

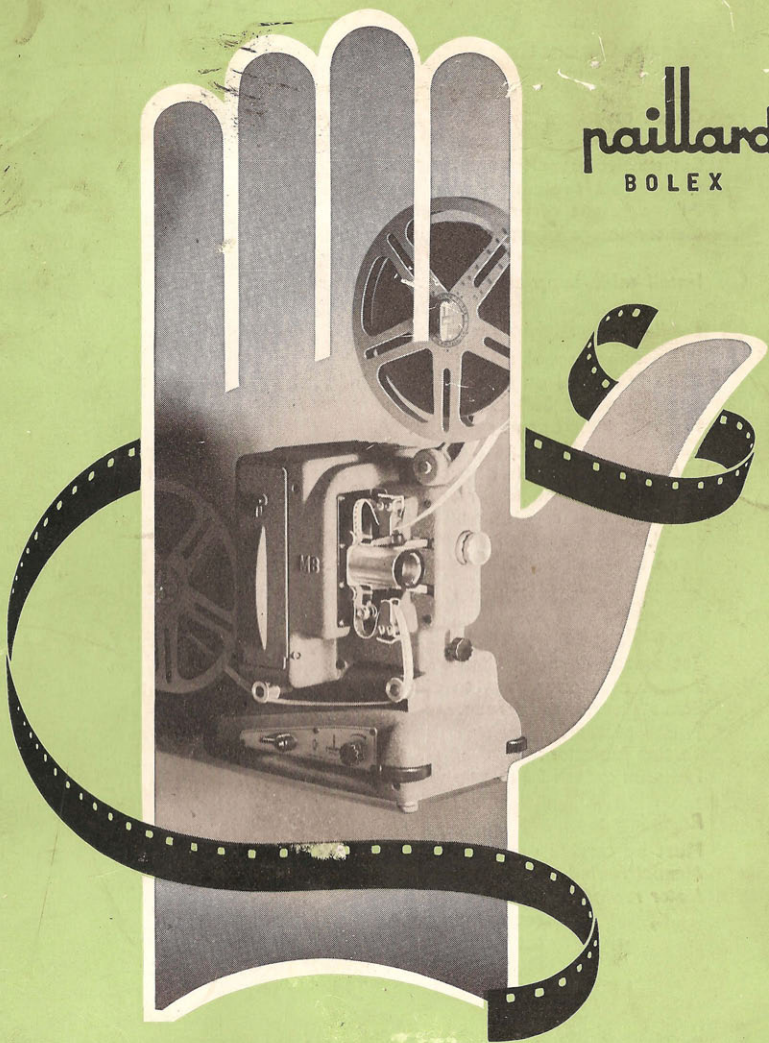
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paillard
BOLEX



INSTRUCTIONS FOR USE
CINE PROJECTOR

M8

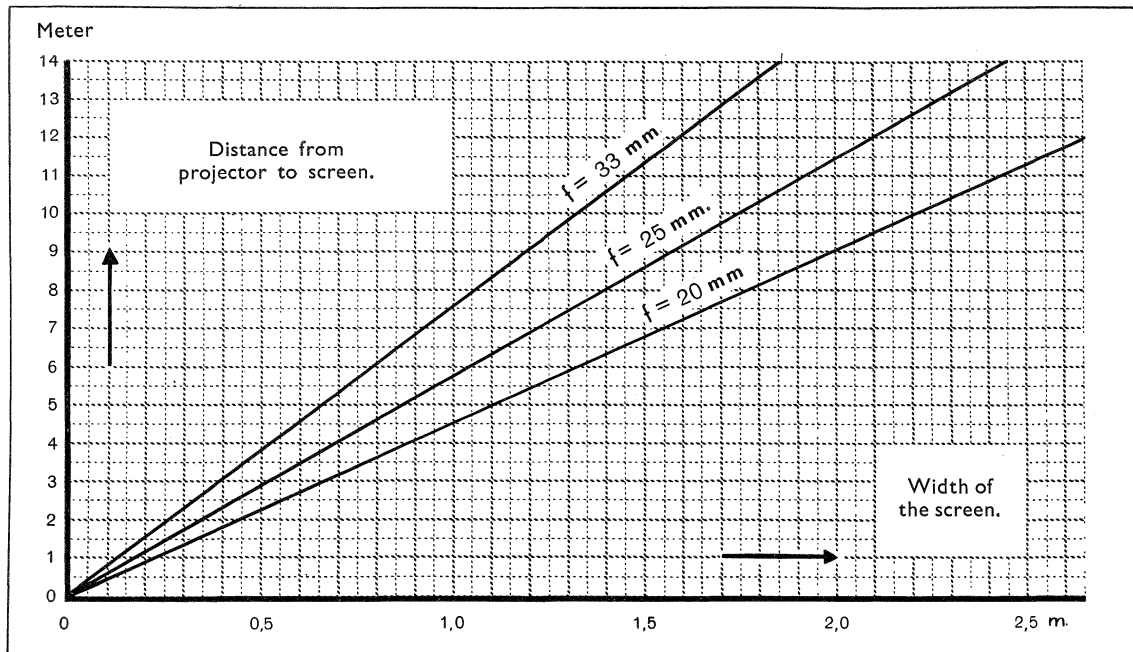
INTRODUCTORY NOTE

The firm of Paillard Ltd. has long been world-famous for its remarkable accomplishments in the field of amateur cinematography. Paillard Bolex cine cameras and projectors are designed and manufactured in Sainte-Croix, in the heart of the Jura region of Switzerland, centre of the Swiss watchmaking and fine precision industries.

Your projector has been thoroughly tested before leaving our Works. It is built to provide the utmost ease of operation, and will render you long and faithful service.

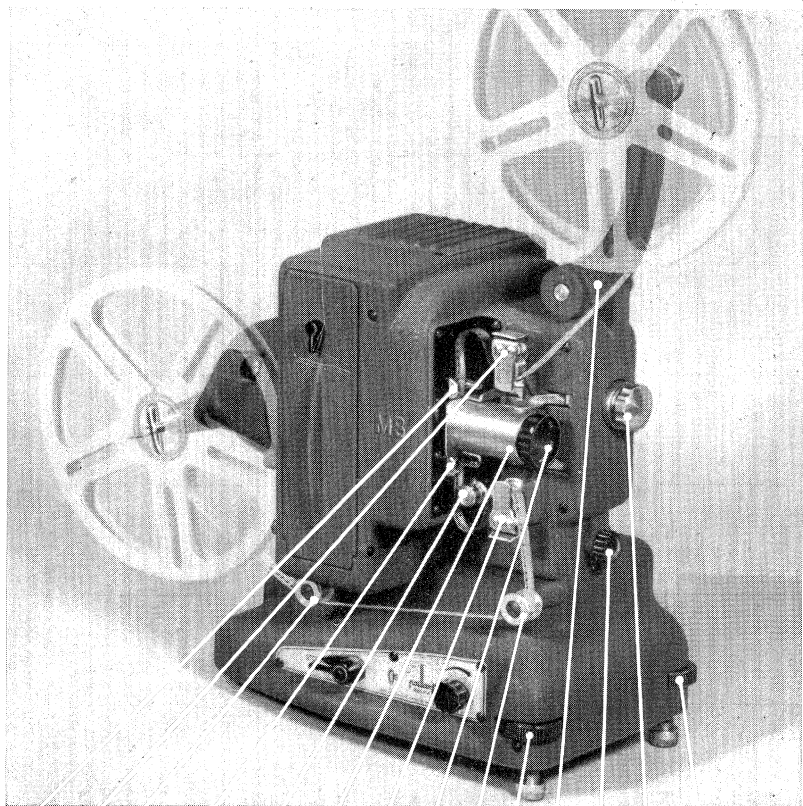
The following precautions will enable you to get the best from your projector :

- **Read the instructions contained in this booklet, and follow them carefully.**
- **Get to know your projector, and practice the operations required to load and run it.**
- **Always keep your projector absolutely clean.**



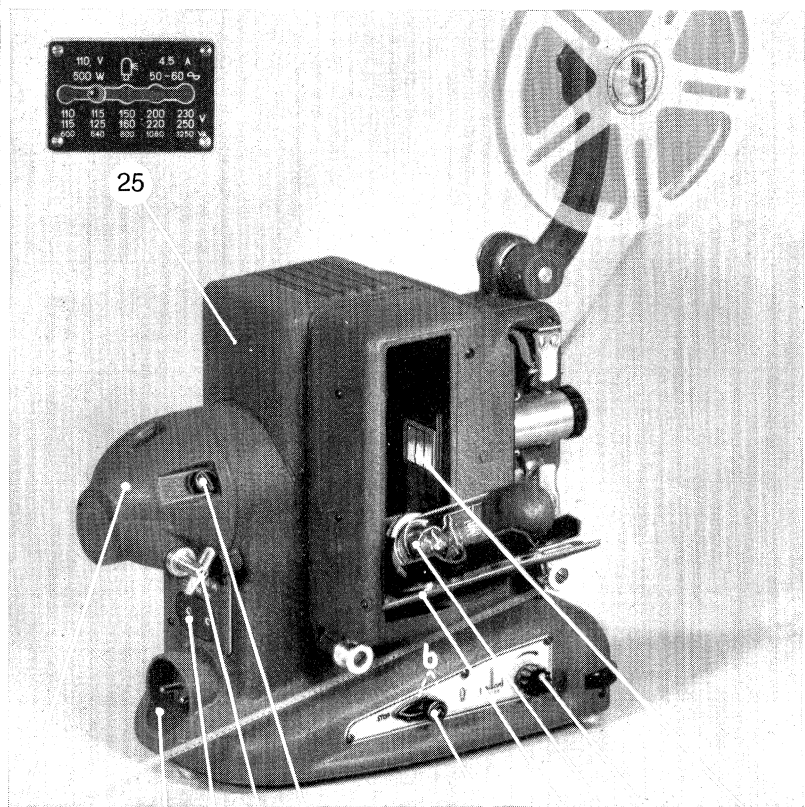
Size of the image on the screen given by lenses of 20, 25 and 33 mm focal lengths in terms of the distance of the projector from the screen.

M8 PROJECTOR—DETAIL



- | | | | | | | | | | | | | | |
|-------------|-----------------------|---------------|-----------------------|------------------------------------------|-----------------------|----------------|---------------|-----------------|----------------------------|------------------------|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 1, 4 | 2 | 3, 9 | 5 | 6 | 7 | 8 | 10, 14 | 11 | 12 | 13 | | | |
| Film-guides | Upper sprocket guides | Guide-rollers | Automatic loop former | Lens-holder and projection gate aperture | Lower sprocket guides | Focussing ring | Tilt controls | Upper spool arm | Framing adjustment control | Grooved rewinding knob | | | |

MAILED SYNOPTIC VIEW



- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24

- 15 Motor
- 16 Power input socket
- 17 Universal outlet for auxiliary room
- 18 Take-up spool spindle [lighting]
- 19 Carbon brush
- 20 3-position operating switch & 'stop'

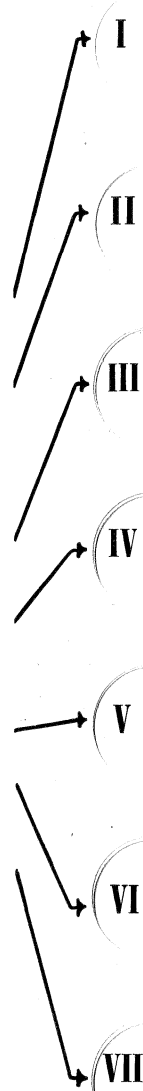
- 21 Panel with lamp-holder
- 22 500 w projection lamp
- 23 Speed control knob
- 24 Catathermic heat screen
- 25 Voltage selector (model M8R)

Abridged Operating Instructions

- 1** Check mains supply voltage and fuses.
- 2** Set up projector facing middle of screen.
Check that projection lamp is fitted and in correct position.
Adjust height of projection.
Center image of gate aperture on screen.
- 3** Install table lamp and connect it to projector.
- 4** *Loading :*
Raise upper spool arm.
Place full spool on upper spool spindle.
Unwind about 30" of film.
Place film on upper sprocket.
Form upper loop and pass film between film guides at gate.
Form lower loop (without letting film touch automatic loop-former) and place film on lower sprocket.
Pass film under guide-rollers and fasten free end to core of take-up spool.
Turn latter slightly to tighten up film.
Check that direction of projection is perpendicular to screen.
- 5** *Projecting :*
Set motor running, then switch on projection lamp.
Adjust projection rate to eliminate any flicker on screen.
Focus picture on screen.
Frame picture.
To stop projector :
Press on switch 20 as you would on a bell push.
- 6** *Rewinding :*
Must be carried out with lens-holder in "closed" position.
Manual rewind : fit handle to upper spool arm—rewind film.
Motor rewind : fix spring belt in place ;
set speed control nearly to minimum ;
set motor running ;
engage rewinding mechanism by pressing on grooved rewinding knob.
- 7** *Unloading (after showing part of a reel) :*
Open gate.
Press on sprocket guides.
Remove film from film transport mechanism.
Rewind film.

INSTRUCTIONS FOR OPERATING
PAILLARD BOLEX PROJECTORS
MODEL **M8** AND **M8R**

| | PAGES |
|------------------------------------------------------------------------------------------------------|--------------|
| I Checking the mains supply voltage —Fuses | 2 and 3 |
| II Setting up the projector Room lighting (table or standard lamp, etc.) | 4 and 5 5 |
| III Loading the film | 6 and 7 |
| IV Projecting | 8 |
| V Rewinding—Unloading | 9 |
| VI Changing the projection lamp | 10 |
| VII Upkeep and cleaning | 10 and 11 |

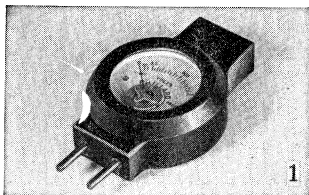


I. Mains supply voltage

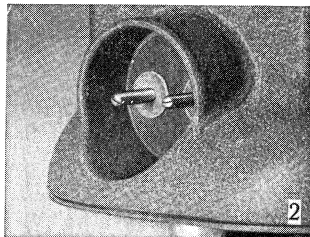
Take the projector out of its case and check that the operating switch 20 is on "Stop."

Before commencing operations, it is necessary to find out the voltage of the local mains supply.

As a rule, this voltage is already known. If this is not the case, the electric light bulb in the room in which the projector is to be used should be unscrewed; the mains voltage will usually be found marked somewhere on the bulb, in volts (or "V"). A better method is to examine the nearest electric light meter, on which precise information about the type of current supplied—which will be either alternating (A.C. or \sphericalangle) or direct (D.C. or =)—and the mains voltage (in volts) will be found.



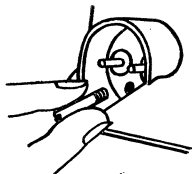
However, the best way of checking the mains voltage is to use a voltmeter, as this has the added advantage of keeping the operator informed about any fluctuations in the mains supply which might affect the running of the projector. The Motor 15 is of the "universal" type and can run on any mains whose frequency is comprised between 0 and 60 periods/sec.



M8

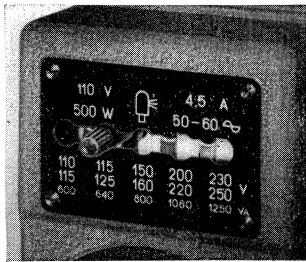
If the mains voltage does not exceed 125 volts, Model M8 projectors can be connected directly to the mains supply, no matter whether the current is alternating or direct. If the mains voltage is higher than 125 volts, an auxiliary transformer (A.C. only) or resistance (A.C. or D.C.) must be used between the mains supply and plug 16.

Three-conductor flex



The power-input socket (2) can be connected to a three-phase attachment plug (grounding). On request, the Paillard-Bolex Agent or your Bolex Dealer will supply a three-conductor flex and a special pin. This latter should be screwed into the hole "O" of the socket (see fig.).

In countries where grounding is advisable, use the three-conductor flex.



M8R

This model can be connected to any of the mains supply voltages shown on the voltage selector 25, no matter whether the current is alternating or direct. Having ascertained the mains voltage, unscrew the small plug on the panel of the voltage divider and insert it in the hole opposite the number corresponding to the mains voltage.

E.g. : The position of the plug corresponds to a mains voltage of 125 V.

Fuses

Before connecting up the projector, inspect the fuses in the projection room's mains supply circuit and check that their rating is high enough to withstand the current taken by the projector.

M8

When fitted with a 500-watt lamp, the projector consumes 550 VA, i.e. approximately 550 watts of electrical power. If the projector is the only apparatus drawing power from the circuit, a fuse with a rating of at least 6 amperes will be sufficient.

However, if any other apparatuses or lights remain switched on while the projector is in use, the additional current drawn by them will have to be taken into account in calculating the fuse rating.

E.g. : Voltage of mains supply 110 volts.

| | | |
|----------------------------------------------|--------------------|-------------------|
| Power taken by M8 projectors | 550 VA, or approx. | 550 watts |
| Power taken by other apparatuses in circuit. | | 500 watts |
| Total power consumed. | | <u>1050 watts</u> |

The fuses fitted should have a minimum rating at least as high as the value obtained when the total power consumed is divided by the mains supply voltage. In the example just quoted, a 10-ampere fuse would be required (1050 divided by 110).

M8R

The minimum fuse rating can be calculated in the same way as in the case of the M8 projector.

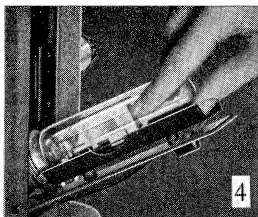
The only alterations that must be taken into account are those that affect the mains supply voltage and the projector's power consumption.

E.g. : Voltage of mains supply 220 volts.

Total power consumed 1100 VA, or about 1100 watts.

The minimum fuse rating should be at least 5 amperes (1100 divided by 220). In this case, a standard 6-ampere fuse would prove sufficient.

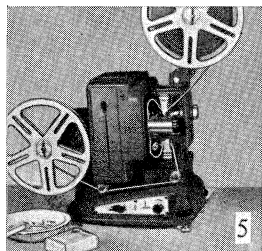
II. Setting up the projector



The operating switch 20 should be on "Stop."

Open up hinged panel 21, and check that a projection lamp is fitted and in the correct position. To do the latter, turn the projection lamp in the direction shown by the arrow. The flanges on the lamp base 22 should touch the stops in the lamp-holder socket.

The projector can either be stood on a table or on its carrying case, or it can be set up on the special Paillard Bolex tripod stand for cine projectors.

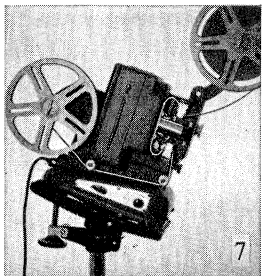
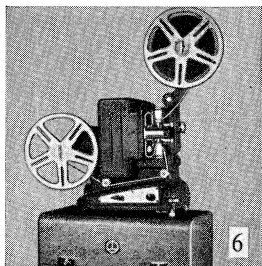


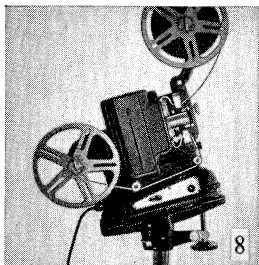
Centering the projection image on the screen

a) Projector set up on table or carrying case :

The projection beam may be aimed in a horizontal direction, or it may be pointed upwards or downwards. Connect the projector to the power supply, and set the operating switch to position c (motor running and projection lamp lit—see general view). An image of the aperture in the gate will appear on the screen. Bring this image into focus by turning the focussing ring 8 on the lens. Use the speed control knob 23 to adjust the motor speed so as to eliminate any trace of flicker on the screen. Center up the image of the gate aperture in the middle of the screen, by turning knobs 10 and 14.

Reset the operating switch to "Stop."





b) Projector set up on PAILLARD BOLEX Projector Stand

Let down the projector's front feet about 15 mm (3/5"). Place the projector on platform of tripod, taking care that its feet slide into the appropriate depressions. Fasten the projector into position by screwing the knobs down hard. Figure 7 shows the projector pointed downwards. Figure 8 shows the projector pointed upwards. To render the projection beam horizontal, turn screw *d* on the tripod.

Set the operating switch to position *c*, focus the image of the gate aperture on the screen by turning the focussing ring on the lens, adjust the motor speed to eliminate flicker on the screen, and center up the image on the screen by means of the tripod screw. Return operating switch 20 to "Stop."

The projection beam must be directed perpendicularly at the screen, whatever the type of stand in use.

Installing a table or standard lamp, etc.

There is no need to make any provision for lighting the mechanism or controls while a film is being shown, as the film transport mechanism is very simply designed, and the operating controls and stopping device are within easy reach. The universal mains outlet 17 fitted to the projector is intended to supply an auxiliary room light (such as a table light or standard lamp) of the same voltage as the mains supply to which the projector is connected.

However the power in watts consumed by the lamp should not be greater than the mains supply voltage.

E.g. : Model M8-125 V— 125 watts maximum.

Model M8R-220 V—220 watts maximum, and so on.

The auxiliary lamp is extinguished automatically when the projection lamp is switched on.

If the operator wishes to be able to dim the room lighting gradually at the beginning of a show, he should insert a variable resistance or "dimmer" of the appropriate rating in the auxiliary lighting circuit. Correct operating procedure in this case is first to dim the room lighting by moving the slider on the dimmer resistance, then to set the projector running and show the film. At the end of the reel the same operations should be repeated in the reverse order.



a)

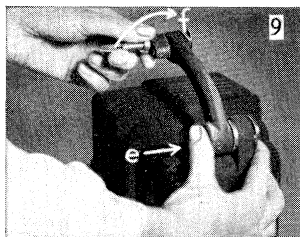


b)

Connecting the auxiliary light

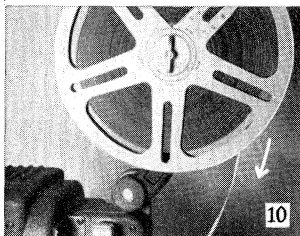
- a) European plug
- b) American plug

III. Loading



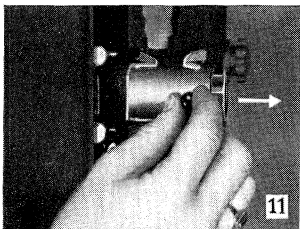
1

Raise up the upper spool arm 11 into the erect position by carrying out movements e and f simultaneously.



2

Place the full spool on the upper spool spindle. The film unwinds in the direction shown by the arrow, with the perforations on the same side as the slotted spindle tip that keeps the spool in place.



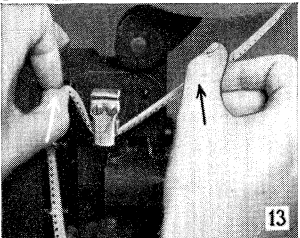
3

Open the film gate by swinging the lens-holder forwards on its hinges.



4

Place the empty spool on the back (take-up) spindle 18 and unwind about 30" of film.



5

Insert the film between the upper sprocket guides 2 by pulling it slightly in an upwardly direction. If the sprocket teeth do not enter the film perforations immediately, pull the film forwards a little. A slight click tells when the film is in place.

g the film

6

Form the upper loop, and pass the film between the guides 1 and 4 at the gate.

7

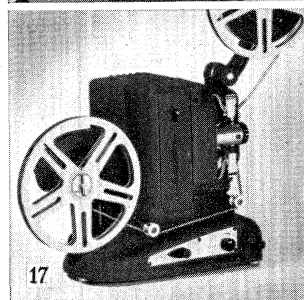
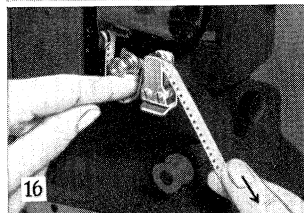
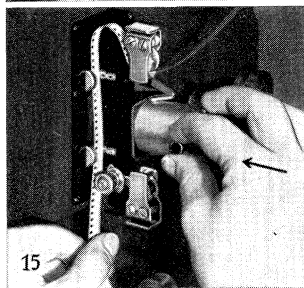
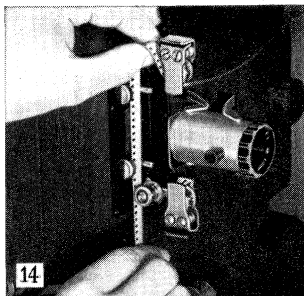
Hold the film in this position and bring the lens-holder back into place gently.

8

Place the left index finger just under the automatic loop-former 5 and form the lower loop, then guide the film over the lower sprocket guides 7 with the right hand, and pull on it slightly in the direction shown by the arrow. The upper and lower loops should be roughly the same size.

9

Pass the film under guide-rollers 9 and 3 and fasten the free end to the core of the empty take-up spool. Turn the latter in a clockwise direction so as to tighten up the film slightly.



III

IV

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VII

IV. Projecting

Both models **M8** and **M8R** are fitted with a special safety device (centrifugal contactor) which prevents the projection rate from falling below the minimum necessary to ensure adequate ventilation. When the projection rate falls below 12 frames per second, the motor speed starts to oscillate up and down, and the centrifugal contactor becomes noisy. If this occurs, increase the projection rate by turning knob 23.

Set the motor and film transport mechanism running by placing the operating switch 20 on position *b* (see general view).

Now turn the switch to position *c*. This switches on the projection lamp and turns off the auxiliary room lighting.

Using the speed control knob 23, adjust the projection rate so as to eliminate any trace of flicker on the screen.

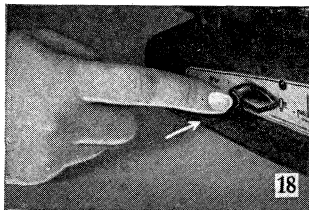
Bring the picture into focus by turning the focussing ring on the projection lens 8.

Check that the picture is properly centered on the screen, and adjust framing if necessary by turning knob 12.

End of the reel

To switch off the projection lamp and turn on the room lighting, while keeping the motor running at the same time, simply move the operating switch from *c* to *b*.

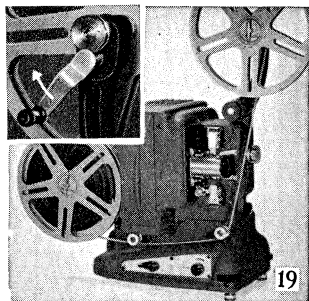
To stop the projector completely (motor and lamp), simply press on the operating switch as you would on a bell push. The auxiliary room lighting will light up automatically.



Instantaneous stopping device

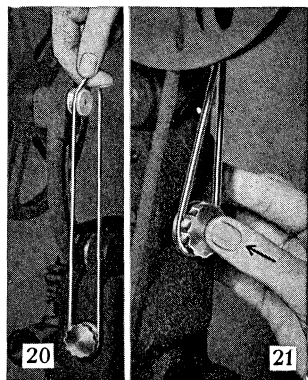
To bring the projector to an immediate stop, press on the operating switch as described in the preceding paragraph.

V. Rewinding—whether by hand or using the motor—must always be carried out with the lens-holder in the “closed” position.



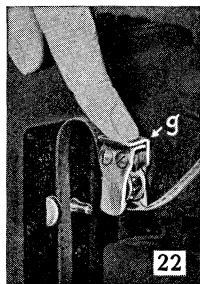
Manual rewind

1. Screw the rewinding handle into the upper spool arm.
2. Take hold of the free end of the film, and fasten it to the core of the upper spool (now empty), following the path shown.
3. Rewind the film by turning the handle in the direction shown by the arrow.



Motor rewind

1. Fix the spring belt into place as shown (Fig. 20). Take hold of the free end of the film and fasten it to the core of the upper spool, following the path shown.
2. Set knob 23 nearly to minimum speed.
3. Set the operating switch on position *b*.
4. Engage the rewinding mechanism, by pressing on the grooved rewinding knob 13.
5. When all the film has been wound back, stop the projector by pushing on the operating switch.



Unloading

To unload the projector after showing part of a film, proceed as follows :

Open the gate by pulling the lens-holder forwards.

Free the film from the sprockets by pressing on part *g* of the sprocket guides.

Rewind the film by hand or using the motor, as described above (see Fig. 19 and 20).

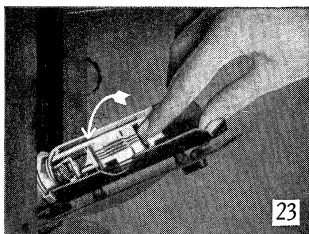
IV

V

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VII

VI. Changing the projection lamp

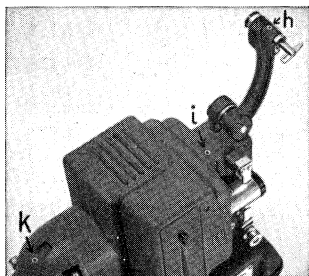


Open the combined panel and lamp mount 21, press down on the lamp and turn it a quarter-turn in the direction shown by the arrow. Remove the lamp, and put in a new one by carrying out the same operations in the reverse order (when inserting the new lamp, see that the flanges on its base are opposite the corresponding gaps in the lamp-holder socket).

The standardized projection lamps now on the market are practically interchangeable, so that no readjustments will be necessary when the lamp is changed. To ensure a maximum life of the lamp, the lamp-holder socket is fixed on shock-absorbing elastic stands.

VII. Upkeep

Never use any metal tool or other metallic object for cleaning the projector.



Lubrication

After every 25 hours of use the projector should be lubricated by introducing 3 or 4 drops of high-grade sewing-machine oil into the lubricating ducts, which are marked in red, at the same time letting the motor run very slowly. Duct *i* lubricates the central part of the mechanism, and ducts *h* and *k* lubricate the upper spool spindle and the motor.

Cleaning

Optical equipment: Using a dry, clean paintbrush with fine soft hairs, remove all dust from the lens, the reflecting mirror next to the projection lamp, and the glass screen 24 of the catathermic filter. Then clean all the glass surfaces with a clean, dry chamois-leather cloth.

Pressure-pad (on lens-holder) and gate : These two parts, which are very easy to get at, should be cleaned fairly often to remove any deposits of

emulsion or dust which may accumulate. A soft, dry rag can be used for this purpose.

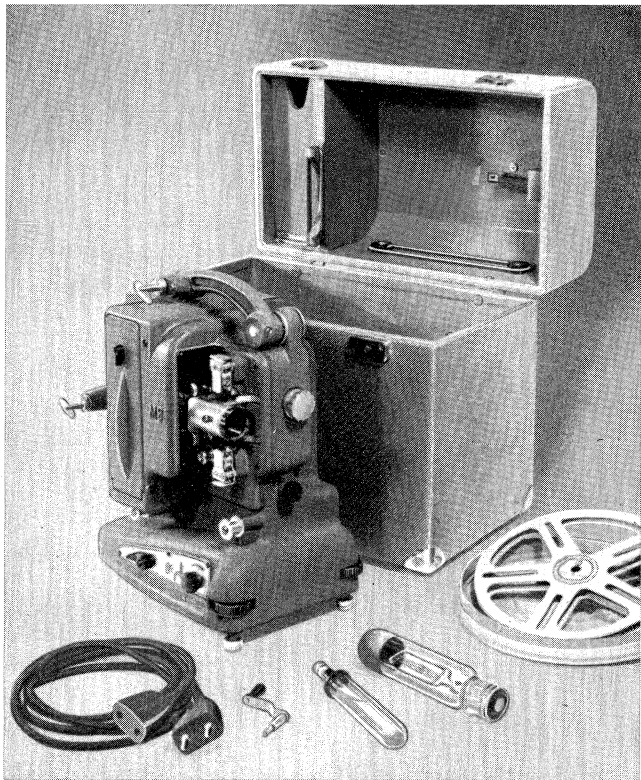
Check that the gate aperture is free from any particles of foreign matter by inspecting its image on the screen.

Sprockets and rollers : Any deposit of dust or emulsion that collects on the sprockets, film guides or rollers may cause scoring of the film. Although the M8's sprockets and guide rollers have been designed expressly to prevent the possibility of such damage occurring, by avoiding all contact with the exposed portion of the film, these components should nevertheless be cleaned regularly. Deposits of emulsion are more likely to occur when freshly-developed films are being shown.



VI

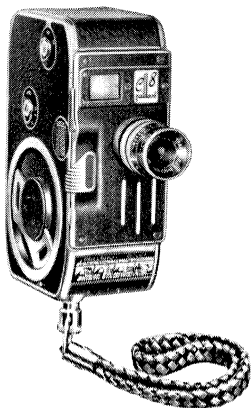
VII



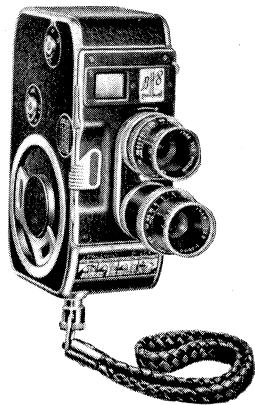
The M8 projector and its accessories

The finest small size 8 mm cameras obtainable

Precision, speed and economy
are all cased in these jewellike 8 mm gems
of Swiss Camera Craft



BOLEX C 8
single lens camera



BOLEX B 8
twin-turret camera

Simple to operate, yet with all the features you'll need for trick and fast action shots. The **B 8** and **C 8** are designed expressly for rapid loading, rapid control, and rapid accurate shooting.



Manufacturers:

PAILLARD Ltd., Ste-Croix

(Switzerland)

