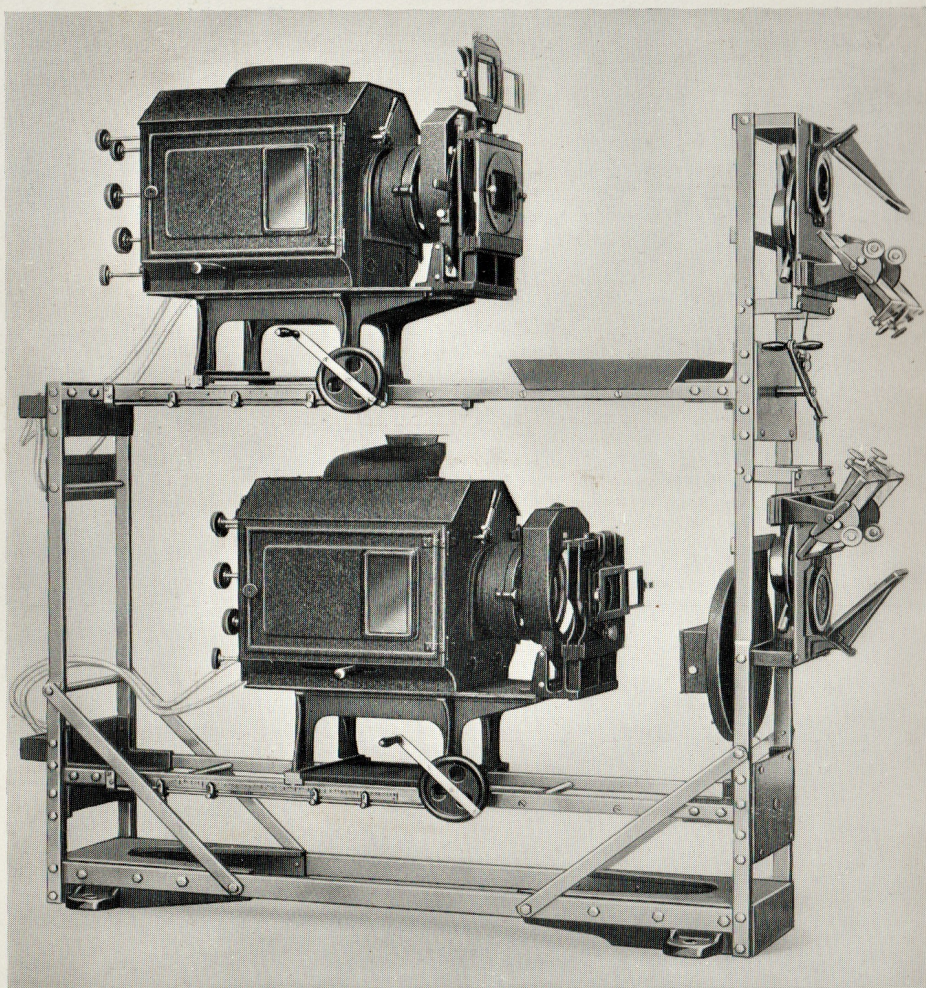


*The*  
**ROSS**  
*EFFECTS MACHINE*

PUTS LIFE AND COLOUR INTO EVERY PROGRAMME



## THE ROSS EFFECTS MACHINE

*The Instrument that gives  
new life to the show*



*Opticians to  
His Majesty The King*

# ROSS L<sup>TD.</sup>

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# *The* ROSS EFFECTS MACHINE

~  
NEW PRODUCT OF THE  
FAMOUS OPTICAL FIRM  
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## *Preface*

*We are witnessing* with great interest the enormous advance in the development of the British Film Industry, reflected especially in the improvement of the technical qualities of British Films. But it is also true that great improvements have been made in practically all the departments which combine to make the Cinematograph Industry a great one.

*Larger and more beautiful Cinemas* possessing the greatest degree of comfort are taking the place of older buildings . . . . all that science can produce is being put into the field . . . . improved sound, improved projectors, improved interior atmosphere, improved personnel, all forces gathered together to produce an extended appeal. Let us say that the Cinema Industry is "on its toes" so to speak and rightly so, because the great public which it serves is becoming a more discriminating public, and the latter fact urges us to continue in our search for new material and new

methods. One could discuss at length the historical events of the Trade, which have occurred with great rapidity, were we not so much concerned with the present and the near future. British Projection Engineering is by no means behind the times, and the contributions of the firm of Ross to this particular branch of the industry are outstanding.

It is the latest of their products, the Effects Machine to which the following remarks are contributed.

*A projectionist who is an enthusiast* will be amazed at this ingenious contrivance, it is a thing of optical and mechanical perfection, which definitely gives new meaning to optical effect and illusion, for in capable hands its possibilities are unlimited. No modern cinema, super or otherwise, should be without one, for it is a Robot, born of simple ideas and it is destined to form an important unit of the Projection Room Equipment.

Can you imagine the single lantern projecting the humble slide with monotonous and lifeless regularity? . . . . then the Bi-Unial Lantern which came to improve upon it by affording dissolving effects and super-imposed effects not before possible?

Have you seen the freak triple lanterns used by the enthusiasts of optical phenomena, with caskets of lenses, and prisms and the like?

Do you also remember the early attempts to produce effect with the aid of Chromoscopes and mechanical slides?

All thoughts of these things disappear into oblivion when one views the Effects Machine.

*It is more than a combination* of all the aforementioned pieces of apparatus, it is decidedly a precision instrument. A study of the description of the Ross Effects

Machine will convince you of its great value to the cinema, but the instrument seen in action will positively intrigue you.

There can be no doubt of its work as an aid to putting the show over, and exhibitors will agree that anything which can attain an improvement in the presentation to the public, must be cheap at almost any price.

To the projectionist who has his job at heart, the Ross Effects Machine is not just another gadget come to add to the woes and worries of his business; he will learn that it is as important as the projector itself, and that its refinements will assist him in his work . . . . "the Art of correct presentation."

There seems to be few who fully realise the extent to which the Cinema Industry rests on the final act—the projection. The success of a production, so far as an audience is concerned, does to a considerable extent, depend upon the excellence of its projection or presentation.

*The more pleasing the effects* on the screen, the greater will be the patronage of the theatre, and this is one sound reason why this machine is destined to take its place in the Projection room of every cinema of the first order.

## GENERAL SPECIFICATION

1. Two Ross Vertical Type Arc Lamps with six adjustments in steel lamphouses, and with internal dousters (cut-offs).
2. Two 8" diameter specially computed condenser lenses of heat resisting glass in easily detachable mounts.
3. Two large capacity water baths with sliding adjustments on rods.
4. Strong rack and pinion movements, handwheel operated for quick backward and forward movement of the lamphouses, with stops on a divided scale arranged for pre-setting.
5. Effects holders immediately in front of water baths and at rear of projection lenses.
6. Two sets of four projection lenses of foci ranging from  $7\frac{1}{2}$ " to 28" mounted in rotary turrets for rapid location.
7. Two sets of  $3\frac{1}{4} \times 4$ " double slide carriers with swivel adjustment and adaptors for English Standard slides  $3\frac{1}{4} \times 3\frac{1}{4}$ ".
8. Two interchangeable  $5 \times 4$ " slide carriers with swivel adjustment.
9. One adjustable star iris shutter with swivel adjustment.
10. One pre-set iris shutter with engraved aperture sizes.
11. Two pre-set framing shutters with swivel adjustment and independent controls for each of the four blades.
12. One heat resisting glass plate for use in blanking out screen and borders.
13. One spring motor driven colour wheel completely fitted with gelatine colours.
14. Ten  $8 \times 9$ " gelatines in assorted colours fitted in metal holders.
15. Ten embossed glass effect plates of varying design in stout metal holders.
16. Two optically worked fixed projection mirrors mounted in front of projection lenses.
17. Four direction projection mirrors optically worked, and mounted in pairs on sliding carriages in front of projection lenses. These are also fitted with friction clutches and locking screws for pre-setting purposes.
18. One movable teak tray attachable to runners to carry slides and effects in use.
19. One cleaning brush—for dusting mirrors.
20. Rigid steel framework stand with heavy base and corner castings and feet providing for permanent attachment to the projection room floor.
21. Heavy asbestos covered flexible leads from terminal boxes to both arcs.

## DESCRIPTION

The projectionist may be called upon to operate a Ross Effects Machine, and if without experience, and because of its formidable appearance, he may feel nervous about the attempt. "There is nothing so formidable looking that cannot be overcome," indeed when we come to know such things we are inclined to like them better.

It is unnecessary to have any qualms about this machine for the apparatus is simple and easy to operate, and those who may become responsible for its manipulation will soon become attached to it when they discover its possibilities.

Let us, therefore, regard it as a double Optical Lantern with very many refinements and a threefold instead of a single purpose. Its triple functions are those of Spot and Flood Lighting, with dynamic and combined colours, Scenic Effect Projection, and Lantern Slide Projection.

It will be seen later that its refinements are manifold, and that very many charming and colourful effects can be produced. Mounted on a rigid steel framework with heavy base and corner castings, and feet for permanent attachment to the level floor of the projection room, are two roomy steel lamphouses, one situated above the other. These are provided with adequate ventilation and possess the same degree of finish as the famous Ross Searchlight Arc Lamps. They have also an undercarriage with a rack and pinion mounting which is actuated by a hand-wheel thus affording a rapid movement to and fro.

The tracks of the lamphouses are fitted with enumerated stops to afford their immediate location to pre-determined positions in relation to the Projection Lenses.

The lamphouses each contain a vertical arc with six movements and arrangements for automatic feed if desired, and an actuating lever is fitted to give a quick movement of the arc inside the lamphouse so that a parallel or convergent beam of light is obtained from the condenser system. This together with the rack and pinion device provides a means of rapid focal adjustment which is highly desirable in the smooth operation of effects.

The condensers of 8" diameter are specially computed and ground and are of heat resisting glass fitted in easily detachable mounts, while an internal douser (cut-off) is located immediately behind the condensers, thus serving to afford them protection from the heat of the arc if it is burning while the apparatus is not actually in use. The cut-off is operated by a lever fitted outside the lamphouse. Large capacity water baths between the condensers and carrier mechanism afford ample protection to costly effects and lantern slides while they are being subjected to the heat rays from

Various mechanical effects are obtainable on hire or can be purchased outright and it is probable that the variety of effects will be added to as time goes on.

The apparatus demands no more attention than does the arc and optical parts of the projector.

A special brush is provided for dusting the mirrors and all parts are easily accessible for cleaning.

A teak tray which is attachable to the frame of the apparatus is supplied to hold effects and slides when in use.

## SOME HINTS ON THE USE OF THE EFFECTS MACHINE

Let us remember that the same laws of cleanliness are attached to the Effects Machine as to the Projector itself. Condensers and lenses should always be kept perfectly clean and free from dust and finger marks which produce refraction and absorption of light. These are best cleaned by applying a solution of wood alcohol and water in equal parts, and quickly polishing with a circular motion with clean pieces of old cambric, an old and well washed handkerchief will serve the purpose. Tissue paper and cloths of doubtful composition are to be strongly deprecated.

In this way the life of the lenses will be greatly prolonged. If one saw the great care exercised in their production, one would realise that they deserve extremely careful handling. All slides and effects should be cleaned before being inserted for use. Slides can be cleaned by the aforementioned method or by breathing upon them, then rubbing them free of finger marks which are inevitable when they are being handled in the carrier. A finger mark, especially when imprinted on a transparent ground looks hideous when seen in enlarged form on the screen, and goes far towards marring the effect.

Gelatines are best dusted, and otherwise left alone for they are prone to render permanent finger markings from moist fingers, and are inclined to become brittle after prolonged use before the heat of the lamphouse.

Mechanical Effects require the absolute minimum of lubrication so that oil and dust adhering to them does not find its way on to the gelatines or photographic surfaces.

The arcs may be trimmed with stumps of High Intensity or other carbons of suitable size thus affording some economy in carbon consumption.

## Spot Lighting—Flood Lighting.

The great thing to keep in mind when operating this machine is that smoothness produces the best effect. There should be nothing of a jerky movement of iris shutters or effect wheels. By means of the various focal lengths of the lenses, the iris aperture controlling shutters, the framing shutters, and the star shutters complete flood and spot lighting can be accomplished, and because of the fact that both condenser system and projection lenses are employed, a spot or a floodlight will possess an even degree of illumination covering their entire area. There are no discolorations such as is experienced on an ordinary spot light with its crude single lens.

The pre-set iris shutter when mounted in front of the condenser regulates the size of spot light obtainable.

By means of the adjustable framing shutters, a vertical flood, horizontal flood, or perfectly square flood, can be obtained at will, and the swivel adjustment allows for these varied floods to be projected at angles.

The star shutter enables a five-pointed star to be thrown, of any size or colour, or variable colour if the colour wheel be used. There is nothing in this class of work left to be desired.

## Colourful Effects—Optical Illusions.

Supposing the whole width of the orchestra well is to be flood lighted, then the slide carrier would be swung out of position, the framing shutter inserted and adjusted for a horizontal beam, the lens of shortest focal length swung into position, and the lamphouse adjusted on its carriage. In addition to this, and at the same moment, the organ console could be spotted in colour or pre-determined shape by the other unit. Many other variations of this combination can be worked. This same idea can be applied to the stage itself. A back-cloth, could be flooded by one unit, and any other group picked out in intense colour by the second unit.

Combination and colours in motion create great interest, and one simple way of producing this is to place one of the embossed design plates in the carrier and focus this upon the object to be illuminated. The colour wheel is then located in its position and set in motion, slow or fast as the case may warrant:—thus we have the effect of a peculiar design of mosaic appearance in ever-changing colour.

Of course, there being two units, a double combined effect can be worked. Consider lantern slides for a moment, and the extremely beautiful effects obtainable with the aid of these. Let it be also remembered that with the aid of the various focus lenses, the actual image can be masked to approximate screen

## ***Novel Announcements—Unique Slides.***

dimensions, then projected to fill the actual screen space as used for the cinematograph pictures, which is a great advantage.

An announcement can be faded gradually in, or it can be arranged that a number of announcements can be interchanged by the gradual fading out of one while the other comes in, with smooth and uninterrupted regularity.

One unit can be made to project a border such as a gold frame or floral border, while the other unit super-imposes in true central position the letterpress, or pictorial illustration. Dynamic colour effects can also be applied to slides of white ground, or to slides of black ground in which case the colour of the letters appears to be constantly varying.

With the aid of the Ross Effects Machine, a portion of an announcement can be projected on the screen, and a further portion to which prominence is required, can be faded in, super-imposed upon the first portion.

This mode of operation greatly enhances the production of scenic effects if the co-operation of a good slide producer is obtained. One trick effect consists of a positive being placed in one carrier and a negative of the same scene in another—the negative is screened in monotone, or colour, then the positive, pre-arranged to register correctly over the negative image, is interchanged with a fading effect—thus what was first seen in negative proportion suddenly comes to life.

Similarly a triple effect of this character can be worked, registration being first corrected. A black and white positive is screened, the subject being say a landscape, then a second positive of the same scene, but in full colour gradually takes its place, and thirdly a negative view of the same scene with a blue ground gradually emerges to replace the coloured view.

Such charming effects can be used to lend atmosphere to musical interludes or other presentations.

The titles of films, held in control as far as brilliance is concerned by use of an iris diaphragm, can be projected over a coloured landscape being shown by the Ross Effects Machine, with absolutely unique effect.

Similarly the same thing can be done while the embossed glass effects are being used in conjunction with the colour wheel. These few simple, but charming effects can be added to *ad infinitum*, and a keen operator will delight in finding new combinations and effects to the increasing pleasure of the audience.

Careful plotting, and pre-arrangement, and a Ross Effects Machine can enhance your show 100%. Indeed all things considered, you cannot afford to be without one in your theatre.

