

ASHCRAFT

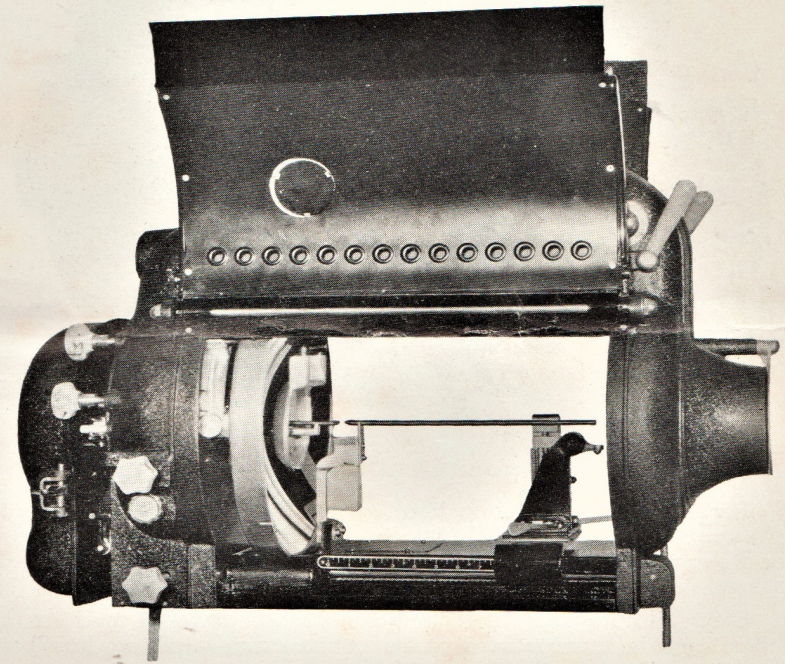
TYPE "E"

SUPREX PROJECTION LAMP

PERFECT PROJECTION

MAXIMUM ECONOMY

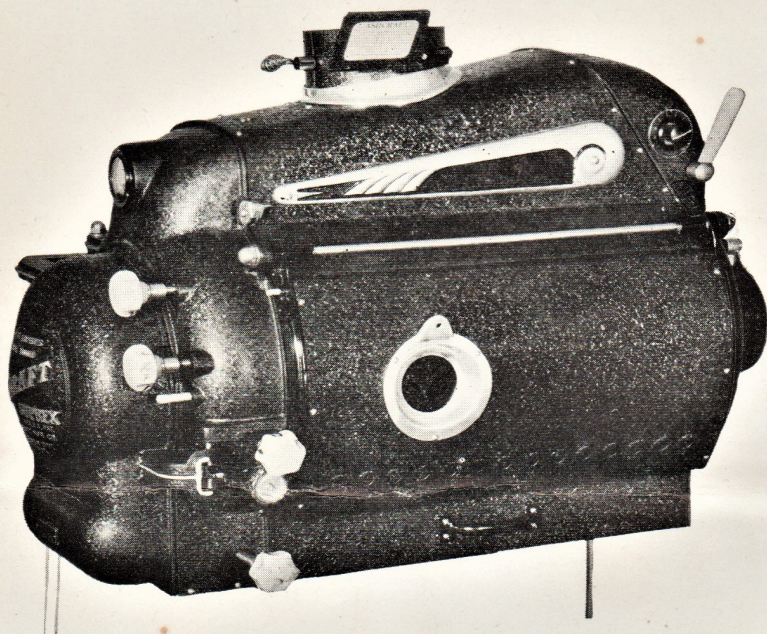
ASHCRAFT TYPE "E" SUPREX
PROJECTION LAMP



MFG'D BY
C. S. ASHCRAFT MFG. CORP.
47-31—35th St., Long Island City
NEW YORK

ASHCRAFT TYPE "E" LAMP

The Ashcraft Type "E" Projection Lamp is designed to provide dependable maximum screen illumination at the lowest possible first cost and minimum operating expense.



Particular attention has been given in the construction to insure continuous, dependable service, minimum of wearing parts or parts exposed to high temperature, in fact, except due to carelessness no repair parts should be necessary for many years.

Every feature embodied in the most expensive of modern projection arcs is incorporated in its construction—nothing has been omitted. A few of these features are:

1. 14" diameter Bausch & Lomb Reflector.
2. Large well designed and ventilated lamphouse.
3. Independent feeding adjustments—both carbons.
4. Full ball bearing motor.
5. Positive holder grips full 12" length of carbon.
6. Carbon scale measures carbon trim.
7. Both carbons provided with automatic guides to insure perfect crater.
8. 100 Amp. Ammeter and external shunt.
9. Magnetic Control of arc flame.
10. Mirror protecting light dowser.
11. External controls for adjustment of position of negative carbon tip.

12. Fully enclosed reduction gear unit.
13. Full chain drive. Positive and Negative no feed screws to wear.
14. All controls on operating side of lamphouse.
15. Unit construction—each unit removable without disturbing others.
16. Copper collecting receptacle.

Mirror

Maximum illumination can be expected from the Ashcraft Type "E" lamp due to the perfect arc formed and the collection and converging of all light produced. No lamp now made utilizes a larger or more efficient Reflecting mirror. The mirror collects all rays emerging from the crater within an angle of 140° , which is the angle of all useful rays in the SUPREX ARC.

The ratio of magnification of the reflector is 6.8-1 which produces a large aperture spot and insures a screen image free from discoloration on top, bottom or sides, in fact, the field will be as near perfect as is possible to produce with any of the best modern arcs. This point, together with the fact that no other lamp can exceed its brilliant illumination, leaves nothing to be desired.

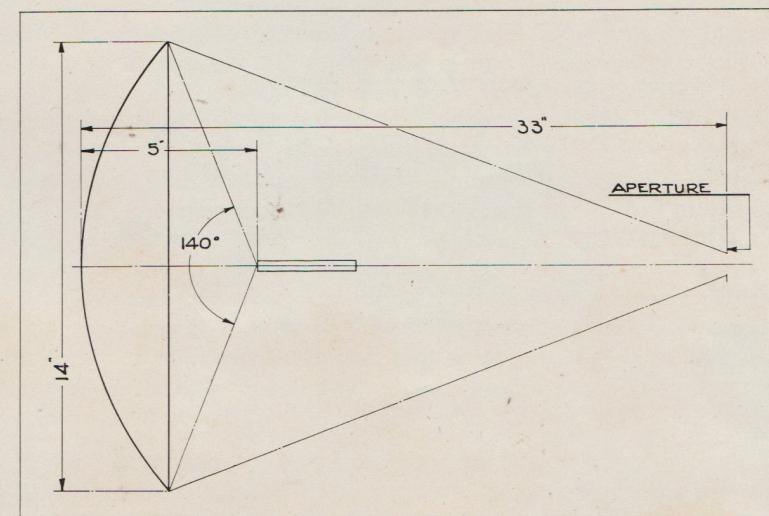


Fig. 1—OPTICAL LINEUP

General Construction

The units which make up the general assembly of the Ashcraft Type "E" Projection Lamp are illustrated and the details shown. These units are

- Base assembly
- Negative assembly
- Positive assembly
- Arc control assembly
- Douser assembly

The parts of each unit are made and assembled with minute care in our own plant and under the supervision of men who have been in our employ many years. No effort is spared to make ASHCRAFT products outstanding and superior to all others. A cursory explanation of the construction of these units may be of value and a point of information to both prospective purchasers and present users of the Ashcraft Type "E" lamp.

Arc Control

This unit is the heart of the lamp—the correct functioning of the arc is dependent on its reliability and sensitivity. To accomplish this we have incorporated in it a full ball bearing motor which is super-sensitive to minute changes of arc voltage. **The Suprex Arc is very sensitive to changes of arc current, therefore it is essential that the motor change its speed automatically as the arc requires.**

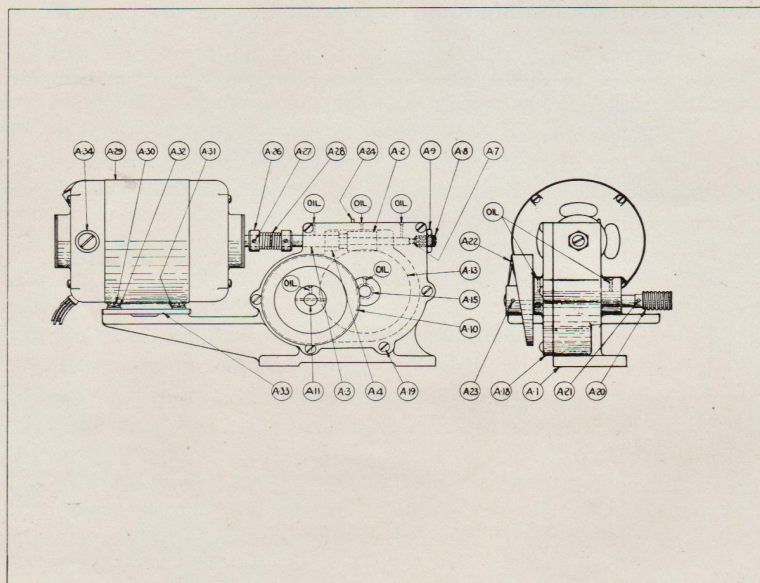


Fig. 2—ARC CONTROL

This motor has more than ample power to drive the gearing which operates the carbon feed mechanism. The motor shaft directly drives the high speed arc control or worm shaft, which operates at a speed of from 1200 to 3000 RPM. The driving worm meshes with a large, silent composition worm gear upon the shaft of which is also mounted a pinion which operates the main carbon feed mechanism operating cam and gear arrangement. Upon one end of the latter shaft is mounted the large cam which drives the negative carbon carriage forward. Its feeding action is variable, the amount of forward travel, each revolution of the cam, being adjustable by varying the time the clutch arm roller is in contact with the cam during each revolution.

On the forward end of this same shaft is mounted the positive mechanism driving worm.

All of this gearing is mounted in a heavy cast iron case, provided with oil holes to each bearing. The high speed worm shaft has a ball thrust at the rear and to absorb the thrust action of the worm and worm gear, this ball thrust also limits the end play of the high speed shaft. The gear case is oil sealed and covered with a smooth coat of high gloss black enamel.

The Negative Carbon Carriage Assembly

This unit consists of a main frame upon which is mounted the necessary shafts—sprockets—slides and the over-riding negative carbon carriage driving clutch.

The drive chain used for driving both the negative and positive carbon carriages has a breaking strength of 500# but the maximum operating force upon it is a very few ounces—its motion is extremely slow and the possibility of any wear whatever, negligible. The over-riding clutch is of unique and durable design. The housing or main casting is of gray cast iron, carefully machined. This housing contains, within, the core and three clutch rollers sets in slots 120° apart and held in precision contact with the interior periphery of the clutch housing. The action is such that the rollers grab and move the core only on the upward stroke of the clutch arm. On the downward stroke the rollers release and impart no motion to the feeding mechanism. The clutch housing, being of cast iron, the roller of polished hardened tool steel and the core of machine steel, there is little possibility of any wear over a period of many years.

This assembly also contains the negative carbon gripping arms which are opened and closed by cam action operated by a simple lever. There are no complicated units in this assembly.

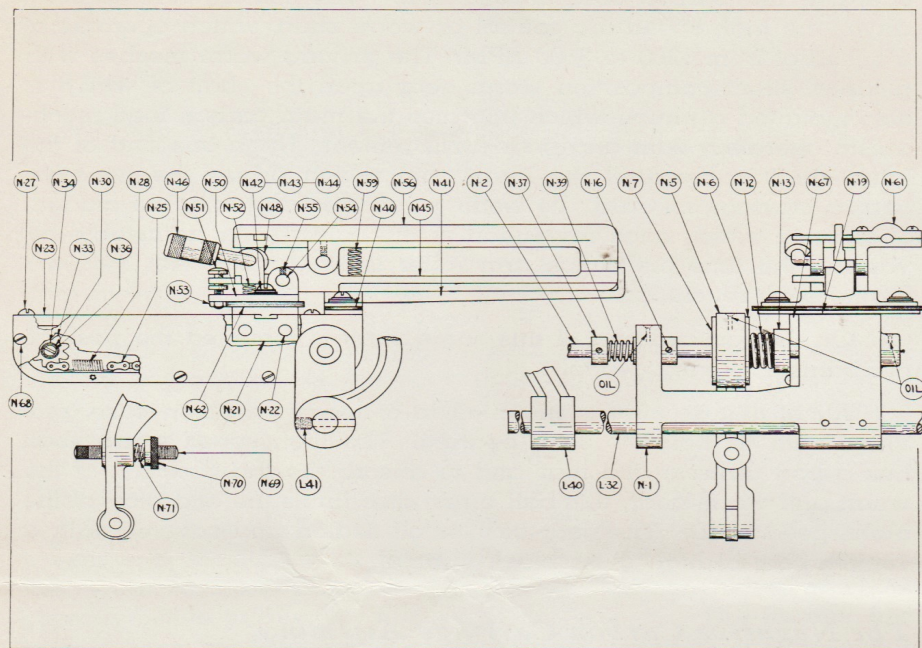


Fig. 3—NEGATIVE ASSEMBLY

The Positive Guide and Clinker Receptacle

At the forward end of the positive carbon a non-magnetic heat resisting guide is placed which holds the crater end of the positive carbon in the exact optical center of the mirror at all times. The standard upon which the guide is mounted forms a chute below which is placed a cup or receptacle to catch all of the molten copper dripping from both carbons as they burn away. The collecting of these molten drippings prevent them from falling upon the floor of the lamphouse and splashing upon the lower section of the reflector which would result in heavy pitting and breakage of the reflector. This is an exclusive feature and is not found in other lamps.

Main Base Assembly

Upon this base are mounted the heavy rods upon which the positive carbon feed assembly operates — actuated by means of chain and sprockets. The rear sprocket is driven and mechanically operated by the arc control by means of a large composition worm gear frictionally mounted upon the same shaft as the main driving sprocket. This shaft is extended thru the side of the lamphouse back and serves as the manual operating shaft for adjustment of the positive carbon carriage. It is readily operated at all times, by merely turning, due to the friction device incorporated in mounting the main driving gear. A heavy sheet metal cover entirely protects the slide rails and chain. Upon the rear of the base assembly is mounted the Arc Control gear case and lamphouse back.

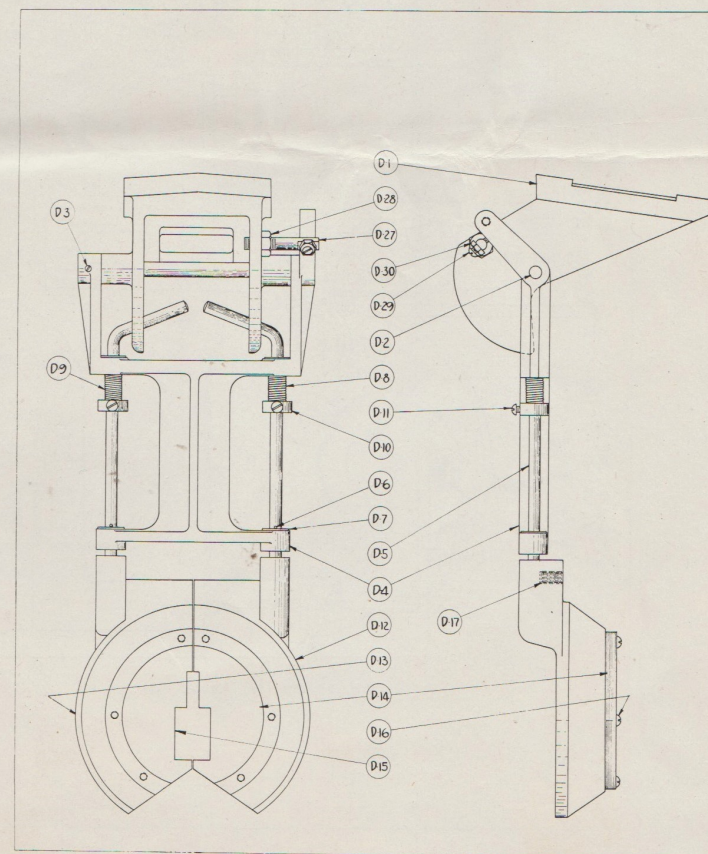


Fig. 4—DOUSER ASSEMBLY

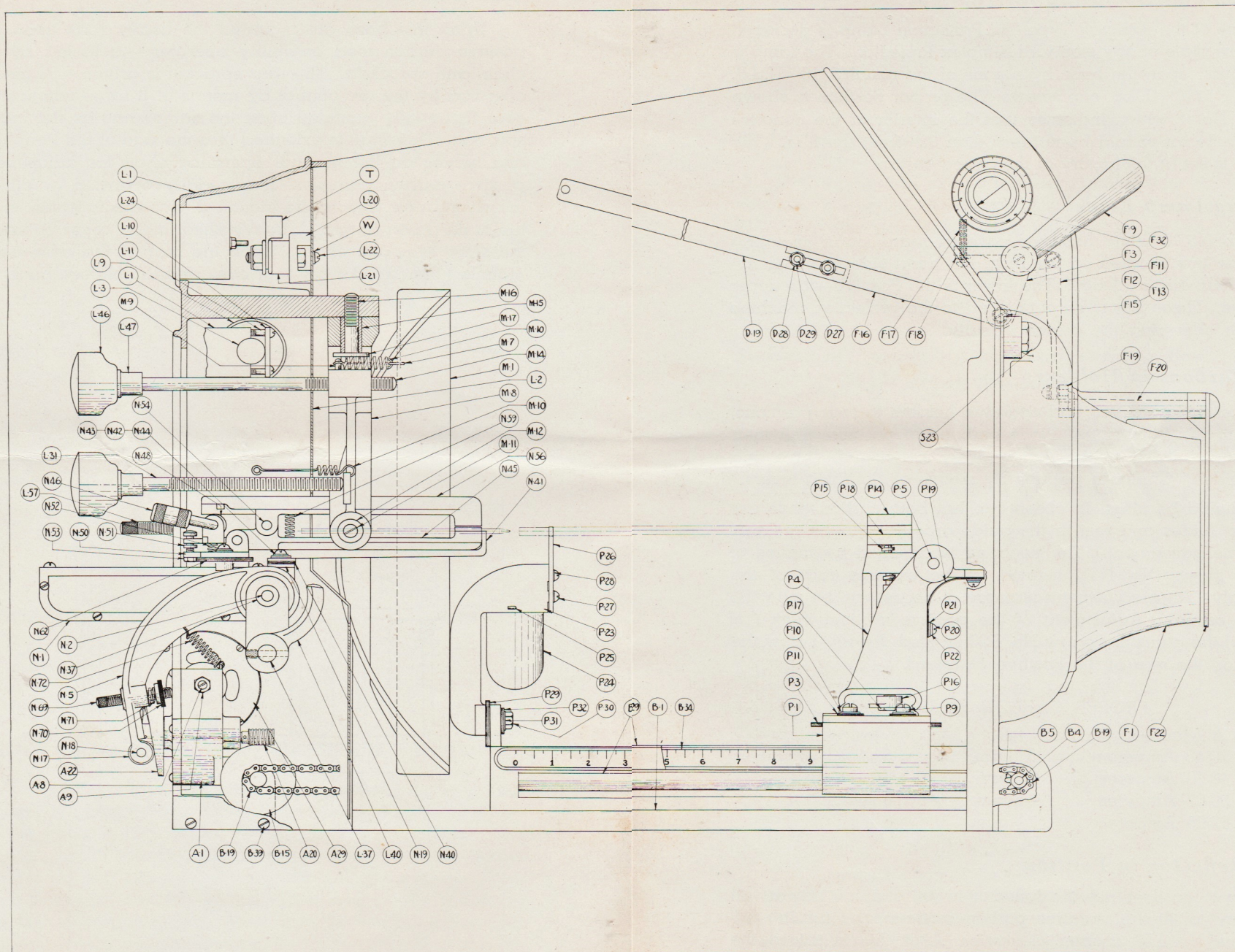


Fig. 5—GENL ASSEMBLY

Installation and Operating Instructions

The base of the Ashcraft Type "E" Projection Lamp is designed to fit the base plate of any standard Simplex Projector. The lamp is held in position upon the base by means of the usual 5/16" U.S.S. wing bolts or 5/16" U.S.S. cap screws. The proper position is shown in diagram No. 1 which indicates that the interior of the concave side of the reflector should be not less than 33" from the film. The gauge card is set at the factory at the correct distance, 33".

Connecting Lamp Leads

The two No. 6 white asbestos covered lamp leads emerging from the fuse box, located on the rear, left hand side of the lamp-house are the main arc leads. The lower is the Positive—the upper the Negative. These are to be connected to the projection machine lamp switch observing the proper polarity.

Placing Carbons in Holders

Move both the positive and negative holders to rear positions, leaving them 1/2" from stops. Place carbons in position with their arcing ends 1/4" apart — the gap midway between positive and negative guides. Clamp in position by means of clamping levers.

Care should be taken in observing that both carbon ends are free in their guides and rest in the guide groove. Means are provided for this adjustment. The negative is adjusted by means of the groove screw (No. N51) located at the extreme rear of the jaw assembly. After adjustment is made, if necessary, be sure the lock nut is secure. Adjustment of the positive vertical motion is by means of the adjusting screw No. P20 located directly below the shunt lead on the rear of the Positive Standard.

PROPER CARBON SIZES

Current	Neg.	Pos.
30-40 Amperes	5 mm.	6 mm.
40-50 Amperes	6 mm.	7 mm.
50-62 Amperes	6.5 mm.	8 mm.
62-65 Amperes	7 mm.	8 mm.

Placing Reflector in Position

In order to easily place the reflector in its retaining ring it will be necessary to tilt the negative carbon guide up by turning adjusting screw No. L57 counter clockwise. After this is raised the reflector may be slipped between the carbon guides and behind the retaining clips.

The reflector must be free in the ring having a slight clearance in all directions for expansion. Also the springs must bear against the back of the reflector with sufficient strength to press it forward against the retaining clips. The negative guide should now be lowered until the tip is 1/64" below the center of the positive carbon.

Reflector Controls

The projectionist should become familiar with the action of the reflector controls before attempting to adjust the light upon the screen. The upper control is for adjusting the aperture spot vertically—movement to the right lowers the spot.

The lower control is for moving the spot laterally or sideways, turning to the right moves the spot to the left.

Method of Obtaining and Maintaining Best Light Upon the Screen

After the arc has been struck and the proper current obtained, center the arc gap midway between the carbon guides, start the projector, raise the douser and throw the light upon the screen. By means of the reflector controls, center the spot upon the aperture. By moving the entire arc relative to the reflector at the same time maintaining a uniform arc gap, by simultaneous motion of both positive and negative feed controls. The position of the crater relative to the reflector, which gives the best light, will be found. The light must be white—not blue—not yellow. When this position is found move the image card upon the lamphouse top so that the rear line coincides with the front edge of the positive crater. Secure the card frame in position by means of the nuts at the rear. The action just explained determines definitely the aperture spot size. Thereafter it may be disregarded if the image is kept upon the line. The clearness of the field will however depend upon the expertness and care of the projectionist in maintaining a central spot upon the aperture.

Adjusting Carbon Feeds

The forward motion of the positive carbon is adjusted by means of rheostat No. F32. Negative adjustment by means of screw No. N69. After the image has been set upon the line maintain it by means of these controls. Remember—if the negative feed is too fast the tip of the carbon will "chase" the positive crater back of its line. The reverse of this is also true.

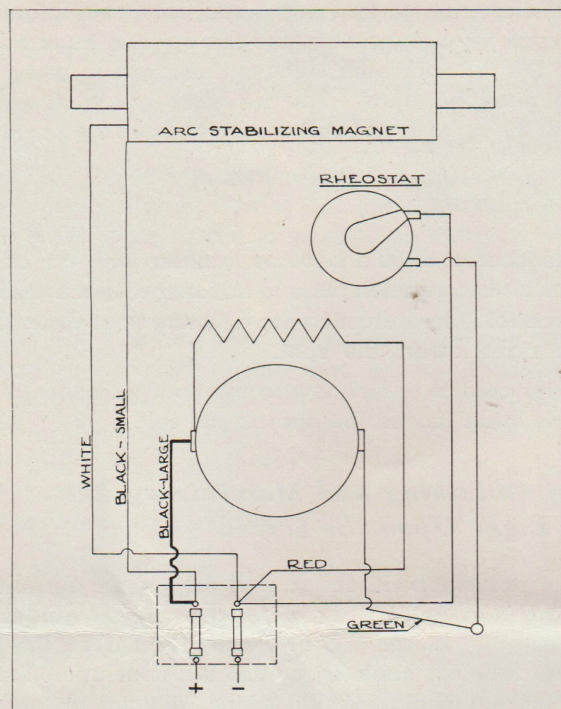


Fig. 6—WIRING DIAGRAM

A Parts—ARC CONTROL ASSEMBLY—Page 4

- | | |
|----------------------------|------------------------------|
| A 1—Gear Housing | A18—Cover Gear Case |
| A 2—Small Worm | A19—Screws |
| A 3—Shaft | A20—Worm |
| A 4—Pin | A21—Groove Pin |
| A 5—Spacer | A22—Cam |
| A 6—Coupling Collar | A23—Groove Pin |
| A 7—Ball | A24—Spring Post (Clutch Arm) |
| A 8—Screw Thrust Adjusting | A25—Motor Shaft Sleeve |
| A 9—Locknut | A26—Collar |
| A10—Gear (Spur 54.T.) | A27—Setscrew |
| A11—Shaft | A28—Spring Coupling |
| A12—Groove Pin | A29—Motor |
| A13—Micarta Gear | A30—Screws |
| A14—Bushing (Hub) | A31—Washers |
| A15—Pion—Shaft | A32—Lockwashers |
| A16—Tubing (For end shaft) | A33—Motor Base |
| A17—Groove Pin | A34—Motor Brush |

N Parts—NEGATIVE ASSEMBLY—Page 6

- | | |
|----------------------------------|--------------------------------------|
| N 1—Negative Frame | N37—Collar |
| N 2—Shaft (Negative Control) | N38—Washer |
| N 3—Sprocket 8T | N39—Spring |
| N 4—Groove Pin | N40—Negative Guide Insulator |
| N 5—Clutch Frame | N41—Negative Guide |
| N 6—Washers (Spindle) | N42—Screws |
| N 7—Bushings (Spindle) | N43—Washer |
| N 8—Clutch Core | N44—Lockwasher |
| N 9—Clutch Rollers | N45—Clamp (Lower) |
| N10—Clutch Springs | N46—Lever (Negative Cam) |
| N11—Pin | N47—Knob |
| N12—Spring | N48—Cam |
| N13—Nut | N49—Setscrew |
| N14—Groove Pin | N50—Slide Top |
| N15—Washer | N51—Groove Screw |
| N16—Setscrew | N52—Spring |
| N17—Roller | N53—Nut |
| N18—Pin | N54—Pin (Negative Jaw Shaft) |
| N19—Negative Guide Base Strap | N55—Setscrew |
| N20—Screw | N56—Clamp (Upper) |
| N21—Slide | N57—Pin (Negative Jaw Shaft) |
| N22—Pins (Negative Slide Pins) | N58—Setscrew |
| N23—Slide Rail | N59—Spring |
| N24—Chain (Short) | N60—Mica Bushing |
| N25—Chain (Long) | N61—Clamp (Cable) |
| N26—Cotter Pin | N62—Plate (Insulating) |
| N27—Screw | N63—Washer |
| N28—Spring | N64—Washer |
| N29—Link (Chain Spring) | N65—Lockwasher |
| N30—Rear Negative Sprocket Shaft | N66—Screw |
| N31—Nut | N67—Side Plate |
| N32—Washer | N68—Screw |
| N33—Sprocket 8T | N69—Vertical Neg. Adj. Screw |
| N34—Washer | N70—Vertical Neg. Adj. Screw Locknut |
| N35—Lockwasher | N71—Spring |
| N36—Screw | N72—Clutch Arm Spring |

F Parts—FRONT ASSEMBLY—Page 9

F 1—Front	F18—Nut (Lock)
F 2—Shaft	F19—Lower Douser Lever
F 3—Douser Lever	F20—Douser Shaft
F 4—Groove Pin	F21—Setscrew
F 5—Douser Crank	F22—Outside Douser
F 6—Groove Pin	F23—Pilot Lamp
F 7—Douser Lever Hub	F24—Screws
F 8—Shafts (Hub)	F25—Nuts
F 9—Handles	F26—Ferrule
F10—Setscrews	F27—Conduit
F11—Link	F28—Wire
F12—Screw	F29—Clip
F13—Washer	F30—Screw
F14—Lockwasher	F31—Dial Plate
F15—Spacer	F32—Rheostat
F16—Douser Strap	F33—Wires
F17—Screw	F34—Rheostat Knob

P Parts—POSITIVE ASSEMBLY—Page 9

P 1—Positive Slide	P17—Locknut
P 2—Screws (Chain)	P18—Contact Block
P 3—Insulating Plate	P19—Positive Lead
P 4—Positive Standard	P20—Screws
P 5—Positive Head Shaft	P21—Washers
P 6—Screw	P22—Lockwasher
P 7—Washer	P23—Positive Guide Standard
P 8—Lockwasher	P24—Cup
P 9—Screws	P25—Pin
P10—Washer	P26—Positive Guide
P11—Mica Washers	P27—Screws
P12—Cable Clamp	P28—Washers
P13—Screw	P29—Insulator
P14—Positive Carbon Clamp	P30—Screws
P15—Clamp Screw	P31—Washer
P16—Positive Release Lever	P32—Mica Washer

L Parts—LAMPHOUSE BACK ASSEMBLY—Page 8

L 1—Back (Lamphouse)	L16—Screws
L 2—Aluminum Baffle	L17—Screws
L 3—Coil Core	L18—Fuse
L 4—Fibre	L19—Cover Screws
L 5—Paper Insulation	L20—Shunt Block
L 6—Wire	L21—Shunt
L 7—Cotton Tape	L22—Screws
L 8—Leads White	L23—Nuts
L 9—Cover	L24—Ammeter
L10—Clamp (Coil Strap)	L25—Screws
L11—Screw	L26—Door Latch
L12—Fuse Box	L27—Screws
L13—Cover	L28—Nuts
L14—Fuse Block	L29—Washers
L15—Bushings	L30—Pins

L31—Lateral Adjusting Screw (Mirror)	L44—Screws
L32—Negative Tip Vertical Screw	L45—Spring Lateral
L33—Thumb Release	L46—Knob (Lateral Mirror)
L34—Door Catch Pin	L47—Bushing
L35—Spring	L48—Setscrew
L36—Setscrew	L49—Cable (Neg. to Shunt)
L37—Negative Mounting Shaft	L50—Cable (Shunt out)
L38—Lateral Adjusting Knob	L51—Wenzel Terminal
L39—Spacer	L52—Capscrews
L40—Eccentric Lever	L53—Clip
L41—Setscrew	L54—Screw
L42—Spring	L55—Positive Lead
L43—Spring Post	L56—Terminal
	L57—Vertical Neg. Adj. Screw

B Parts—BASE ASSEMBLY—Page 8

B 1—Base Plate	B20—Chain Spring
B 2—Slide Rod	B21—Chain Link
B 3—Setscrew	B22—Screws
B 4—Sprocket Shaft	B23—Screws
B 5—Sprocket 8T	B24—Pin (Spindle)
B 6—Pin	B25—Knob
B 7—Shaft	B26—Bushing (Knob)
B 8—Sleeve	B27—Screw
B 9—Spacer (Sprocket)	B28—Washer
B10—Sprocket 8T	B29—Sheet Metal Cover
B11—Pin (Groove)	B30—Plate
B12—Slip Clutch Spindle	B31—Screws
B13—Slip Clutch Plate	B32—Screws
B14—Slit Clutch Plate	B33—Lockwasher (Cover)
B15—Gear 70T	B34—Scale
B16—Spring	B35—Pins
B17—Nut	B36—Screws
B18—Groove Pin	B37—Shims
B19—Chain	B38—Screws
	B39—Screws

M Parts—MIRROR ASSEMBLY—Page 8

M 1—Mirror Ring	M10—Spring
M 2—Mirror Spring	M11—Screw
M 3—Screw	M12—Washer
M 4—Mirror Clip	M13—Nut
M 5—Screw	M14—Vertical Adjusting Screw
M 6—Cotter Pin	M15—Spacer (Bushing)
M 7—Spring (Vertical)	M16—Capscrew
M 8—Yoke	M17—Washer
M 9—Stud (Spring) (Spring Post)	M18—Washer

T Parts—TOP ASSEMBLY—Page 8

T 1—Sheet Metal Top	T 5—Screw
T 2—Ventilators	T 6—Lockwasher
T 3—Ventilator	T 7—Nuts
T 4—Screw	T 8—Stack Ring

Page Sixteen

T 9—Screens	T17—Card Casting
T10—Nuts	T18—Screws
T11—Lockwashers	T19—Nuts
T12—Damper	T20—Lockwashers
T13—Screws (Top to casting)	T21—Screws
T14—Screws (Top to casting)	T22—Nuts
T15—Card Frame	T23—Lockwashers
T16—Card Holder	T24—Card

S Parts—DOOR ASSEMBLY—(not shown)

S 1—Right Door	S12—Glass
S 2—Left Door	S13—Screws
S 3—Door Ends	S14—Clips (Glass)
S 4—Door Ends	S15—Screws
S 5—Door Pins (Catch)	S16—Lens Holder
S 6—Screws	S17—Lens
S 7—Screws	S18—Mirror
S 8—Door Pull	S19—Washer
S 9—Screws	S20—Spring Ring
S10—Port Frame (Right)	S21—Door Hinge Rods
S11—Port Frame (Left)	S22—Door Washers
	S23—Nuts (Cap)

D Parts—DOUSER ASSEMBLY—Page 7

D 1—Douser Base	D16—Screws
D 2—Douser Hinge Pin	D17—Setscrew
D 3—Setscrew	D18—Screws
D 4—Lower Douser Casting	D19—Strap
D 5—Shaft (Douser Blade)	D20—Screw
D 6—Cotter Pins	D21—Washer
D 7—Washers	D22—Lockwasher
D 8—Spring (Right)	D23—Spacer
D 9—Spring (Left)	D24—Stop Pin
D10—Collar	D25—Screw
D11—Setscrew	D26—Locknut
D12—Blade (Right)	D27—Douser Stop
D13—Blade (Left)	D28—Nut
D14—Plate (Right)	D29—Screw
D15—Plate (Left)	D30—Locknut