

KALEE INDOMITABLE

MODEL Nº 8

Sole Makers—

A. KERSHAW & SON, LEEDS (England).

Sales Agency—

The Home of KERSHAW Productions

Where the "Kalee Indomitable," Model No. 8,
Cinematograph Projectors and Accessories
are manufactured.

All British Capital ————— All British Labour.

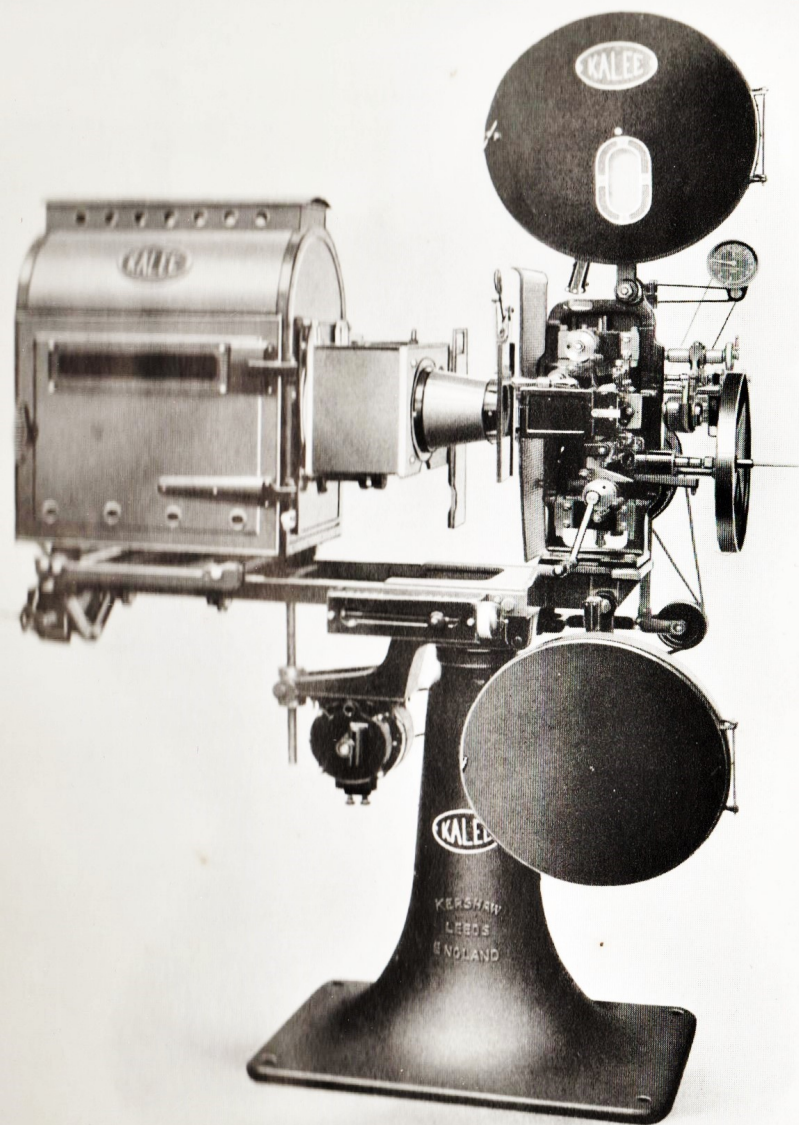


SOLE MAKERS —————

A. KERSHAW & SON, LEEDS (England)

Branch of Amalgamated Photographic Manufacturers, Ltd., 3 Soho Square, W.1.

SALES AGENCY —————



ALL BRITISH
"KALEE INDOMITABLE" Model No. 8,
Cinematograph Projector.

"The Kalee Indomitable." ALL BRITISH

Model No. 8.

PERFECT PROJECTION

SILENCE IN ACTION

RELIABILITY

PRECISION

EASE OF

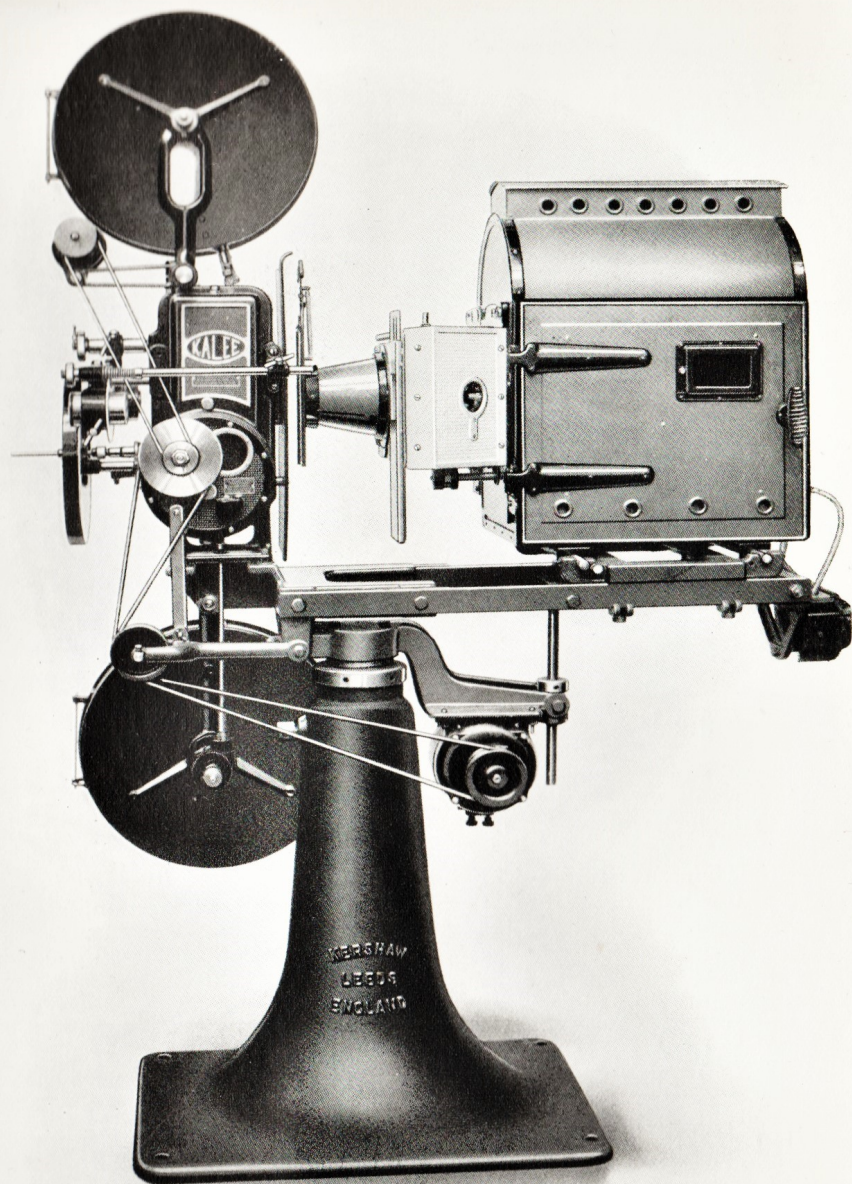
MANIPULATION

THESE *are* the outstanding features of the latest development in CINEMATOGRAPH PROJECTORS produced by A. KERSHAW & SON, the result of over twenty years continuous manufacture of high-class Projectors.

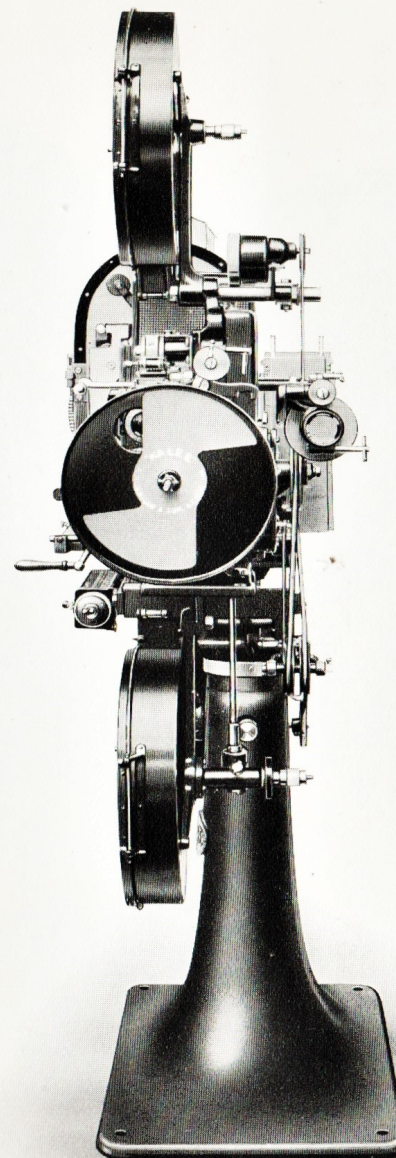
Thousands of "KALEE PROJECTORS" are in daily use all over the World, giving perfect satisfaction.

"KALEE" means "SERVICE"

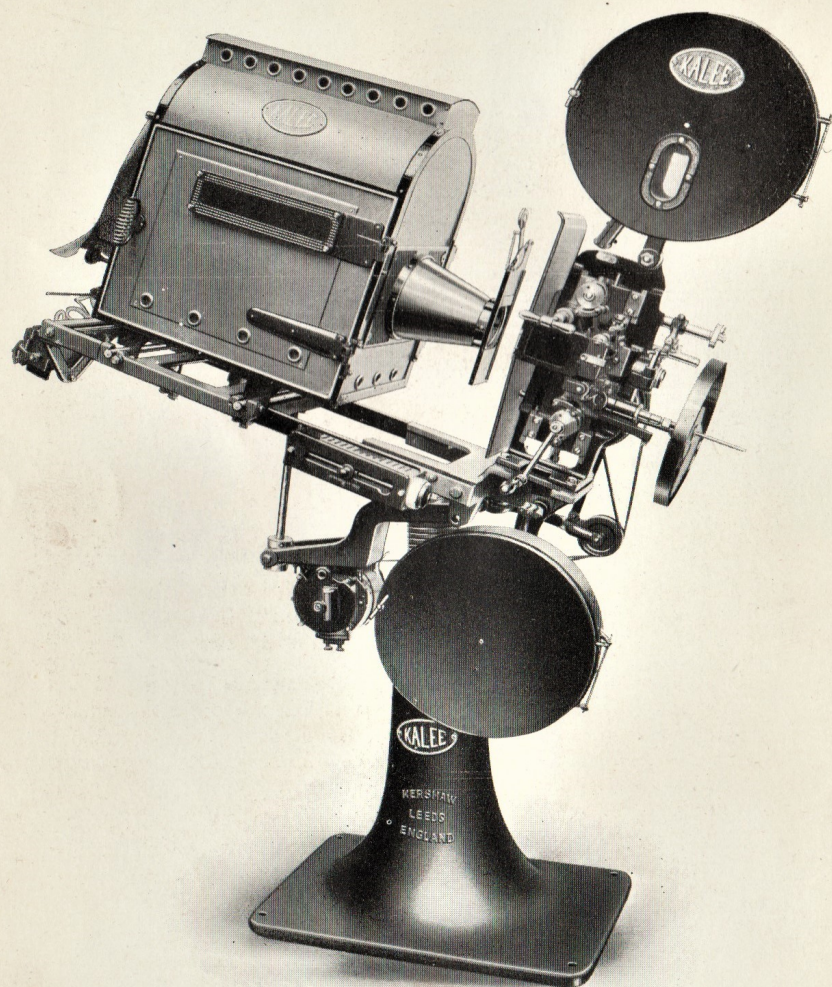
"The KALEE INDOMITABLE" No. 8 is full of novel and exclusive features as the following pages will reveal.



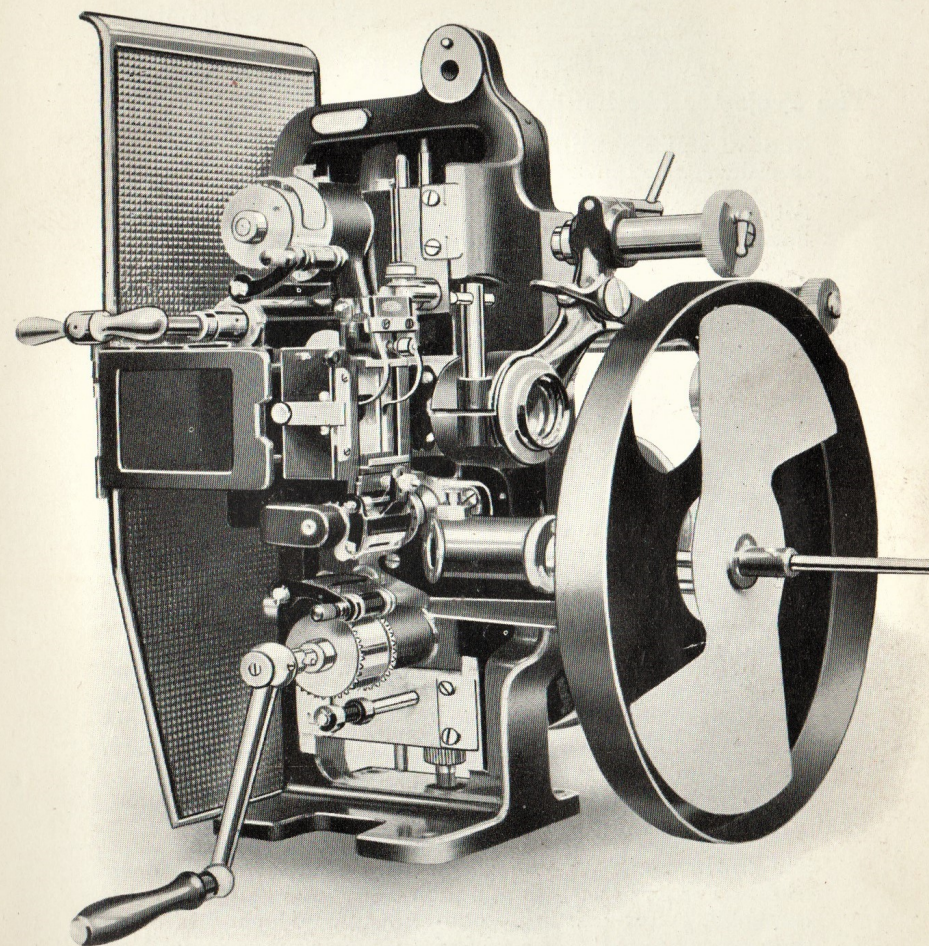
*Side View of "KALEE INDOMITABLE," Model No. 8,
Cinematograph Projector.*



*Front View of "KALEE INDOMITABLE" Model No. 8,
Cinematograph Projector.*



"KALEE INDOMITABLE," Model No. 8, Cinematograph Projector, tilted 15° in depression.



Enlarged View of "KALEE INDOMITABLE," Model No. 8, Projector Mechanism.

"The KALEE Indomitable"

Model No. 8.

The Projector Mechanism

Massive and substantial construction yet graceful in design, specially selected materials are used throughout.

All castings are black stove enamelled, machined parts polished finish.

The outer frame is one casting only, not built up, thus ensuring perfect alignment and rigidity.

The body casting, which slides in the outer frame, to give the fixed optical centre, has all the bearings and oil boxes embodied in it. The advantages in this design are the elimination of small bearing brackets, etc., which, with constant running and vibration, often work loose.

Spindles and Bearings

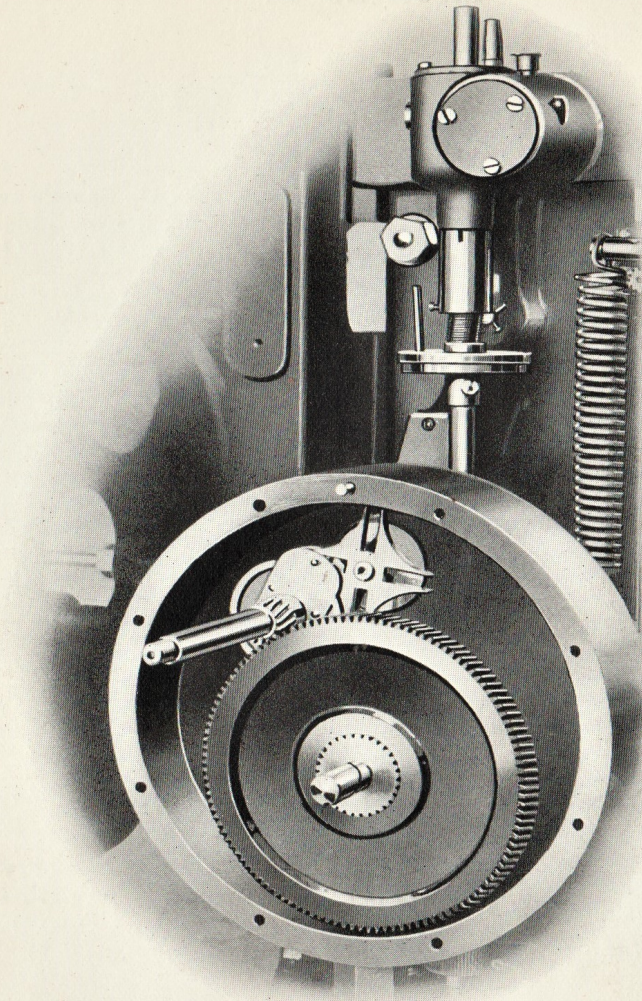
Special tough high carbon spindle steel is used for the spindles. They are all ground to extremely fine limits on precision grinding machines.

The bearings are made from a close grained material which has been found in practice to be free running, and wear resisting. Either the spindle or the bearing, as the case may be, is machine-oil grooved to give equal oil distribution over the whole surface.

Main Gears

The **Main Gear Wheel** is of large diameter with spiral-cut teeth. For its construction, a patent synthetic gear material is employed, wear-resisting, non-resonant, which has been thoroughly tested out under extremely severe working conditions. It is entirely protected from dirt and grit, etc., as it runs in the main oil box and is constantly lubricated.

The **Main Pinion** is also of large diameter, spiral-cut teeth, and is made integral with the second motion spindle. This spindle is constructed from Chrome Vanadium steel, heat treated to give maximum tensile strength to withstand hard wear and tear.



Close up View of the Massive Oil Box 6½ in. inside diameter, which is cast integral with the Mechanism body. Note the large size Maltese Cross, novel hardened Steel Locking Cam, Pinion and Main Gear Wheel, all of which are constantly lubricated. The oil bath containing the gear drive to the Top Spindle is also illustrated.

The "KALEE Indomitable"

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Spiral Gears

The Top Spindle, Vertical Spindle, and Take Up Spindle are driven by Spiral Gears. These are constructed from a high tensile case hardening steel, with glass hard surfaces. Oil baths ensure perfect lubrication to these gears.

Spiral Bevel Gears

The shutter spindle drive is direct with the cam spindle through a pair of hardened steel mitre gears. These gears are cut on a Gleason Spiral Gear Generator which is acknowledged the World over as the last word in bevel gear construction. Back lash, wear and tear are thus reduced to a minimum; perfect transmission and silence at high speeds. An oil box with an observation window is provided for these gears, the operator can tell at a glance if the lubrication is correct, as this is essential with this type of gear.

Maltese Cross

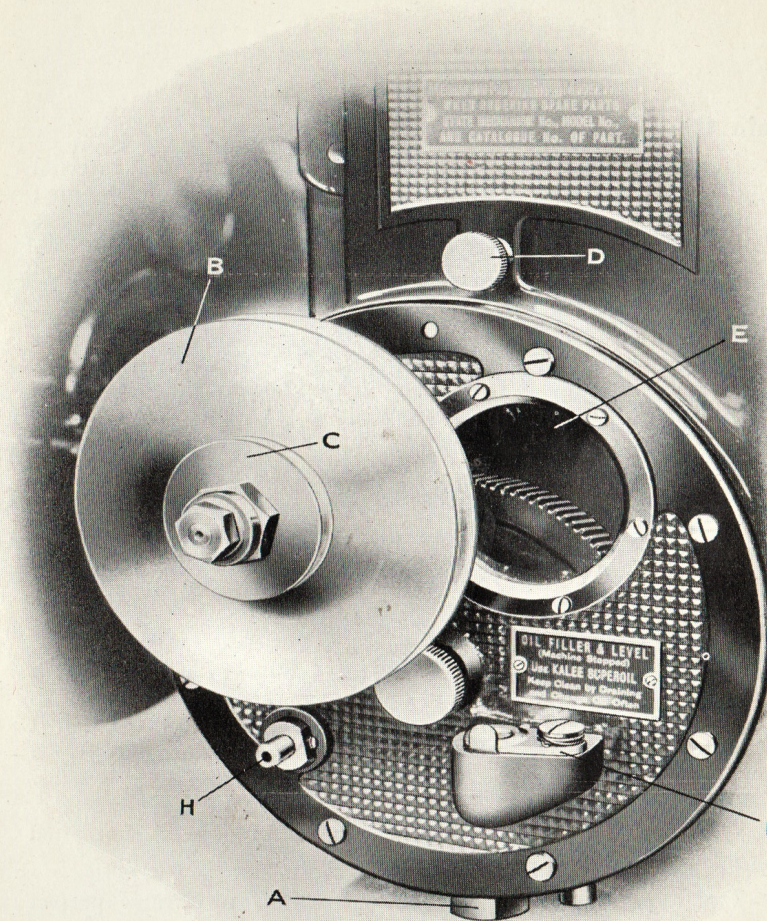
This is the most vital part of the Projector Mechanism and may correctly be termed the "Heart" of the Projector.

The material from which it is made is a special high tensile alloy steel, heat treated.

The highest skill is employed in its manufacture, in conjunction with most accurate precision machinery, finished, by grinding to extremely fine limits of accuracy. The cross is of large size ensuring long life.

Locking Cam

The Locking Cam is of new and novel construction, made of special steel, hardened and ground perfectly true. The striking roller is also made of hardened steel, ground to fine limits to fit the cross slots. The roller shaft is eccentrically adjusted so that the striking position is correctly placed relative to the engagement of the cross and cam.



Close up View of the Oil Box, with Cover in position; note the large observation window "E," the solid steel driving wheel "B," the film speed indicator drive pulley "C," the oil filler and level cover "F," drain and sump plug "A," "H" is the Stud to which is attached the coupling link to the jockey pulleys, for maintaining constant belt tension. "D" is the single screw fixing for the back dust cover.

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Main Oil Box

In the "Kalee" No. 8 a large oil box of $6\frac{1}{2}$ " internal diameter is used. It contains the main gear and its pinion; the maltese cross and locking cam. All these vital parts are therefore ensured of a constant supply of lubricating oil. The solidity of the box reduces friction and noise to an absolute minimum.

The cover of the box carries a substantial third bearing for the cam shaft end on which is fixed the driving wheel. The end of this bearing has an annular groove and return oil hole, thus avoiding any possibility of oil throwing from the driving wheel.

A novel oil filler and level arrangement is embodied which avoids overfilling of the box. A large observation window allows the operator to see that lubrication is functioning correctly.

Driving Wheel

To give perfect balance, a solid steel driving pulley is used, machined all over. It is mounted on the tapered end of the cam spindle and locked by a nut. This method ensures absolute truth and rigidity. It is dished out so that the belt pull comes well over the third bearing on the oil box cover.

Intermittent Sprocket

Constructed from a high quality carbon tool steel, hardened by a special process.

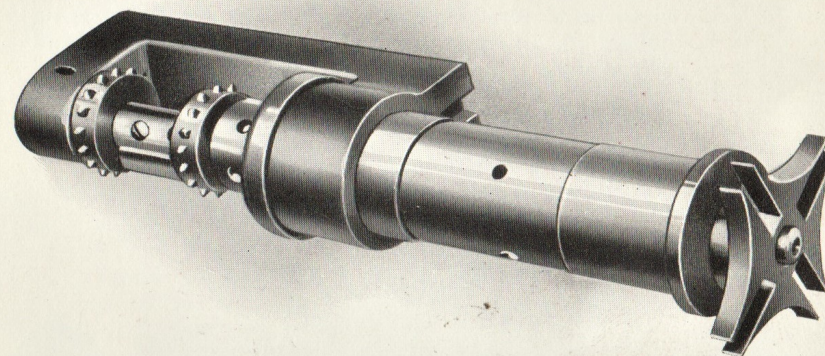
Great care is used in manufacturing, to ensure perfect accuracy, the final testing being carried out to fine limits.

One has only to compare the relative mask size to the projected picture size to realise the accuracy required. A fraction of one thousandth part of an inch error in this sprocket will make it unfit to give a steady picture. In reality, the whole time the Projector is in use, the sprocket is undergoing an optical test of high magnification.

Operators should use great care to see that it is kept free from dirt and protect it from injury.

The "KALEE Indomitable"

Model No. 8.



Eccentric Intermittent Unit Sleeve, Intermittent Sprocket, Maltese Cross and outside bearing.

Intermittent Unit Sleeve

This is constructed in the form of a unit, and carries the Maltese Cross, Spindle, and Intermittent Sprocket. The body is slightly eccentric to the spindle to allow of correct engagement of cross and cam.

An outside bearing to the Intermittent Sprocket end of the spindle is provided. This bearing provides extra rigidity and avoids any liability of the spindle being injured and thrown out of truth.

Large Sprockets

The Top and Bottom large feed sprockets are turned from solid steel bars, the teeth are correctly formed and spaced.

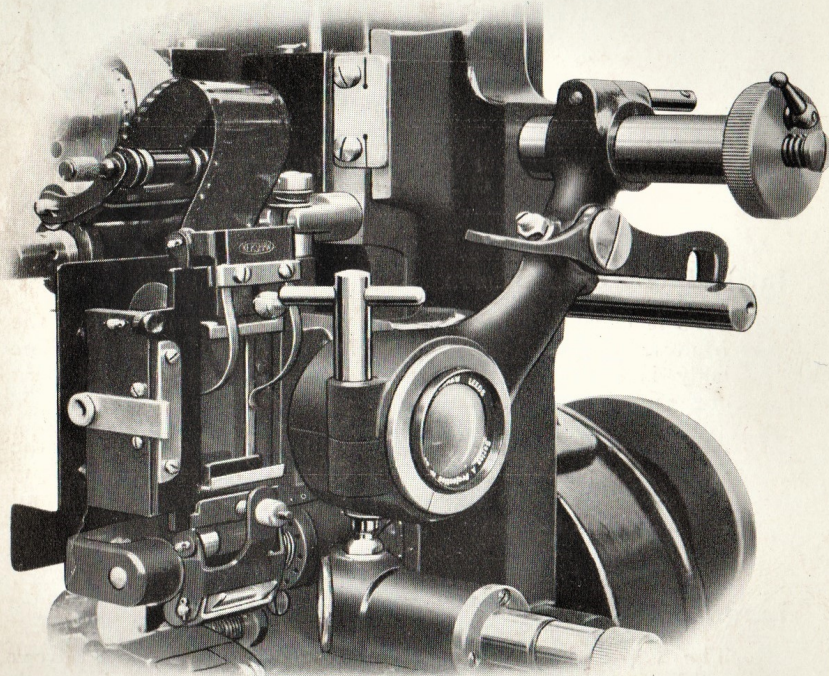
They are attached to their respective spindles by large fine threaded screws for ease in replacement.

The "KALEE Indomitable"

Model No. 8.

Film Guide and Sprocket Rollers

Are all constructed of steel, hardened, ground and lapped and seldom require replacing. They are correctly formed and relieved to avoid scratching the film. The frames carrying these rollers are all constructed of special steel pressings and are unbreakable. For retaining roller spindles a standard size of split pin has been adopted. These cannot work loose, which is often the case with small screws, and the cost of replacement is practically nil.



Gate closed, with film and lens in position for Projecting, the rigid mechanical focussing device will be observed.

The "KALEE Indomitable"

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The Gate

The Gate is made entirely of steel, roller brackets are electric welded making a very rigid construction.

In place of a fixed width of film track automatic tracking rollers are employed, which are self adjusting according to the width of the film.

The runner plate and mask is formed in one steel stamping, cleared in the centre to avoid scratching the film and is devoid of any sides. This plate is easily replaceable when worn.

The mask being integral with the runners, is as nearly as possible in the focal plane of the film, and consequently gives a clearly defined sharp masked picture.

The size of the mask aperture is 0.9062 in. wide \times 0.6796 in. high, which is now becoming generally adopted as a standard. It will be noted that the height is three quarters of the width, therefore the projected picture is in the same proportion.

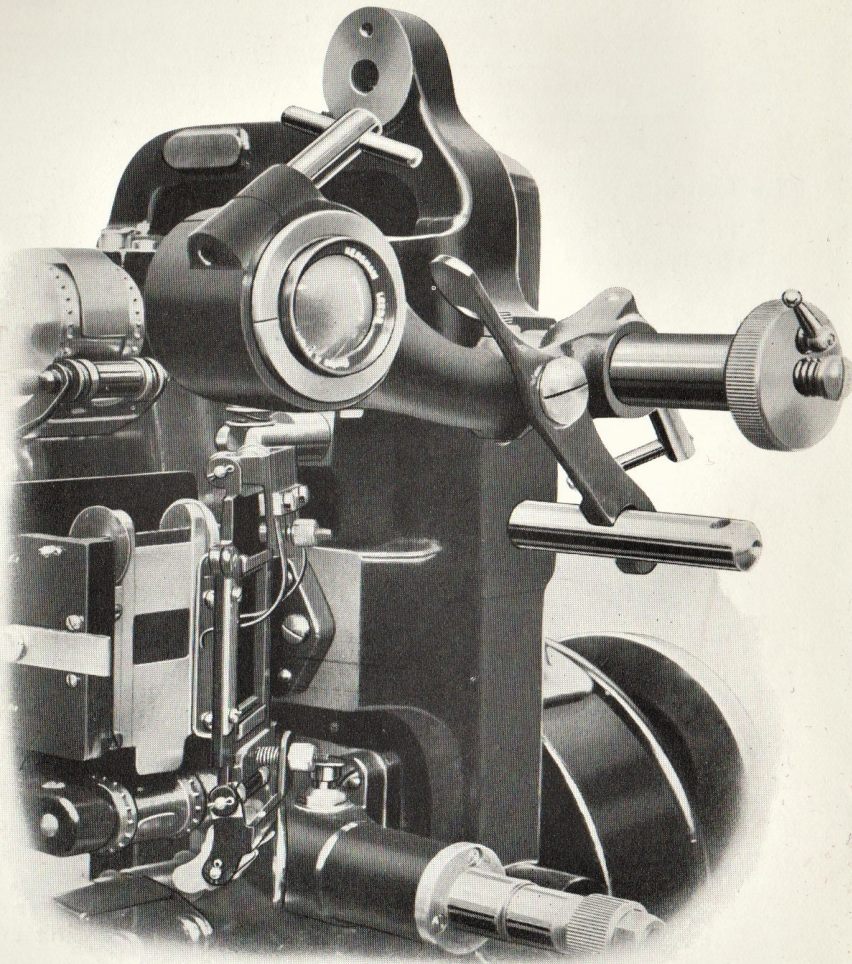
At the top of the gate bracket and mask plate is a fixed roller, and, in addition, a spring controlled roller which automatically adjusts itself to the width of the film.

The gate opens at the front of the Projector, away from the source of light and heat, and allows of threading and adjustment of the film in the shortest possible time.

The film pressure skates are formed in one light hardened steel frame, controlled by a pair of easily replaceable steel bow springs which are mounted on a hinged bracket. It is so arranged that when the milled head is fully screwed down, maximum tension is put on the skates.

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Gate open and Cine Lens Support swung away, showing the replaceable steel mask plate, auto tracking rollers, etc.

When giving a "first run" of a new film it is often found desirable to reduce this tension, to avoid emulsion collecting on the runners, due to the fact that final hardening of new film occurs after it has been subjected to the heat rays of the arc lamp.

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The tension is reduced by turning the milled head anti-clockwise.

At all times it is recommended to keep the tension as light as possible as it increases the life of the vital parts of the Projector, in particular the intermittent sprocket, steadiness of projection must mainly evolve from the intermittent movement.

A special form of film guide shoe is pivoted at the bottom of the gate. This shoe is made of steel, hardened, and formed so that it gives full engagement of film with the intermittent sprocket, thereby reducing film strain to a minimum; a necessity where film is projected above the normal speed.

Particular attention should be given to the adjustment of the film guide shoe. Without film, the shoe should be just clear of the rim of the intermittent sprocket. This adjustment is made by means of a small knurled steel nut at the bottom of the gate. When turned clockwise, the shoe recedes from the sprocket. This nut has a square shoulder on the back, which engages in the slot of the steel cradle lug, so that no attempt should be made to turn the nut without pressing the lug towards the gate, this allows the square shoulder to be clear of the slot. It will be noted that the nut is allowed one quarter of a revolution adjustment, which is sufficiently fine to give the necessary adjustment of the shoe.

Masking or Framing

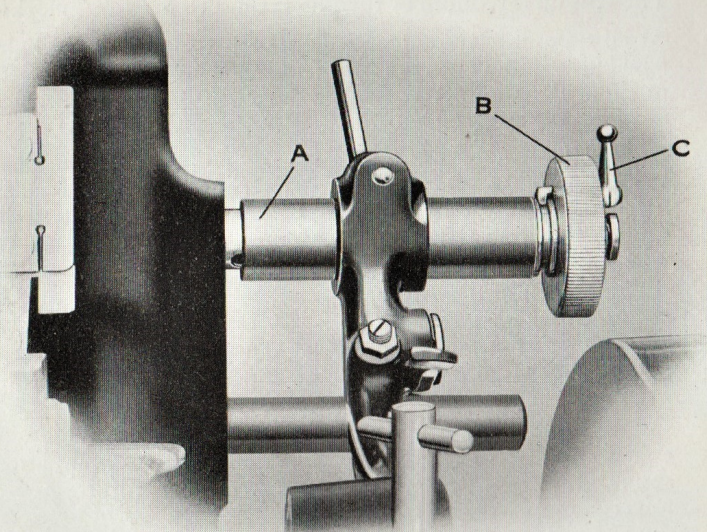
This is known as fixed optical centre, and is controlled by a steel pinion shaft with a suitably formed handle. When the handle is in a horizontal position, it indicates that the movement is in the central position.

The pinion shaft is mounted in a detachable eccentric sleeve which in turn is fixed to the outer frame. The eccentric movement allows of correct engagement with a steel rack fixed to the body casting, thus eliminating back lash.

The body is balanced by means of a long nickel-plated steel spring, so that very little effort is required to raise or lower it.

The masking movement allows of two picture adjustment, and entails no strain whatever on the film. Another distinctive movement, when masking, the whole gate moves, consequently, the relative position of the skates and the mask runner plates is constantly varied, obviating to a great extent the wearing of the plate in switchback fashion; it tends to keep it flat, the wear taking place over the whole length.

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Cine Lens focussing device: adjustable steel sleeve "A," large knurled focussing knob "B," and locking lever "C."

The Cine Lens Support

This is an entirely new departure from the old-fashioned rack and pinion jacket. It has been designed on entirely sound mechanical lines, the result being extreme rigidity and obviating constant focussing. Either a large aperture Type "B" lens or a small aperture Type "A" lens can be clamped in the standard bracket. A special bracket can be supplied to take extra large diameter Type "C" lenses.

The bracket is clamped in position according to the focal length of the lens, along a large diameter adjustable steel sleeve. The adjustable steel sleeve is actuated by a large steel knurled knob and allows of a fine focussing adjustment of ample capacity. Back lash is entirely eliminated by an internal compression spring. When correct focal position is obtained the focussing knob can be locked by means of a small lever situated on the face of the knob. The centre spindle, on which the sleeve slides, is of large diameter and substantially fixed to the main frame.

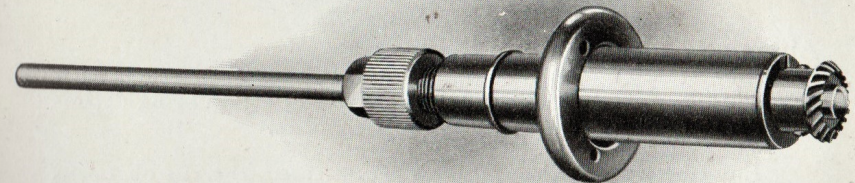
The "KALEE Indomitable" Model No. 8.

The lower rod is also massive and forms a perfect guide to the lens bracket, and retains the axial position of the lens in perfect alignment with the mask. The heavy substantial construction avoids any possibility of vibration. Further, the lens bracket can be swung entirely out of the way of the gate to facilitate film threading, cleaning, etc.

Flicker Shutter

This is the outside type, revolving between the lens and the screen. Either two or three blades can be supplied. The blades are cut to a special shape to give the highest light efficiency with the least possible flicker.

Provision is made for quickly setting the shutter to eliminate ghost, by means of two screws on the shutter boss. When the shutter is once set correctly, it requires practically no attention. A detachable steel guard is provided to protect the shutter from damage, it also protects from injury the operator's hand when focussing, etc.



Main shutter spindle bearing unit, showing the extension shaft, clamping nut and spiral bevel gear drive.

The main shutter spindle is driven direct from the cam shaft through a pair of spiral cut bevel mitre gears, which run continuously in oil. The shutter spindle extension shaft is made detachable for cleaning, transit, etc.

To ensure the loose spindle running true, improvement has been made in the method of fixing. The drive is now taken by a halved coupling, the clamping being made by a split, double-coned ring interposed between the main spindle end and the inside of the clamping nut. When the nut is tightened up, the collar is contracted, which rigidly grips the shaft and ensures true running, freedom from rattle, etc.

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An oil trough of ample proportions is fitted under the shutter spindle bearings to collect any stray oil which otherwise might drop on to the film when passing through the projector.

Hand Driving Handle

An entirely new type is fitted to the "Kalee No. 8" Projector, of the free-wheel type.

The vital details of the handle are made of steel, case hardened.

The body of the handle is made of steel, turned and polished, the handle itself being vulcanite with a brass liner.

Automatic Light Cut-off

This is an improved form, the principle of action being dependent on oil friction between two steel discs.

Immediately the drive attains a safe speed, the cut-off opens clear of the light rays, but the moment the drive ceases, the cut-off drops, and effectually shields the film.

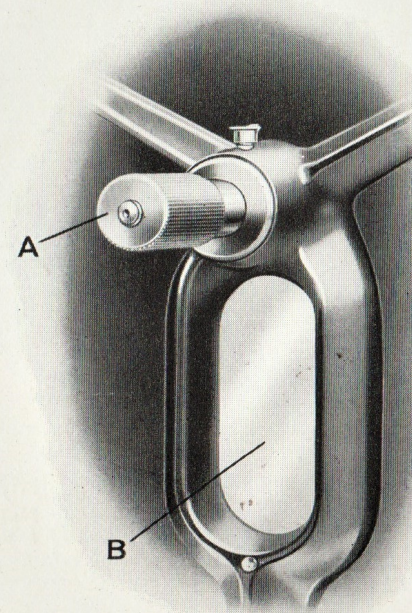
The perfection and simplicity of its action deserves special attention as it is a most valuable feature. It is impossible for the film to get scorched or burnt by being exposed for any length of time to the hot light rays.

Back Cover

A large cast cover protects the vertical shaft and automatic light cut-off from damage, dust, grit, etc. It is quickly removed for any adjustments, oiling, etc.

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Rear View of Top Spool Arm, showing the spindle tension adjustment knurled nut "A" and rear window "B."

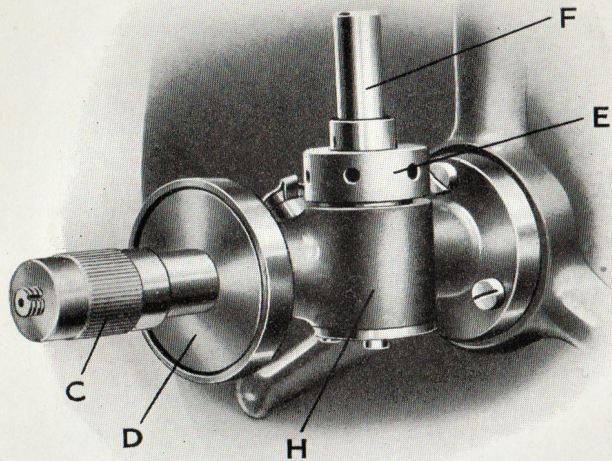
Spool Boxes

The Spool Boxes are 16 in. diameter, allowing the use of $14\frac{3}{4}$ in. diameter film spools. It will be noted that they are directly in line with the mechanism.

The boxes and doors are made of best quality rolled steel plate, solid drawn, not built up. Substantial hinges and catches are fitted and the whole finished in black stoved enamel,

The Top Box is provided with a Mica window on the door and on the back of the box, to facilitate observation of the amount of film on the spool.

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Rear View of Bottom Spool Arm, showing take-up spindle bracket "H," which houses the spiral gears in an oil bath. The vertical spindle "F" and gear is contained in a quill which can be removed by unscrewing Nut "E." The tension of the slipping clutch "D" is adjusted by means of knurled nut "C." The take-up spindle can be withdrawn when the bearing retaining screw in the bracket "H" is slacked off and the nut "C" removed.

Spool Arms

These are of ample strength, and are detachable, but, when clamped up, are perfectly rigid.

The top arm is provided with a revolving spindle in which is embodied a friction device controlled by a knurled nut.

The bottom arm carries the take-up spindle, which is positive driven through spiral gears running in an oil bath, connection to the mechanism being made by a detachable shaft.

A large diameter leather to metal slipping friction clutch is provided, to compensate for the varying diameter of the film coil.

The clutch tension spring is adjustable by means of a knurled steel nut. The whole friction clutch can be readily taken to pieces for cleaning, etc.

Safety Fire Traps

The safety traps have received the warmest approval of the licensing authorities, and are real safety traps, not mere rollers guiding the film into the spool boxes.

The "KALEE Indomitable" Model No. 8.

They are substantially constructed, with long machined fire damping ducts, a pair of steel guide rollers at each end. The lids are hinged to facilitate film threading, but cannot be left open, the lid being automatically closed by a strong spring.

Heat and Light Shields

A small steel shield is fixed to the back of the gate to keep it cool. A large shield is fixed to the back of the mechanism, which entirely prevents stray light from the lamp house passing through or past the Projector. It extends from the top spool box to the base of the mechanism, and prevents film running on to the heated lamp house, should a film break occur.

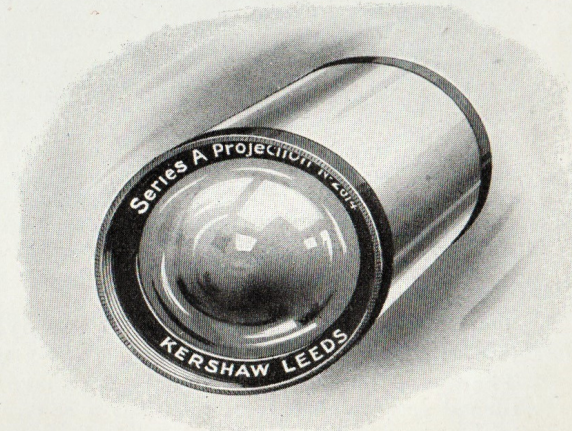
The large shield is a substantial aluminium casting with serrated surfaces, finished black stoved enamel. It is provided with a large hinged observation window fitted with a dense coloured glass window, to prevent glare when adjusting the arc to flood the mask.

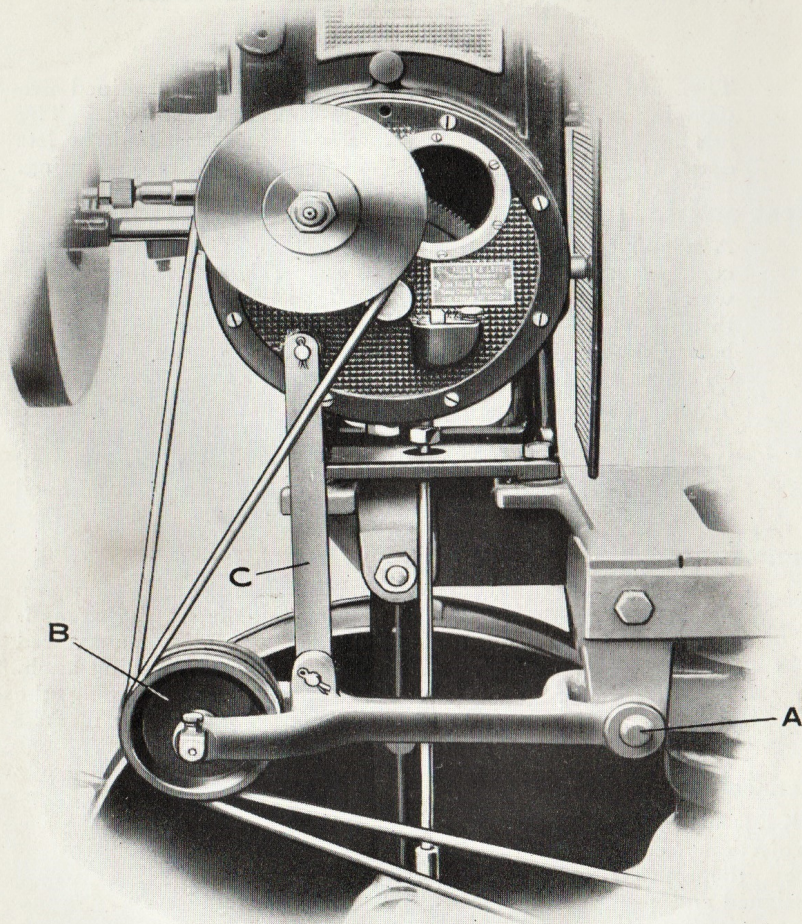
Lantern or Title Slide Attachment

This is fixed to the outer frame; focussing is done on mechanical principles similar to the Cine lens. The lens is securely clamped in a cast-iron holder which slides on a screwed steel spindle, on which is fitted a knurled steel focussing knob. Rough adjustment of focus is obtained by unclamping the main bracket and sliding the steel bar; fine adjustment is then made with focus knob.

Lenses

"KERSHAW" Projection Lenses are theoretically designed and project a picture with perfectly clear definition over the whole field, free from distortion and colour. The latest types of optical glass have been embodied in these lenses, to correct for all aberrations, and give a brilliant picture.





Close-up View of the Constant Belt Tension Device, the casting carrying the jockey pulleys "B," is pivoted at the bearing "A" and connected to the mechanism body by coupling link "C." This arrangement ensures constant belt tension at all masking positions.

Pedestal Stand

The "Kalee" No. 8 Pedestal Stand is of very massive construction, the main body is a heavy iron casting with a large base. The top of the body is machined out to take a large diameter turned cast-iron sleeve, which has a square thread engaging with a turned steel nut to provide for adjustment of height of optical centre from the floor.

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An adjustment of 6 in. is provided, so that the optical centre height is adjustable from 3 ft. 9 ins. to 4 ft. 3 ins.

This arrangement also allows of lateral swivelling adjustment, a floating key, with a substantial locking bolt, provides for securely clamping when all adjustments have been made.

Mechanism and Motor Base

The Motor Base is substantially constructed of cast-iron and is firmly secured to the stand sliding sleeve.

The Mechanism Base is also of cast-iron, and is pivoted to the motor base, a steel screw with adjusting nuts provides for elevation or depression 15 degrees from the horizontal position.

Motor Drive

The position of the motor provides for the best balancing position, freedom from vibration, etc. It allows of a long belt drive with constant tension at all masking positions.

The jockey pulleys are carried in a cast-iron bracket which is pivoted to the mechanism base, and direct coupled by a novel link arrangement to the sliding body of the mechanism. No matter how rapidly one may mask, there is no liability of the belt jumping off, which is the case with spring or weight-controlled jockey pulleys.

Motors

These are built to our own special design—British Manufacture—and can be supplied to suit all voltages, either for direct or alternating currents.

Stand Top

The Stand Top is formed by substantial rectangular section steel bars, which are let into milled grooves on the mechanism base and securely fastened by steel bolts.

Spacing bars are provided for the lamp house end.

Switch Terminal Block

In place of the ordinary terminal block, a double pole quick break switch is provided. It is mounted on a cast-iron bracket, fixed to the rear end of the stand top.

Lamp House Base

Supplied either for fixed single lamp house, or slide-over pattern, when the outfit is fitted with Lantern Slide attachment. When double lamp houses are supplied, a lamp house base is not required, as the double lamp houses fit direct on to the stand rails.

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Lamp Houses

The "Kalee" No. 8 Stand provides for the fitting of all Kalee Lamp Houses, Arc Lamps, etc.

"Kalee" Lamp Houses are all constructed on a similar design of substantial capacity but modified in details to suit the various types of Arc Lamps, etc.

The frame work is made of wrought iron, with blue planished steel panels.

Two doors are provided, the door nearest to the handle driving side of the mechanism having a long dense glass arc observation window, a smaller window is also provided in the back door.

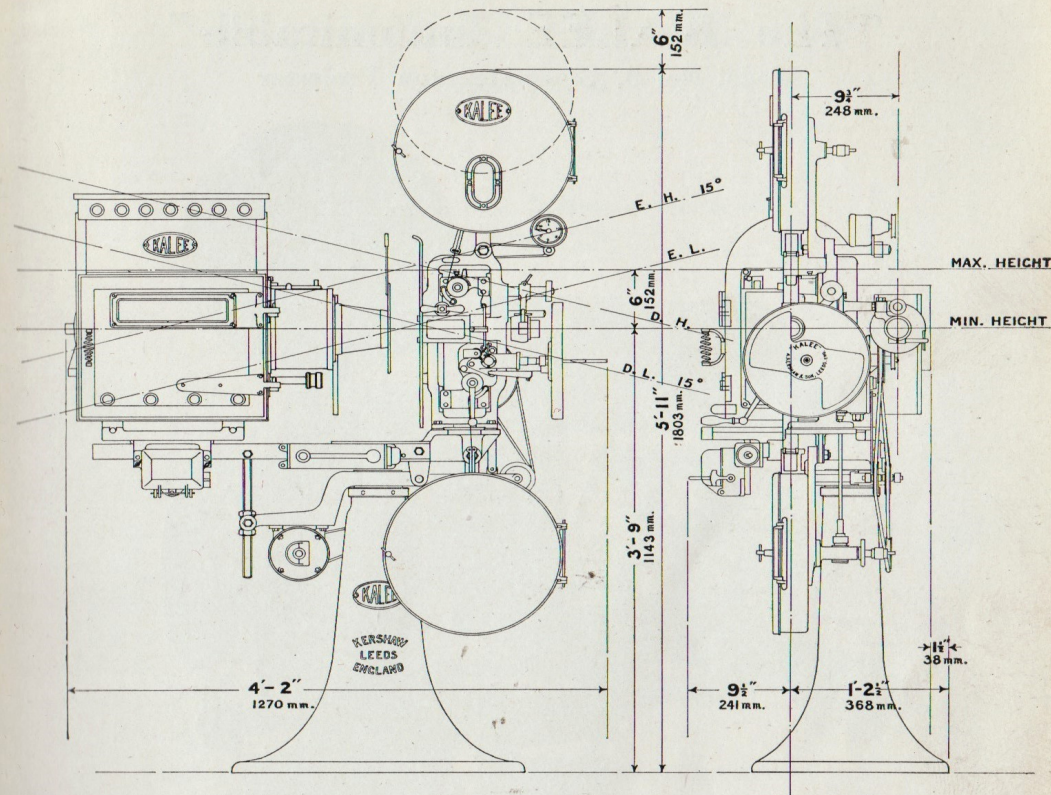
Details of each type of Lamp House as fitted to the various outfits are specified and illustrated in the outfit specification.

CARE OF THE "KALEE INDOMITABLE," No. 8 MECHANISM

A projector mechanism is a fine and accurately constructed piece of mechanical apparatus which has to withstand hard continuous wear and demands a certain amount of care if it is expected to fulfil its duties efficiently. Cleanliness and proper lubrication with a high-class oil are the main factors. Very little calculation is required to estimate the quantity of film which passes through the machine in, say, a week. Films harbour dust and grit, which are deposited on the machine and should be periodically removed.

We strongly advise, say every month, taking the mechanism off its stand, placing it in a tin tray and thoroughly cleansing it with paraffin oil, an ordinary paint brush being a suitable tool to remove any obstinate particles of dirt.

In removing deposit that may have collected on the intermittent sprocket, the greatest care should be used, as the slightest injury to the teeth will upset the steadiness of the picture. A tooth brush is recommended for cleaning this part. In cleaning the skates or runner plate of emulsion which has adhered to them, a soft metal should be used as a scraper. This should be done daily in order to avoid scratching the films, especially with new run films which do not appear to be always perfectly set. We supply, at a small cost, a brass scraper mounted in a polished hard wood handle. On no account do we recommend removing the dirt with a knife or hard metal, as it is liable to scratch the polished steel surface, raising the edges, which will immediately collect dirt again, probably worse than before. After having thoroughly cleansed the mechanism, the paraffin should be removed from the bearings by draining and over-oiling, the surplus oil being wiped off. Paraffin, not being



Line Drawing of the "KALEE INDOMITABLE" Model No. 8, Projector Outfit, giving useful dimensions for the guidance of Architects and Builders of Operating Rooms.

a lubricant, if allowed to remain in the bearings, is liable to cause a seizure.

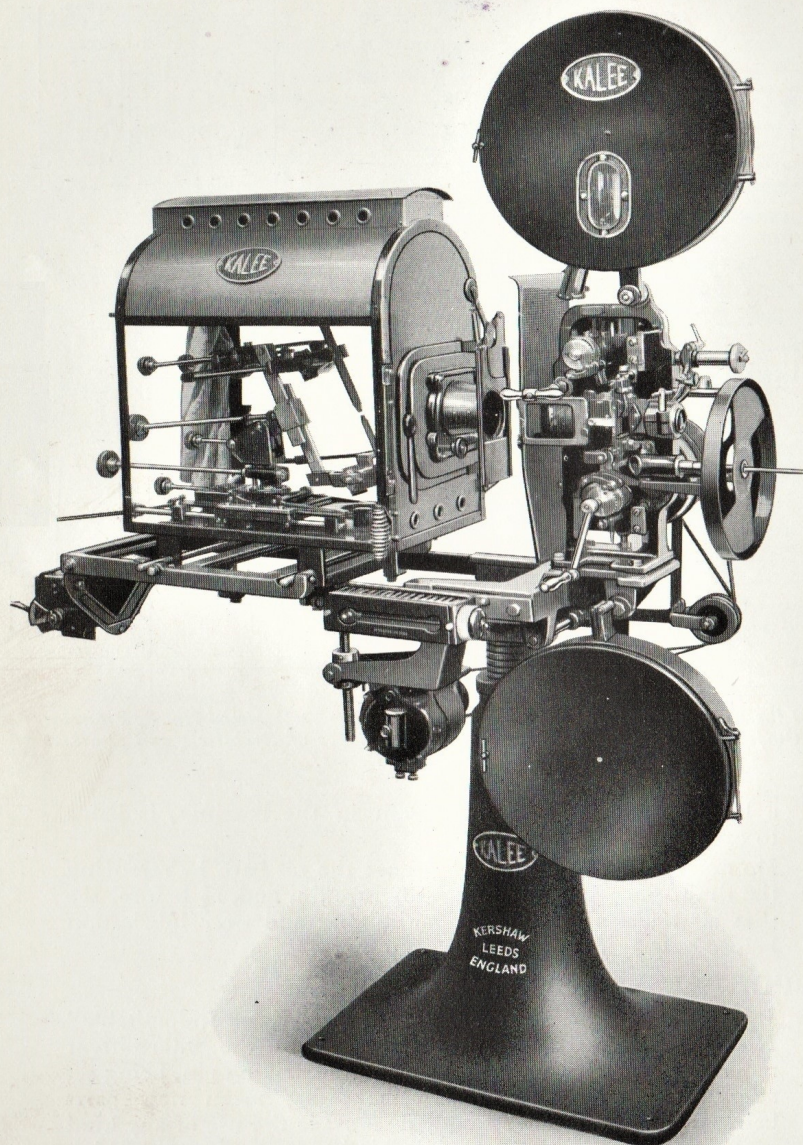
Do not forget to thoroughly cleanse the oil bath by removing the drain plug and flooding with paraffin, and, as before, see that all traces are removed by draining and over lubrication before putting the mechanism into use.

IMPORTANT NOTICE

It is to the advantage of every user of the "Kalee Indomitable" No. 8 Projector never to interfere with the intermittent movement. The maltese cross, cam and striking pin, being set scientifically true, their displacement may mean new parts being fitted. We also strongly discourage the use of any kind of grease for the lubrication of this important part; nothing better can be used than the special high quality oil we sell for the lubrication of the whole mechanism.

“The KALEE Indomitable”

Model No. 8, Cinematograph Projector



No. 8A. OUTFIT.

“The KALEE Indomitable”

Model No. 8

Specification and Schedule Price of No. 8A. OUTFIT.

“KALEE INDOMITABLE” No. 8 Mechanism.

Pair of 16 in. Fire-resisting Steel Spool Boxes and Spool Arms.

Two 14 $\frac{3}{4}$ in. Steel Film Spools.

Heavy Iron Adjustable Pedestal Stand, with Mechanism and Motor Bases.

Belt Guide Pulleys and Compensating Link.

Fixed Lamp House Base and Bolts.

Lamp House, with Mechanical Tray, Condenser Front; Asbestos Curtain, and Steel Curtain Cut-off.

One Set of 4 $\frac{1}{2}$ in. Condenser Lenses.

Type “Y.L.” 100 Ampere Arc Lamp.

Pair of 100 Ampere Asbestos-covered Flexible Copper Leads.

No. 2 Double Pole Switch and Adapter.

Kershaw Series “A” Cinematograph Lens (3 in. to 7 in. focus).

Spanners and One Tin of “Superoil.”

Complete as illustration and above specification (without Motor, Regulator, and Film Speed Indicator).

Price £119 0s. 0d.

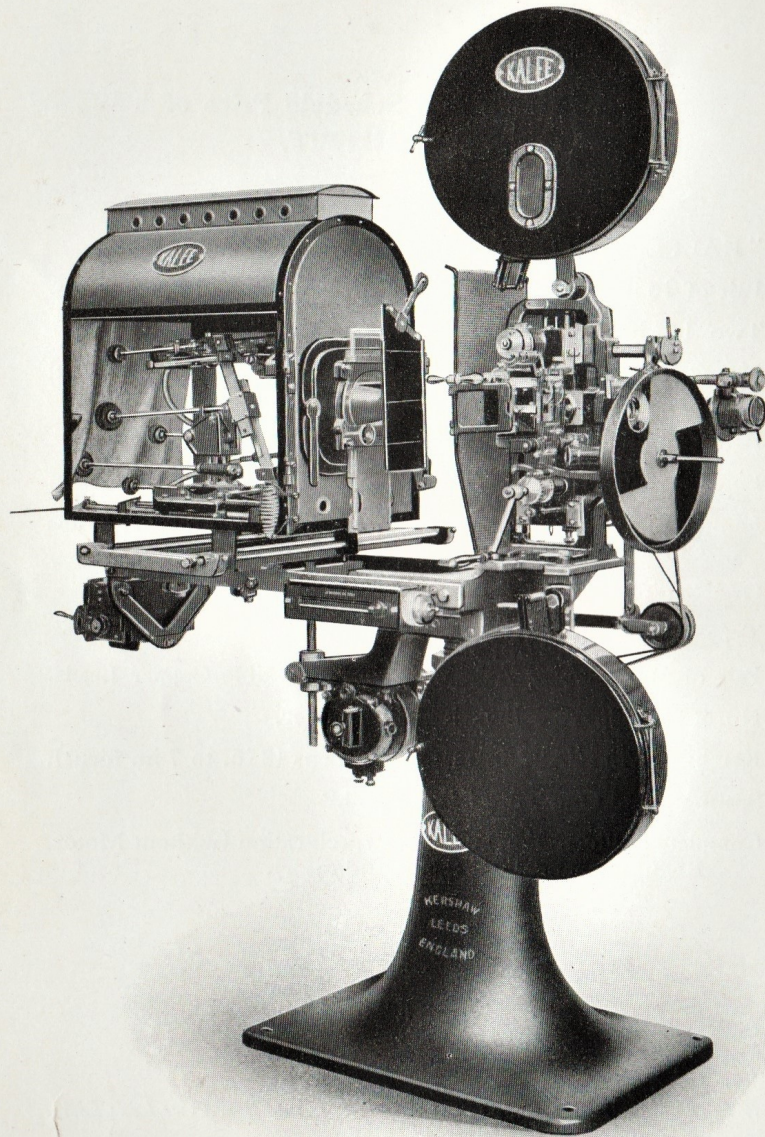
Code Word: “ATKIN.”

When Coding, follow Code Word with Lens Code Word (see Lens List).

Schedule Outfit Prices are for complete outfits as specified, parts not required are not deductable at listed prices.

“The KALEE Indomitable”

Model No. 8, Cinematograph Projector



No. 8B. OUTFIT.

“The KALEE Indomitable”

Model No. 8

Specification and Schedule Price of No. 8B. OUTFIT.

“KALEE INDOMITABLE” No. 8 Mechanism.

Pair of 16 in. Fire-resisting Steel Spool Boxes and Spool Arms.

Two 14 $\frac{3}{4}$ in. Steel Film Spools.

Heavy Iron Adjustable Pedestal Stand, with Mechanism and Motor Bases, Belt Guide Pulleys and Compensating Link.

Slide over Lamp House Base and Bolts.

Lamp House, with Mechanical Tray, Condenser Front, Asbestos Curtain, and Steel Curtain Cut-off.

Vertical Steel Slide Carrier and Slide Holders.

One Set of 4 $\frac{1}{2}$ in. Condenser Lenses.

Type “Y.L.” 100 Ampere Arc Lamp.

Pair of 100 Ampere Asbestos-covered Flexible Copper Leads.

No. 2 Double Pole Switch and Adapter.

Kershaw Series “A” Cinematograph Lens (3 in. to 7 in. focus).

Lantern Slide Lens Attachment Fittings.

Kershaw Series “T” Title Lens (8 in. to 28 in. focus).

Spanners and One Tin of “Superoil.”

Complete as illustration and above specification (without Motor, Regulator, and Film Speed Indicator).

Price £123 0s. 0d.

Code Word: “ATBEE.”

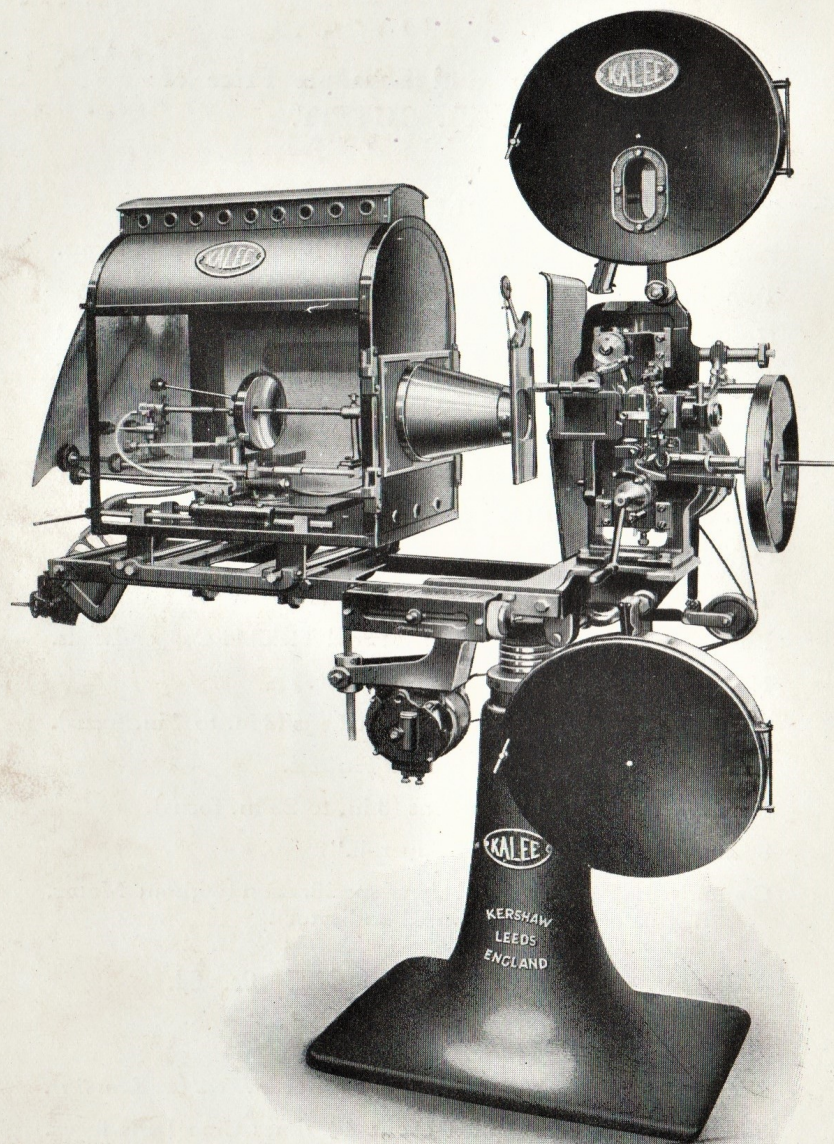
When Coding, follow Code Word with Lens Code Word (see Lens list).

Title Lens will be supplied about 4 $\frac{1}{2}$ times Cine Lens focus.

Schedule Outfit Prices are for complete outfits as specified, parts not required are not deductible at listed prices.

“The KALEE Indomitable”

Model No. 8



No. 8M. OUTFIT.

“The KALEE Indomitable”

Model No. 8

Specification and Schedule Price or No. 8M. OUTFIT.

“KALEE INDOMITABLE” No. 8 Mechanism.

Pair of 16 in. Fire-resisting Steel Spool Boxes and Spool Arms.

Two 14 $\frac{3}{4}$ in. Steel Film Spools.

Heavy Iron Adjustable Pedestal Stand with Mechanism and Motor Bases, Belt Guide Pulleys and Compensating Link.

Fixed Lamp House Base and Bolts.

Lamp House, with Mechanical Tray, Asbestos Curtain, Cone and Steel Curtain Cut-off.

Type “R.L.” Mirror Arc Lamp.

Pair of 50 Ampere Asbestos-covered Flexible Copper Leads.

No. 1 Double Pole Switch and Adapter.

Kershaw Series “A” Cinematograph Lens (3 in. to 7 in. focus).

Spanners and One Tin of “Superoil.”

Complete as illustration and above specification (without Motor, Regulator, and Film Speed Indicator).

Price £119 0s. 0d.

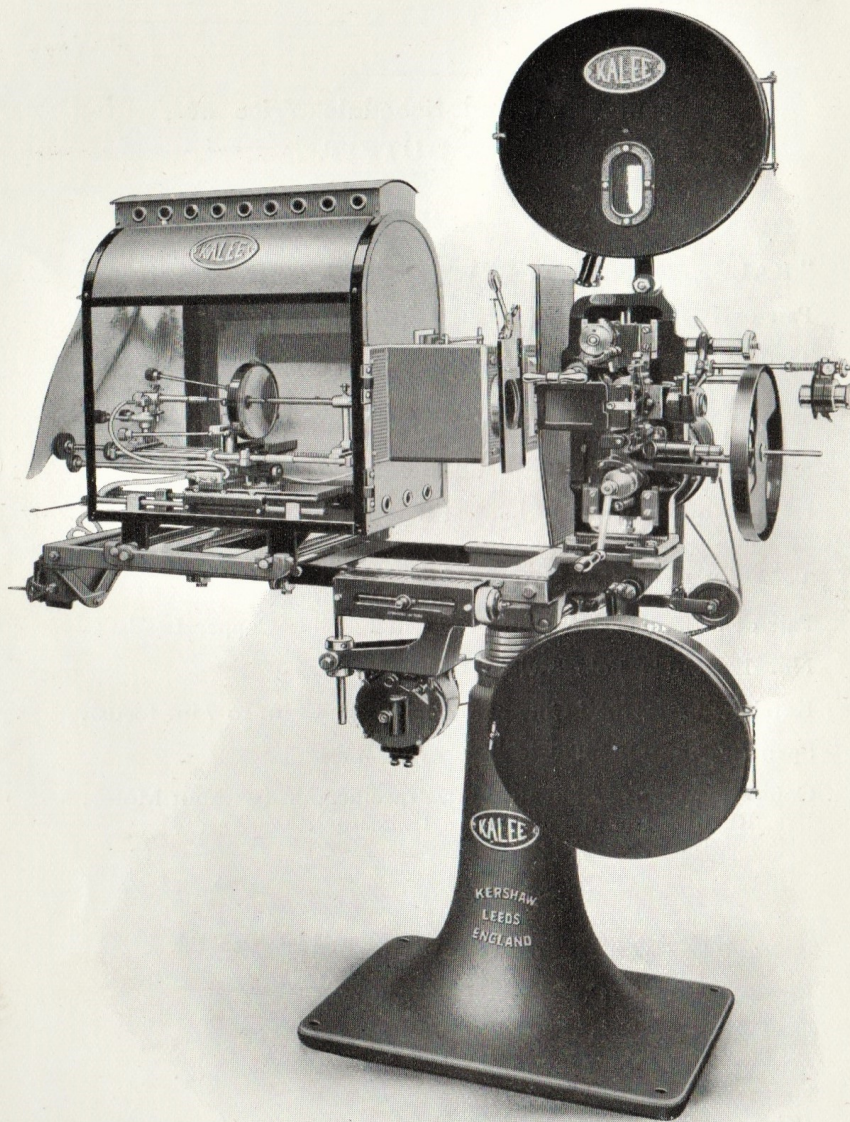
Code Word: “ATMIR.”

When Coding, follow Code Word with Lens Code Word (see Lens list).

Schedule Outfit Prices are for complete outfits as specified, parts not required are not deductible at listed prices.

“The KALEE Indomitable”

Model No. 8, Cinematograph Projector



No. 8M.K. OUTFIT.

“The KALEE Indomitable”

Model No. 8, Cinematograph Projector

Specification and Schedule Price of No. 8M.K. OUTFIT.

“KALEE INDOMITABLE” No. 8 Mechanism.
 Pair of 16 in. Fire-resisting Steel Spool Boxes and Spool Arms.
 Two 14 $\frac{3}{4}$ in. Steel Film Spools.
 Heavy Iron Adjustable Pedestal Stand, with Mechanism and
 Motor Bases, Belt Guide Pulleys and Compensating Link.
 Fixed Lamp House Base and Bolts.
 Lamp House, with Mechanical Tray and Asbestos Curtain.
 Type “R.L.” Kerascope, with Steel Curtain Cut-off, and
 Vertical Slide Carrier and Slide Holders.
 Type “R.L.” Mirror Arc Lamp.
 Pair of 50 Ampere Asbestos-covered Flexible Copper Leads.
 No. 1 Double Pole Switch and Adapter.
 Kershaw Series “A” Cinematograph Lens (3 in. to 7 in. focus).
 Lantern Slide Lens Attachment Fittings.
 Kershaw Series “T” Title Lens (8 in. to 28 in. focus).
 Spanners and One Tin of “Superoil.”
 Complete, as illustration and above specification (without Motor,
 Regulator, and Film Speed Indicator).

Price £127 0s. 0d.

Code Word: “ATKER.”

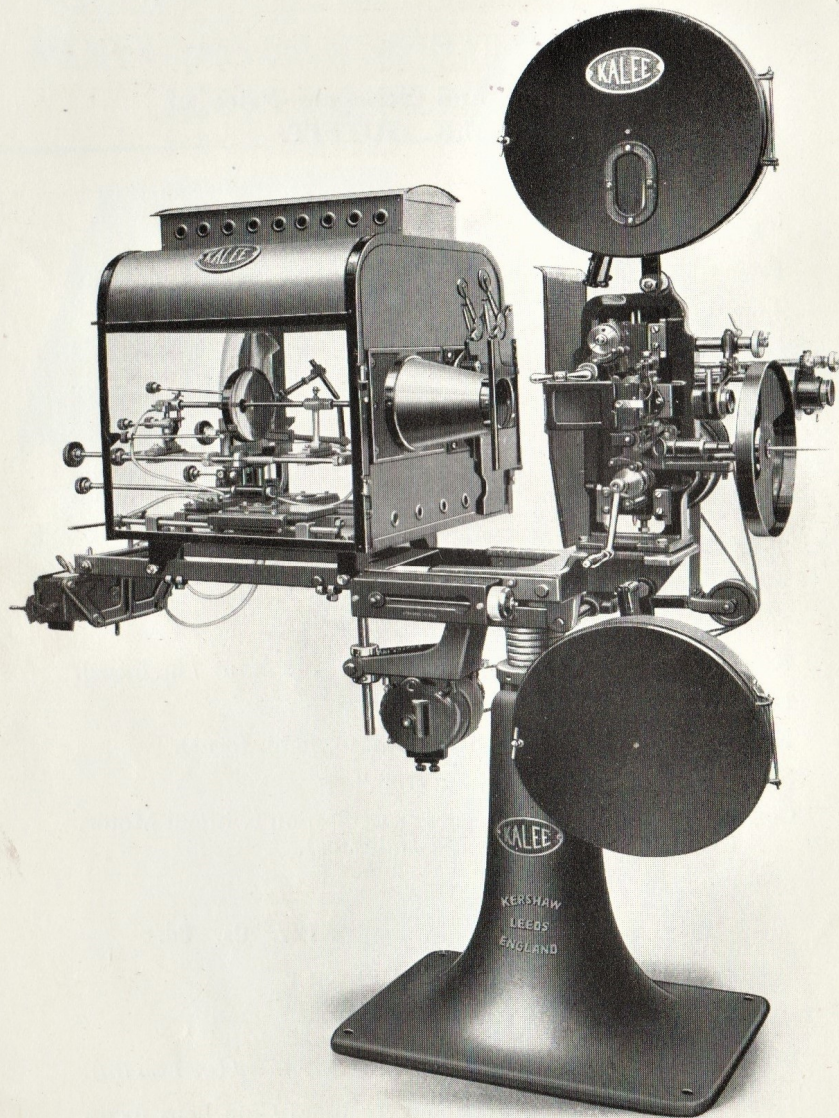
When Coding, follow Code Word with Lens Code Word (see Lens list).

Title Lens will be supplied about 4 $\frac{1}{2}$ times Cine Lens focus.

Schedule Outfit Prices are for complete outfits as specified,
 parts not required are not deductable at listed prices.

“The KALEE Indomitable”

Model No. 8, Cinematograph Projector



No. 8M.S. OUTFIT.

“The KALEE Indomitable”

Model No. 8

Specification and Schedule Price of No. 8M.S. OUTFIT.

“ KALEE INDOMITABLE ” No. 8 Mechanism.

Pair of 16 in. Fire-resisting Steel Spool Boxes and Spool Arms.

Two 14 $\frac{3}{4}$ in. Steel Film Spools.

Heavy Iron Adjustable Pedestal Stand, with Mechanism and Motor Bases, Belt Guide Pulleys and Compensating Link.

Double Lamp House, with Two Mechanical Trays and Asbestos Curtain.

Cone Front and Steel Curtain Cut-off.

Condenser Front, with Vertical Steel Slide Carrier, Slide Holders and Steel Curtain Cut-off.

One set of 4 $\frac{1}{2}$ in. Condenser Lenses.

Type “ R.L. ” Mirror Arc Lamp.

Type “ S.L. ” Scissors Arc Lamp.

Two No. 1 Double Pole Switches and Adapter.

Two Pairs of 50 Ampere Asbestos-covered Flexible Copper Leads.

Kershaw Series “ A ” Cinematograph Lens (3 in. to 7 in. focus).

Lantern Slide Lens Attachment Fittings.

Kershaw Series “ T ” Title Lens (8 in. to 28 in. focus).

Spanners and One Tin of “ Superoil. ”

Complete as illustration and above specification (without Motor, Regulator and Film Speed Indicator).

Price £140 0s. 0d.

Code Word: “ ATTSY. ”

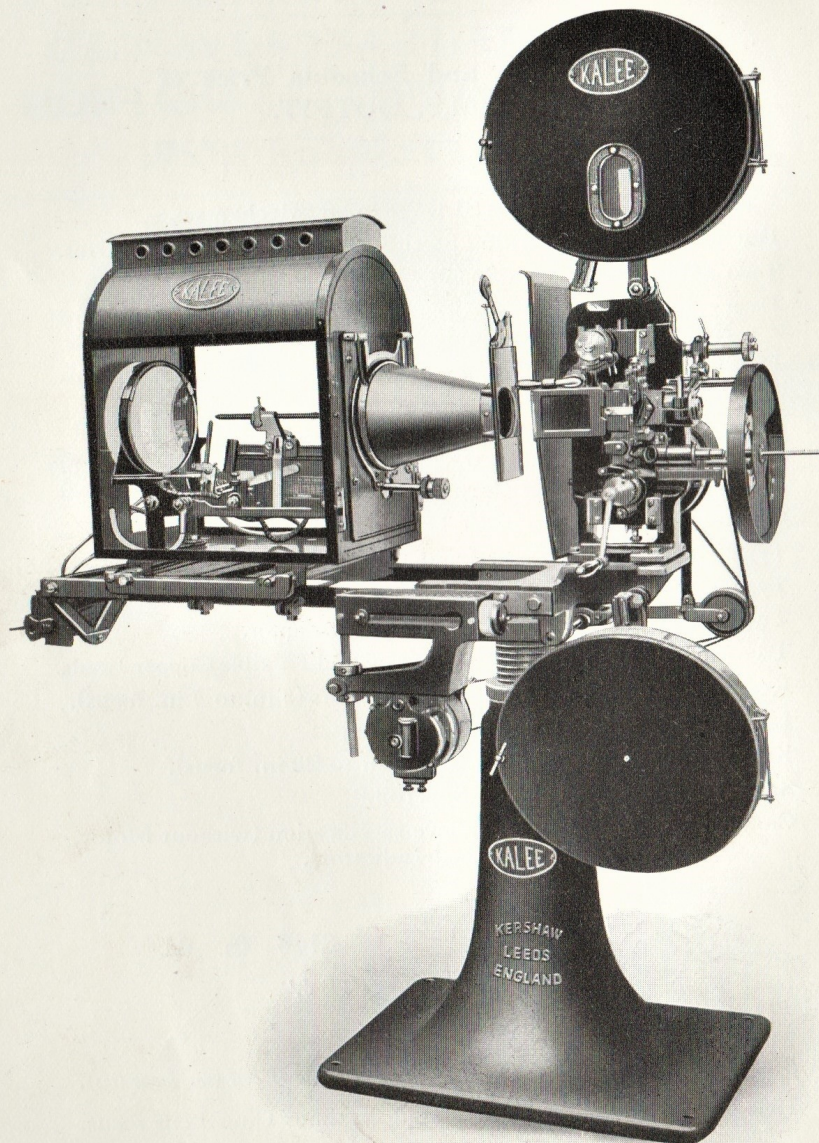
When Coding, follow Code Word with Lens Code Word (see Lens list).

Title Lens will be supplied about 4 $\frac{1}{2}$ times Cine Lens focus.

Schedule Outfit Prices are for complete outfits as specified, parts not required are not deductible at listed prices.

“The KALEE Indomitable”

Model No. 8, Cinematograph Projector



No. 8A.M.L. OUTFIT.

“The KALEE Indomitable”

Model No. 8

Specification and Schedule Price of No. 8A.M.L. OUTFIT

“KALEE INDOMITABLE” No. 8 Mechanism.

Pair of 16 in. Fire-resisting Steel Spool Boxes and Spool Arms.

Two 14 $\frac{3}{4}$ in. Steel Film Spools.

Heavy Iron Adjustable Pedestal Stand, with Mechanism and Motor Bases, Belt Guide Pulleys, and Compensating Link.

Fixed Lamp House Base and Bolts.

Type “8M.L.” High-power Mirror Arc Lamp in Single Lamp House, with 8 in. Mirror and 8 in. Condenser, and Steel Curtain Cut-off.

Pair of 50 Ampere Asbestos-covered Flexible Copper Leads.

No. 1 Double Pole Switch and Adapter.

Kershaw Series “A” Cinematograph Lens (3 in. to 7 in. focus).

Spanners, and One Tin of “Superoil.”

Complete as illustration and above specification (without Motor, Regulator and Film Speed Indicator).

Price £128 0s. 0d.

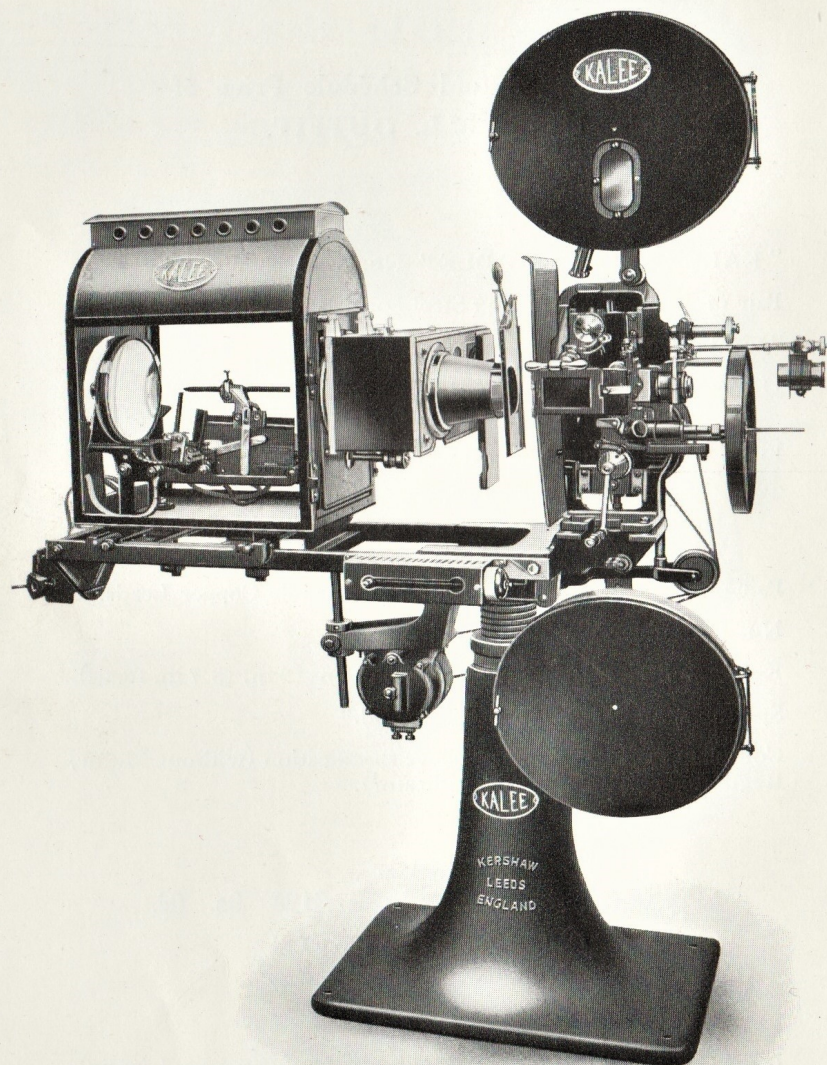
Code Word: “ATMEL.”

When Coding, follow Code Word with Lens Code Word (see Lens list).

Schedule Outfit Prices are for complete outfits as specified, parts not required are not deductible at listed prices.

“The KALEE Indomitable”

Model No. 8, Cinematograph Projector



No. 8B.L.K. OUTFIT.

“The KALEE Indomitable”

Model No. 8

Specification and Schedule Price of No. 8B.L.K. OUTFIT.

“KALEE INDOMITABLE” No. 8 Mechanism.
 Pair of 16 in. Fire-resisting Steel Spool Boxes and Spool Arms.
 Two 14 $\frac{3}{4}$ in. Steel Film Spools.
 Heavy Iron Adjustable Pedestal Stand, with Mechanism and
 Motor Bases, Belt Guide Pulleys and Compensating Link.
 Fixed Lamp House Base and Bolts.
 Type “8M.L.” High-power Mirror Arc Lamp in Single Lamp
 House, with 8 in. Mirror and 8 in. Condenser.
 Type “8M.L.” Kerascope, with Steel Curtain Cut-off, and
 Vertical Steel Slide Carrier and Slide Holders.
 Pair of 50 Ampere Asbestos-covered Flexible Copper Leads.
 No. 1 Double Pole Switch and Adapter.
 Kershaw Series “A” Cinematograph Lens (3 in. to 7 in. focus).
 Lantern Slide Lens Attachment Fittings.
 Kershaw Series “T” Title Lens (8 in. to 28 in. focus).
 Spanners and One Tin of “Superoil.”
 Complete as illustration and above specification (without Motor,
 Regulator, and Film Speed Indicator).

Price £140 0s. 0d.

Code Word: “ABMEK”

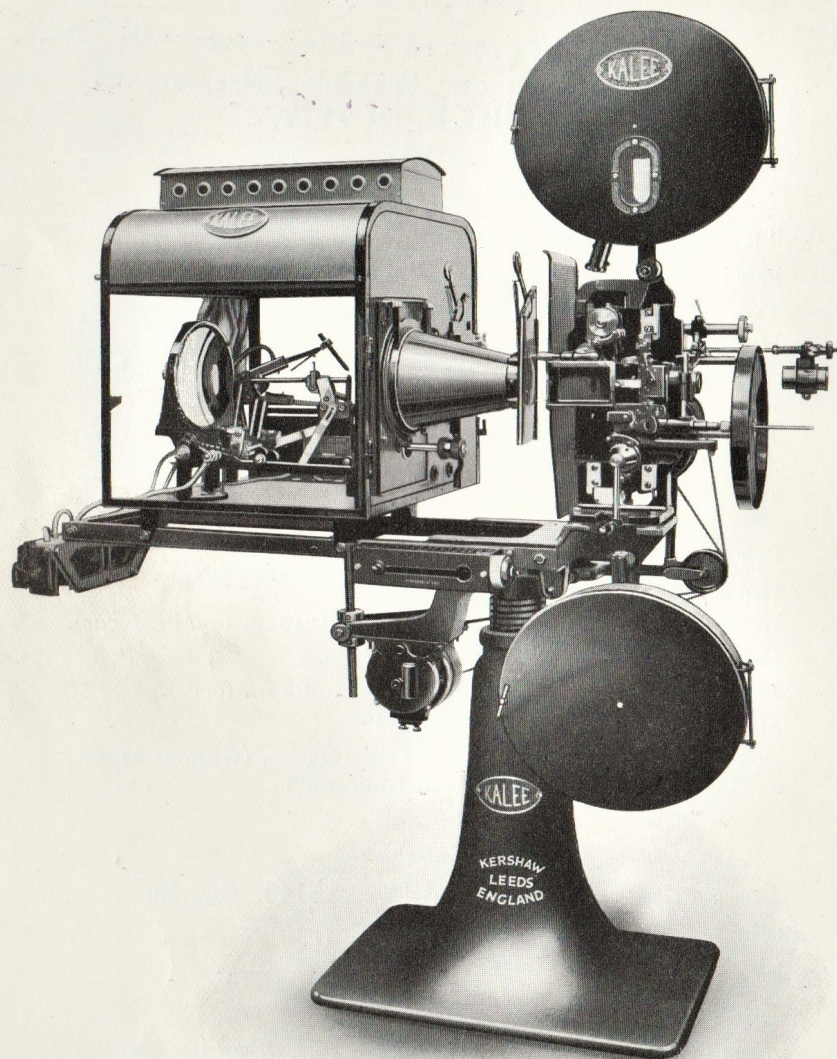
When Coding, follow Code Word with Lens Code Word (see Lens list).

Title Lens will be supplied about 4 $\frac{1}{2}$ times Cine Lens focus.

Schedule Outfit Prices are for complete outfits as specified,
 parts not required are not deductable at listed prices.

“The KALEE Indomitable”

Model No. 8, Cinematograph Projector



No. 8B.L.S. OUTFIT.

“The KALEE Indomitable”

Model No. 8

Specification and Schedule Price of No. 8B.L.S. OUTFIT.

“KALEE INDOMITABLE” No. 8 Mechanism.

Pair of 16 in. Fire-resisting Steel Spool Boxes and Spool Arms.

Two 14 $\frac{3}{4}$ in. Steel Film Spools.

Heavy Iron Adjustable Pedestal Stand with Mechanism and Motor Bases, Belt Guide Pulleys and Compensating Link.

Double Lamp House, with one Mechanical Tray and Asbestos Curtain.

Cone Front, with Steel Curtain Cut-off.

Condenser Front, with Vertical Steel Slide Carrier, Slide Holders, and Steel Curtain Cut-off.

One Set of 4 $\frac{1}{2}$ in. Condenser Lenses.

Type “8M.L.” High-power Mirror Arc Lamp, with 8 in. Mirror and 8 in. Condenser.

Type “S.L.” Scissors Arc Lamp.

Two No. 1 Double Pole Switches and Adapter.

Two Pairs of 50 Ampere Asbestos-covered Flexible Copper Leads.

Kershaw Series “A” Cinematograph Lens (3 in. to 7 in. focus).

Lantern Slide Lens Attachment Fittings.

Kershaw Series “T” Title Lens (8 in. to 28 in. focus),

Spanners and One Tin of “Superoil.”

Complete as illustration and above specification (without Motor, Regulator and Film Speed Indicator).

Price £149 0s. 0d.

Code Word: “ATLIS.”

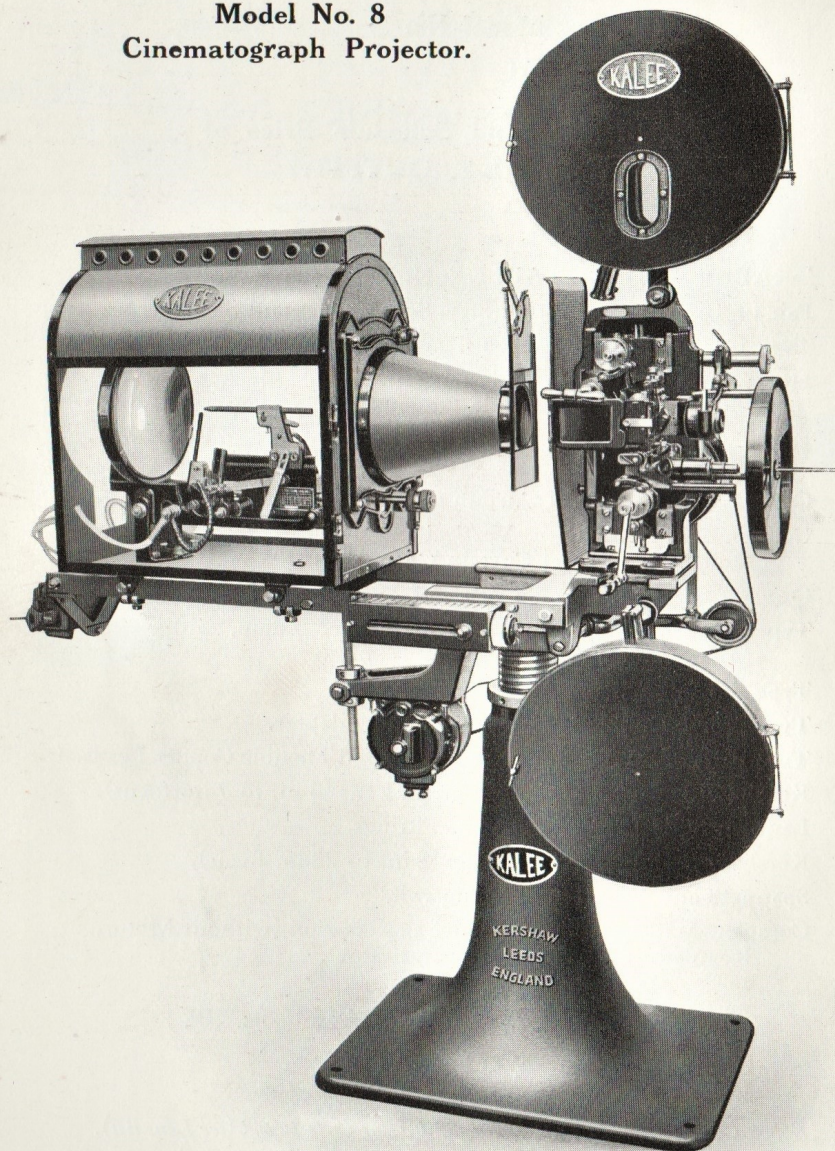
When Coding, follow Code Word with Lens Code Word (see Lens list).

Title Lens will be supplied about 4 $\frac{1}{2}$ times Cine Lens focus.

Schedule Outfit Prices are for complete outfits as specified, parts not required are not deductable at listed prices.

“The KALEE Indomitable”

Model No. 8
Cinematograph Projector.



No. 8T.M.L. OUTFIT.

“The KALEE Indomitable”

Model No. 8

Specification and Schedule Price of No. 8T.M.L. OUTFIT.

“KALEE INDOMITABLE” No. 8 Mechanism.

Pair of 16 in. Fire-resisting Steel Spool Boxes and Spool Arms.

Two 14 $\frac{3}{4}$ in. Steel Film Spools.

Heavy Iron Adjustable Pedestal Stand with Mechanism and Motor Bases, Belt Guide Pulleys and Compensating Link.

Fixed Lamp House Base and Bolts.

Type “10M.L.” High-power Mirror Arc Lamp in Single Lamp House with 10 in. Mirror and 10 in. Condenser, and Steel Curtain Cut-off.

Pair of 50 Ampere Asbestos-covered Flexible Copper Leads.

No. 1 Double Pole Switch and Adapter.

Kershaw Series “A” Cinematograph Lens (3 in. to 7 in. focus).

Spanners and One Tin of “Superoil.”

Complete as illustration and above specification (without Motor, Regulator and Film Speed Indicator).

Price £140 0s. 0d.

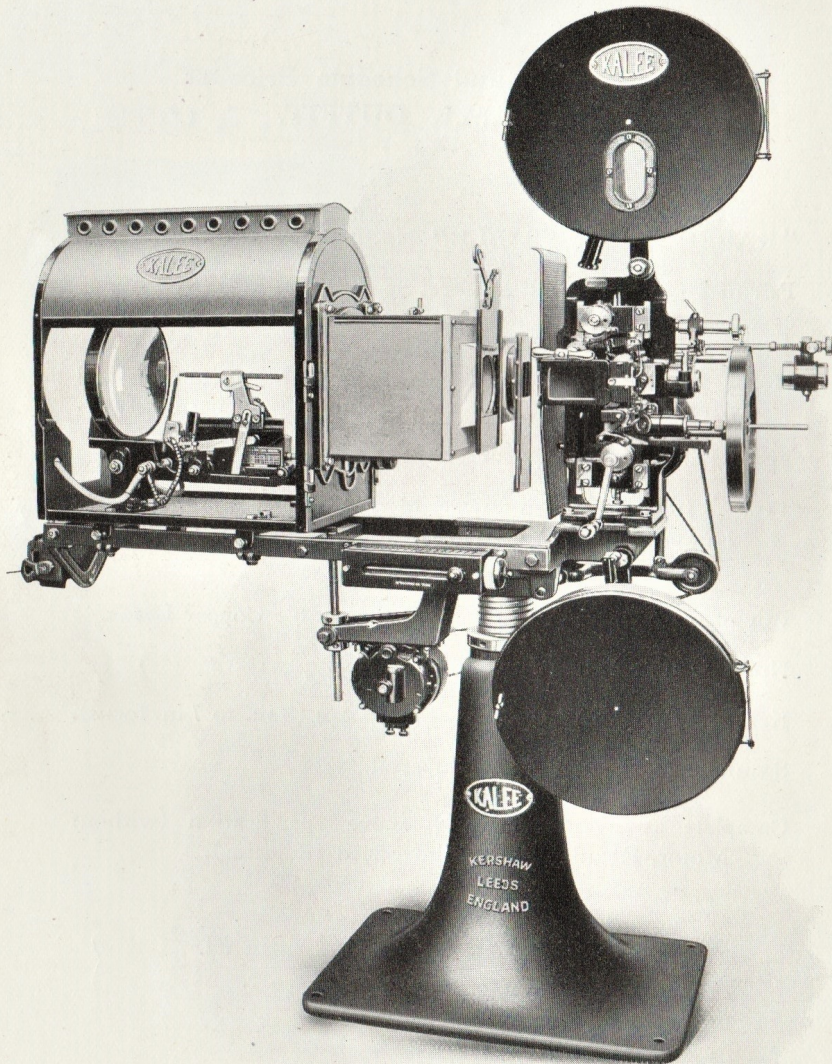
Code Word: “TEMEL.”

When Coding, follow Code Word with Lens Code Word (see Lens list).

Schedule Outfit Prices are for complete outfits as specified, parts not required are not deductible at listed prices,

“The KALEE Indomitable”

Model No. 8, Cinematograph Projector.



No. 8T.L.K. OUTFIT.

“The KALEE Indomitable”

Model No. 8

Specification and Schedule Price of No. 8T.L.K. OUTFIT.

“KALEE INDOMITABLE” No. 8 Mechanism.

Pair of 16 in. Fire-resisting Steel Spool Boxes and Spool Arms.

Two 14 $\frac{3}{4}$ in. Steel Film Spools.

Heavy Iron Adjustable Pedestal Stand, with Mechanism and Motor Bases, Belt Guide Pulleys and Compensating Link.

Fixed Lamp House Base and Bolts.

Type “10M.L.” High-power Mirror Arc Lamp in Single Lamp House with 10 in. Mirror and 10 in. Condenser.

Type “10M.L.” Kerascope, with Steel Curtain Cut-off and Vertical Steel Slide Carrier and Slide Holders.

Pair of 50 Ampere Asbestos-covered Flexible Copper Leads.

No. 1 Double Pole Switch and Adapter.

Kershaw Series “A” Cinematograph Lens (3 in. to 7 in. focus).

Lantern Slide Lens Attachment Fittings.

Kershaw Series “T” Title Lens (8 in. to 28 in. focus).

Spanners and One Tin of Superoil.

Complete as illustration and above specification (without Motor, Regulator and Film Speed Indicator).

Price £155 0s. 0d.

Code Word: “TELAK.”

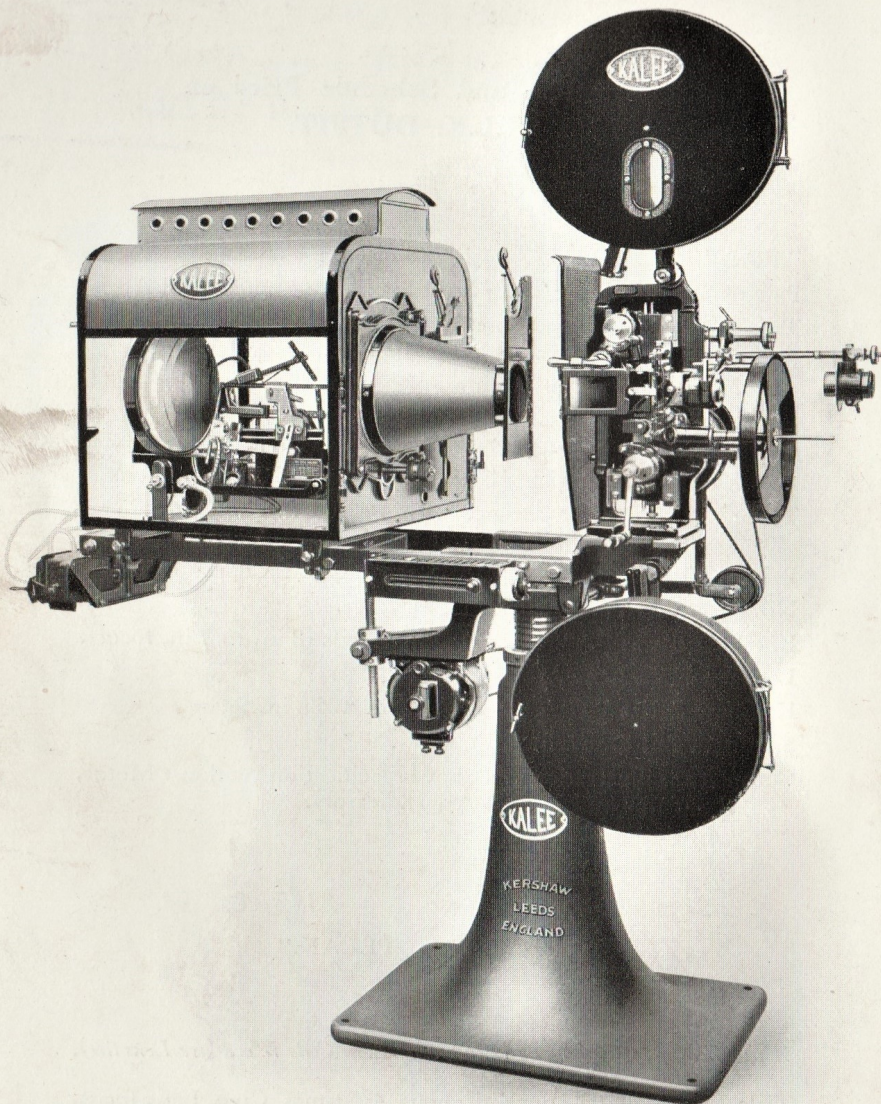
When Coding, follow Code Word with Lens Code Word (see Lens list).

Title Lens will be supplied about 4 $\frac{1}{2}$ times Cine Lens focus.

Schedule Outfit Prices are for complete outfits as specified, parts not required are not deductable at listed prices.

“The KALEE Indomitable”

Model No. 8, Cinematograph Projector



No. 8T.L.S. OUTFIT.

“The KALEE Indomitable”

Model No. 8

Specification and Schedule Price of No. 8T.L.S. OUTFIT.

“KALEE INDOMITABLE” No. 8 Mechanism.

Pair of 16 in. Fire-resisting Steel Spool Boxes and Spool Arms.

Two 14 $\frac{3}{4}$ in. Steel Film Spools.

Heavy Iron Adjustable Pedestal Stand, with Mechanism and Motor Bases, Belt Guide Pulleys and Compensating Link.

Double Lamp House, with One Mechanical Tray and Asbestos Curtain.

Cone Front, with Steel Curtain Cut-off.

Condenser Front, with Vertical Steel Slide Carrier, Slide Holders, and Steel Curtain Cut-off.

One Set of 4 $\frac{1}{2}$ in. Condenser Lenses.

Type “10M.L.” High-power Mirror Arc Lamp, with 10 in. Mirror and 10 in. Condenser.

Type “S.L.” Scissors Arc Lamp.

Two No. 1 Double Pole Switches and Adapter.

Two Pairs of 50 Ampere Asbestos-covered Flexible Copper Leads.

Kershaw Series “A” Cinematograph Lens (3 in. to 7 in. focus).

Lantern Slide Lens Attachment Fittings.

Kershaw Series “T” Title Lens (8 in. to 28 in. focus).

Spanners and One Tin of “Superoil.”

Complete as illustration and above specification (without Motor, Regulator and Film Speed Indicator).

Price £164 0s. 0d.

Code Word: “TELIS.”

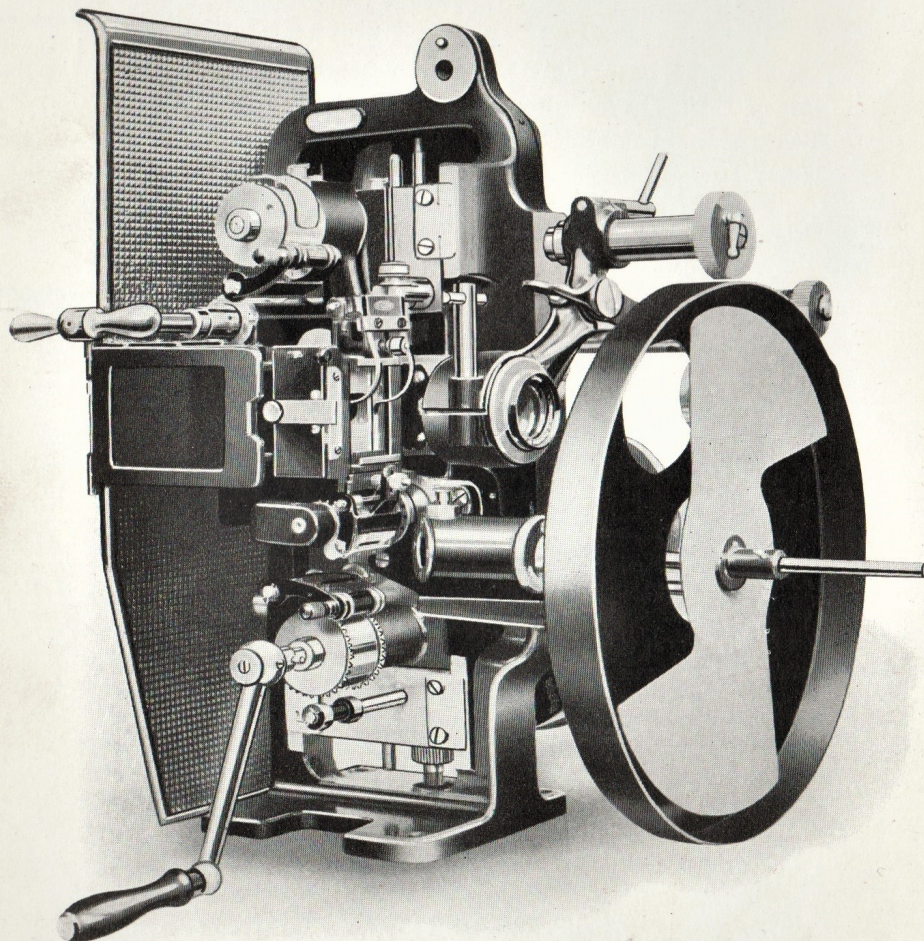
When Coding, follow Code Word with Lens Code Word (see Lens list).

Title Lens will be supplied about 4 $\frac{1}{2}$ times Cine Lens focus.

Schedule Outfit Prices are for complete outfits as specified, parts not required are not deductible at listed prices.

“The KALEE Indomitable”

Model No. 8, Cinematograph Projector.



No. 8C. PROJECTOR MECHANISM.

“The KALEE Indomitable”

Model No. 8

Specification and Schedule Price of No. 8C. MECHANISM.

“KALEE INDOMITABLE” No. 8 Mechanism.

With Heat Shield, Spanners, and One Tin of “Kalee Superoil.”

Without Spool Boxes, Spool Arms, Lenses or Lantern Slide Attachment Fittings.

Price £64 0s. 0d.

Code Word: “ACMEK.”

No. 8D. MECHANISM.

“KALEE INDOMITABLE” No. 8 Mechanism.

Pair of 16 in. Fire-resisting Steel Spool Boxes and Spool Arms.

Two 14 $\frac{3}{4}$ in. Steel Film Spools.

With Heat Shield, Spanners and One Tin of “Kalee Superoil.”

Without Lenses or Lantern Slide Attachment Fittings.

Price £72 0s. 0d.

Code Word: “ADKEM.”

Special Mechanism and Motor Base, to fit “Kalee Indomitable” No. 8 Mechanism to No. 7 Type Stand.

Complete, with Guide Pulleys and necessary fixing bolts.

Price £3 15s. 0d.

Code Word: “FIBAS.”

On Pages 52 and 53, illustrations show the method of fitting No. 8 Mechanisms to No. 7 Stand.

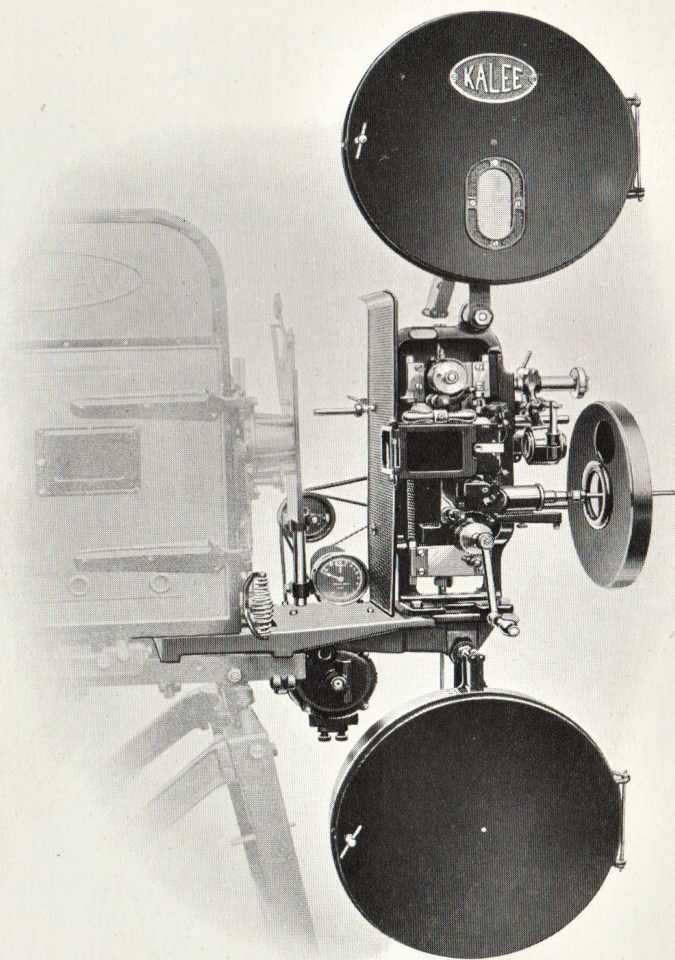
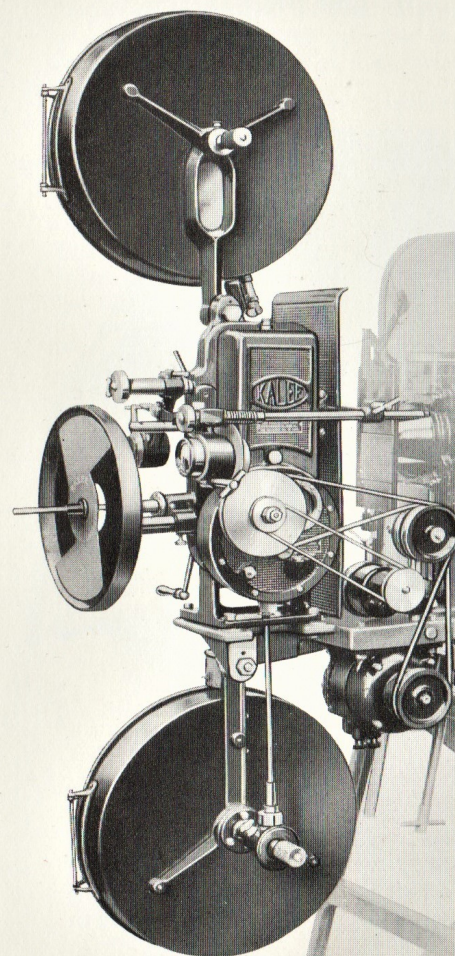


Illustration shows the Special Mechanism and Motor Base required to fit the "KALEE Indomitable" Model No. 8 Projector Mechanism to existing No. 7 type stand.

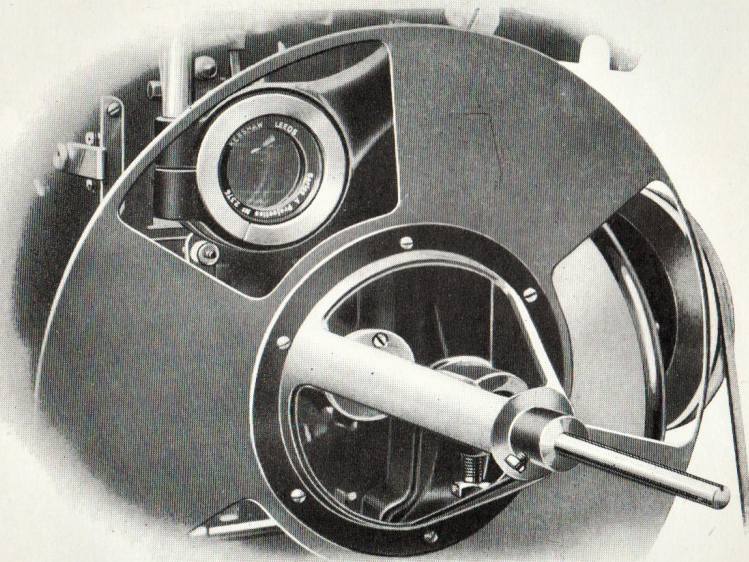


Side View, showing the Belt Drive and Tension arrangement when the "KALEE Indomitable" Model No. 8 Projector Mechanism is fitted to an existing No. 7 type stand.

The "KALEE" Indomitable

Model No. 8,

Rear Projection Outfits and Mechanisms.



Model No. 8 Mechanism, arranged to use extremely short focus lenses for Rear Projection. A special flicker shutter with sunk boss is provided so as to bring the blades close up to the lens. The rear projection model does not allow the fitting of a shutter guard.

All the foregoing outfits can be arranged for Rear Projection, which includes Special Shutter, Supplementary Lens and Special Rear Projection Anastigmat Lens, at an extra cost on the outfit price of **£6 0s. 0d.**

Mechanism fitted with Special Shutter, Supplementary Lens, but without Projection Lens, at an extra cost of **£2 2s. 0d.** each.

SPARE PARTS FOR THE "KALEE INDOMITABLE MODEL No. 8" MECHANISM.

The "Kalee Indomitable" Model No. 8 Projector is manufactured in a factory specially built and equipped with the most modern precision machinery for the production of the highest class mechanical precision apparatus.

All the composite parts are standardised to very fine limits, and are practically interchangeable, with the exception of taper pin holes. In supplying a part which is fixed by a taper pin, one side only is drilled, the completing of the hole and final reamering to size being left to the mechanic doing the repair.

The majority of composite parts are illustrated on the three following plates. When ordering parts not illustrated, state the list number of the part for which they are required.

The factory number of the mechanism should be stated; this will be found on the top of the mechanism near the top spool arm fixing bolt. Also, when ordering parts for this type of mechanism, to avoid any mistakes, the number of the part should be prefixed by the letter "K."

Spare parts are kept in stock and in most cases can be despatched by return of post.



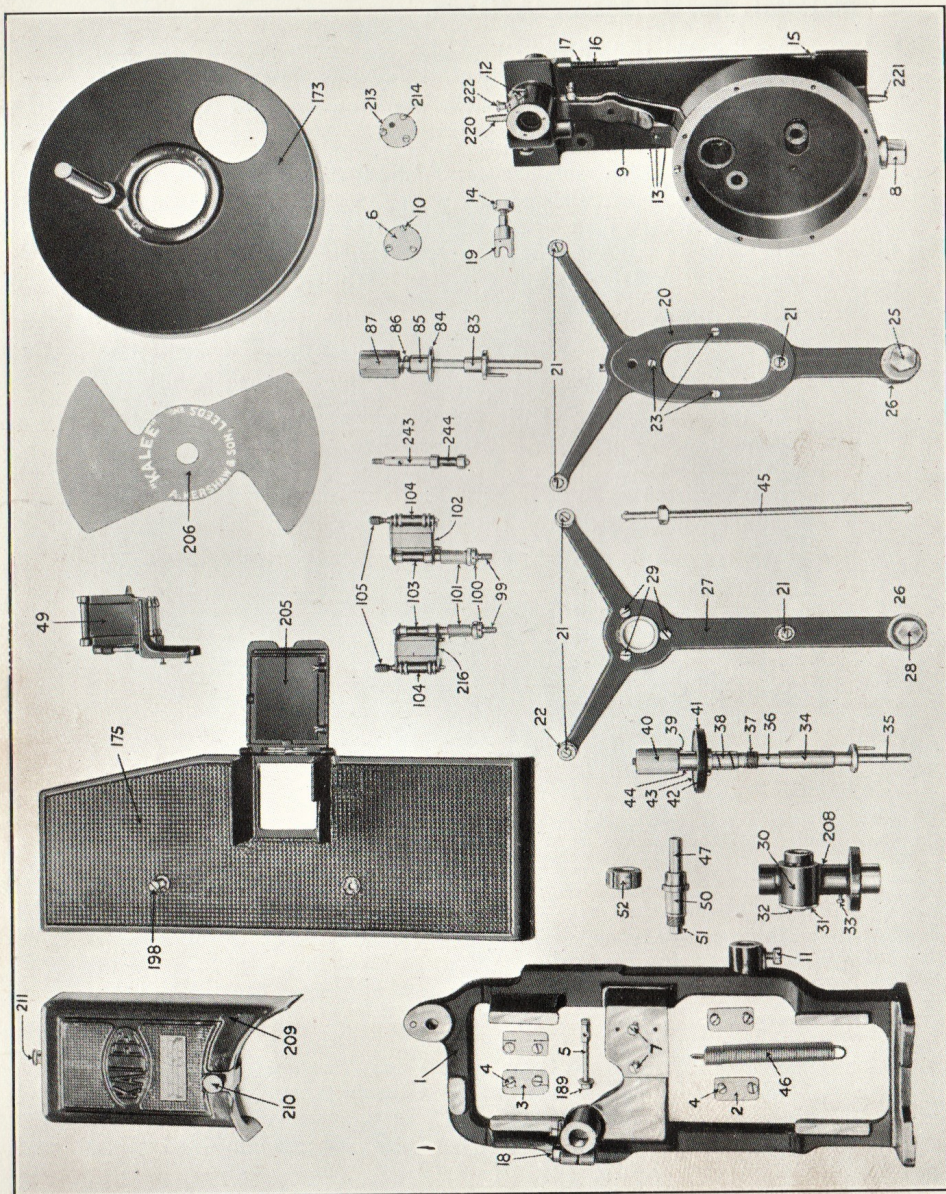


Plate No. 1.

PLATE No. 1.

No.	Description.	£	s.	d.
K 1	Frame, Main each			
K 2	Plates, Slide	3	0	
K 3	Plates, Slide Spring	4	0	
K 4	Screws, Slide Plate... ..			3
K 5	Stud, Top Balance Spring	2	0	
K 6	Cover, Top Spindle Gear Box	3	0	
K 7	Screws, Gate Frame			3
K 8	Drain Plug, Oil Box	4	0	
K 9	Slide, Frame			
K 10	Screws (for K 6)			6
K 11	Clamping Screw, Rotary Shutter Guard			6
K 12	Screw (Covering Taper Pin fixing of Gear) ..	1	0	
K 13	Screws, Rotary Shutter Bracket			3
K 14	Nut, Gate Hinge Fork			6
K 15	Stud, Bottom Balance Spring	1	0	
K 16	Rack, Framing	2	0	
K 17	Screws, Framing Rack			3
K 18	Bolt, Framing Pinion Sleeve Clamping			9
K 19	Fork, Gate Hinge	4	0	
K 20	Arm, Top Spool	1	4	0
K 21	Screws, Spool Box			3
K 22	Washers, Spool Box Screw			2
K 23	Screws, Retaining Mica Window on K 20 ..			3
K 24	Mica Window for K 20	1	3	
K 25	Bolt, Top Spool Arm	1	6	
K 26	Nuts, Spool Arm Bolt			6
K 27	Arm, Bottom Spool	1	4	0
K 28	Bolt, Bottom Spool Arm	1	6	
K 29	Screws, Take-up Bracket			6
K 30	Bracket, Take-up	1	1	0
K 31	Gear Cover, Take-up Bracket	3	0	
K 32	Screws, Gear Cover			6
K 33	Screw, Bottom Spool Spindle Bearing Securing ..			6
K 34	Bearing, Bottom Spool Spindle	5	0	
K 35	Spindle, Bottom Spool	18	0	
K 36	Collar, Fixed	2	0	
K 37	Gear, Bottom Spool Spindle Spiral	7	0	
K 38	Collar, Drive Clutch	8	0	
K 39	Spring, Tension			9
K 40	Nut, Spring Tension	3	6	
K 41	Cup, Clutch	2	6	
K 42	Disc, Leather Friction			9
K 43	Plate, Clutch (Keyed)	2	0	
K 44	Collar, Spring Supporting	1	6	
K 45	Spindle, Take up (Loose) with nut	9	0	
K 46	Spring, Body Balance	2	0	
K 47	Spindle, Take up (Bottom)	7	6	

PLEASE STATE MECHANISM NUMBER WHEN ORDERING SPARE PARTS.

PLATE No. 1—continued.

No.	Description.	£	s.	d.
K 49	Trap, Film (complete) each	1	13	0
K 50	Bearing, Take-up Spindle "		7	0
K 51	Gear, Take-up Spindle Spiral "		6	0
K 52	Nut, Bearing (K 50) Securing "		5	0
K 83	Spindle, Top Spool "		15	0
K 84	Plate, Keyed Friction "		3	0
K 85	Collar, Spring Supporting "		1	6
K 86	Spring, Tension "			9
K 87	Nut, Spring Tension Adjusting "		3	6
K 99	Stud, Roller Bracket "		3	6
K 100	Collar, Spring Adjusting "		2	0
K 101	Spring, Roller Bracket "		1	0
K 102	Frame, Roller Bracket (Bottom Sprocket) "		4	0
K 103	Rollers, Flanged "		5	0
K 104	Rollers, Grooved "		5	0
K 105	Spindle, Grooved Roller "		2	0
K 106	Assembly, Complete (K99 to K105) "	1	4	0
K 173	Guard, Rotary Shutter (complete with Spindle) "	1	1	0
K 175	Heat Shield (Complete with observation window) "	1	2	0
K 189	Nut, Top Balance Spring Stud "			6
K 198	Screw, Heat Shield Fixing "			6
K 205	Window, Coloured observation "		1	6
K 206	Disc, Rotary Shutter (Cardboard 2 Blade)... .. "		4	0
K 207	Disc, Rotary Shutter (Cardboard 3 Blade) "		4	0
K 208	Oil Cup "		1	0
K 209	Cover, Vertical Shaft, etc. "		18	0
K 210	Screw, Retaining "		2	6
K 211	Oil Cup, Vertical Shaft Gear "		1	0
K 253	Extension for K211, Lubricator "		2	6
K 213	Cover, Top Spindle Gear Oil "		4	0
K 214	Screws (for K 213) "			6
K 216	Frame, Roller Bracket (Top Sprocket) "		4	0
K 217	Assembly, Complete (K 99 to K 101, and K 103 to K 105, and K 216) "	1	4	0
K 220	Stud, Stop (Top) "		1	0
K 221	Stud, Stop (Bottom) "		1	0
K 222	Oil Cup, Top Shaft "			6
K 243	Stud, Film Idle Roller "		3	6
K 244	Roller, Film Idle "		4	0

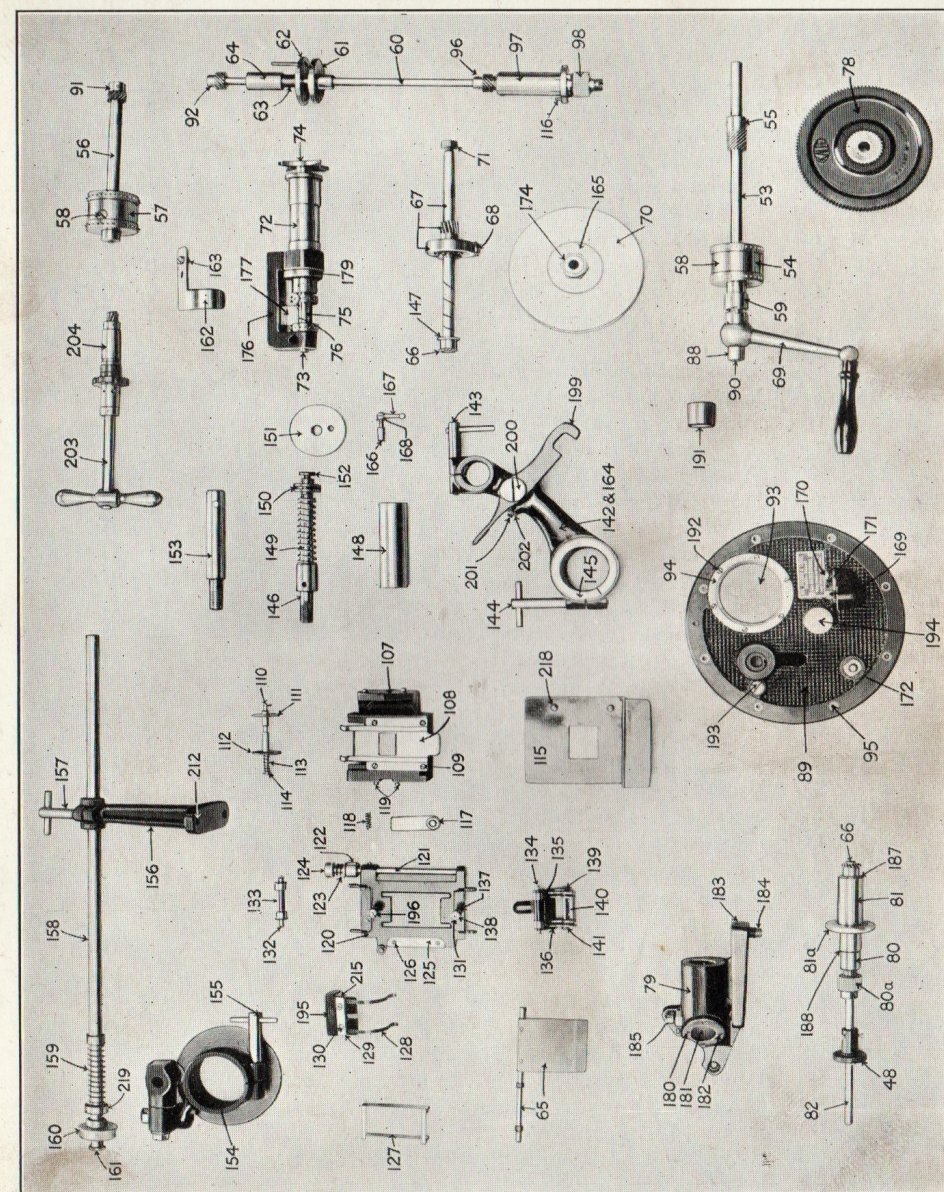


Plate No. 2.

PLATE No. 2.

No.	Description.	£	s.	d.
K 48	Boss, Rotary Shutter ... ..	...	...	...
K 53	Spindle, Main ... ..	...	...	...
K 54	Sprocket, Bottom ... ..	...	...	...
K 55	Gear, Main Spindle Spiral ... ..	...	...	...
K 56	Spindle, Top ... ..	...	...	...
K 57	Sprocket, Top ... ..	...	...	...
K 58	Screw, Large Sprocket Fixing ... ..	...	...	...
K 59	Collar, Handle Clutch ... ..	...	...	...
K 60	Spindle, Vertical ... ..	...	...	...
K 61	Disc, Auto Shutter (Bottom) ... ..	...	...	...
K 62	Disc, Auto Shutter (Top) ... ..	...	...	...
K 63	Spring, Auto Shutter ... ..	...	...	...
K 64	Shell, Spring ... ..	...	...	...
K 65	Shutter, Spindle and Auto (Complete) ... ..	...	...	...
K 66	Mitre Gears, Spiral (Left and Right) ... ..	...	...	...
K 67	Spindle, Pinion and Cam (Complete with Striking Pin and Roller) ... ..	...	...	...
K 68	Pin and Roller, Cam Striking ... ..	...	...	...
K 69	Handle (Complete) ... ..	...	...	...
K 70	Flywheel ... ..	...	...	...
K 71	Nut, Flywheel Retaining... ..	...	...	...
K 72	Quill, Cross Spindle Bearing ... ..	...	...	...
K 73	Spindle, Cross and Inter Sprocket ... ..	...	...	...
K 74	Cross, Maltese ... ..	...	...	...
K 75	Sprocket, Intermittent ... ..	...	...	...
K 76	Screws, Inter Sprocket ... ..	...	...	...
K 77	Assembly, Complete (K72 to K76 and K176 to K179) ... ..	...	...	...
K 78	Wheel, Main Gear ... ..	...	...	...
K 79	Bracket, Rotary Shutter ... ..	...	...	...
K 80	Spindle, Rotary Shutter ... ..	...	...	...
K 80a	Nut, Spindle ... ..	...	...	...
K 81	Bearing, Rotary Shutter Spindle... ..	...	...	...
K 82	Spindle, Loose Rotary Shutter ... ..	...	...	...
K 81a	Screws, Rotary Shutter Spindle Bearing... ..	...	...	...
K 88	Collar, Handle Stop ... ..	...	...	...
K 89	Cover, Oil Box ... ..	...	...	...
K 90	Screw, Handle Stop Collar ... ..	...	...	...
K 91	Gear, Top Spindle Spiral... ..	...	...	...
K 92	Gear, Vertical Spindle Top Spiral ... ..	...	...	...
K 93	Window, Inspection ... ..	...	...	...
K 94	Ring, Retaining Window ... ..	...	...	...
K 95	Screws, Oil Box Cover ... ..	...	...	...
K 96	Gear, Vertical Spindle Bottom Spiral ... ..	...	...	...
K 97	Bearing, Vertical Spindle Bottom ... ..	...	...	...
K 98	Gland, Bearing Nut ... ..	...	...	...
K 107	Frame, Gate ... ..	...	...	...
K 108	Plate, Mask ... ..	...	...	...
K 109	Screws, Mask Plate ... ..	...	...	...

PLEASE STATE MECHANISM NUMBER WHEN ORDERING SPARE PARTS.

PLATE No. 2

No.	Description.	£	s.	d.
K 110	Spindle, Film Guide Rollers ... ..	...	...	...
K 111	Roller, Film Guide (Fixed) ... ..	...	...	...
K 112	Roller, Film Guide (sliding) ... ..	...	...	...
K 113	Spring, Film Guide Roller ... ..	...	...	...
K 114	Collar, Film Guide Roller Spring ... ..	...	...	...
K 115	Shield, Gate Heat ... ..	...	...	...
K 116	Screws, Vertical Spindle Bearing ... ..	...	...	...
K 117	Catch, Gate ... ..	...	...	...
K 118	Spring, Gate Catch ... ..	...	...	...
K 119	Screws, Gate Catch ... ..	...	...	...
K 120	Gate ... ..	...	...	...
K 121	Pin, Gate Hinge ... ..	...	...	...
K 122	Collar, Loose Gate Hinge ... ..	...	...	...
K 123	Spring, Gate Hinge Pin ... ..	...	...	...
K 124	Collar, Fixed Gate Hinge ... ..	...	...	...
K 125	Plate, Catch ... ..	...	...	...
K 126	Screws, Catch Plate ... ..	...	...	...
K 127	Skate, Gate ... ..	...	...	...
K 128	Springs, Gate Skate ... ..	...	...	...
K 129	Bar, Gate Skate Spring Retaining ... ..	...	...	...
K 130	Screws, Bar ... ..	...	...	...
K 131	Nut, Gate Shoe Bracket ... ..	...	...	...
K 132	Spindle, Top Roller Gate ... ..	...	...	...
K 133	Roller, Top Gate ... ..	...	...	...
K 134	Spindle, Gate Bracket and Roller ... ..	...	...	...
K 135	Roller, Bottom Gate ... ..	...	...	...
K 136	Bracket, Gate Shoe ... ..	...	...	...
K 137	Spring, Gate Shoe Bracket ... ..	...	...	...
K 138	Collar, Spring ... ..	...	...	...
K 139	Spindle, Gate Shoe Bracket ... ..	...	...	...
K 140	Shoe, Inter Sprocket Gate Bracket ... ..	...	...	...
K 141	Washers, Shoe Spacing ... ..	...	...	...
K 142	Holder, Cine Lens ... ..	...	...	...
K 143	Screw, Thumb (Clamping Holder) ... ..	...	...	...
K 144	Screw, Thumb (Clamping Cine Lens) ... ..	...	...	...
K 145	Bush, Adapter Cine Lens ... ..	...	...	...
K 146	Stud, Cine Lens Holder ... ..	...	...	...
K 147	Washer (K66) Thrust ... ..	...	...	...
K 148	Sleeve, Cine Lens Holder ... ..	...	...	...
K 149	Spring, Cine Lens Holder ... ..	...	...	...
K 150	Key Collar, Cine Lens Holder ... ..	...	...	...
K 151	Nut Focussing (Cine Lens) ... ..	...	...	...
K 152	Screw, Focussing Nut Retaining ... ..	...	...	...
K 153	Stud, Cine Lens Holder Stop ... ..	...	...	...
K 154	Holder, Title Lens ... ..	...	...	...
K 155	Screw, Thumb (Clamping K154) ... ..	...	...	...
K 156	Bracket, Title Lens ... ..	...	...	...
K 157	Screw, Thumb (Clamping K158) ... ..	...	...	...
K 158	Spindle, Title Lens Holder ... ..	...	...	...

PLEASE STATE MECHANISM NUMBER WHEN ORDERING SPARE PARTS.

PLATE No. 2—continued.

No.	Description.	£	s.	d.
K 159	Spring, Title Lens Holder ... each			6
K 160	Nut, Focussing (Title Lens) ... "	2		6
K 161	Screw (Retaining K160) ... "			6
K 162	Stripper, Top Sprocket ... "	2		0
K 163	Screw, Top Sprocket Stripper ... "			3
K 164	Holder, as K142 except to take Series "C"			
	Cine Lens ... "	1	10	0
K 165	Pulley, Film Speed Indicator ... "	4		6
K 166	Bolt, Nut Locking ... "	1		6
K 167	Lever, Nut Locking Bolt ... "	1		6
K 168	Washer, Lever ... "			3
K 169	Cover, Oil Level and Filler ... "	1		6
K 170	Screw (for K169) ... "	1		0
K 171	Spring Washer (for K170) ... "			6
K 172	Stud, Coupling Bar ... "	2		0
K 174	Nut, Film Speed Indicator Pulley ... "	2		6
K 176	Bearing, Inter Sprocket Spindle Outer ... "	12		0
K 177	Stripper, Inter Sprocket ... "	2		0
K 178	Screw, Stripper (for K 177) ... "			6
K 179	Nut, Outer Bearing securing ... "	4		0
K 180	Cover, Window ... "	2		0
K 181	Window ... "			9
K 182	Screws, Window Cover ... "			3
K 183	Tray, Oil Drip ... "	5		0
K 184	Plug, Drain ... "			9
K 185	Lubricator and Nut ... "	1		0
K 186	Screws, Oil Drip Tray (K183) ... "	4		
K 187	Washer (K66) Thrust ... "	2		0
K 188	Washer, Rotary Shutter Spindle Thrust... "	2		0
K 190	Split Collar (Inside Nut K80a) ... "	1		0
K 191	Cover, Sleeve (for K59) ... "	1		6
K 192	Screws, Inspection Window ... "			3
K 193	Screw, Striking Pin Cover ... "	1		0
K 194	Cover, Bearing Cap and Washer... "	2		3
K 195	Bracket, Gate Spring Tension ... "	6		0
K 196	Nut, Tension Bracket ... "	1		0
K 197	Collar, Stop (for K196) ... "			6
K 199	Latch, Cine Lens Holder... "	5		0
K 200	Screw, Cine Lens Holder Latch ... "	2		0
K 201	Screw, Cine Lens Holder Adjusting ... "	1		3
K 202	Nut, Securing (K201) ... "			6
K 203	Pinion, Framing, with Collars ... "	1	4	0
K 204	Bearing, Framing Pinion... "	9		0
K 212	Bolts, Title Lens Bracket ... "			6
K 215	Bar, Back (Tapped) ... "	2		0
K 218	Screws, Gate Heat Shield ... "			3
K 219	Collar, Keyed ... "	2		6
K 252	Gland, Vertical Spindle Bearing (In K98) ..	2		3

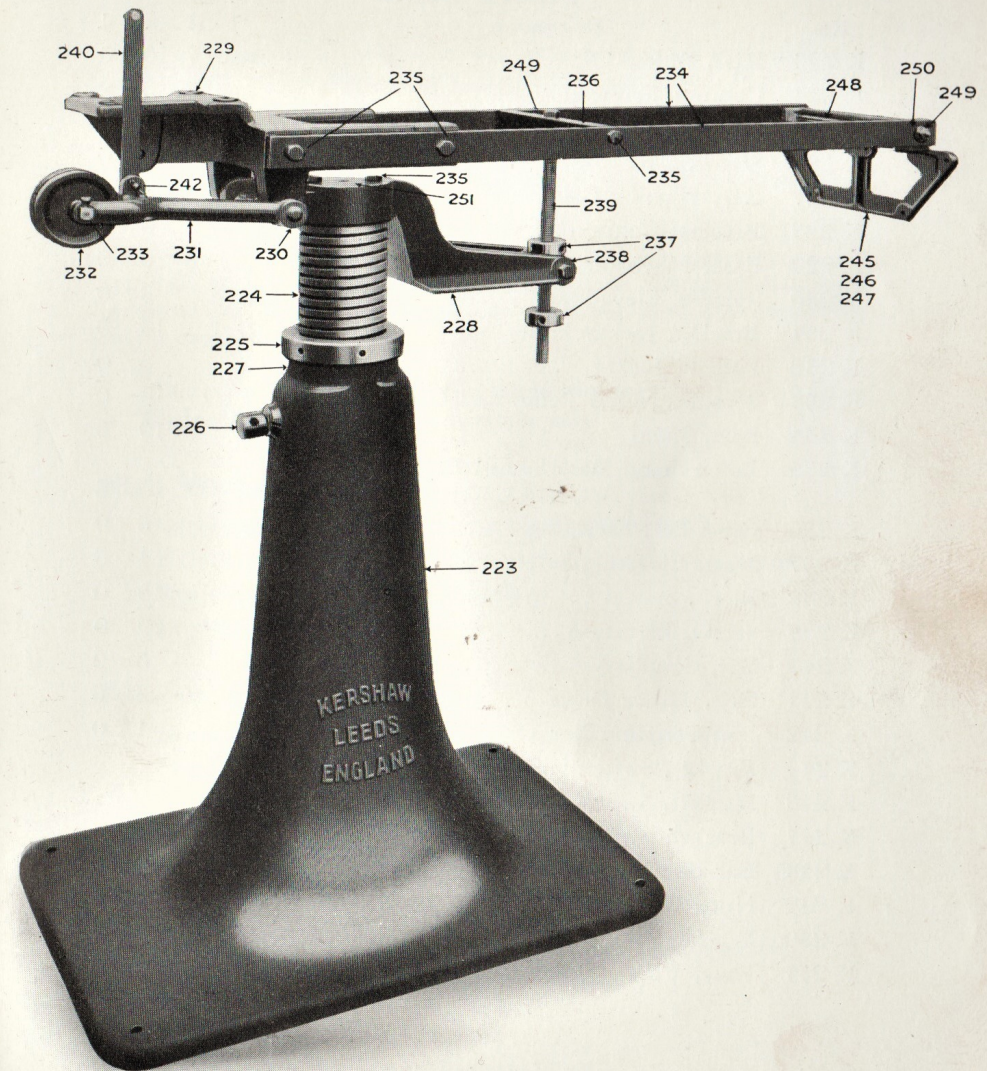


Plate No. 3.

PLATE No. 3.

No.	Description.	£	s.	d.
K 223	Base, Pedestal Stand each	7	10	0
K 224	Column, Screwed "	3	0	0
K 225	Nut, Screwed Column Adjusting "	1	1	0
K 226	Screw, Clamping "	5	0	
K 227	Key, Floating Column "	8	0	
K 228	Bracket, Column "	3	0	0
K 229	Base, Mechanism... .. "	3	0	0
K 230	Spindle, Elevation "	3	0	
K 231	Bracket, Jockey Pulley "	15	0	
K 232	Pulleys, Jockey "	5	0	
K 233	Spindle, Jockey Pulley and Lubricator "	4	0	
K 234	Bars, Stand "	10	0	
K 235	Bolts, Stand Bar, Swivel Block, Elevating Cross Bar, and Cover Plate "	6		
K 236	Cross Bar, Elevating "	6	0	
K 237	Nuts, Elevating Screw "	4	6	
K 238	Block, Swivel "	5	0	
K 239	Screw, Elevating "	9	0	
K 240	Bar, Coupling "	3	0	
K 241	Belt, Motor Drive "	3	6	
K 242	Pin, Coupling Bar "	1	0	
K 245	Bracket, Switch (single type 50 No. 1) "			
K 246	Bracket, Switch (single type 100 No. 2) "			
K 247	Bracket, Switch (double type 50 No. 1) "			
K 248	Bar Bolt, Switch Bracket "	2	0	
K 249	Nuts, Bar Bolt "	4		
K 250	Washers, Bar Bolt "	3		
K 251	Plate, Cover "	2	0	

Lubricating Oil.

The lubrication and selection of a proper oil for projector mechanisms is an exceedingly important and vital item, often overlooked by operators.

Experience has proved that a good many faults attributed to the mechanism, are solely due to using common and unsuitable oils.

To uphold the reputation of the manufacturers of these mechanisms, it has been found necessary to give much thought, time and experiment to this all-important item, and there has been produced in "**Kalee Superoil**" an oil superior to any obtainable on the market.

Below is stated briefly a few comparisons of the high qualities of "**Kalee Superoil**" against common oils.

High Viscosity :

Giving smooth, silent running of the Maltese Cross.

Excellent lubricating qualities, reducing wear to a minimum.

Remains in the bearings, therefore,

Economical in use.

Freedom from Fatty Acids :

Gives a clean, free-running machine and bearings.

Freedom from gumming or clogging.

Non-Drying :

Therefore, may be used for months without a trace of deposit

Undesirable Properties found in Common or Unsuitable Oils.

Low Viscosity.

Giving noisy running of Maltese Cross.

Poor lubricating qualities, consequently considerable premature wear.

Runs out of the bearings, therefore,

Expensive in use.

Fatty Acids :

Causes saponification, and corrosion of the bearings and metal parts.

Gums up the mechanism.

Drying :

Slow drying, especially at high temperatures, leaving a thick rubber-like deposit in and around the bearings.

The first signs are heavy running of the mechanism, eventually binding up.

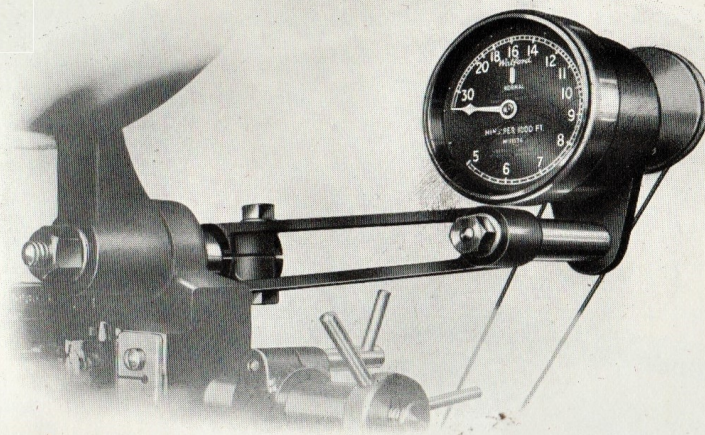
The constituents of "**Kalee Superoil**" are the finest and purest quality obtainable ; in first cost it will therefore appear to be expensive—its cheapness will only be apparent in its economy in use.

" Kalee Superoil " No. 1 size tin ; ($\frac{1}{2}$ pint) ...
Code Word : " SUPIT. "

" Kalee Superoil " No. 2 size tin ; (1 pint)...
Code Word : " SUPER. "

" Kalee Superoil " No. 3 size tin ; ($\frac{1}{2}$ gallon)
Code Word : " SUPAN, "

"Kalee" Film Speed Indicator.



The "Kalee" Film Speed Indicator has been specially designed and made to fit "Kalee" Projectors, and enables an operator to know by a glance the exact speed at which the film is passing through the Projector.

It is a thoroughly well-made and reliable instrument, constructed to withstand continuous service.

The Dial is graduated to give a wide range of speed up to 1,000 feet of film in five minutes.

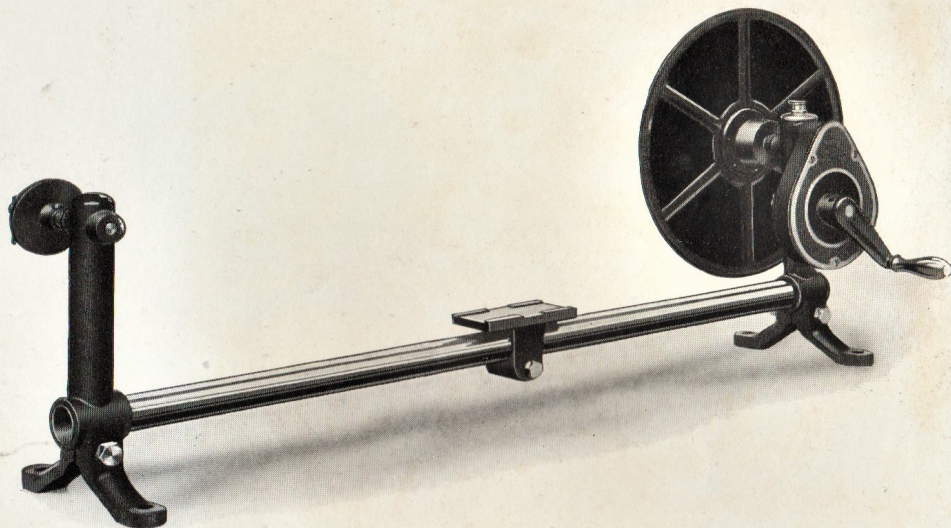
Price ... **each set.**
Code Word : " KALSP. "

The price includes :—Speedometer, Extended Top Spool Arm Bolt, Gunmetal Arm, Bracket and Bolt, Pulley, Special Steel Pulley to fix on Projector Balance Wheel, and Rubber Driving Band, as illustrated.

Spare Rubber Driving Belts ... **each.**
Code Word : " KELBA. "

**Special Hardened and Tempered
Flexible Steel Driving Belts** ... **each**
Code Word : " SPEEL. "

"KALEE" Film Rewinder. Type K.W.



Type K.W. Rewinder is a new type model of heavy construction, made to withstand hard continuous service.

The Standards are made of cast-iron of novel design, accurately machined and bored; connected together by a strong nickel plated steel tube 39 inches long. When screwed down to the bench, the Rewinder is extremely rigid, the increased separation of the heads makes the handling and examination of film comparatively simple.

The Gears are machine cut and are enclosed by a gear cover.

Spindles are made of cast-steel precision ground to limits.

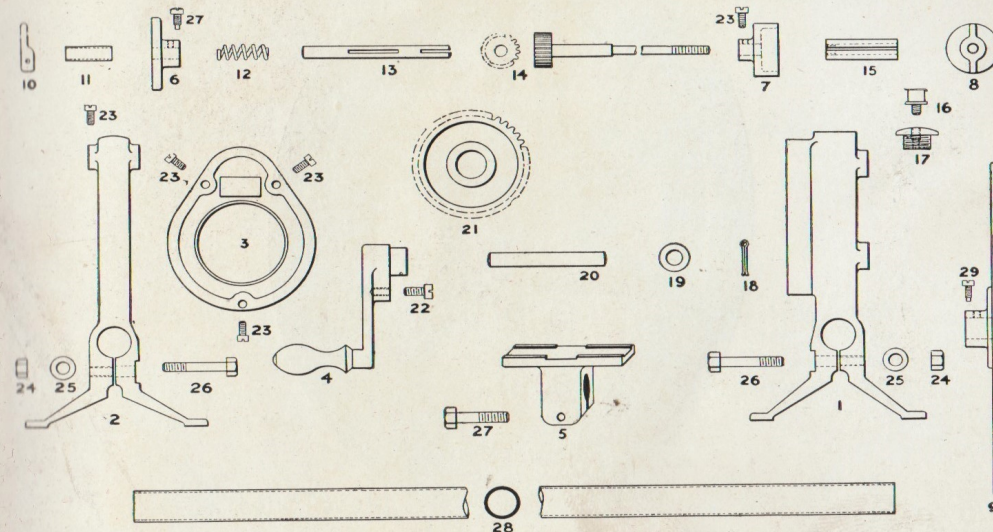
The assembly is made by screw driver and spanner, no taper pins being used, so that it can be taken to pieces quickly for making replacements, etc., when required. A cast-iron block machined out to film width is fixed to the centre of steel tube, which forms a simple fixture for scraping and jointing film.

The whole Rewinder is well-finished, castings black stove enamelled and machined parts bright. A 12 in. pressed steel disc is provided for loose film rewinding.

Approx. weight complete, 19 lbs.

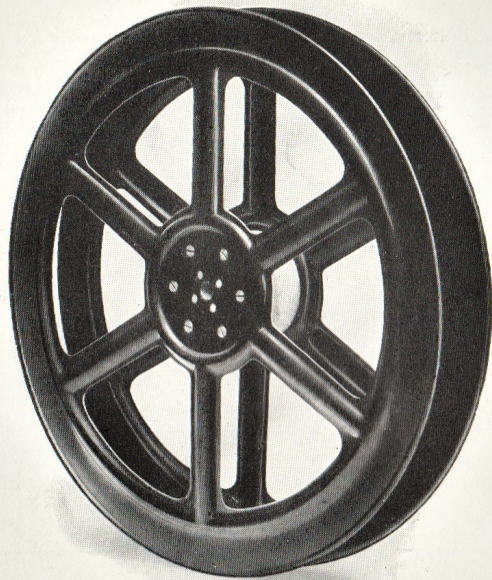
Price Complete... **£3 10s. 0d.** Code Word: "KWINE."
Price without scraping block **£3 5s. 0d.** Code Word: "KWILT."

SPARE PARTS FOR K.W. REWINDER



No.		s.	d.	No.		s.	d.
1	Gear Standard	each	12 0	16	Lubricator	each	9
2	Plain Standard	"	8 0	17	Cap for gear standard	"	2 3
3	Gear Cover	"	2 3	18	Split pin for No. 20 spindle	"	3
4	Handle and Crank	"	6 0	19	Washer for No. 20 spindle	"	3
5	Jointing Table	"	5 0	20	Main gear spindle	"	2 0
6	Boss for plain standard	"	1 6	21	Main gear wheel	"	6 0
7	Collar for gear standard	"	1 9	22	Screw for No. 4	"	4
8	Wing nut	"	1 0	23	Screws for cover Nos. 2, 3 and 7	"	4
9	Steel disc with boss	"	5 0	24	Nuts for No. 26	"	3
10	Retaining sneck for No. 13	"	6	25	Washers for No. 25	"	3
11	Distance tube	"	6	26	Bolt, Clamping steel tube for Nos. 1 and 2	"	6
12	Spring for No. 6 boss	"	6	27	Bolt for No. 5	"	6
13	Spindle for plain standard	"	1 6	27A	Screw for No. 6	"	6
14	Spindle and pinion for gear standard	"	7 6	28	Stay tube	"	6 0
15	Brass bush for No. 9	"	1 6	29	Screw for No. 9	"	6

"KALEE" Steel Spools



These Spools are accurately made, true running, and of the highest class finish.

The sides or cheeks are made from stampings in heavy gauge cold rolled steel, ribbed to give strength and rigidity.

The centre or core is made of Birch wood to which each side is securely held by six steel wood screws and reinforced in the centre by a brass tube, spun over at each end.

This tube also forms a bearing for the spool to revolve on when in use.

The Film is gripped to the core by means of a hardened and tempered steel clip which is easily accessible and simple for an operator to manipulate.

These Spools are all made to fit $\frac{3}{8}$ in. spindles, and in four different diameters.

12 in. diam. Steel Spools, black enamelled	5s. 6d. each, Code Kai.
12 $\frac{3}{4}$ in. " " " " "	6s. 3d. " " Kaid.
13 $\frac{3}{4}$ in. " " " " "	7s. 0d. " " Kaip.
14 $\frac{3}{4}$ in. " " " " "	7s. 9d. " " Kafor.

"KERSHAW" Projection Lenses

Project a picture with perfectly clear definition over the full field, free from distortion and colour. No stops are used therefore the highest illumination and efficiency is secured. Full advantage has been taken in designing these lenses to use the latest types of optical glasses, which are thoroughly transparent in respect of the actinic rays, hence the desired result of brilliancy.

Care of the Projection Lens.

It is important to keep the lens clean, and care should be taken not to handle them with greasy fingers.

A dirty lens will never project a good clear picture.

Use a soft, clean piece of silk or old fine linen for cleaning, after first removing grit or dust by means of a camel hair brush, otherwise scratches will appear in time, which impair the results and may mean the eventual repolishing of the lens. Grease can be removed with a little alcohol.

Selection of Correct Focal Length.

The focus of the lens governs the size of the projected picture on the screen, the longer the focus the smaller the size of the picture and *vice-versa*.

The following tables of distances, etc., have been computed for Cinematograph lenses, assuming the mask width to be 0.9 in. wide, and Lantern Lenses working with a slide mask of 3 ins.

If, however, more accurate results are desired, these can be obtained with the formula below.

D—Distance in feet from lens to screen.

P—Width in feet of picture on screen.

M—Width in inches of mask.

F—Focus in inches of lens.

$$\therefore F = \frac{D \times M}{P} \quad P = \frac{D \times M}{F} \quad D = \frac{P \times F}{M}$$

TABLE OF DISTANCES OF CINEMATOGRAPH LENSES.

Mask aperture .9 in. wide.

PAGE SEVENTY-TWO

Distance Lens to Screen Feet.	Focus of Lens in Inches.																																Width of Picture.		
	2 in.	2¼ in.	2½ in.	2¾ in.	3 in.	3¼ in.	3½ in.	3¾ in.	4 in.	4¼ in.	4½ in.	4¾ in.	5 in.	5¼ in.	5½ in.	5¾ in.	6 in.																		
	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.																		
10	4	6	4	0	3	7	3	3	3	0	2	9	2	7	2	5	2	3	2	1	2	0	1	11	1	10	1	9	1	8	1	7	1	6	
12	5	5	4	10	4	4	3	11	3	7	3	4	3	1	2	11	2	8	2	7	2	5	2	4	2	2	2	1	1	11	1	10	1	10	
15	6	9	6	0	5	5	4	11	4	5	4	2	3	11	3	7	3	5	3	2	3	0	2	11	2	9	2	7	2	6	2	4	2	3	
20	9	0	8	0	7	2	6	7	6	0	5	7	5	2	4	10	4	6	4	3	4	0	3	10	3	7	3	5	3	3	3	1	3	0	
25	11	3	10	0	9	0	8	2	7	6	6	11	6	5	6	0	5	7	5	3	5	0	4	9	4	6	4	3	4	1	3	10	3	9	
30	13	6	12	0	10	9	9	10	9	0	8	4	7	9	7	3	6	9	6	4	6	0	5	9	5	5	5	2	4	11	4	8	4	6	
35	15	9	14	0	12	7	11	5	10	6	9	8	9	0	8	5	7	10	7	4	7	0	6	8	6	4	6	0	5	9	5	5	5	3	
40	18	0	16	0	14	4	13	2	12	0	11	2	10	4	9	8	9	0	8	6	8	0	7	8	7	2	6	10	6	6	6	2	6	0	
45	20	3	18	0	16	2	14	9	13	6	12	6	11	7	10	10	10	1	9	6	9	0	8	7	8	1	7	8	7	4	6	11	6	9	
50	22	6	20	0	18	0	16	5	15	0	13	10	12	11	12	0	11	3	10	7	10	0	9	6	9	0	8	7	8	2	7	10	7	6	
55	24	9	22	0	19	9	18	1	16	5	15	4	14	3	13	3	12	5	11	8	11	0	10	7	9	11	9	5	9	0	8	6	8	3	
60	27	0	24	0	21	6	19	8	18	0	16	8	15	6	14	6	13	6	12	8	12	0	11	6	10	10	10	4	9	10	9	4	9	0	
65	29	3	26	0	23	4	21	4	19	6	18	1	16	9	15	8	14	7	13	9	13	0	12	5	11	8	11	1	10	7	10	0	9	9	
70	31	6	28	0	25	1	23	0	21	0	19	6	18	1	16	11	15	9	14	10	14	0	13	5	12	7	12	0	11	5	10	10	10	6	
75	33	9	30	0	27	0	24	7	22	6	20	9	19	4	18	0	16	10	15	10	15	0	14	3	13	6	12	10	12	3	11	8	11	3	
80	36	0	32	0	28	9	26	3	24	0	22	2	20	8	19	3	18	0	16	11	16	0	15	3	14	5	13	9	13	1	12	6	12	0	
85	38	3	34	0	30	7	27	10	25	6	23	6	21	11	20	5	19	1	17	11	17	0	16	2	15	4	14	7	13	11	13	3	12	9	
90	40	6	36	0	32	5	29	6	27	0	25	0	23	2	21	8	20	2	19	0	18	0	17	2	16	2	15	4	14	8	13	10	13	6	
95	42	9	38	0	34	2	31	2	28	6	26	4	24	6	22	10	21	4	20	1	19	0	18	1	17	1	16	3	15	6	14	9	14	3	
100	45	0	40	0	36	0	32	9	30	0	27	8	25	9	24	0	22	6	21	2	20	0	18	11	18	0	17	1	16	5	15	7	15	0	
110	49	6	44	0	39	7	36	0	33	0	30	5	28	4	26	5	24	9	23	3	22	0	20	10	19	10	18	10	18	1	17	2	16	6	
120	54	0	48	0	43	2	39	4	36	0	33	3	30	11	28	10	27	0	25	5	24	0	22	9	21	7	20	6	19	8	18	0	18	0	

Width of Picture.

The height of Picture is approximately $\frac{3}{4}$ the width.

TABLE OF DISTANCES FOR LANTERN LENSES.

Mask Size 3 inches.

Distance Lens to Screen Feet	Focus of Lens in Inches.													
	4 in. ft. in.	6 in. ft. in.	8 in. ft. in.	10 in. ft. in.	12 in. ft. in.	14 in. ft. in.	16 in. ft. in.	18 in. ft. in.	20 in. ft. in.	22 in. ft. in.	24 in. ft. in.	26 in. ft. in.	28 in. ft. in.	
10	7 6	5 0	3 9	3 0	2 6	2 2	1 10	1 8	1 6	1 4	1 3	1 2	1 1	} Size of Picture.
12	9 0	6 0	4 6	3 7	3 0	2 7	2 3	2 0	1 9	1 7	1 6	1 4	1 3	
15	11 3	7 6	5 8	4 6	3 9	3 3	2 10	2 6	2 3	2 0	1 10	1 9	1 8	
20	15 0	10 0	7 6	6 0	5 0	4 3	3 9	3 4	3 0	2 9	2 6	2 4	2 2	
25	18 9	12 6	9 4	7 6	6 3	5 4	4 8	4 2	3 9	3 5	3 1	2 11	2 8	
30	22 6	15 0	11 3	9 0	7 6	6 5	5 7	5 0	4 6	4 1	3 9	3 6	3 3	
35	26 3	17 6	13 1	10 6	8 9	7 6	6 7	5 10	5 3	4 9	4 4	4 0	3 9	
40	30 0	20 0	15 0	12 0	10 0	8 6	7 6	6 8	6 0	5 4	5 0	4 7	4 3	
45	33 9	22 6	16 10	13 6	11 3	9 8	8 5	7 6	6 9	6 1	5 7	5 2	4 10	
50	37 6	25 0	18 9	15 0	12 6	10 9	9 4	8 4	7 6	6 10	6 3	5 9	5 4	
60	45 0	30 0	22 6	18 0	15 0	12 11	11 3	10 0	9 0	8 2	7 6	6 11	6 5	
70	52 6	35 0	26 3	21 0	17 6	15 1	13 1	11 8	10 6	9 6	8 9	8 1	7 6	
80	60 0	40 0	30 0	24 0	20 0	17 1	15 0	13 4	12 0	10 11	10 0	9 3	8 7	
90	67 6	45 0	33 9	27 0	22 6	19 5	16 10	15 0	13 6	12 3	11 3	10 5	9 8	
100	75 0	50 0	37 6	30 0	25 0	21 7	18 9	16 8	15 0	13 8	12 6	11 6	10 8	

In selecting a Lantern Lens, its Focus should be approximately $4\frac{1}{2}$ times that of the Cinematograph Lens.

"KERSHAW" Cinematograph Projection Lenses.



Series A.

Standard Size Mount 1.68 inches dia.

Working at full open aperture—no central stops—therefore allowing the maximum amount of light available to pass.

Focal Length, Inches.	F Value	Price Each.	Code Word.
2½	F 2.0	£4 10s. 0d.	Acton
3	F 2.2		Acree
3¼	F 2.3		Actor
3½	F 2.5		Actimo
3¾	F 2.7		Actinic
4	F 2.9		Actual
4¼	F 3.1		Acted
4½	F 3.3		Actral
4¾	F 3.5		Actak
5	F 3.7		Actent
5½	F 4.0		Actist
6	F 4.4		Actaler
6½	F 4.8		Accent
7	F 5.2		Aceso

Intermediate focal lengths ... 15/- extra.

"KERSHAW" Cinematograph Projection Lenses.



Series B.

Standard Size Mount 2.07 inches dia.
LARGE APERTURE.

Similar in construction to series A, and of the same high quality. The larger diameter mount makes it possible to use larger diameter optical elements, therefore allowing more light to pass.

Focal Length, Inches.	F Value	Price Each	Code Word.
3	F 1.7	£8 0s. 0d.	Bens
3¼	F 1.8		Benson
3½	F 2.0		Bensit
3¾	F 2.1		Bend
4	F 2.2		Benton
4¼	F 2.4		Belt
4½	F 2.5		Bentop
4¾	F 2.7		Bended
5	F 2.8		Bensize
5½	F 3.1		Bensal
6	F 3.3		Bensix
6½	F 3.7		Bensosit
7	F 4.0		Benseven

Intermediate focal lengths ... 20/- extra.

“ KERSHAW ” Cinematograph Projection Lenses.



Series C.

Standard Size Mount 2.75 inches dia.

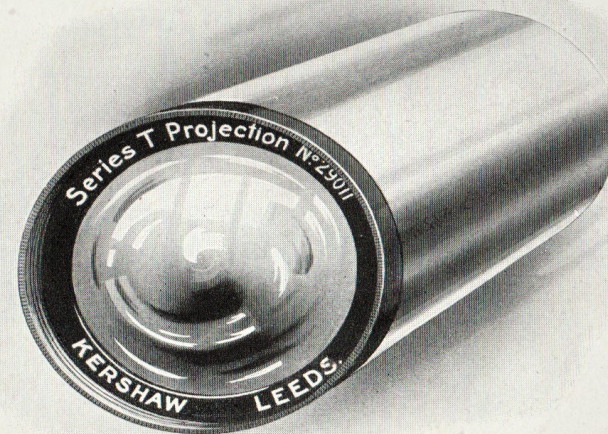
EXTRA LARGE APERTURE.

Designed to meet the requirements for a lens of increased aperture. The large diameter mount makes it possible to use optical elements of extra large aperture, hence increased illumination.

Focal Length, Inches.	F Value.	Price Each.	Code Word.
4½	F 2.0	} £14 0s. 0d.	Cabon
4¾	F 2.0		Cacon
5	F 2.0		Cadon
5½	F 2.2		Cagon
6	F 2.4		Cakon
6½	F 2.6		Calon
7	F 2.8		Camon

Intermediate focal lengths ... 20/- extra.

“ KERSHAW ” Lantern or Title Projection Lenses.



Entirely British Made.

Series T.

Standard Size Mount 2.07 inches dia.

These lenses have been specially designed for use in conjunction with our Cinematograph Projection Lenses, for projecting slides, titles, advertisements, etc., but are equally suitable for any form of Lantern Projection.

They are of first class make and finish, and give remarkably fine, clear definition over the whole field.

The working aperture is 1.9 inches dia.

8 in. to 28 in. equiv. focus ... each **£2 5s. 0d.**
(Advancing by 2 in.)

Intermediate focal lengths ... 5/- extra.

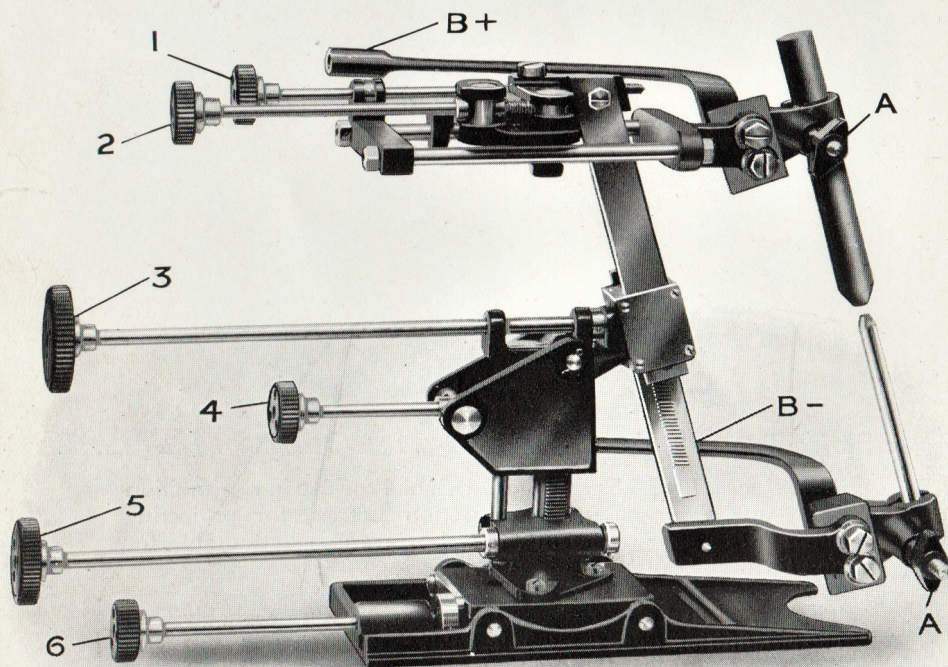
Code Word : “ TITLE.”

When coding add focus in inches to Code Word.

“KALEE” Projection Arc Lamp.

Type Y.L.

For Currents up to 100 Amperes.



THE “KALEE” TYPE “YL” PROJECTION ARC LAMP is the outcome of experience gained in the manufacture of the Type AL and LL Arc Lamps. The new type of Arc Lamp has embodied in it the good features of the older types with further new features of construction to facilitate operation and ease of replacement.

New Features.

Carbon Holders :—One nut only (A) clamps the carbon, situated at the side, is easily operated.

Terminals :—Heavy construction (B), extended to the back of the lamp, reduces the possibility of burning of cable leads.

Vertical Centering :—Adjustment is provided for maintaining tension.

Horizontal Centering :—In place of rack and pinion, a combination of crank and toggle lever with tension spring is provided.

Other Features :—Improvement in general design as illustration.

Materials :—Gun-metal and iron castings, black stove enamel finish. All racks, pinions and screws are steel, bright finish.

Insulation :—Heavy sheet mica and steatite bushes, knobs of hard vulcanized fibre with deep machine cut knurls.

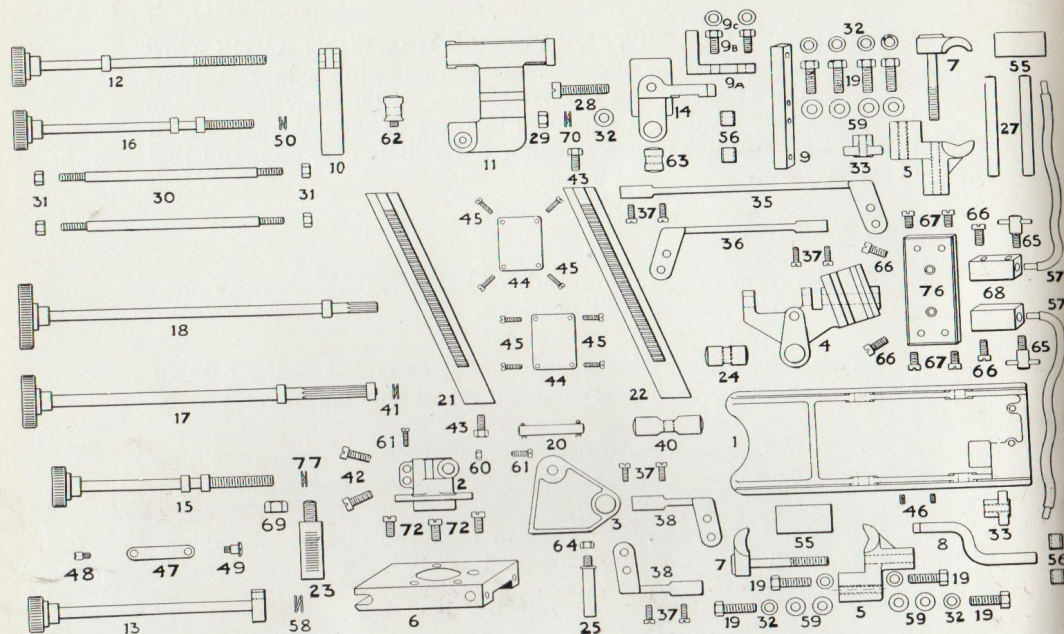
Mechanical Feed and Centering Motions:—

1. Backward and forward movement to top carbon holder.
2. Lateral movement to top carbon holder.
3. Carbon feed, quick and accurate.
4. Tilting movement to lamp.
5. Vertical Centering movement.
6. Lateral movement to lamp.

Approx. weight of Arc Lamp as illustrated, 26 lbs.

Price (as illustrated) each £10 0s. 0d. Code Word: “Yodel.”

Price (fitted with terminal block and leads) each £11 0s. 0d.
Code Word.: “Leyel.”



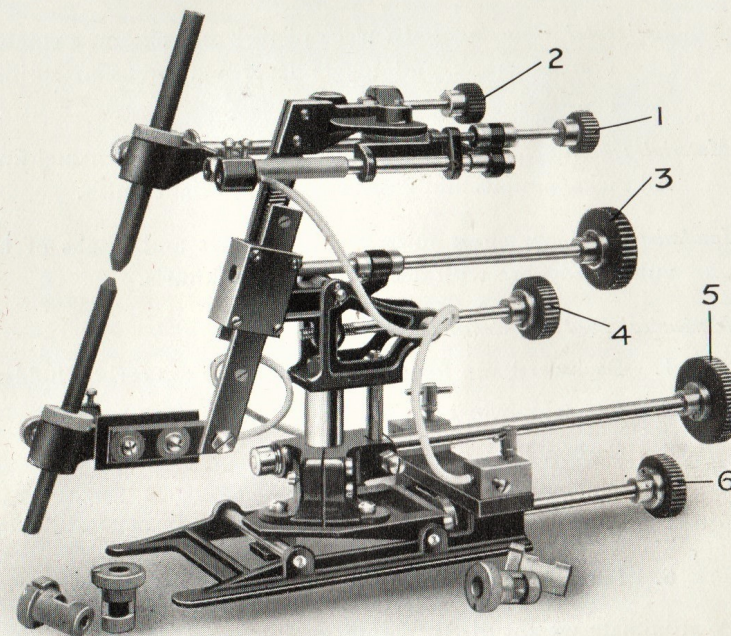
TYPE Y.L. ARC LAMP SPARE PARTS

No.	DESCRIPTION.	£	s.	d.	No.	DESCRIPTION.	£	s.	d.
1	Base each	0	12	0	35	Top Terminal each	0	6	0
2	Body "	0	15	0	36	Bottom Terminal "	0	5	0
3	Centre Frame "	0	12	0	37	Screws for Terminals "	0	0	6
4	Tilting Bracket "	1	0	0	38	Short Terminals (for use with Terminal Block) "	0	4	6
5	Top and Bottom Back Carbon Holder "	0	7	0	40	Pivot Pin for Tilting Bracket Screw "	0	4	0
6	Lateral Slide Base for Body "	0	9	0	41	Spring Washer for Elevating Pinion "	0	0	6
7	Top and Bottom Carbon Holder Caps "	0	4	0	42	Body Tension Screws "	0	0	6
8	Bottom Carbon Holder Bracket "	0	7	0	43	Screws for Racks "	0	0	6
9	Bar for Top Carbon Holder Bracket "	0	3	0	44	Rack Bar Plates "	0	1	6
9A	Top Carbon Holder Bracket "	0	5	0	45	Screws for Rack Bar Plates "	0	0	3
9B	Screw for No. 9A "	0	0	6	46	Screws for No. 6 Slide Rods "	0	0	3
9C	Washers for No. 9A "	0	0	3	47	Link for Centering Crank "	0	2	0
10	Space bar for Slide Rods "	0	5	0	48	Pin for Centering Crank "	0	0	9
11	Slide Bar Frame "	0	12	0	49	Pivot Screw for Link "	0	1	0
12	Slide Screw "	0	7	0	50	Spring Washer for Swivel Screw "	0	0	6
13	Horizontal Centering Crank "	0	9	0	55	Mica Insulating Plates "	0	1	0
14	Swivel Bracket "	0	12	0	56	Insulating Bushes "	0	0	6
15	Control Screw for Tilting Bracket "	0	8	0	57	Leads, Asbestos Covered Copper pair "	0	8	6
16	Swivel (No. 14) Screw "	0	9	0	58	Spring Washer for Centering Crank each "	0	0	6
17	Elevating Pinion "	0	10	6	59	Mica Washers pair	0	0	9
18	Feed Pinion "	0	0	6	60	Nut for Guide Pin Set Screw each	0	0	3
19	Screws for Carbon Holders "	0	2	0	61	Set Screw for Guide Pin and Body "	0	0	6
20	Pivot Pin, Tilting Bracket "	0	9	0	62	Pivot Nut for Swivel Screw "	0	3	0
21	Rack Bar and Rack (Left Hand) "	0	9	0	63	Nut for Swivel Bracket "	0	3	0
22	Rack Bar and Rack (Right Hand) "	0	9	0	64	Nut for Guide Pin "	0	0	4
23	Main Pillar "	0	3	0	65	Tommy Screws for Terminals "	0	0	9
24	Nut for Tilting Bracket "	0	2	0	66	Screws for Terminals "	0	0	6
25	Guide Pin "	0	0	9	67	Screws for Terminals "	0	0	6
27	Slide Rods for No. 6 "	0	1	3	68	Terminals "	0	2	3
28	Pivot Screw for No. 14 "	0	0	4	69	Nut for Main Pillar "	0	0	4
29	Nut for No. 28 "	0	0	4	70	Spring Washer for Swivel Pivot Screw "	0	0	6
30	Top Slide Rods "	0	2	3	72	Screws for Body (No. 2) "	0	0	6
31	Nuts for No. 30 "	0	0	4	76	Hard Fibre Base for Terminals "	0	2	9
32	Washers for Nos. 28 and 19 "	0	0	3	77	Spring Washer for Tilting Bracket Control Screw (No. 15) "	0	0	6
33	Carbon Holder Wing Nuts pair	0	2	3					

"KALEE" Projection Arc Lamp.

Type C.L.

For Currents up to 50 Amperes.



THE "KALEE" TYPE "CL" PROJECTION ARC LAMP has been designed on similar lines to the Type "YL," but lighter and less in size. It is suitable for ordinary slide projection or for Kinematograph projection, where a current of not more than 50 amperes is required.

FEATURES.

Carbon Holders:—Special sleeve bushes make it possible to use any size carbon up to 18 m.m. dia., the carbon is directly clamped by one screw only.

Vertical Centering:—Adjustment is provided for maintaining tension.

Horizontal Centering:—In place of rack and pinion, a combination of crank and toggle lever with tension spring is provided.

Materials:—Gun-metal and iron castings, black stove enamel finish. All racks, pinions and screws are steel, bright finish.

Insulation:—Heavy sheet mica, steatite bushes and knobs of hard vulcanised fibre with deep machine-cut knurls.

Mechanical Feed and Centering Motions:—

1. Backward and forward movement to top carbon holder.
2. Lateral movement to top carbon holder.
3. Carbon feed, quick and accurate.
4. Tilting movement to lamp.
5. Vertical centering movement.
6. Lateral movement to lamp.

Approximate weight of Arc Lamp, as illustrated, 12 lbs.

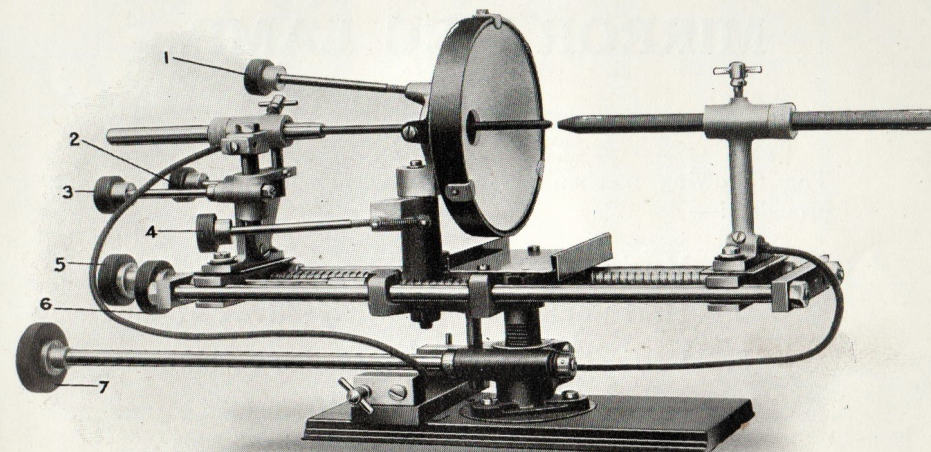
Price each £7 5s. 0d.

Code Word: "CEFEL."

The above price includes two Carbon Holder Bushes, and unless ordered otherwise, one each 12 and 14 m.m. is supplied

Extra Bushes —8, 10, 12 or 14 m.m., 5/- each.

"KALEE" Mirror Arc Lamp. Type R.L.



THE "KALEE" MIRROR ARC LAMP has been designed to give all the advantages obtained by the mirror type of Arc Lamp, controlled in the easiest possible manner. Constructed of selected materials, of robust build, and manufactured on the latest interchangeable system, to withstand hard, continuous service.

Advantages:—Highest possible light efficiency. 75 per cent. saved in current consumption. Elimination of condensers. Small diameter carbons, reduced cost.

Materials:—Body and base of cast-iron; carbon holders and supports, gun-metal; actuating screws, steel; mirror holder, aluminium.

Finish:—Iron and aluminium castings, black stove enamel; gun-metal and steel parts, dull nickel-plated.

Insulation:—Heavy sheet mica and porcelain bushes, handles of hard vulcanised fibre. Terminals are separately mounted on a vulcanised fibre block fixed to the main base.

Mirror:—Best quality glass, silvered with hard protective backing.

Spares:—All the component parts are manufactured in jigs and fixtures, hence easy replacement.

Carbons:—Each lamp is provided with holders to take the following sizes of carbons:—

Positive 10 and 12 mm. diam. ... Negative 6, 7 and 8 mm. diam.

Amperage:—We recommend the following combination of carbons:—

0-10 Amperes, 6 mm. negative, and 10 mm. positive.

10-20 " 7 mm. " and 10 mm. "

20-35 " 8 mm. " and 12 mm. "

Price of Arc Lamp complete with set of carbon holders, £11 0s. 0d.

Weight of Arc Lamp, approx., 18 lbs. Code Word: "MIRAC"

Instructions for working The "KALEE" Type R.L. MIRROR ARC LAMP.

The following mechanical feed and centering motions are provided:—

1. Vertical centering of Mirror.
2. Horizontal centering of Negative carbon.
3. Vertical centering of Negative carbon.
4. Horizontal centering of Mirror
5. Carbon feed, quick and accurate.
6. Backward and forward movement of crater in relation to mirror.
7. Vertical adjustment of optical centre.

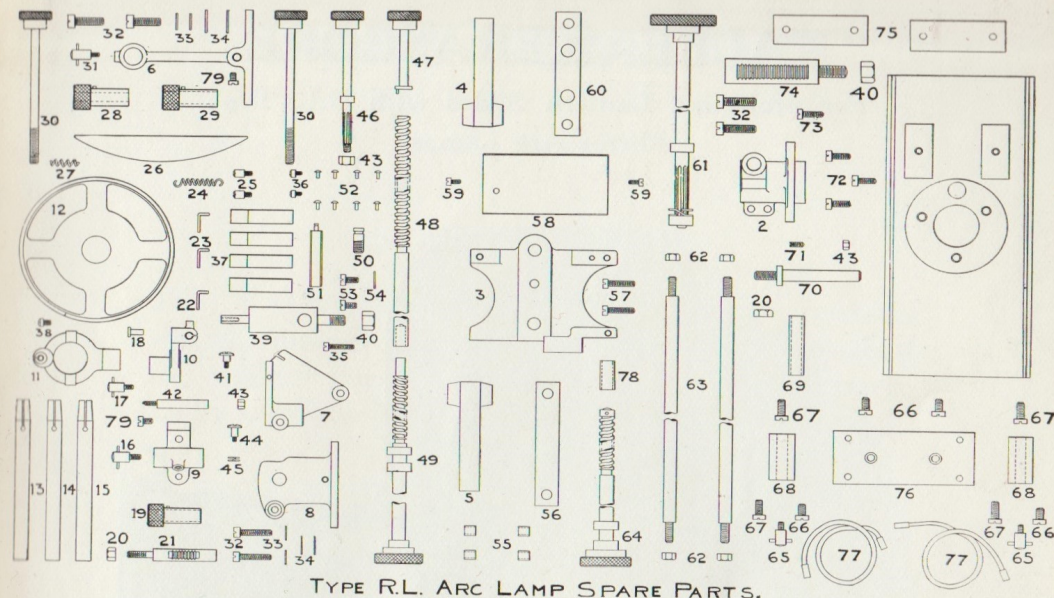
Open out the carbon feed (5) as far as possible, insert the negative carbon in the back holder so as to project through the hole in Mirror about $2\frac{1}{2}$ ins. Insert the positive (cored) carbon in the front holder so that its point is separated $\frac{1}{4}$ in. from the negative carbon point. Be careful to see that the lamp is connected up to current supply in the correct polarity direction. By observation, roughly adjust mirror central with carbons.

Allow a working distance of about 15 ins. to 17 ins. from the Arc Crater to Projector Gate.

The lamp house runners should be carefully adjusted to ensure the carbon being lineable with the optical axis of the projector.

The Arc should be maintained, as far as possible, at $\frac{1}{8}$ in. to avoid shadow effect.

By careful manipulation of the various motions a user will quickly find the best positions to obtain the maximum efficiency.

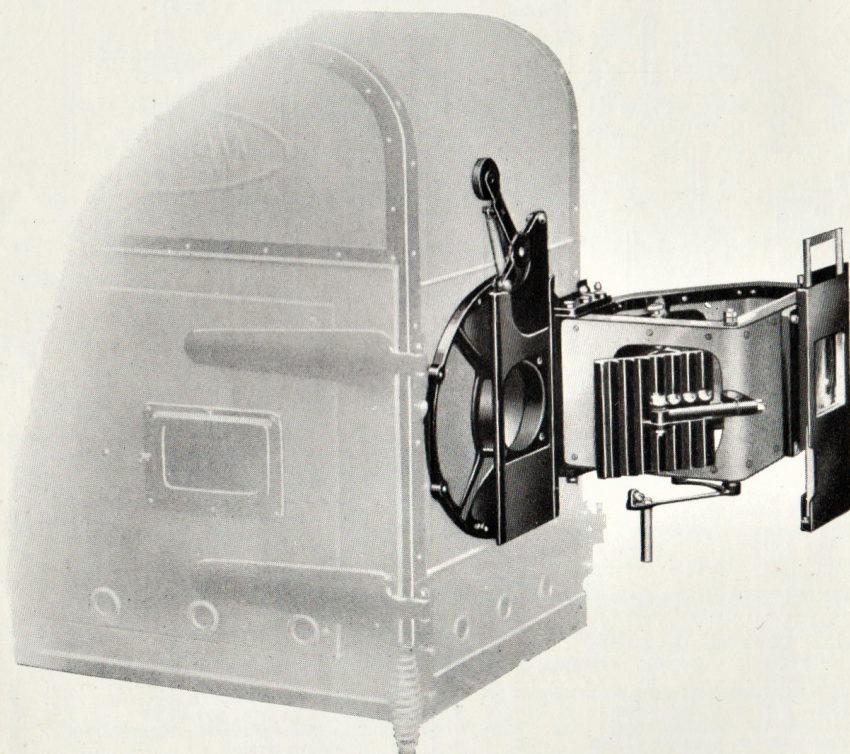


TYPE R.L. ARC LAMP SPARE PARTS.

No.	DESCRIPTION.	each	£	s.	d.	No.	DESCRIPTION.	each	£	s.	d.
1	Base	...	0	9	0	38	Screw for Mirror Clip No. 22	...	0	0	4
2	Body	...	0	15	0	39	Pillar for Mirror Brackets	...	0	6	6
3	Centre Bracket	...	0	9	0	40	Nuts for Nos. 39 and 74 Pillars	...	0	0	4
4	Positive Carbon Holder Slide	...	0	12	0	41	Pivot Screw for No. 7 Bracket	...	0	1	0
5	Negative Carbon Holder Slide	...	0	12	0	42	Guide Pin, Negative Carbon Holder	...	0	1	0
6	Positive Carbon Holder Support	...	0	10	0	43	Nuts for Nos. 42, 46 and 71	...	0	0	3
7	Centering Bracket Negative Carbon Holder	...	0	11	0	44	Screw for Centering Bracket	...	0	1	0
8	Bracket for Negative Carbon Holder	...	0	9	0	45	Spring Washer	...	0	0	4
9	Negative Carbon Holder Support	...	0	8	0	46	Elevating Pinion Negative Carbon Holder	...	0	3	6
10	Horizontal Centering Bracket for Mirror	...	0	8	0	47	Centering Crank, Negative Carbon Holder	...	0	3	0
11	Vertical Centering Bracket for Mirror	...	0	9	0	48 & 49	Carbon Feed Screws complete Set	...	0	12	0
12	Mirror Holder	...	0	13	0	50	Stud for No. 24 Spring	...	0	0	6
13	Negative Carbon Holder 6 mm.	...	0	5	0	51	Crossbar Mirror Adjustment (horizontal)	...	0	1	6
14	Negative Carbon Holder 7 mm.	...	0	5	0	52	Screws for Mirror Holder	...	0	0	3
15	Negative Carbon Holder 8 mm.	...	0	5	0	53	Screws for Nos. 10 and 29	...	0	0	4
16	Clamping Screw, Negative Carbon	...	0	1	0	54	Washer for Screw No. 53 on No. 10	...	0	0	3
17	Clamping Screw, Mirror Bracket No. 10	...	0	1	0	55	Porcelain Bushes	...	0	0	6
18	Rivet for Pad Mirror Holder	...	0	0	4	56	Back Slide Bar	...	0	3	3
19	Negative Carbon Holder Sleeves	...	0	4	0	57	Screws for No. 3	...	0	0	6
20	Nut for No. 21—Elevating Rack	...	0	0	3	58	Carbon Dust Tray	...	0	1	6
21	Elevating Rack, Negative Carbon Holder	...	0	2	3	59	Screws for Tray	...	0	0	3
22	Clip securing Mirror, top	...	0	0	9	60	Front Slide Bar	...	0	3	6
23	Clips securing Mirror, side	pair	0	1	3	61	Elevating Pinion	...	0	9	0
24	Spring for No. 10 Bracket	each	0	0	4	62	Nuts for Slide Rails	...	0	0	4
25	Screws for Mirror Holder	pair	0	1	3	63	Slide Rails	...	0	2	3
26	Mirror	each	1	1	0	64	Focussing Screw	...	0	8	0
27	Spring, Vertical Centering Mirror	...	0	0	4	65	Tommy Screws for Terminals	...	0	1	0
28	Positive Carbon Holder Sleeve, 10mm.	...	0	4	0	66	Lead Screws for Terminals	...	0	0	6
29	Positive Carbon Holder Sleeve, 12mm.	...	0	4	0	67	Screws fixing Terminals to Fibre Block	...	0	0	3
30	Centering Screws for Mirror	...	0	2	6	68	Terminals	...	0	2	3
31	Clamping Screws Positive Carbon	...	0	1	0	69	Distance Tube	...	0	1	3
32	Screws for Nos. 2, 4 and 5	...	0	0	6	70	Guide Pin for Body	...	0	2	0
33	Washers for Nos. 4 and 5	...	0	0	3	71	Grub Screw for Body	...	0	0	3
34	Mica Washers for Nos. 4 and 5	...	0	0	4	72	Screws for Base	...	0	0	6
35	Screws, Clamping Guide Pin, Neg. Carbon Holder	...	0	0	6	73	Screw for Body	...	0	0	6
36	Screws for Mirror Clips, No. 23	...	0	0	6	74	Main Pillar	...	0	6	0
37	Pressure Springs for Mirror	...	0	0	9	75	Mica Insulators	...	0	1	0
						76	Fibre Terminal Block	...	0	2	3
						77	Leads	pair	0	3	6
						78	Distance tube for Focus Screw	each	0	1	0
						79	Lead Screws for Nos. 6 and 9	...	0	0	4

"KALEE KERASCOPE."

For projecting Lantern Slides with R.L. Type
Mirror Arc Lamps.



"Kalee Kerascope" as fitted to "Kalee" No. 7 Lamp House,
with Vertical Steel Slide Carrier and Steel Curtain Cut-off.

"KALEE KERASCOPE," as illustration, but without Steel
Curtain Cut-off.

Price £6 0s. 0d.

Code Word: "KERAS."

"KALEE" Steel Curtain Light Cut-off.

Price £2 0s. 0d.

Code Word: "STOFF."

"KALEE KERASCOPE"



SPECIFICATION.

The "KALEE KERASCOPE" is a special apparatus which is mounted on the Lamp House front in place of the ordinary condenser housing, for projecting Lantern Slides with Mirror Arc Lamps, of the R.L. Type.

In use the apparatus entirely obviates the objectionable black centre spot which appears on the screen when using Mirror Arc Lamps with the ordinary condenser arrangement.

It is not necessary to slide over the Lamp House when changing over from Cine to Slide projection; a vertically swung Mirror is brought into action, which intercepts the light rays from the Arc Lamp. The rays then pass through a Diverging Lens and are then reflected by a second Mirror, through a special Condenser which is mounted behind the Slide Carrier. The projected image then passes through the Lantern Objective in the ordinary manner.

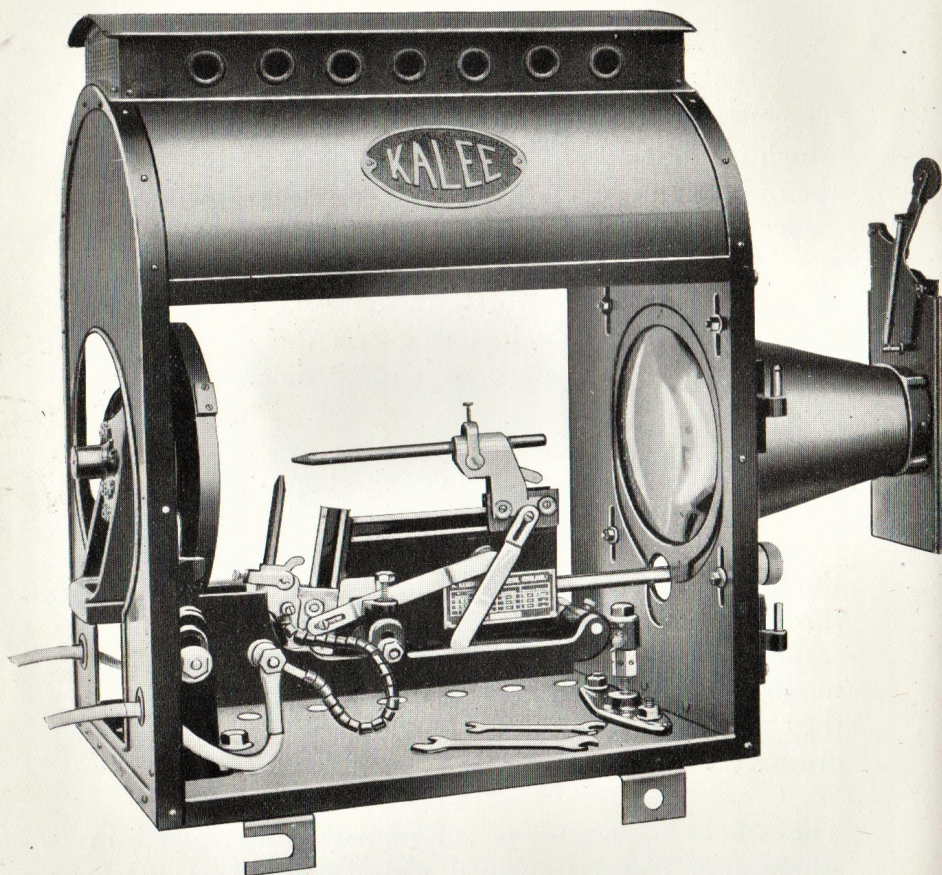
The whole apparatus is substantially constructed of Aluminium castings encased with Blued Sheet Steel; the Optical Components are specially selected and of superior quality.

A special type of Vertical Slide Carrier is fitted and the slides are carried in separate metal holders. The simple action of withdrawing the bottom slide, allows the next slide to come into correct register for projection.

"KALEE" Type 8M.L.

High-Power Mirror Arc Lamp

(8 in. dia. Mirror and 8 in. dia. Condenser).



"KALEE" Type 8M.L. High-Power Mirror Arc Lamp, complete with Single Lamp House, Light Cone and Steel Curtain Cut-off. Complete as illustration (as supplied with No. 8A.M.L. Outfit).

PRICE **£28 0s. 0d.**

Code Word: "HIPOW."

"KALEE" Type 8M.L. High-Power Mirror Arc Lamp, complete, with Single Lamp House, Type 8M.L. Kerascope, Light Cone, Steel Curtain Cut-off, Vertical Steel Slide Carrier and Slide Holder Frames (as supplied with No. 8B.L.K. Outfit).

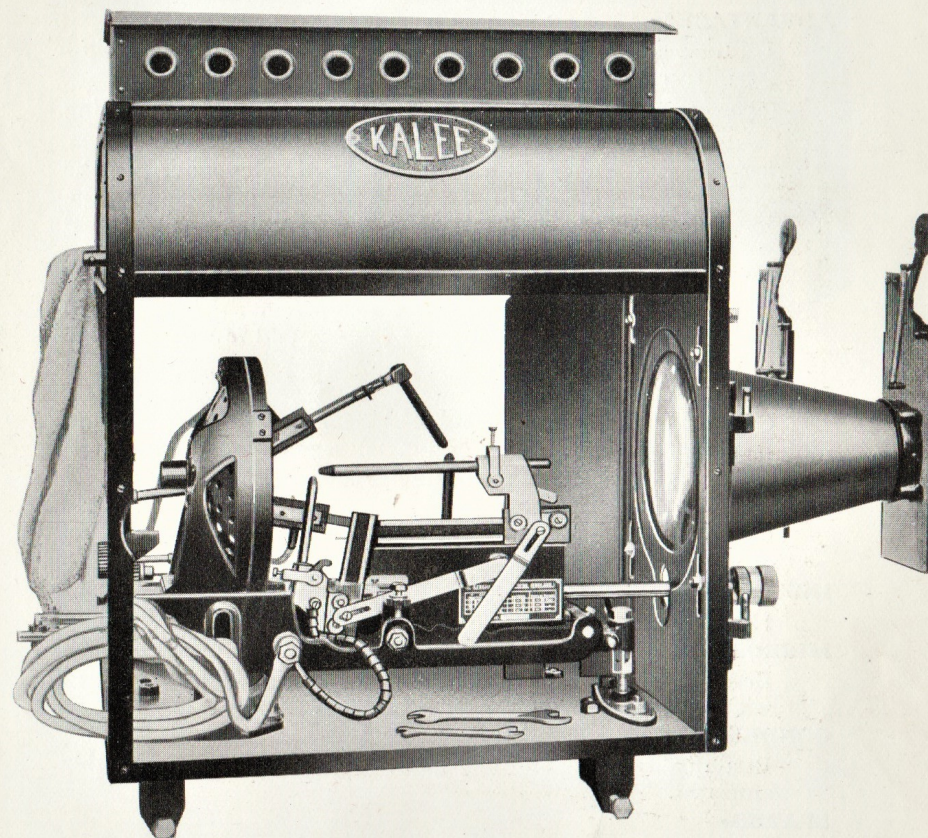
PRICE **£38 0s. 0d.**

Code Word: "HIKER."

"KALEE" Type 8M.L.

High-Power Mirror Arc Lamp.

(8in. dia. Mirror and 8in. dia. Condenser).



"KALEE" Type 8M.L. High-Power Mirror Arc Lamp, complete, with Double Lamp House, Light Cone, and Steel Curtain Cut-off. Type "S.L." Scissors Arc Lamp, Mechanical Tray, Condenser Cell, Condenser Lenses, Vertical Steel Slide Carrier, Slide Holder Frames, and Steel Curtain Cut-off.

Complete as illustration (as supplied with No. 8B.L.S. Outfit).

PRICE **£45 0s. 0d.**

Code Word: "DUPOW."

SPECIFICATION :

The "KALEE" Type "8 M.L." High-Power Mirror Arc Lamp represents the latest developments in Mirror Arc construction and is an evolutionary design, gained by experience in manufacturing large numbers of Mirror Arc Lamps.

ADVANTAGES :

- 1 Increased light efficiency by using a large diameter (8in.) mirror without a central hole.
- 2 Arc crater, placed at the most efficient light collecting position.
- 3 Large diameter (8 in.) condenser finally converges the beam of light on to the projector gate mask and at the same time absorbs heat which would otherwise be transmitted to the mechanism.
- 4 Ease of operation—when correctly set up in the first instance—it is only necessary to operate the carbon feed knobs, both work on the one spindle, and can be locked to work simultaneously.

MATERIALS :

Only selected materials are used—base, body and mirror holder cast-iron—steel worms—gun-metal segments—pressed steel carbon holders.

FINISH :

Castings, etc., black stove enamelled—gun-metal and steel components, dull nickel-plated.

INSULATION :

Heavy sheet mica—hard vulcanized fibre carbon feed knobs.

MIRROR :

Best quality heat-resisting glass, heavily silvered and coated with a special hard protective backing.

CONDENSER :

Best quality heat-absorbing glass, transparent and thoroughly annealed.

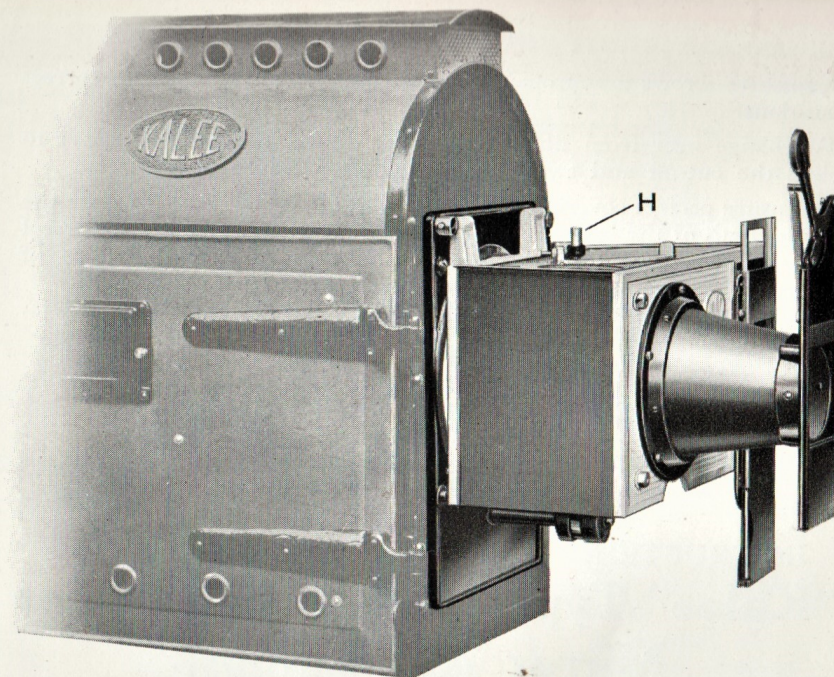
SPARES :

All component parts are manufactured by the most modern methods in jigs and fixtures to close limits—hence easy replacements.

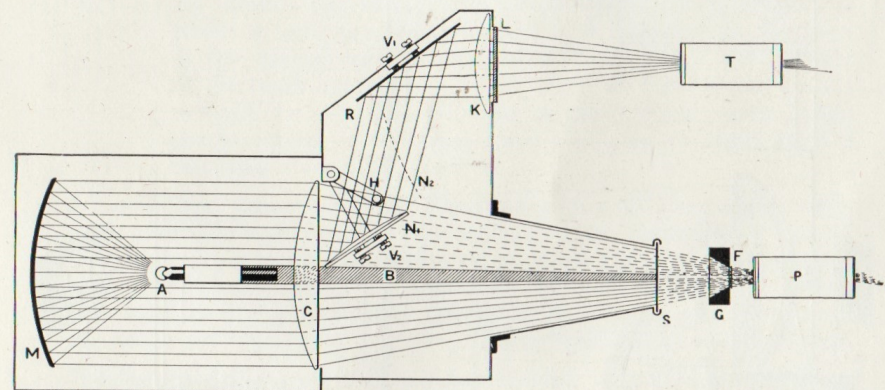
AMPERAGE :

The following combination of carbons are recommended :

+	CARBONS			
	POSITIVE.	NEGATIVE.		
			AMPERES.	WIDTH OF PICTURE.
	12 m.m.	10 m.m.	15—20	18—24 feet
	10 m.m.	8 m.m.	9—14	12—18 feet
	7 m.m.	6 m.m.	5—8	9—12 feet



Type "M.L." Kerascope fitted to Type "M.L." Lamp House.



Sectional plan line drawing showing the path of the light rays when projecting both film and lantern slides.

When projecting slides, a convex mirror (N) intercepts the convergent beam after passing through the condenser (C). The position of the convex mirror (N) is so disposed as to obviate the black shadow (B).

The light rays are then reflected on to a plane mirror (R); then through a special condenser (K), mounted behind the slide carrier (L).

The projected image then passes through the lantern objective (T) in the ordinary manner.

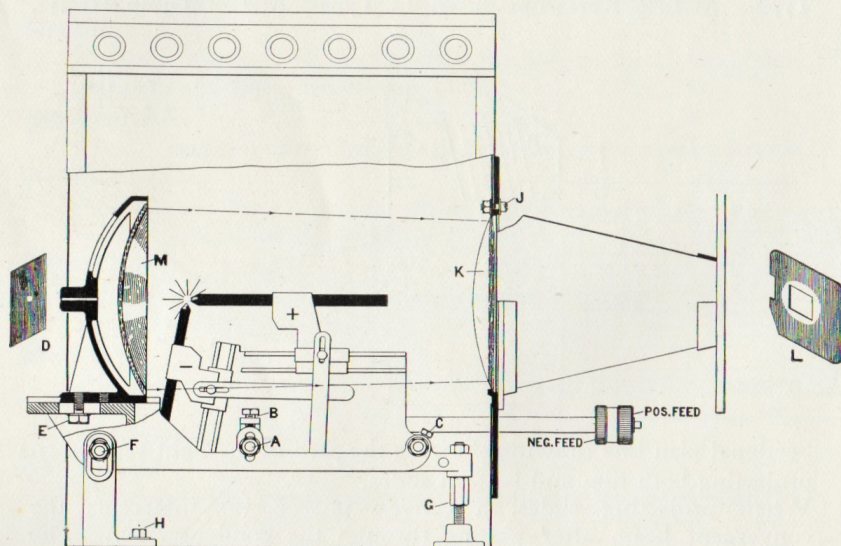
Adjusting screws are provided for setting the mirrors in the correct positions.

To change over from film to slide projection it is only necessary to close the cut-off and swing over the mirror lever (H).

To ensure perfect covering of lantern slides it is necessary to state the focal length of the lantern lens to be used with it, so that the correct focus condenser can be supplied. The following combinations of lantern objectives and condensers should be used.

OBJECTIVE FOCUS	CONDENSER FOCUS
6 inch to 12 inch	9 inch
12 inch to 25 inch	16 inch
25 inch upwards	20 inch

INSTRUCTIONS for SETTING UP and WORKING "Kalee" Type "M.L." High-Power Mirror Arc Lamps.



To obtain maximum efficiency with "Kalee" Type "M.L." Arc Lamps, care in setting up in the first instance should be taken in making the following essential adjustments:

1 The centre of the condenser (K) must be in alignment with the optical centre of the mechanism.

2. The Arc Crater must be relatively true with the mirror (M).
3. The Condenser (K) must be just flooded with light.
4. The Mask Plate (L) must be just flooded over the corners of the aperture.

All these adjustments are provided for in a very simple manner as follows:

1. The set screws (J) allow the condenser (K) to be raised or lowered. For "Kalee" mechanisms, a line marked on the housing should coincide with a line on the body.
2. Slacken nut (A), the lamp can then be moved vertically by screw (B). Lateral movement can be made when set screw (C) is slackened. When correctly set, an image of the crater will be projected through the small hole in the back of mirror housing. To verify, a piece of card can be held at the position (D), as shown on line drawing,
3. Slacken bolt (E) which will then allow the mirror housing to be moved backward or forward, so that the condenser (K) is just flooded. If the flooding is not central, vertical adjustments are provided for by bolt (F) and screw (G) and horizontal adjustment by screw (H).
4. By moving the whole lamp house bodily on the stand, the circle of light covering the gate mask plate can be adjusted to the correct size, which should fully cover the corners of the mask aperture. If the circle of light is not clearly defined, *i.e.*, should a double or ghost circle appear, then the foregoing instructions have not been correctly carried out and should be verified.

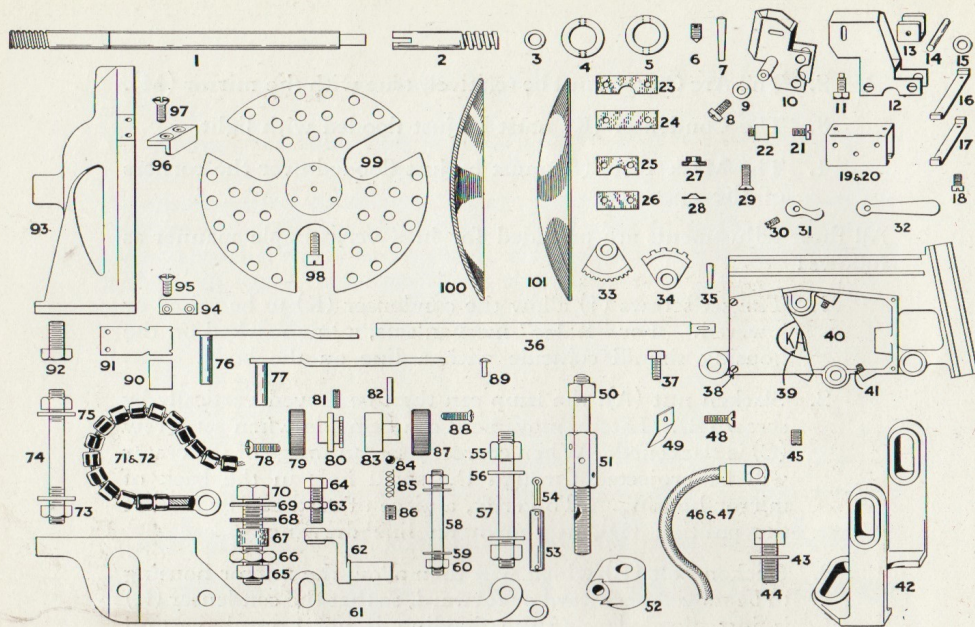
After a little experience all adjustments are quickly and readily made, and when correct, all bolts, nuts, etc., can be definitely locked. The only adjustments then required to work the lamp are the two carbon feed knobs, both of which are on the same spindle. When the crater has been formed by operating each knob separately, they can be locked together, the feeding is then operated by one knob only.

It is essential that only the very best quality of mirror arc carbons should be used.

The carbon holders are made of special pressed steel, to eliminate light obstruction, care should therefore be taken not to burn the carbons too short and thereby damaging the holders.

Strike the arc below the normal amperage, increasing gradually to normal until the carbons burn in.

To avoid flame shooting on to the mirror when striking up with new carbons, it is an advantage to have vertical (negative) carbon slightly above the normal position until the carbons are heated up.



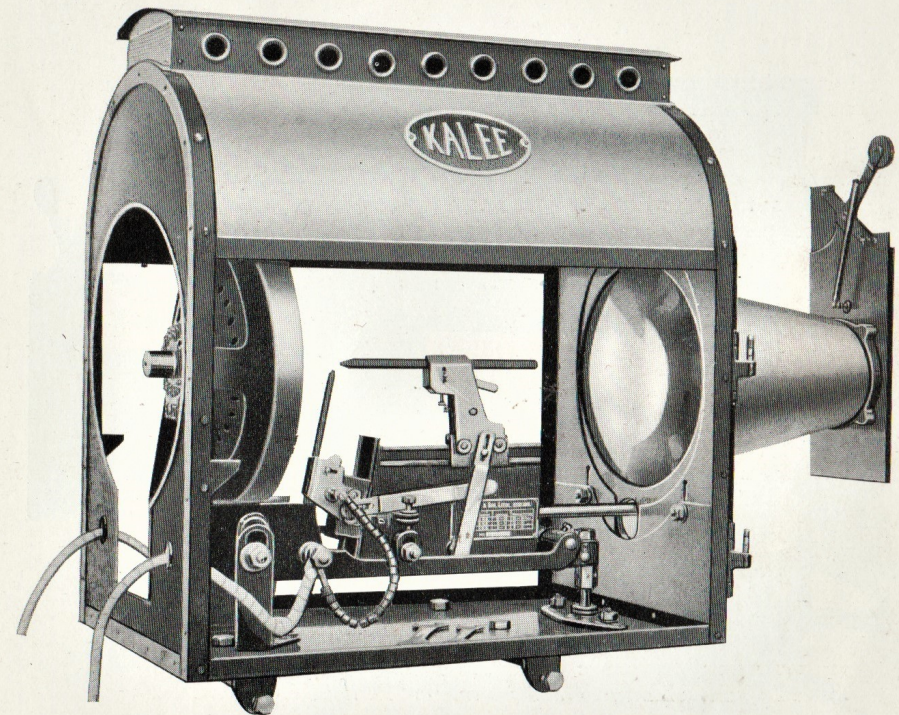
Type "8M.L." ARC LAMP SPARE PARTS.

No.	DESCRIPTION.	£	s.	d.	No.	DESCRIPTION.	£	s.	d.
1	Fine Feed Screw	0	9	0	53	Hinge Pin on Block	0	1	0
2	Coarse Feed Screw	0	9	0	54	Split Pins on Part 53	0	0	3
3	Feed Screw Spacer Ring	0	0	6	55	Hex Nut on Hinge Bolt	0	0	4
4	Feed Screw Thrust Washer (Tapped hole)	0	2	0	56	Washer on Hinge Bolt	0	0	3
5	Feed Screw Thrust Washer (Plain hole)	0	2	0	57	Body Hinge Bolt	0	2	0
6	Grub Screw for Part 4	0	0	3	58	Clamp Bolt on Body Cradle	0	1	9
7	Taper Pin for Part 5	0	0	3	59	Washer on Part 58	0	0	3
8	Securing Screw for Beaded Flex	0	0	6	60	Hex Nut on Part 58	0	0	4
9	Washer for Part 8	0	0	3	61	Body Cradle Casting	1	10	0
10	Vertical Carbon Holder (negative)	0	10	0	62	Stop Bracket	0	4	6
11	Adjusting Screw for Carbon Holders	0	1	0	63	Hex Nut on Part 64	0	0	4
12	Horizontal Carbon Holder (positive)	0	12	0	64	Adjusting Screw on Stop Bracket	0	0	6
13	Carbon Clamp Cradle	0	1	6	65	Hex Nut on Terminal Screw	0	0	4
14	Pin for Part 13	0	0	3	66	Thin Locknut on Terminal Screw	0	0	4
15	Washer for Part 13	0	0	3	67	Mica Insulation Bush on Terminal Screw	0	0	9
16	Slide Slip for Horizontal Carbon Holder	0	1	0	68	Mica Washer on Terminal Screw	0	0	4
17	Slide Slip for Vertical Carbon Holder	0	1	0	69	Washer (Metal) on Terminal Screw	0	0	3
18	Adjusting Screws for Parts 16 and 17	0	0	3	70	Terminal Screws	0	0	9
19	Slide for Horizontal Carbon Holder	0	6	0	71	Beaded Lead (long) positive	0	3	6
20	Slide for Vertical Carbon Holder	0	6	0	72	Beaded Lead (short) negative	0	3	6
21	Retaining Screws for Levers	0	0	3	73	Hex Nut on Part 74	0	0	6
22	Driving Studs on Carbon Holder Slides	0	1	0	74	Cradle Clamp Bolt	0	2	0
23	Mica Insulation for Horizontal Carbon Holder	0	0	6	75	Washer on Clamp Bolt	0	0	3
24	Mica Insulation for Horizontal Carbon Holder	0	0	6	76	Lever for Horizontal Movement, positive	0	4	6
25	Mica Insulation for Vertical Carbon Holder	0	0	6	77	Lever for Vertical Movement, negative	0	4	6
26	Mica Insulation for Vertical Carbon Holder	0	0	6	78	Screw securing Vertical Movement Head, negative	0	0	3
27	Mica Bushes on Carbon Holder Slides	0	0	6	79	Vertical (negative) Movement Head	0	2	6
28	Dished Washers on Carbon Holder Slides	0	0	6	80	Multi Tooth Clutch	0	6	0
29	Screws securing Carbon Holders to Slides	0	0	3	81	Grub Screw for Part 80	0	0	3
30	Grub Screws on Cam Handles	0	0	3	82	Driving Pin for Movement Spindle	0	0	3
31	Vertical Carbon Cam Handle	0	1	6	83	Single Tooth Clutch	0	6	0
32	Horizontal Carbon Cam Handle	0	2	0	84	Ball Click	0	0	3
33	Fine Feed Quadrant	0	6	0	85	Click Spring	0	0	3
34	Coarse Feed Quadrant	0	6	0	86	Click Grub Screw	0	0	3
35	Taper Pins for Parts 33 and 34	0	0	3	87	Horizontal Movement Head positive	0	3	0
36	Feed Screw Spindle	0	5	0	88	Screw securing Horizontal Movement Head, positive	0	0	3
37	Screw securing Body to Hinge Bolt	0	0	3	89	Rivet securing Mirror Springs	0	0	3
38	Screw for Cover Plate	0	0	3	90	Spring Pad	0	0	3
39	Cover Plate	0	2	0	91	Mirror Spring	0	0	9
40	Lamp Body Casting	2	0	0	92	Screw securing Mirror Bracket	0	0	6
41	Stop Screws for Quadrants	0	0	3	93	Mirror Bracket	1	4	0
42	Lamp House Cradle for Lamp	0	7	6	94	Mirror Retaining Plate	0	0	9
43	Washer on Part 44	0	0	3	95	Screw securing Retaining Plate	0	0	3
44	Screw Securing Cradle	0	0	6	96	Mirror Retaining Plate (Angular)	0	1	6
45	Grub Screw securing Stop Bracket in Body	0	0	3	97	Screw securing Angular Retaining Plate	0	0	3
46	Asbestos Lead for Single Lamphouse (3ft.) pair	0	12	0	98	Screw securing Mirror Guard	0	0	3
47	Asbestos Lead for Twin Lamphouse (4ft.)	0	15	0	99	Mirror Guard	0	6	0
48	Screw fixing Condenser Clip	0	0	3	100	Concave Mirror 8 in. dia.	2	5	0
49	Condenser Clip	0	0	3	101	Condenser Lens 8 in. dia.	1	15	0
50	Retaining Nut on Part 51	0	0	4					
51	Elevating Screw for Lamp	0	4	6					
52	Elevating Block for Lamp	0	3	0					

"KALEE" Type "10M.L."

High-Power Mirror Arc Lamp

(10 in. dia. Mirror and 10 in. dia. Condenser).



"KALEE" Type "10M.L." High-Power Mirror Arc Lamp, complete with Single Lamp House, Light Cone and Steel Curtain Cut-off. Complete as illustration (as supplied with No. 8T.M.L. Outfit).

PRICE £40 0s. 0d.

Code Word: "TEPOW."

"KALEE" Type "10M.L." High-Power Mirror Arc Lamp, Complete with Single Lamp House, Type "10M.L." Kerascope, Light Cone, Steel Curtain Cut-off, Vertical Steel Slide Carrier, and Slide Holder Frames.

(As supplied with No. 8T.L.K. Outfit).

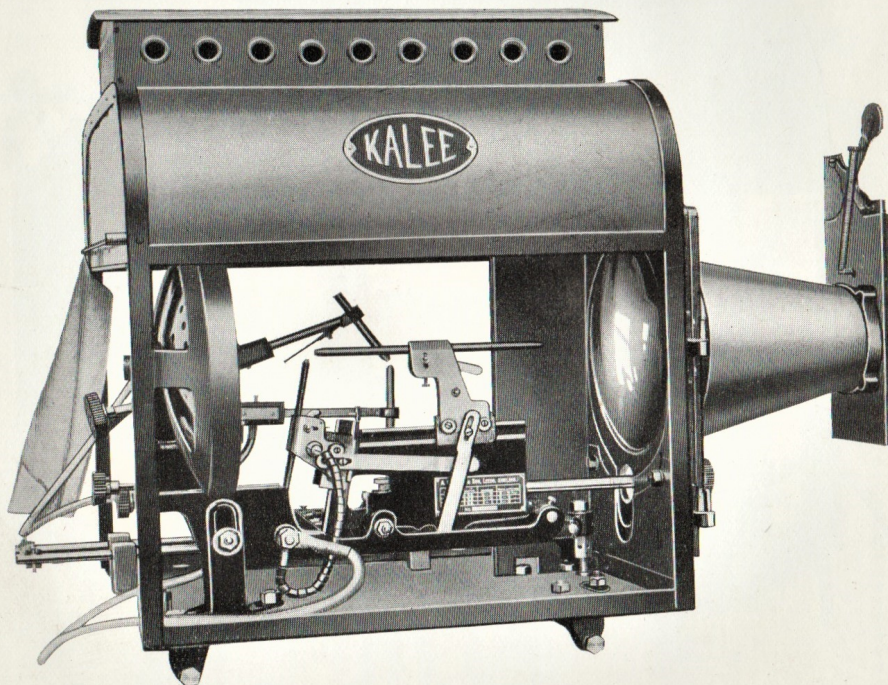
PRICE £53 0s. 0d.

Code Word: "TEKER."

"KALEE" Type "10M.L."

High-Power Mirror Arc Lamp

(10 in. dia. Mirror and 10 in. dia. Condenser).



"KALEE" Type "10M.L." High-Power Mirror Arc Lamp, Complete with Double Lamp House, Light Cone, and Steel Curtain Cut-off. Type "S.L." Scissors Arc Lamp, Mechanical Tray, Condenser Cell, Condenser Lenses, Vertical Steel Slide Carrier, Slide Holder Frames, and Steel Curtain Cut-off. Complete as illustration (as supplied with No. 8T.L.S. Outfit).

PRICE £60 0s. 0d.

Code Word: "DUTEN."

"KALEE" Type "10M.L."

High-Power Mirror Arc Lamp.

SPECIFICATION, SPARES, Etc.

The General Specification, Method of adjustment, setting up and working is similar to the "Kalee" Type "8M.L." as set out in detail on pages 90 to 93.

The advantages gained by the use of a 10 in. dia. Mirror of the same focal length as an 8 in. dia. Mirror will be obvious; the increased diameter collects light which would otherwise be lost.

Two types of mirrors are supplied as follows:—

GLASS. Best quality heat-resisting glass, heavily silvered and coated with a special hard protective backing.

METAL. Heavy Metal Mirror, with a specially prepared surface of high efficiency reflecting quality.

Metal Mirrors are recommended where the angle of projection in depression is large, and for use with heavy currents.

Each "Kalee" Metal Mirror is supplied in a Swans-down bag, with cleaning outfit, comprising a bottle of cleaning solution, cotton wool, and wiping duster, all of which should be kept perfectly clean.

The reflecting surface is highly resistant to tarnishing, etc., but to maintain its full efficiency of reflection, it is considered advisable to clean the surface carefully at least once a week, and so avoid an accumulation of finger marks and dust.

Precise cleaning instructions are sent with each mirror.

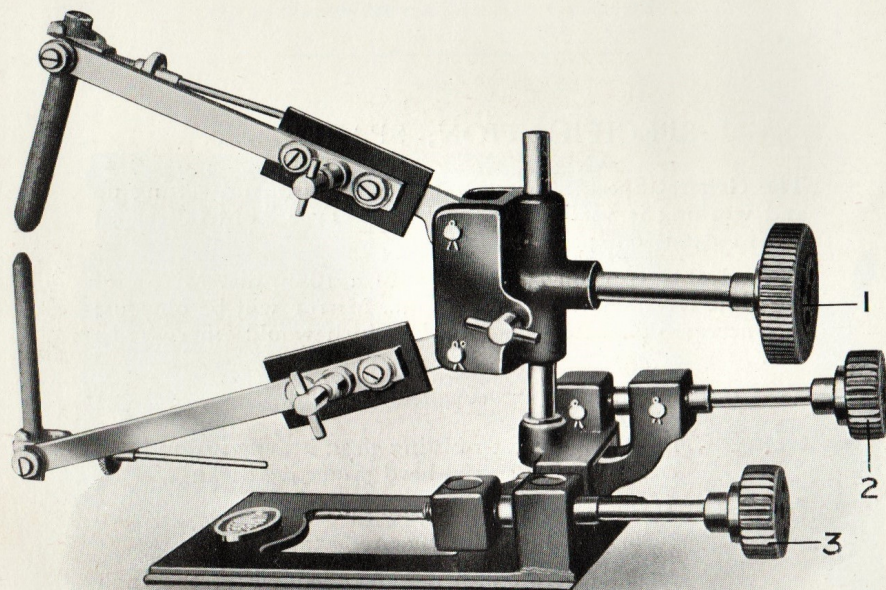
Spare 10 in. Condensers, best quality heat-absorbing glass, transparent and annealed ... each £3 10s. 0d.

Spare 10 in. Mirrors, best quality glass ... each £5 0s. 0d.

Spare 10in. Metal Mirrors, with cleaning outfit, each £5 0s. 0d.

Spare Cleaning Outfits, Bottle of Solution, Cotton Wool, and Wiping Cloth set 6/-

“KALEE” Scissors Arc Lamp. Type “S.L.”



For Stage Boxes—Spot Lights—Lanterns, etc., Scissors Arc Lamps have been proved to be of most convenient form.

The “Kalee” Type “S.L.” Lamp has been designed on engineering lines, strong, rigid, and capable of withstanding hard, continuous service.

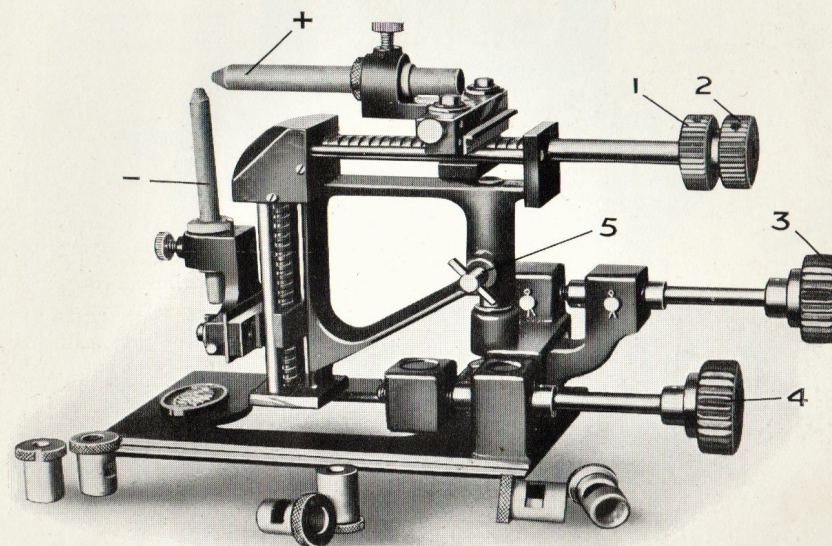
The scissors arms are positively fed by a steel worm connected to feed knob (1), Vertical centering (2), and Horizontal centering (3), is provided.

Both carbon holders will take carbons up to 14 mm. dia., and can be tilted, making the lamp suitable either for Direct or Alternating currents.

Castings finished in best black enamel, machined parts dull nickel plated. Approximate weight, 8 lbs.

Price, each, **£3 3s. 0d.** Code Word: “SLARC.”

“KALEE” Type “X.L.” Right Angle Carbon Arc Lamp.



An improved type of Right Angle Arc Lamp, embodying many novel features of construction. An ideal lamp for use with Slide Projection Lanterns, Microscopic Projection, etc.

The carbons can be fed separately or simultaneously (1 and 2), Vertical centering (3), Horizontal centering (4), and variation of $5\frac{1}{2}$ in. to $6\frac{1}{4}$ in. optical centre height of lantern can be roughly made by (5).

Carbons, 6, 8, 10 and 12 mm. diameter can be used by means of special adapters shown in illustration. Without adapters, the lamp will take 14 mm. diameter carbons.

The Lamp is suitable for either Direct or Alternating Currents. Materials are specially selected, castings are finished in black enamel, machined parts dull nickel-plated.

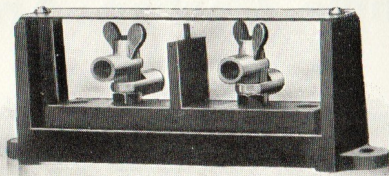
Insulation: Steatite bushes and heavy mica washers, knobs of hard vulcanised fibre. Approximate weight, 5 lbs.

Price, each, **£3 10s. 0d.** Code Word: “RIGHT.”

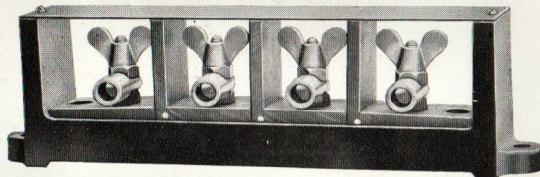
The above price includes two Carbon Holder Bushes, and unless ordered otherwise, one each 8 and 12 mm. is supplied.

Extra Bushes—6, 8, 10 or 12 mm. diameter, **3/-** each.

“KALEE” Terminal Blocks.



Single Type.



Double Type.

A very useful and handy fitting, as it dispenses with long leads from the control board to the Arc Lamp.

It fixes on to the back of the projector stand, and a pair of flexible copper leads are sweated into one pair of the thimbles, the other ends of the leads fix into the Arc Lamp terminals as usual. The remaining pair of thimbles have the control board leads sweated into them.

Single Type (for one Arc Lamp) ... Price each **£0 18s. 0d.**
Code Word: “TOCK.”

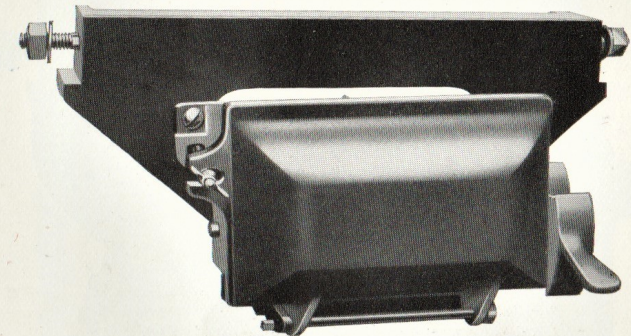
Double Type (for two Arc Lamps) ... Price each **£1 7s. 0d.**
Code Word: “DOCK.”

100 Ampere Flexible Copper Leads,
asbestos-covered, 3 ft. long ... per pair **£0 18s. 0d.**
Code Word: “TOCKEL.”

50 Ampere Flexible Copper Leads,
asbestos-covered, 3 ft. long ... per pair **£0 12s. 0d.**
Code Word: “TOCKY.”

“KALEE” Switch Terminal Blocks.

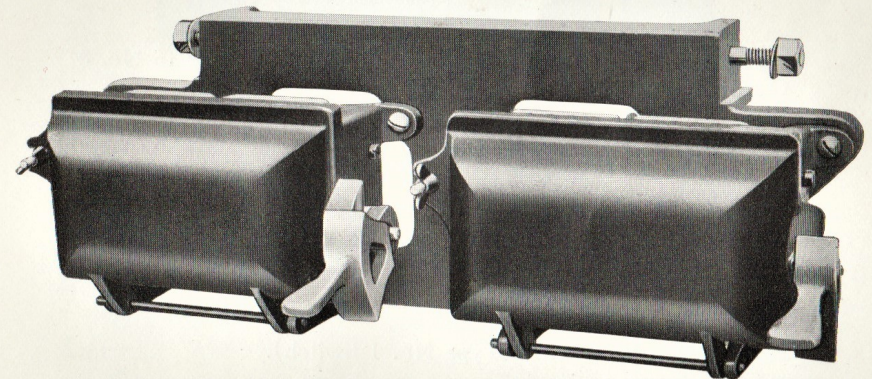
These comprise a quick break iron-clad switch, mounted on an iron casting which is bolted on to the rear end of the stand bars.



Type No. 1 (single) as illustration and as fitted to No. 8 Outfits with Mirror Arc Lamps.

Price, each, **£1 10s. 0d.**

Code Word: “SLOCK.”

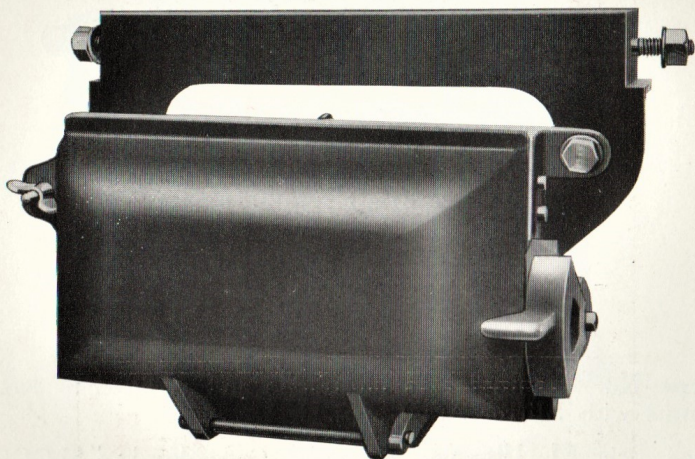


Type No. 1 (Double) as illustration and as fitted to No. 8 Outfits with Double Lamp Houses (Mirror and Scissors Arc Lamps).

Price, each, **£2 5s. 0d.**

Code Word: “DUSOL.”

“KALEE” Switch Terminal Blocks.



Type No. 2 (Single) as illustration and as fitted to No. 8 Outfits with Type “Y.L.” Arc Lamps.

Price, each, £2 4s. 0d.

Code Word : “LASOL.”

Asbestos-covered and insulated flexible copper leads, for use with “Kalee” Switch Terminal Blocks (as fitted to No. 8 Outfits), each 3 ft. long.

No. 1 Size (as fitted to Type No. 1 Switch).

Per pair £0 16s. 6d.

Code Word : “LELCK.”

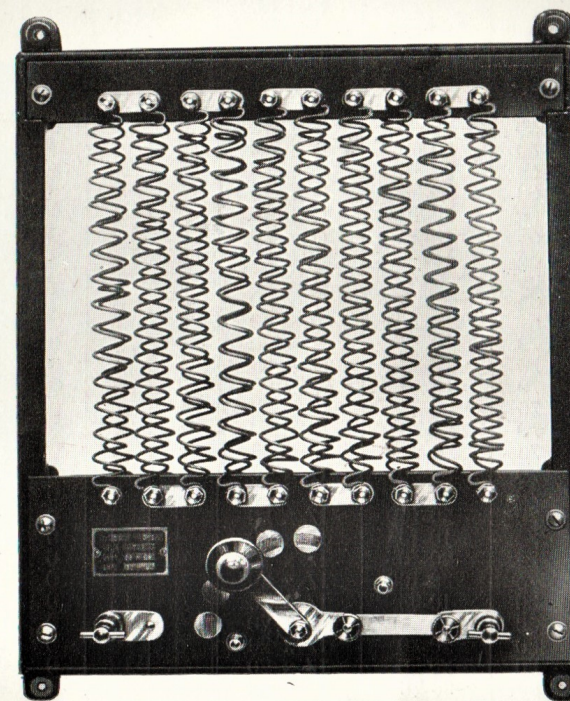
No. 2 Size (as fitted to Type No. 2 Switch),

Per pair £0 10s. 6d.

Code Word : “DEECK.”

“KALEE” Wall Type Series Resistances.

Type “C.R.”



SPECIFICATION :

Frame :

Substantially constructed frame of welded wrought-iron, black stove enamelled.

Slates :

Specially selected.

Wire :

High resistance alloy, having negligible temperature co-efficient.

Switch :

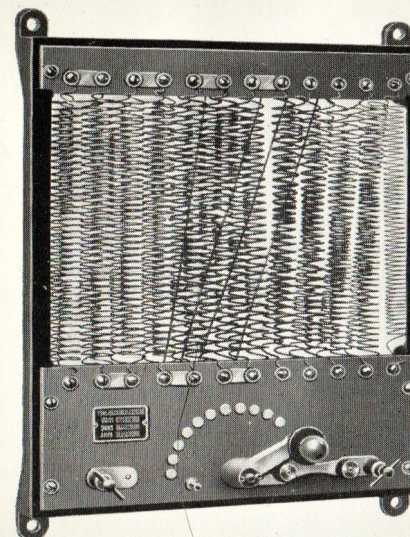
Gun-metal with brush contact of laminated phosphor bronze. Contact studs, Terminals and Fuse connections are made of hard brass.

The following are a few types which we are regularly supplying; we shall be pleased to quote for and supply Resistances for any Voltage and Amperage.

Prices of "KALEE" Type "C.R." Resistances

Type	Supply Volts	Amperes	Size of Frame (inches)	PRICE			Code
				£	s.	d.	
C.R.U.	60	20-50	17 x 20	4	15	0	Resist
C.R.A.M.	60	20-66	17 x 20	5	0	0	Resistob
C.R.N.	60	20-70	17 x 20	5	2	0	Resista
C.R.A.E.	60	20-80	17 x 20	5	4	0	Resistox
C.R.J.	60	20-100	17 x 20	5	6	0	Resistom
C.R.H.	65	10-4	17 x 20	4	17	0	Resister
C.R.B.	65	15-70	17 x 20	4	19	0	Resistat
C.R.A.V.	65	30-80	17 x 20	5	1	0	Resistacit
C.R.A.P.	65	30-90	17 x 20	5	5	0	Resistok
C.R.C.	65	15-100	17 x 20	5	7	0	Resistor
C.R.A.A.	70	10-25	17 x 20	4	12	0	Resistod
C.R.Z.	70	15-30	17 x 20	4	14	0	Resstral
C.R.P.	70	15-50	17 x 20	4	16	0	Resistent
C.R.K.	70	20-60	17 x 20	5	2	0	Restrat
C.R.B.A.	70	30-70	17 x 20	5	4	0	Resba
C.R.A.N.	70	20-80	17 x 20	5	6	0	Resan
C.R.M.	70	30-80	17 x 20	5	10	0	Resistus
C.R.I.	70	30-90	17 x 20	6	2	0	Resistap
C.R.B.J.	70	20-100	17 x 20	6	4	0	Resistog
C.R.B.Q.	75	10-15	17 x 20	4	10	0	Resja
C.R.A.H.	75	20-50	17 x 20	4	16	0	Rescul
C.R.A.G.	75	30-100	17 x 20	6	4	0	Resag
C.R.Y.	80	10-35	17 x 20	4	14	0	Resry
C.R.A.L.	80	15-50	17 x 20	4	18	0	Resal
C.R.B.F.	80	20-70	17 x 20	5	4	0	Resbut
C.R.B.I.	80	30-80	17 x 20	5	12	0	Resbi
C.R.A.U.	80	30-90	17 x 20	6	4	0	Resau
C.R.R.	100	10-25	17 x 20	4	16	0	Resistaler
C.R.E.	100	15-50	17 x 20	5	6	0	Resre
C.R.O.	100	20-60	17 x 20	6	10	0	Resro
C.R.D.	100	15-70	17 x 20	6	12	0	Resix
C.R.L.	100	30-80	17 x 20	6	14	0	Resarl
C.R.A.D.	100	20-100	17 x 20	6	16	0	Resard
C.R.A.J.	110	10-25	17 x 20	4	18	0	Resarge
C.R.V.	110	15-50	17 x 20	5	12	0	Resox
C.R.A.T.	110	25-70	17 x 20	6	12	0	Resrat
C.R.X.	110	30-80	17 x 20	6	16	0	Resosit
C.R.B.E.	110	10-90	17 x 20	6	18	0	Resarx
C.R.S.	110	30-100	17 x 20	7	0	0	Resent
C.R.A.	120	10-25	17 x 20	5	2	0	Result
C.R.B.U.	120	30-90	17 x 20	7	2	0	Resurb
C.R.A.K.	200	10-25	20 x 24	6	2	0	Resrak
C.R.B.N.	200	20-70	24 x 26	12	0	0	Resbarn
C.R.A.W.	220	30-80	24 x 26	12	12	0	Resess
C.R.A.I.	230	15-30	20 x 24	7	0	0	Resraw
C.R.B.B.	230	20-60	20 x 24	9	0	0	Resair
C.R.F.	250	10-25	20 x 24	7	7	0	Reston
C.R.G.	250	25-50	20 x 24	8	8	0	Restive

"KALEE" Wall Type Series Resistances. Type "M.R."



SPECIFICATION :

Designed for use with Mirror Arc Lamps, but equally suitable for small Arc Lamps used with slide lanterns, spot lights, etc.

Frame—Substantially constructed of welded wrought-iron, black stove enamelled.

Slates—Specially selected.

Wire—High resistance alloy having negligible temperature co-efficient.

Switch, etc.—Gun-metal, with brush contact of laminated phosphor bronze, 11 contact studs connections, etc., of hard brass.

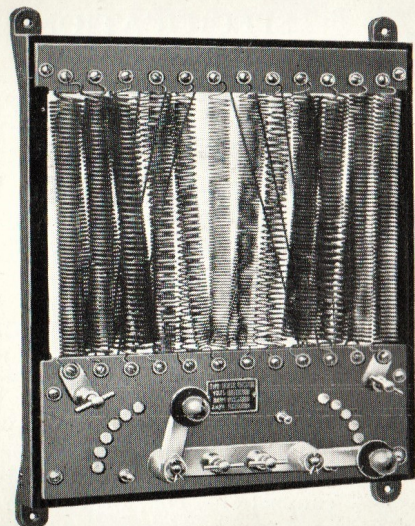
Prices of "M.R." Type Resistances.

Type	Supply Volts.	Amperes	Size of Frame (Inches)	PRICE			Code
				£	s.	d.	
MRA	60	5—30	17 x 20	4	10	0	Merap
MRB	70	do.	do.	4	12	0	Merab
MRC	80	do.	do.	4	14	0	Mercy
MRD	110	do.	do.	5	8	0	Merdy
MRE	200	do.	20 x 24	8	0	0	Merek
MRF	220	do.	do.	8	10	0	Merfy
MRG	230	do.	do.	8	15	0	Mergy
MRH	60	5—40	17 x 20	5	0	0	Merha
MRI	70	do.	do.	5	6	0	Merin
MRK	80	do.	do.	5	12	0	Merky
MRL	110	do.	do.	6	15	0	Merly
MRM	200	do.	20 x 24	10	10	0	Meram
MRN	220	do.	do.	11	10	0	Merny
MRO	230	do.	do.	11	15	0	Meroy

The above are standard types. Resistances can be supplied for any Voltage and Amperage.

“KALEE” Duplex Wall Type Series Resistances.

Type “D.M.R.”



SPECIFICATION.

Similar Resistances to Type “M.R.,” substantially built of the same kind of materials, fittings, etc., but arranged for controlling Two Arc Lamps.

The 5–30 Ampere types have 6 contact studs to each switch.

The 5–40 Ampere types have 8 contact studs to each switch.

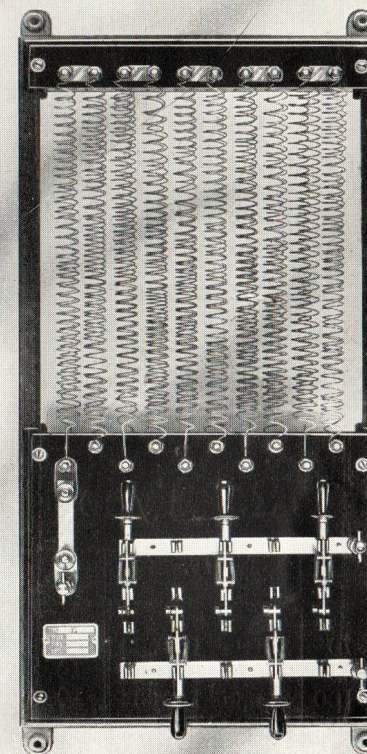
Prices of “D.M.R.” Type Resistances.

Type	Supply Volts	Amperes	Size of Frame (Inches)	PRICE £ s. d.	Code
DMRA	60	5–30	17 × 20	6 10 0	Daram
DMRB	70	do.	do.	6 17 0	Darab
DMRC	80	do.	do.	7 5 0	Darad
DMRD	110	do.	do.	8 5 0	Darac
DMRE	200	do.	2–20 × 24	12 10 0	Darak
DMRF	220	do.	do.	13 10 0	Darap
DMRG	230	do.	do.	14 0 0	Darag
DMRH	60	5–40	17 × 20	7 5 0	Darar
DMRI	70	do.	do.	7 12 0	Darat
DMRK	80	do.	do.	8 0 0	Daraw
DMRL	110	do.	20 × 24	9 5 0	Daray
DMRM	200	do.	2–20 × 24	14 10 0	Darax
DMRN	220	do.	do.	15 10 0	Daraz
DMRO	230	do.	do.	16 10 0	Daral

The above are standard types. Resistances can be supplied for any Voltage and Amperage.

“KALEE” Wall Type Tandem Parallel Resistances.

Type “T.R.”



This type of Resistance offers many advantages. One Resistance only is required for controlling two Arc Lamps. Overloading the Motor Generator is an impossibility, only the maximum current for which the Resistance is designed can flow. When the amperage on one of the Arcs is increased, the amperages on the other Arc is decreased by a like amount.

SPECIFICATION :

Frame :

Cast-iron, of substantial construction, black stove enamelled.

Slates :

Specially selected, black enamelled.

Wire :

High resistance alloy, having negligible temperature co-efficient, and wound in five sections.

Switches :

Five, quick, long break knife pattern switches are provided, made with hard drawn copper blades and phosphor bronze contact clips. Each switch controls a section of the resistance windings and each section allows the minimum current to flow, so that the current to Arc Lamps varies with the number of switches in circuit.

Terminals :

Connector Clip Bars and Fuse Connections are made of hard brass.

Prices of "T.R." Type Resistances.

Type	Supply Volts	Amperes	Size of Frame (Inches)	£	PRICE s.	d.	Code
TRD	70	14-70	Single 15 × 34	10	0	0	Tand
TRE	70	16-80	Single 15 × 34	10	2	6	Tandre
TRA	70	20-100	Single 15 × 34	10	5	0	Tanra
TRF	80	14-70	Single 15 × 34	10	10	0	Tanraf
TRG	80	16-80	Single 15 × 34	10	12	6	Tanrag
TRB	80	20-100	Single 15 × 34	10	15	0	Tanrab
TRH	100	14-70	Double 15 × 34	15	10	0	Tanher
TRI	100	16-80	Double 15 × 34	15	12	6	Tanir
TRJ	100	20-100	Double 15 × 34	15	15	0	Tanraj
TRK	110	14-70	Double 15 × 34	16	0	0	Tanrak
TRL	110	16-80	Double 15 × 34	16	2	6	Tanrel
TRC	110	20-100	Double 15 × 34	16	5	0	Tanrac

The above types are a few which we are regularly supplying; we shall be pleased to quote for other sizes.

"KALEE" Wall Type Parallel Resistances. TYPE "P.R."



Similar in construction to the "T.R." type, except that it is designed to be used with separate control panels. Single control panel for one arc lamp, tandem control panel for two arc lamps. This system allows of the control panel only being fixed in the projecting room, the Resistance being fixed in any convenient place in the theatre, thereby reducing the risk of fire, and also adding to the comfort of the operator by not overheating the projection room.

SPECIFICATION :

Frame :

Cast-iron, black stove enamelled.

Slates :

Specially selected.

Wire :

High resistance alloy, having negligible temperature co-efficient and wound in five sections.

Terminals :

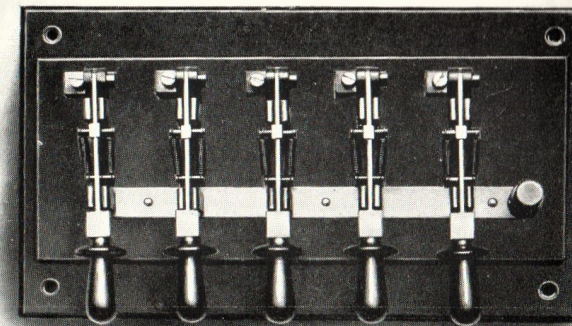
Hard brass.

Prices of "P.R." Type Resistances.

Type	Supply Volts	Amperes	Size of Frame (Inches)	£	PRICE s.	d.	Code
PRD	70	14-70	Single 15 × 34	6	0	0	Para
PRE	70	16-80	Single 15 × 34	6	2	6	Parace
PRA	70	20-100	Single 15 × 34	6	5	0	Parable
PRF	80	14-70	Single 15 × 34	6	10	0	Parart
PRG	80	16-80	Single 15 × 34	6	12	6	Paragon
PRB	80	20-100	Single 15 × 34	6	15	0	Part
PRH	100	14-70	Double 15 × 34	11	10	0	Park
PRI	100	16-80	Double 15 × 34	11	12	6	Party
PRJ	100	20-100	Double 15 × 34	11	15	0	Parlon
PRK	110	14-70	Double 15 × 34	12	0	0	Parop
PRL	110	16-80	Double 15 × 34	12	2	6	Parwin
PRC	110	20-100	Double 15 × 34	12	5	0	Parcel

We are regularly supplying the above sizes ; we shall, however, be pleased to quote for other sizes.

"KALEE" Single Control Panel.

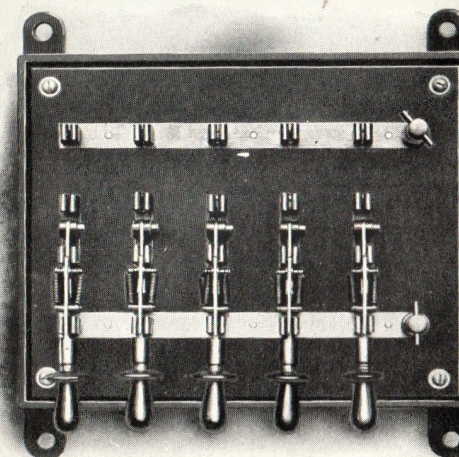


Price each £4 10s. 0d.

Code Word: "SING."

For use with "P.R." Type Resistances where only one arc lamp is required to be controlled. When coding Resistance and Control Panel, prefix the code word of Resistance required before the code word "Sing."

"KALEE" Tandem Control Panel.



Price each
£5 10s. 0d.

Code Word:
"TAN."

For use with "P.R." Type Resistances where two arc lamps are required to be controlled. When coding Resistance and Control Panel, prefix the Code word of Resistance required before the code word "TAN."

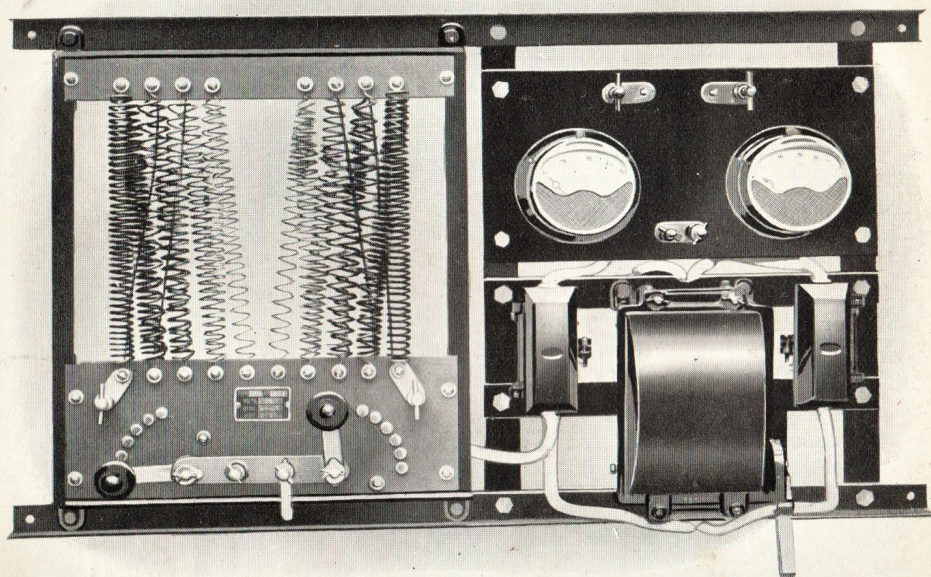
SPECIFICATION :

Frame :—Cast-iron, black stove enamelled.

Slate :—Specially selected, black enamelled.

Switches :—Five quick long break knife pattern switches, made with hard drawn copper blades and phosphor bronze contact clips. Terminals and Contact Clip Bars made of hard brass.

"KALEE" 30 Ampere Combined Switchboard and Resistance.



This Switchboard has been designed to meet the demand for a simple, inexpensive, substantially-built, combined Switchboard and Resistance for controlling Two Mirror Type Arc Lamps, or other types of Arc Lamps when the maximum current does not exceed 30 Amperes.

SPECIFICATION:

Voltmeter:—Reading to 120 Volts.

Ammeter:—Reading up to 80 Amperes.

Switch:—Heavy double pole, quick-break, iron clad.

Fuses:—Two single pole, iron clad.

Resistance:—Type D.M.R.B., 70 Volts, 5 to 30 Amperes, for controlling Two Arc Lamps.

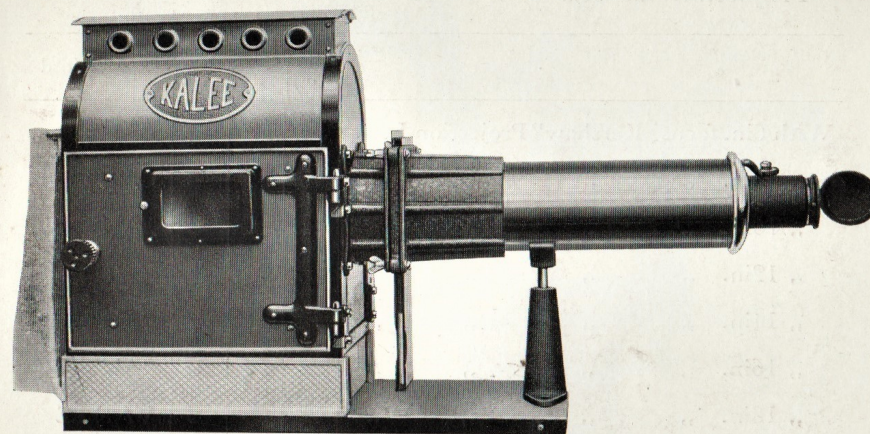
The Voltmeter and Ammeter are mounted on an enamelled slate base, forming a separate unit. The units are mounted on a substantial wrought-iron frame, 3 ft. 3 in. by 2 ft., wired up with insulated and asbestos-covered cable. Type D.M.B. Switchboard, as above specification.

Price £24 0s. 0d.

Code Word: "DABEM."

This Switchboard can be fitted with any of the type D.M.R. Resistances for Two Arc Lamps or Type M.R. Resistances for one Arc Lamp. The price varies according to the list prices of these Resistances which can be arrived at by using the price of the D.M.R.B. Resistance as a basis price.

"KALEE" No. 2 SLIDE LANTERN.



The "KALEE" No. 2 Slide Lantern is built on entirely new lines, substantial construction to withstand hard, continuous service.

Lamp House and Base, is formed by a wrought-iron frame work with blue planished steel panels.

Front, and Condenser housing, constructed of aluminium castings, crystalline black finish.

Condenser, pair of $4\frac{1}{2}$ in. dia. Meniscus and Bi-convex Condenser Lenses.

Slide Carrier, Vertical Type, made of Steel, with separate slide carrier frames.

Lens Jacket, lever focussing with clamping nut.

Projection Lens, "Kershaw" Lantern Lens, Series "T."

“KALEE” No. 2 SLIDE LANTERN.

Complete as specified, with condenser, slide carrier, curtain, and the following “Kershaw” Series “T” Projection Lenses.

	PRICE			Code Word
	£	s.	d.	
With 6in. focus “Kershaw” Projection Lens	10	10	0	BANTE
„ 8in. „ „ „ „	10	15	0	CANTE
„ 10in. „ „ „ „	11	0	0	FANTE
„ 12in. „ „ „ „	12	0	0	KANTE
„ 14in. „ „ „ „	12	5	0	PANTE
„ 16in. „ „ „ „	12	10	0	SANTE
„ 18in. „ „ „ „	12	15	0	VANTE
„ 20in. „ „ „ „	13	0	0	TANTE
„ 22in. „ „ „ „	13	5	0	MANTE
„ 24in. „ „ „ „	13	10	0	NANTE
„ 26in. „ „ „ „	13	15	0	WANTE
„ 28in. „ „ „ „	14	0	0	HANTE
„ 30in. „ „ „ „	14	5	0	LANTE

Please state focus of lens when ordering.

Longer focal lengths can be supplied at extra cost.

Lanterns with lenses up to 10 in. focus are not provided with the extra support shown on illustration, this support is provided with all Lanterns having lenses 12 in. and longer focus.

Above prices do not include illuminants; suitable Arc Lamps (Types “S.L.” and “X.L.”) and Resistances can be supplied.



“KALEE” Model No. 8 STEREOPTICON LANTERN.

The "KALEE" Model No. 8 Stereopticon Lantern.

A perfect Lantern for projecting Lantern Slides, and specially suitable for advertising purposes.

It has been designed to conform in general appearance with the Model No. 8 Projector.

It is thoroughly well-made, of ample proportions, robust, vibrationless, all metal construction, and will last a lifetime.

The universal movements of the pedestal stand along with the swivelling slide carrier front, provide for centering and squaring the projected picture in absolute coincidence with the masked screen.

Further, the cut-off is located between the condenser and the slide carrier; slides are therefore not exposed to the light rays until they are actually in projection.

SPECIFICATION.

Lamp House—Made of blue planished steel on a substantial wrought-iron frame work. Two large doors with large inspection windows. Mechanical tray for moving the Arc Lamp to or from the condenser. Ample ventilation is provided.

Condenser—Pair of $4\frac{1}{2}$ in. diameter Condenser Lenses, each carried in a separate cast-iron screw cap cell, fitted into "U" shaped holders, mechanical means provided for separation adjustment.

Slide Carrier—Vertical type, made of steel, with separate slide carrier frames.

Curtain Cut-off—Made of steel, attached to the slide carrier.

Lens Jacket—Rackwork type, made of brass, cut steel pinion and brass rack, fitted with flasher and tinter slot. The jacket is screwed into a brass extension tube which is carried by a rigid cast-iron support.

Projection Lens—"Kershaw" Lantern Lens, Series "T."

Stand—Heavy cast-iron pedestal type with universal movements.

Arc Lamp—Type "C.L.," for currents up to 50 amperes,

Leads—Pair of 50 ampere Asbestos-covered Flexible Copper Leads.

Switch—No. 1 Double Pole Switch and Adapter.

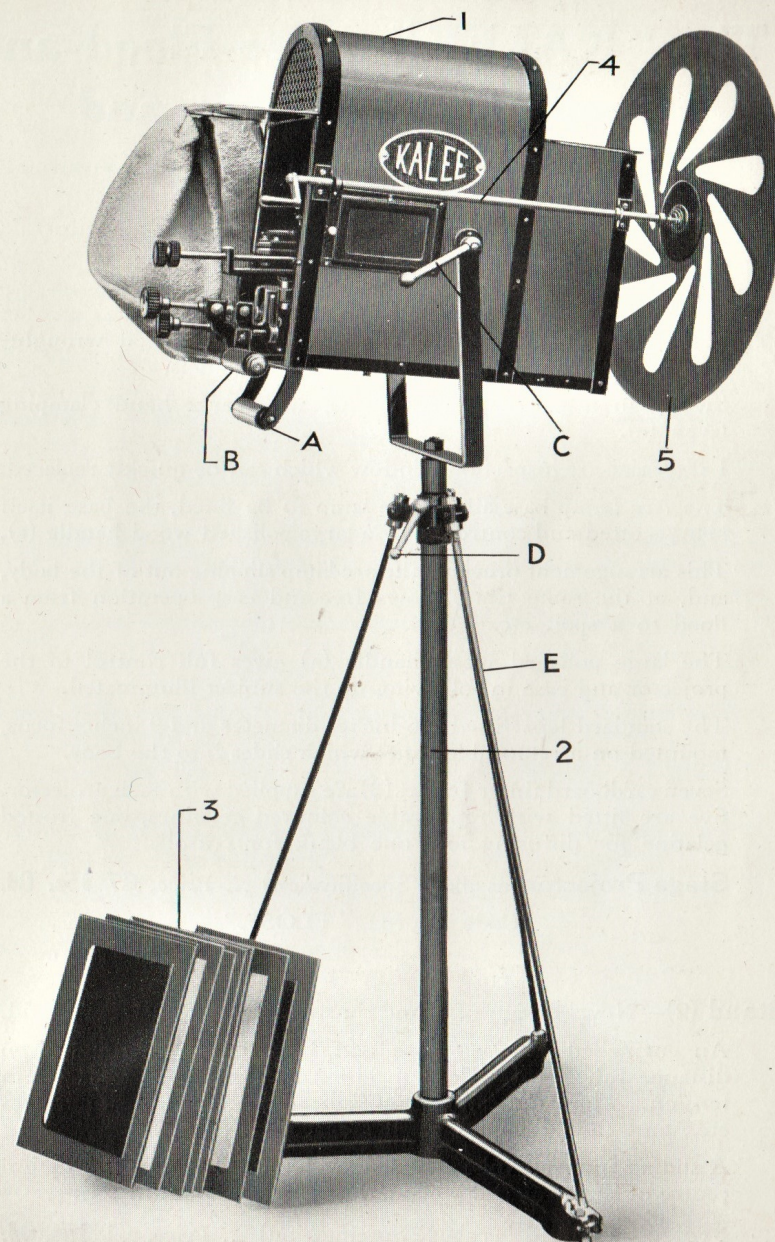
"KALEE" Model No. 8 STEREOPTICON LANTERN, complete as above specification and as illustration, with Kershaw Series "T" Lantern Lens, 8 in. to 18 in. focus.

Price £40 0s. 0d.

Code Word: "STECO."

For every one inch longer focus above 18 in., add extra cost of 3/-.
When coding, follow Code Word with Lens Code Word (see Lens list).

The "KALEE" Stage Flood and Spotlight Projector with Accessories.



Specification and Prices of The "KALEE" Stage Flood and Spotlight Projector and Accessories.

Projector (1)—The Body is a substantially constructed wrought-iron frame work with blue planished steel panels.

Swung in a wrought iron cradle, with large hand clamping lever (c).

Larger size arc inspection window which can be quickly replaced.

The Arc Lamp base allows the lamp to be fixed, the base itself being slotted and controlled by a large polished wood handle (B).

This arrangement prevents the arc lamp slipping out of the body, and, at the same time, allows free and easy operation from a flood to a spot, etc.

The large polished wood handle (A) gives full control to the projector and ease in following up the subject illuminated.

The standard lens fitted is 6 inches diameter and 9 inches focus, mounted on a removable panel which slides into the body.

Seven cardboard tinter frames (3) are supplied with each projector, five are fitted with replaceable coloured gelatines, one frosted gelatine for diffusing and one blank for cut-off.

Stage Projector (as above Specification) ... Price, £7 15s. 0d.

Code Word: "FLOSP."

Stand (2)—Novel design of sound construction and extremely rigid.

An enamelled cast-iron base and head with a wrought-iron distance tube held rigidly together by three steel rods (E) in tension. The stand can be readily dismantled for transit purposes etc., and then occupies small space.

A sliding internal tube clamped by lever (b) allows the optical centre of the Projector to be adjustable from 4 ft. to 5 ft.

Projector Stand (as above Specification) ... Price, £1 15s. 0d.

Code Word: "STALO."

Projector Clamp—When it is required to swing the projector from a beam, etc., an enamelled iron clamp is supplied. The Projector cradle can be either above or below the body. Two nuts are supplied for cradle spindle.

Price, 15/-.

Code Word: "CLAST."

Revolving Spindle (4)—Made of steel with substantial handle, for revolving Flicker or Rainbow Wheels.

Price, 12/-.

Code Word: "RESPI."

Flicker Wheel (5)—Made of blue planished steel, turned over, and Wired edge with centre boss.

Price, £1 5s. 0d.

Code Word: "FLEEL."

Rainbow Wheel—Similar in construction to the Flicker Wheel but fitted with coloured gelatines.

Price, £1 10s. 0d.

Code Word: "RANEL."

Iris Diaphragm—Mounted on a steel plate which slides into the front of the Projector body. It allows of a clear aperture of 6 inches which can be gradually reduced to an entire cut-off. Substantially constructed of gun-metal and phosphor bronze.

Price, £3 10s. 0d.

Code Word: "IRAGM."

Type X.L. Arc Lamp—A right angle type of Arc Lamp, for full specification see page 99.

Price, £3 10s. 0d.

Code Word: "RIGHT."

Type S.L. Arc Lamp—A scissors type of Arc Lamp, see page 98 for full specification.

Price, £3 3s. 0d.

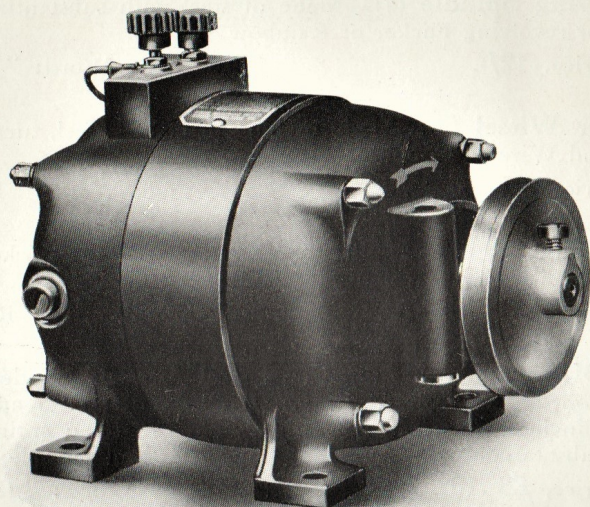
Code Word: "SLARC."

Resistances—All types supplied.

Projector Lenses—Spare lenses can be supplied of various foci. They are made of best quality glass, optically ground.

Diameter.	Focus.	Price each	Code Word.
		£ s. d.	
6 ins. ...	6 ins. ...	1 15 0	"SLINS."
6 ins. ...	7 ins. ...	1 10 0	"SEVIS."
6 ins. ...	8 ins. ...	1 5 0	"EIGNS."
6 ins. ...	9 ins. ...	1 0 0	"NILEN."
6 ins. ...	10 ins. ...	0 17 6	"TENEN."
6 ins. ...	12 ins. ...	0 15 0	"TWENS."

"KALEE" **Cinematograph Driving Motors** For D.C. and A.C. Circuits.



"Kalee" Motors are British Made, specially designed and built for driving Cinematograph Projectors.

Selected materials are used in their construction, neat and attractive in appearance, reliable in operation, they will operate continuously at full load with a low temperature rise.

Specification :

Armature—The coils are wound directly into the slots of the laminated armature core, and are treated with a special moisture-proof varnish. The core slots are set spiral to give silence when running at high speed. The commutator is constructed from best selected bar copper and mica.

Ventilation—Amplly provided for by means of small fan fixed on the pulley end of the armature shaft.

Bearings—Made from phosphor bronze.

Lubrication—Provided for by large waste packed oil reservoirs cast on the end shields. They are drip proof, the motors can be used either way up without the necessity of altering the position of the end shields.

Field Coils—These are former wound and treated with moisture-proof varnish. The field magnets are laminated, firmly riveted together, and form the main frame of the motor.

Brushes—Made of carbon, held in box type brush holders.

SPECIFICATION—cont.

Pulley—A standard $3\frac{1}{2}$ in. diameter pulley is provided unless otherwise stated. The diameter of the pulley shaft is $\frac{1}{2}$ in., on which is milled a flat to allow of single screw fixing. The direction of rotation is clockwise, viewed at pulley end.

Terminal Block—A substantial terminal block is fixed on the end shield to facilitate connecting up.

PRICES OF "KALEE" MOTORS.

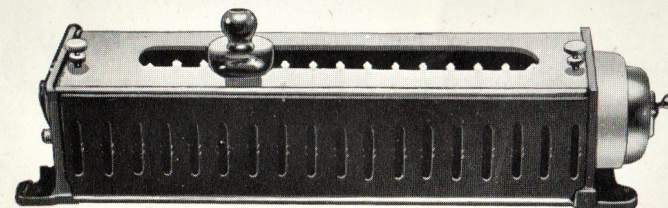
H.P.	Voltage	D.C. or A.C.	Frame No.	Price (each) £ s. d.	Code Word
$\frac{1}{8}$	60/70	D.C.	1236	6 0 0	Kabea
$\frac{1}{8}$	80	D.C.	1236	6 0 0	Kabib
$\frac{1}{8}$	100/110	D.C.	1236	6 0 0	Kabac
$\frac{1}{8}$	200/240	D.C.	1236	6 10 0	Kabod
$\frac{1}{8}$	200/230	A.C. 50 cycles	1246	8 0 0	Kabuh
$\frac{1}{4}$	60/70	D.C.	1246	8 0 0	Kabem
$\frac{1}{4}$	80	D.C.	1246	8 0 0	Kabin
$\frac{1}{4}$	100/110	D.C.	1246	8 0 0	Kabap
$\frac{1}{4}$	200/230	D.C.	1246	8 0 0	Kabor
$\frac{1}{4}$	240/250	D.C.	1246	8 0 0	Kabuz

The above prices include a standard pulley, $3\frac{1}{2}$ in. diameter.

PULLEYS.

Diameter		Bore		Price (each)	
inches.	m/ms.	inches	m/ms.	£	s. d.
$2\frac{3}{4}$	70	$\frac{1}{2}$	12.7	3	6
3	76	$\frac{3}{8}$	12.7	3	6
$3\frac{1}{4}$	83	$\frac{1}{2}$	12.7	3	6
$3\frac{1}{2}$	89	$\frac{3}{8}$	12.7	3	6
4	102	$\frac{1}{2}$	12.7	4	6
5	127	$\frac{3}{8}$	12.7	5	6

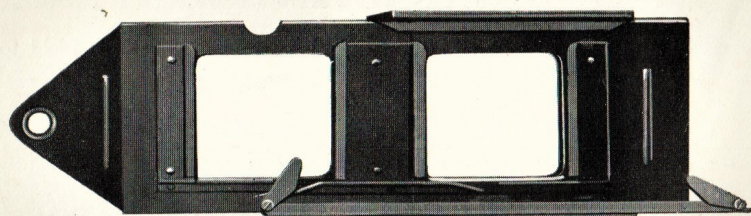
"KALEE" MOTOR SPEED REGULATORS.



This type of Sliding Regulator is most suitable for adjusting the speed of "Kalee" Motors, fine adjustment and wide range of speed is obtained. Supplied for D.C. or A.C., and fitted with tumbler switch.

H.P.	Voltage	D.C. or A.C.	Price (each) £ s. d.	Code Word
$\frac{1}{8}$	60/80	D.C.	1 16 0	Regad
$\frac{1}{8}$	100/110	D.C.	1 16 0	Regip
$\frac{1}{8}$	200/250	D.C.	1 16 0	Regok
$\frac{1}{8}$	200/230	A.C.	1 16 0	Regul
$\frac{1}{4}$	60/80	D.C.	2 2 0	Regry
$\frac{1}{4}$	100/110	D.C.	2 2 0	Regmo
$\frac{1}{4}$	200/250	D.C.	2 2 0	Regli

"KALEE" Steel Slide Carriers.



Substantially constructed of Steel Plate, black stove enamel finish; suitable for Cinematograph or Optical Lanterns,

Horizontal Type, as illustration. Price, each, £1 5s. 0d.

Code Word: "TELID."

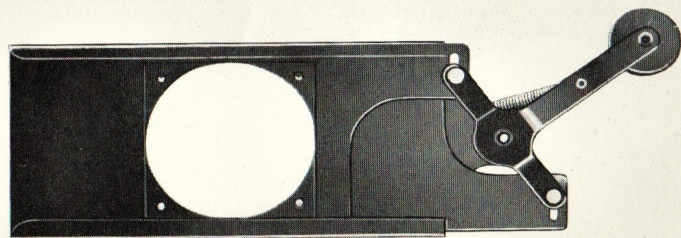
Vertical Type, with 3 slide holders, as supplied with "Kalee" No. 8 Outfits. Price, each, £1 5s. 0d.

Code Word: "VESID."

Spare Slide Holders ... Price, each, £0 2s. 3d.

Code Word: "SPAID."

"KALEE" Steel Curtain Light Cut-off.



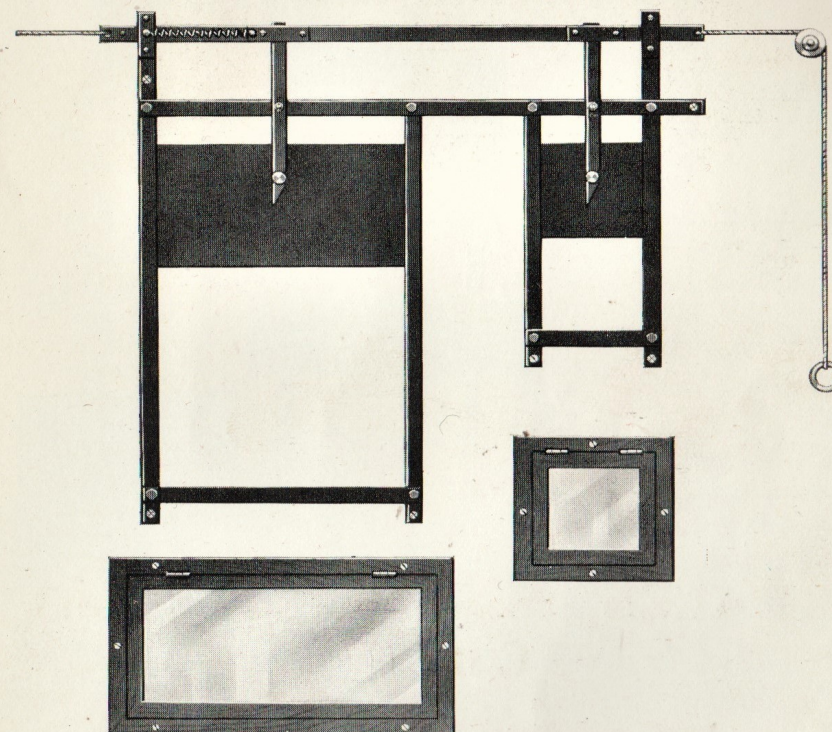
Made entirely of Steel, black stove enamel finish. Opens and closes with a quick action. As illustrated and as fitted to "Kalee" No. 8 Outfits (except outfits supplied with Type 10M.L. Arc Lamps).

Price, each, £2 0s. 0d. Code Word: "STOFF."

Larger Size, as fitted to Type 10M.L. Arc Lamps.

Price, each, £2 10s. 0d. Code Word: "TENOF."

"KALEE" Fire Shutters for Projection Rooms.



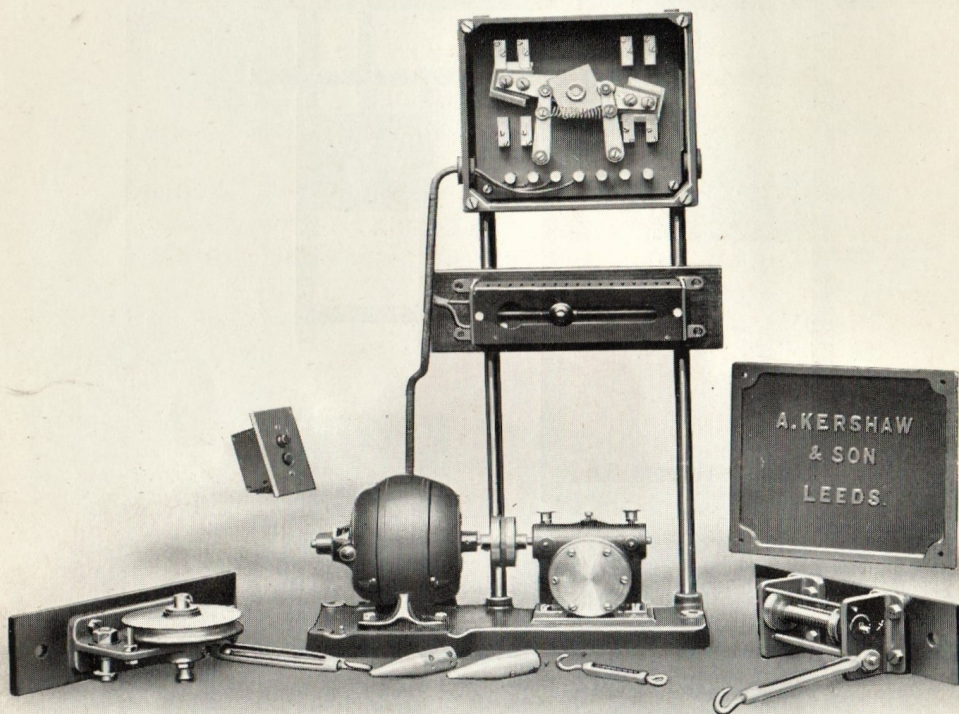
"Kalee" Fire Shutters are substantially constructed of mild steel bars with steel plate shutters, finished in black stove enamel. The larger aperture allows of sufficient width for both Cine and Title projection, and the smaller aperture is for observation. Both shutters are held up by hooks controlled by the top spring sliding bar. One, two or more sets can be joined together so that all will release simultaneously.

The aperture windows are of substantial plate-glass, mounted in hinged, polished oak frames.

"Kalee" Fire Shutter, complete with large aperture window (18 in. × 8 in.) and small observation window (6 in. × 6 in.), pulley cord and ring. Price, per set ... £6 0s. 0d.

Code Word: "FITER."

The "KALEE" Electric Curtain Control.



Complete Electric Control unit as illustrated, including pulley brackets, $\frac{3}{8}$ in. and $\frac{1}{8}$ in. steel cable with strainers, and two-way operating switch.

PRICE £30 0s. 0d.

Code Word: "CUROL."

(When ordering, please state voltage).

Estimates given for installing, also for supplying suitable curtains.

SPECIFICATION.

• •

The "KALEE" ELECTRIC CURTAIN CONTROL is robust in design, and substantially constructed of selected materials to withstand hard, continuous service.

It is controlled by means of a two-way switch fixed in the operating room. The curtain can be opened as the picture commences, and closed as the picture finishes.

It entirely obviates the objectionable showing of the open White screen.

Motor (A). The Motor is $\frac{1}{8}$ h.p., series wound.

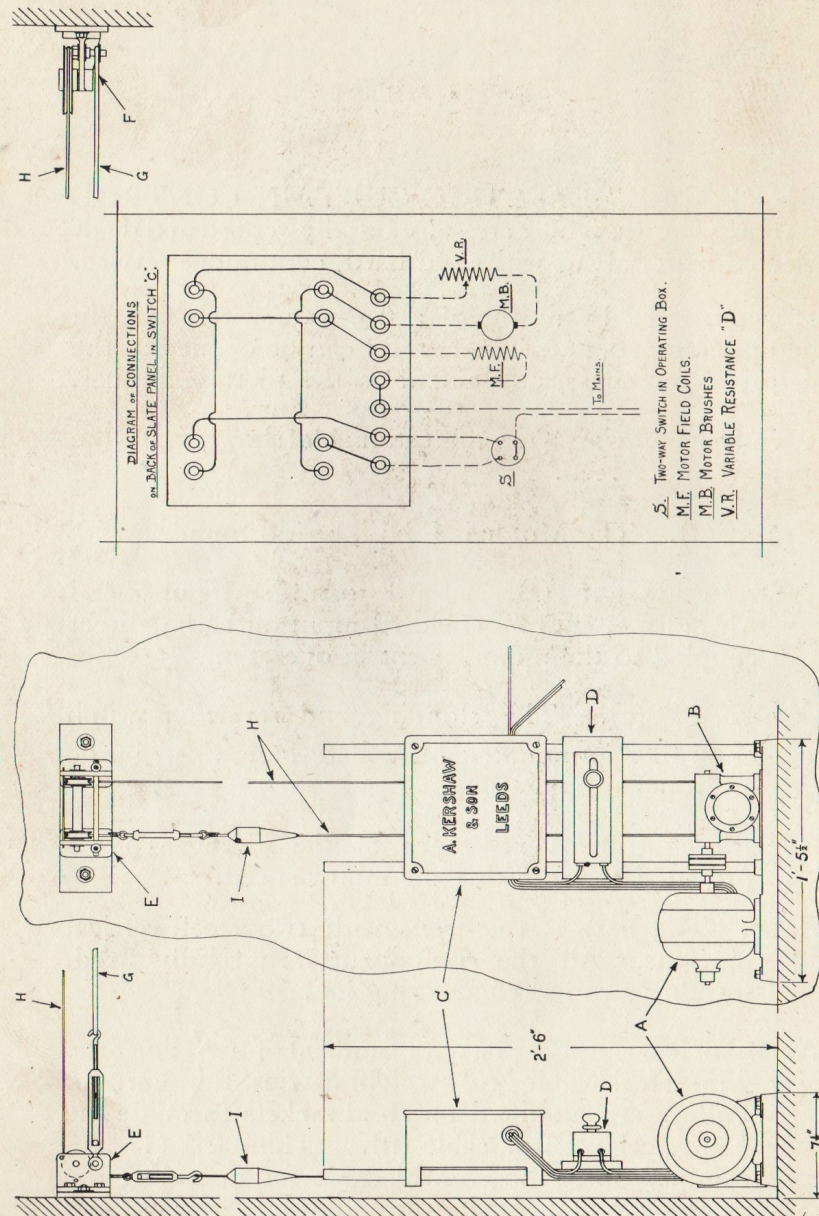
Reduction Gear (B). Steel worm and gun-metal wheel type, entirely enclosed in an oil bath; direct coupled to the motor, silent in operation.

Controller (c). The stopping and reversing switch controller is mounted on a slate base, fixed inside an ironclad box.

Resistance (D). A resistance of the sliding type is provided for adjusting the motor speed.

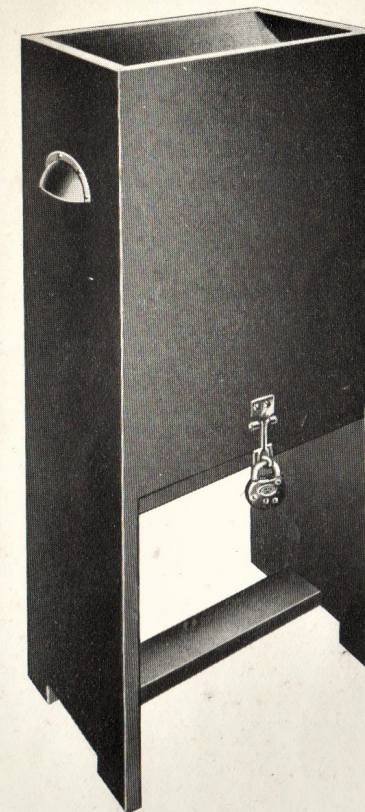
Base. The base is cast-iron, with two steel vertical uprights. All the components are rigidly fixed, forming a sound engineering job.

Accessories. Brackets (E and F) for fixing the $\frac{3}{8}$ in. steel cable (G) which carries the curtain. Pulleys are mounted on the brackets to guide the $\frac{1}{8}$ in. steel control cable (H). Thimbles (I) are clamped on to the control cable for operating the stopping and reversing switch (c). Strainers are provided for tensioning both cables.



Line drawing showing the general fixing arrangement of the "Kalee" Curtain Control; and diagram of the electrical connections.

"KALEE" CHECK BOXES.



"Kalee" Check Boxes are substantially constructed, made from selected wood, stained to mahogany colour, complete with fittings. Outside sizes, 28" x 12" x 8".

PRICE **£1 7s. 0d.** each.

Code Word: "CHECK."

"Kalee" Check Boxes as above, but made in solid mahogany.

PRICE **£1 17s. 6d.** each.

Code Word: "CHEMA."

Everything supplied for the Cinema.

Send us your enquiries for—

CARBONS, all makes.

CONDENSER LENSES.

PROJECTION LENSES, all makes.

SCREENS.

STAGE LIME OUTFITS.

PROGRAMME BOARDS.

EXIT BOXES.

BARRIER ROPES.

KING SLIDES, unbreakable.

KING SLIDES, glass.

OPAQUE SLIDES and PAINT.

FILM CEMENT.

FILM STORAGE CABINETS.

FIRE EXTINGUISHERS.

TICKET MACHINES.

MOTOR GENERATORS.

AUTOMATIC ELECTRIC SCREEN CURTAINS.

DIMMERS.

SLIDE PROJECTOR for use with Mirror Arc Lamps.

SEATING, Etc., Etc.

A. M. PRES
MOBBLEY,
CHESHIRE