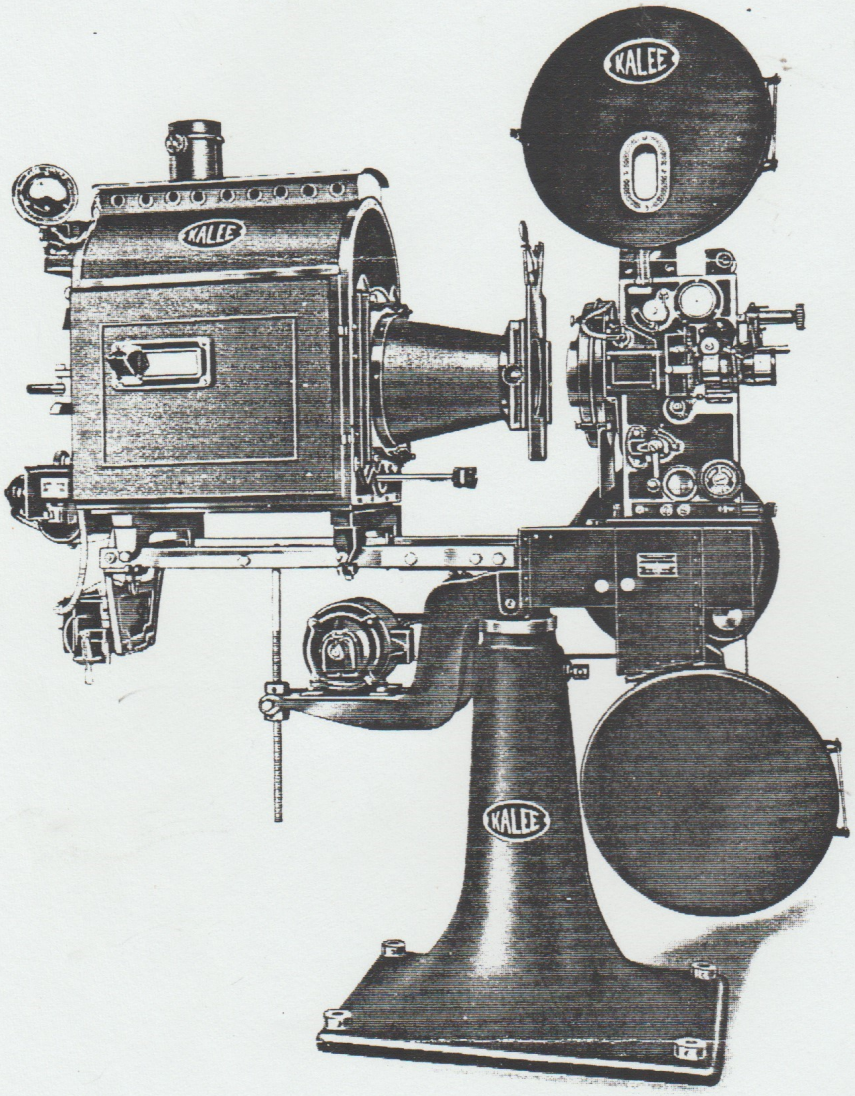
KALEE Model Eleven

SPECIAL SOUND MODEL.

PROJECTED PICTURE TRUST INFORMATION SHEET NUMBER THREE

Researched by John Cannon



Above: Cecil Kershaw, Head of the Kershaw Engineering Works at Leeds and the designer of the Kalee Eleven.

Left: A Kalee Eleven adapted for use with the Western Electric Company's "3-A" Sound-on-Film System and complete with the HML High Intensity Reflector Arc Lamp which had come into use some months earlier.

Our third Information Sheet celebrates a fiftieth birthday - that of the Kalee Model Eleven. This may come as a surprise to many who regard it as a "modern" machine - as indeed it is compared to the once ubiquitous Kalee Indomitable Model Number Eight which was first introduced around 1925. The Kalee Eleven and the projection precision engineering of Kershaws generally cannot be seen as revolutionary in design practice but rather as typifying that which gave Kalee their name for a robust quality of reliable and dependable engineering . Kershaws adapted the best features from other designers' machines to improve their own - they were certainly not the only British and European manufacturers to owe much to the influential work of Heinrich Ernemann : the vertical racking movement, the large Maltese cross and the front-opening gate were recognisable features on the earlier

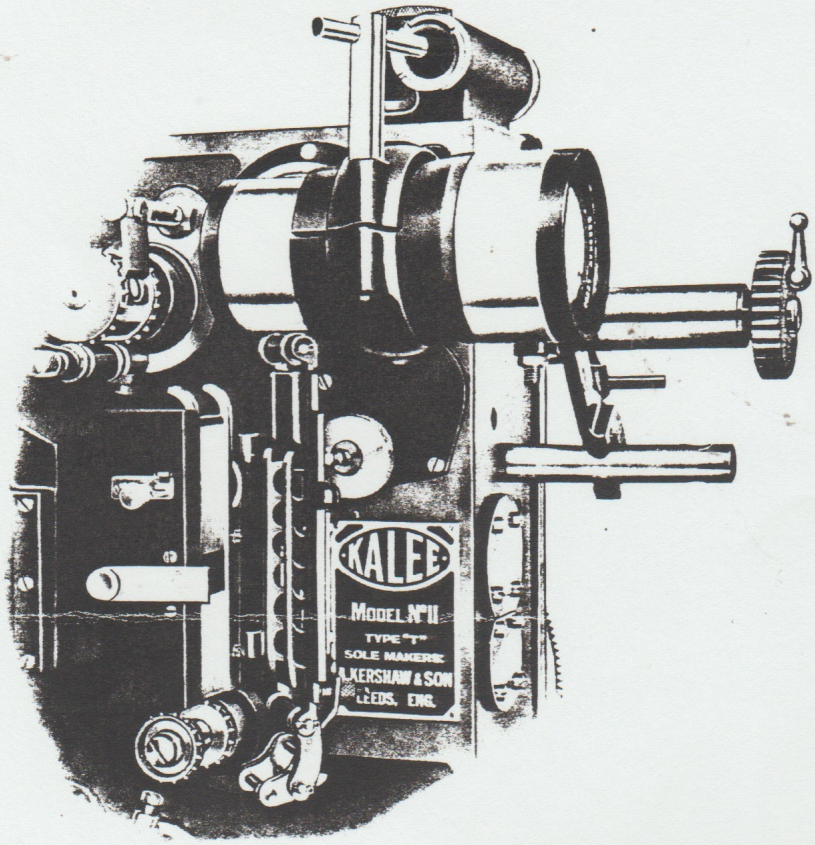
Kalee models . That is not to say that Kalee projectors did not have any exclusive design features . Indeed their development of the rigid micrometer-like focussing system has never been bettered and they were responsible for other useful innovations like the split-line oil-level sight glass . What must be said now is that their new Model Eleven in 1933 was a consolidation rather than an advance in design and it solidly represents a peak of perfection in precision projection engineering for which it and the company are justly famous.

By the end of 1932 there were some 7,000 Kalee mechanisms in active service in this country. The advertisements in "Ideal Kinema" and the trade press generally boasted - " Three-quarters of British and Colonial cinemas are equipped with Kalee ." It would be quite proper to recognise the stress here on the British-built, all-British product and the inherent patriotism of a marque that was to call itself the "King of Projectors".

Kershaws had developed over their twenty-five years of projector manufacture to this position of dominance over the kinema market but in the few years of hectic "wiring for sound" new and fierce competition entered the field as a lucrative market for re-equipment and new Super cinema installations developed. So much so that in 1933 as a single year as many new models of machine came onto the market in one single year as in the preceding five years. The Kershaw share of the market was dropping back to more like two-thirds and the Kalee Eight desperately needed a successor to fight off the many challengers specifically designed for sound and the arrival of the new breed of high intensity arc-lamps which created an inevitable higher temperature at the film-gate unless cooling and/or a rear-shutter arrangement were introduced.

It was in the mid-summer then of 1932 that Cecil Kershaw was forced to start tests on his new model. He had as early as 1929 brought in a moveable mask to the Kalee Eight gate to allow projection of silent and sound formats ; indeed a rear-shutter version of the Eight complete with masking lamp had been introduced as well as such extras available as the Double Turret Lens Arm and the Film Speed Indicator (measuring in minutes per thousand feet of projection). Nonetheless the fact could not be obscured from the exhibitors that, good as the Talkie Eight might be, it was quite definitely a hybrid compared to the new generation of machines that had recently come onto the market. In the fore-front of any designer's mind was the need to provide simple and economical matching with the then independently designed sound-heads . A minimum of adaptor gearing was essential - the drive for the projector needed to be near the central base of the mechanism (as fortuitously had been the case with the Simplex who were able to operate a policy of almost continuous development of the same basic frame from 1909 to 1937).

Cecil Kershaw and his team had therefore to come up with what the market wanted - a British "super" "sound" projector to meet the demands of the new Super cinemas (see the January 1933 advertisement).The design requirements of the machine almost dictated themselves : the rear-shutter was all but ubiquitous; an oil-sump system had been proved desirable and highly effective in practice since the first Ernemann (Imperator) II had been sold on the British market by Walturdaw on December 13th,1926 ; the rapid interchangeability of the intermittent unit had proved immensely popular for the Simplex as had the total enclosure of all working parts ; the British operator favoured (and still it would seem from the number of 21s running minus doors) an open mechanism; the drive had to be low and at the base of the machine; the concerns of the operator needed to be catered for so robust, reliable and accessible controls were needed as well as "useful" items like flicker-shutter adjustment to hand . All these requirements were put into the Eleven which began six months of tests.



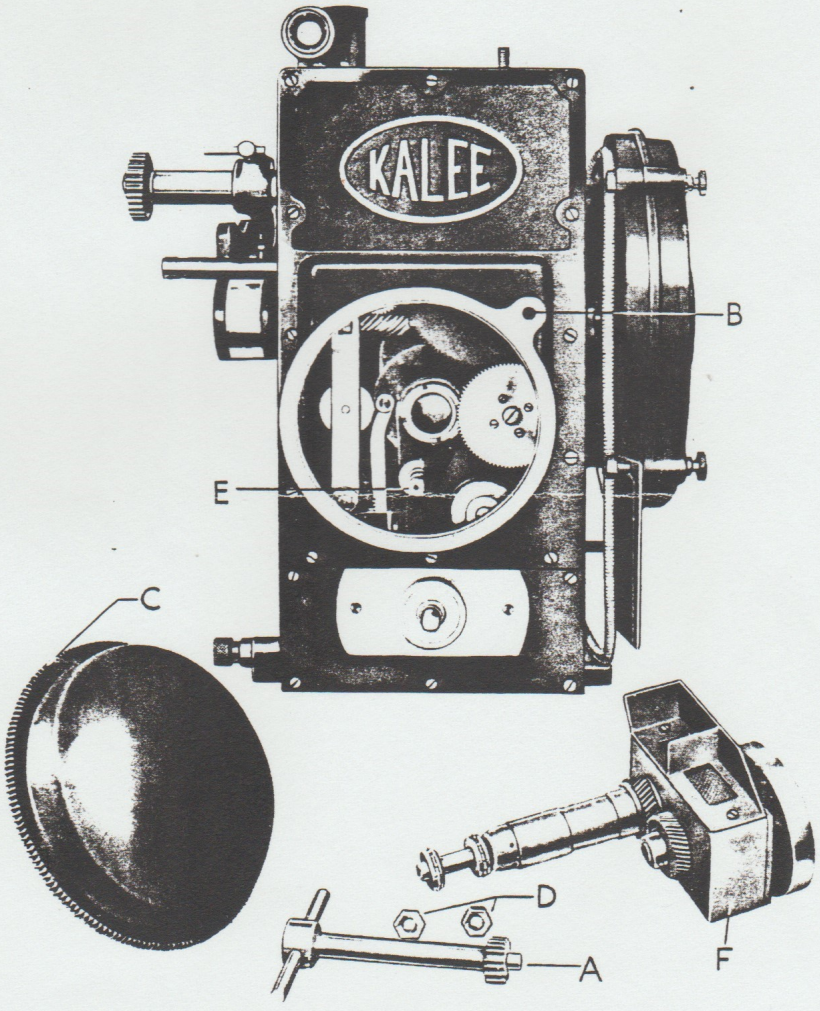
Left: Detail of the gate and lens area showing the oil circulation sight glass on the top right of the frame casting ; the Kalee micrometer focussing system developed through the Seven and Eight and to be retained without exception for all the later Kalee models ; the round milled head immediately above the maker's plate is the flicker-shutter adjustment which is read off on a marked scale in a circular aperture all but obscured here by the lens in its swung-away position . The steel gate with electric welded roller brackets remains unchanged from the earlier type except in length (3" on the Seven, 4" on the Eight and here 4½" for the Eleven.) The then favoured by the British six-picture feed -sprocket can also be seen which Kalee were to leave in favour of the four-picture variety on their Dragon and Invicta mechanisms.

Right: Rear view of the mechanism showing the method of removal of the intermittent assembly as a single unit. The gearing end (A) of the pinion key is inserted in hole (B), its teeth engage with the teeth (C) on the periphery of the screwed cover which can then be unscrewed.

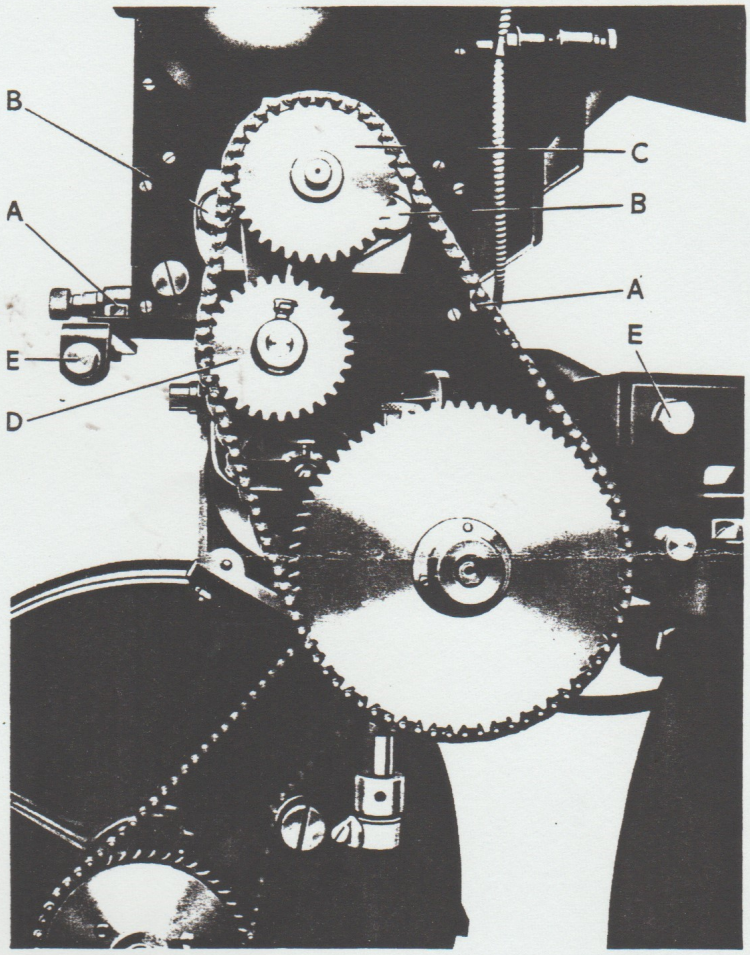
The two nuts (D) are then removed from stud (E) and the intermittent unit (F) - replacement cost in 1933 £21 - can then be withdrawn .

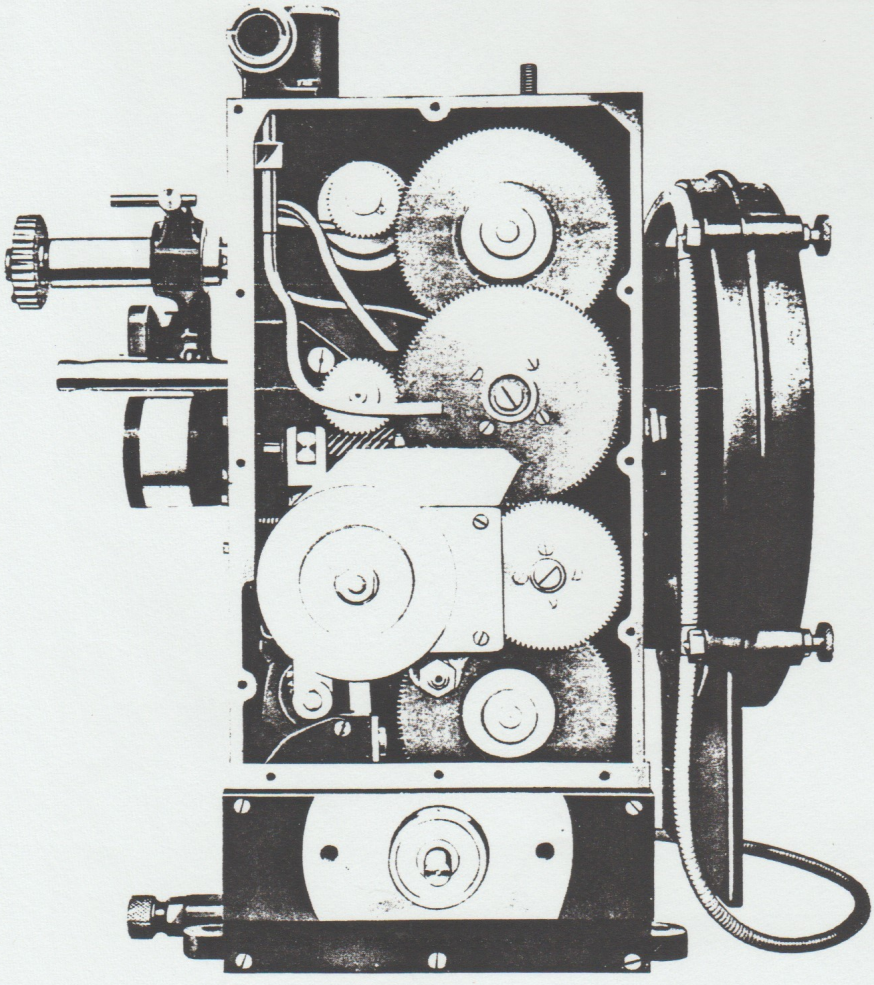
When replacing, to avoid re-timing, the marks on the engaging gears should coincide with each other.

The striking roller shaft in the cam-box is eccentrically adjustable so that the striking position is correctly placed relative to the engagement of the large size , high tensile alloy steel, heat treated Cross and Cam .



Right: Detail of the adaption gearing of the Eleven to a sound-head - in this instance to British Talking Picture (BTP). Although perhaps a seemingly more cumbersome drive arrangement than others, the basic design requirement for having a low central drive position for the mechanism - chain-wheel (C) - is clearly illustrated . The Chain Guard has been removed for the illustration . (D) is simply a tensioning jockey-wheel.





Left: Rear view of the mechanism with the main cover removed to show the intermittent unit, the oil distribution pipes and the train of spiral cut gearing alternating between gears of metal and synthetic fibre construction to ensure silence and smoothness of operation . The forked end of a lever,held in contact with a cam on the housing of the intermittent by a strong spring , can be seen controlling the position of a spiral gear which can slide on the shutter spindle to keep the flicker-shutter synchronised when racking is carried out by revolving the intermittent sprocket.

The machined box-form and all castings were finished in black stove enamel and all machine parts given a polished finish. All spindles were of high carbon steel ground to fine limits. All outside bearing ends had annular grooves and oil-return holes to prevent leakage.

Cynical exhibitors might have been surprised and sensed developments when the January 1933 cover of the "Ideal Kinema" was given over to a full-page heavy selling of the "Kalee Indomitable" - the marque name of the earlier machines - which had not been necessary for some time as they were well established. They might have expected and caught wind therefore of the February cover which was to sell the new Kalee Model Eleven . The early reviews stressed the Britishness of the machine (this being a time of growing anti-German feeling especially and a certain resentment of things American caused in no small part by the early dominance of the sound-market by Western Electric and RCA and some experience of restricted practice carried out by these companies) as well as the perfection of cinema engineering the machine represented - a fact attested to by the longevity in service subsequently by this and previous Kalee models . Sixes and Sevens ran on in some situations until the mid and late fifties (as the Electric Palace,Harwich) and beyond ; Eights ran on in many halls until the mid and late seventies (as Charles Ballands' Astoria,Ware where but for the unfortunate death of the proprietor they would still be running no doubt today - as I understand they are indeed in the North Star Cinema, Lerwick in the Shetlands). The Eleven, produced between 1933 and 1939 when the heavier Twelve was introduced with its drum-shutter, is still in fine active service in many locations today not least the Review Room of Rank Film Laboratories where a pair installed in 1936 complete with original arcs are still having their quality attested for by running first-prints to customers. There can be little dispute with the 1933 sentence expressing the centrality to British precision projection engineering of the Kalee Eleven : " The Kalee Eleven sets the standard by which all projectors will be judged ."

I am unable to state with certainty the first cinema to be equipped with the new Model Eleven machines but certainly amongst those first installations were those at the new Regal, Winchester and the Reo and Carlton, Liverpool (both to BTP sound-heads). The first Elevens to be installed in Wales were at the Park Hall Cinema in Cardiff, whilst the first pair in Cheshire were at the Rialto Cinema, Bebington . Elevens found their way onto the export market - for example eleven were sent to Argentina and a pair to the Royal Palace of the King of Iraq in Bagdad. Adaptions were provided to all the major sound systems and of course a special silent adaptation was supplied. There were probably some 500 pairs of Elevens manufactured with serial numbers (to be found at the top left of the mechanism box on the operating side) between 15001 and 15999 .

The PPT has a dozen or so examples of the Eleven as well as pinion keys, parts lists, manuals and spares . Two of the early type 'T" machines , Nos. 15081 and 15106 , came with BTH Universal bases and turn-tables from the Palace Cinema,Bridport whilst recently courtesy of Classic Cinemas a pair, Nos. 15445 and 15446, came out after regular service at the Classic, Kilburn . Only one of the Trust's Elevens was not modified (a relatively simple operation) at some stage in its life for Cinemascope . Adaption plates and gears are to hand for Western Electric 206 and Universal base operation, RCA 1041 , BTP and BTH 'M' type sound-heads .

Every operator no doubt has had his or her favourite manufacturer and within these their favourite model . For many the Kalee Eleven, the first British sump-oiled projector, stands as glowing testimony to the first-rate quality of British precision cinema engineering at its peak.

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