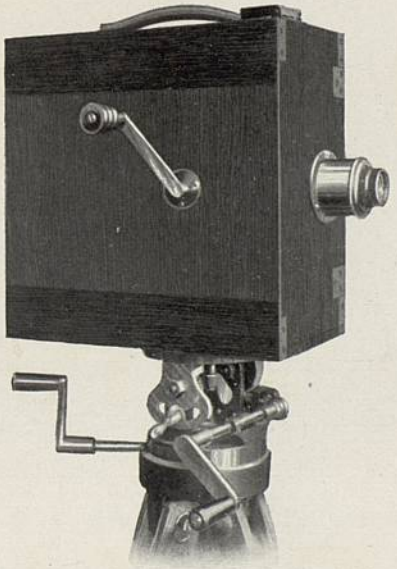
WILLIAMSON'S

"TOPICAL"

CAMERA.

Williamson's
"TOPICAL" CAMERA.

A COMPLETE CINEMA CAMERA WITH ZEISS TESSAR LENS.



Price £10 10s. nett.

✦

The Williamson Kinematograph Co., Ltd.,
WILLIAMSON HOUSE,
28, DENMARK STREET, CHARING CROSS ROAD,
LONDON, W.C.

Telephones—
GERRARD 9751
Private Exchange.
CENTRAL 7393.

Telegrams—
KINETOGRAM, LONDON.

The Topical Camera.

No better work can be done with ANY CAMERA at ANY PRICE than can be done with this new model.

We place in the hands of every Picture Theatre Proprietor a Camera at such a price that one good picture will pay the cost of it.

You Turn the Handle—we do the rest.

It is possible for operators with only a slight knowledge of photography to take pictures of local events and show them on the screen within a few hours.

Your patrons will flock to your theatre on the chance of seeing themselves, or their friends, when you let them know you have filmed some event in which they are interested. Or you may carry the idea far enough to institute a LOCAL GAZETTE, and they will come to SEE regularly the important local events of the week.

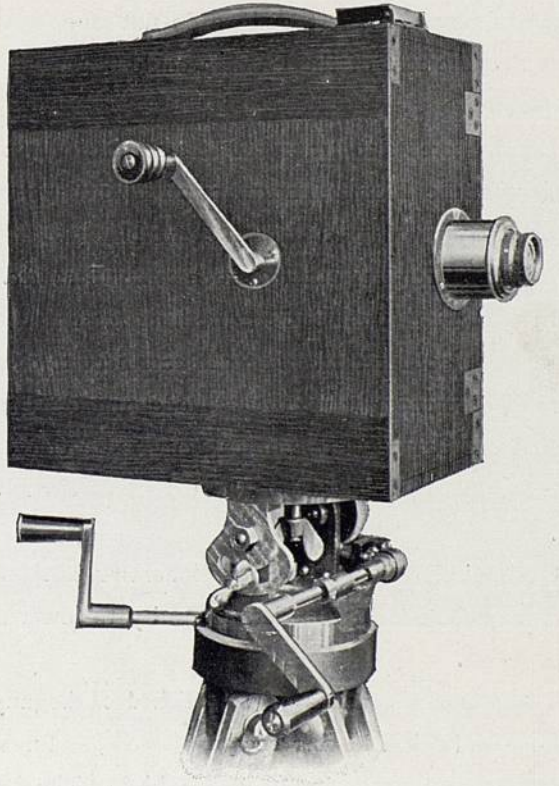


Fig. 1.

The Topical Camera on Tripod with special Head.

Another great point is, that having a Camera ready loaded and on the spot, many important happenings of more than local interest can be secured. We need hardly remind you that there is a good market for negatives of topical subjects of general interest, and we do not exaggerate when we say that the cost of the Camera could be repaid by one such picture.

Local Stores and tradespeople also, are fully alive to the value of the Picture Theatre as an advertising medium, and will pay good prices for the exhibition of a picture showing their premises during a rush of business, &c.

In designing this Camera nothing essential to the making of a good picture has been sacrificed to cheapness. The main differences between this model and our larger and higher priced Cameras are, film capacity, extra conveniences and attachments, adapted for the use of studio and trade work.

Our main idea has been to eliminate non-essential parts and to manufacture in sufficient quantity to lower the cost of production.

The Camera consists of a polished mahogany case, brass bound, having leather carrying handle, and measuring $9\frac{1}{2}$ inches by $4\frac{3}{4}$ inches by $9\frac{1}{2}$ inches high. The lens and mount project another $1\frac{3}{4}$ inch, and the whole, when loaded with film, weighs $7\frac{1}{2}$ lbs.

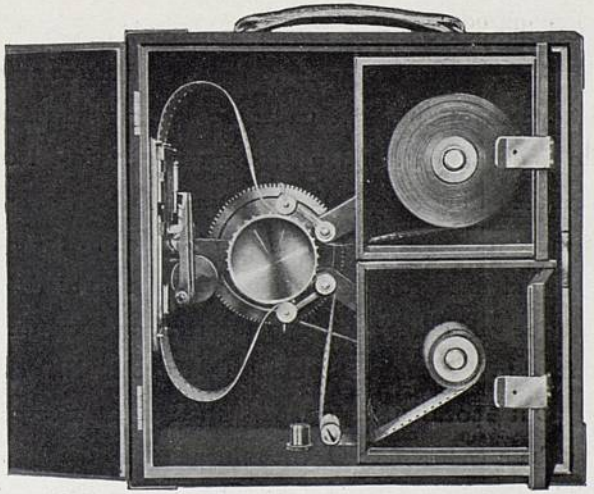


Fig. 2.

Interior of Camera showing method of threading up the film.

DESCRIPTION.

The drawing shows the general arrangement of the mechanism in the case, and the path taken by the film.

The eight-picture sprockett A is turned direct by the handle (not shown in the drawing, but connected to the spindle of the sprockett which projects from the farther side of the case). The loaded film box B, is placed on the top of the receiving box C. The path the film takes after leaving the top box is under the fixed roller D, and after engaging with the teeth of sprockett under the spring roller E lifted by the finger clip F, and after forming the free loop G through the spring gate H, then forming another free loop I; under the sprockett again and held in position by the spring roller J, and fixed roller K, then under the fixed roller L through the velvet lined slot into the receiving box, the end being fixed to the centre bobbin M. The claw N is shown in the "Out" position, in which position it must be put by turning the eccentric disc O when threading up the film.

This claw movement is our well-known PATENT, which has made the reputation of our other model Cameras. This model is also further protected by another PATENT APPLIED FOR. The shutter P is recessed in the case and the whole mechanism is built on a skeleton casting, so that by the removal of 4 screws it can be easily detached from the case in one piece.

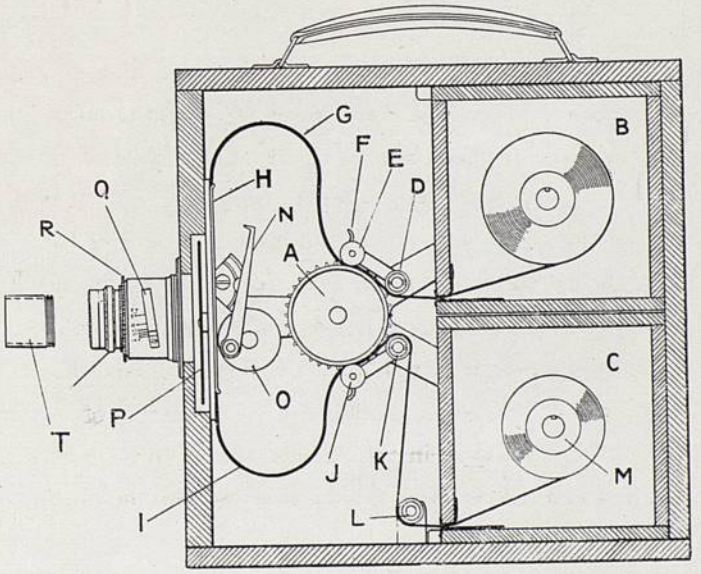


Fig. 3.

THE LENS.

A 2 inch Zeiss Tessar lens f/3.5 is supplied as standard and the illustration on this page gives a full size view of the lens and mount, showing, in detail, the method of focussing and adjusting the iris diaphragm.

The focussing mount is a simple 2-tube sliding arrangement, easily operated by the milled ring R and graduated for INF (Infinity), 20 ft., 15 ft., 10 ft. and 5 ft., by the spiral slot Q. The iris diaphragm is operated by the milled ring S; on the

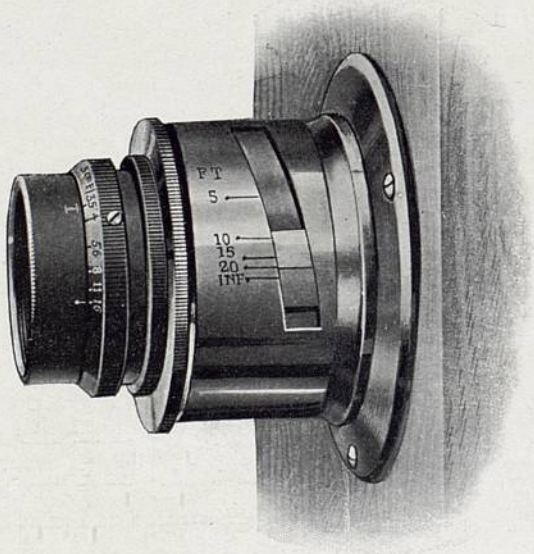


Fig. 4.

lens mount T is a detachable sun shield which screws into the front of the lens.

A booklet with further detailed instructions for operating the Camera, as well as instructions for developing the negative, printing and developing the position, is supplied with each Camera.

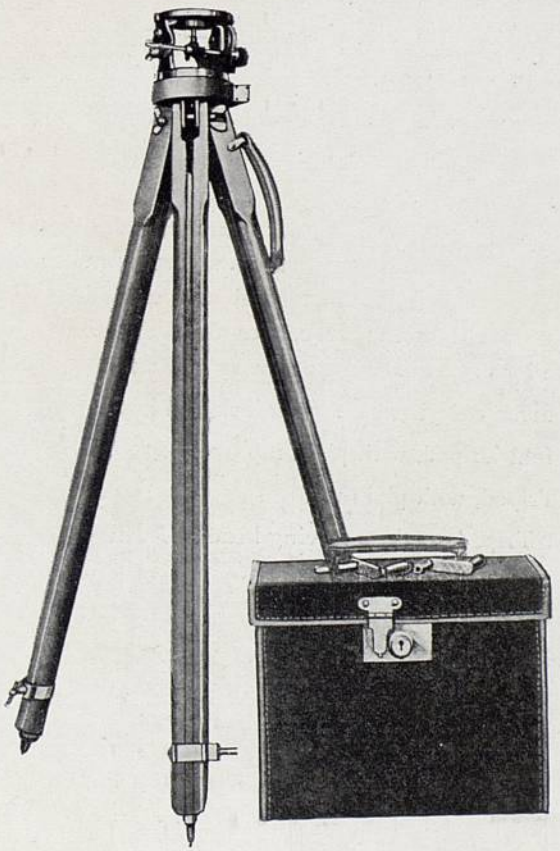


Fig. 5.

PRICE LIST.

CAMERA & ACCESSORIES—

	£ s. d.
The "Topical" Camera, (Williamson Type 4 Model), see Fig. 1.	10 10 0
The "Topical" Camera de Luxe. In seasoned teak wood with extra brass binding, suitable for the Tropics	11 11 0
Leather Case, lined velvet, with handle, straps and buckles. Takes Camera and two extra boxes when lens is unscrewed and carried inside the Camera; or carries the Camera with lens attached without the spare boxes...	1·7·6 ~~1 1 0~~
Mail canvas carrying case, with lock and key ...	1 1 0
Three-fold Tripod, with plain top	15 0
Rigid Tripod, with plain top	1 5 0
Special Tripod, with revolving head and tilting top	5 0 0
Ditto, without tilting top	3 15 0
Spare Film boxes	8 0
Spare Film box bobbins	6
Spare Handle for Camera	2 6
Spare Handle for revolving head or tilting top of tripod	2 0
Tripod Screws	1 6
Spare Sliding gate	3 0
View Finders	5 0

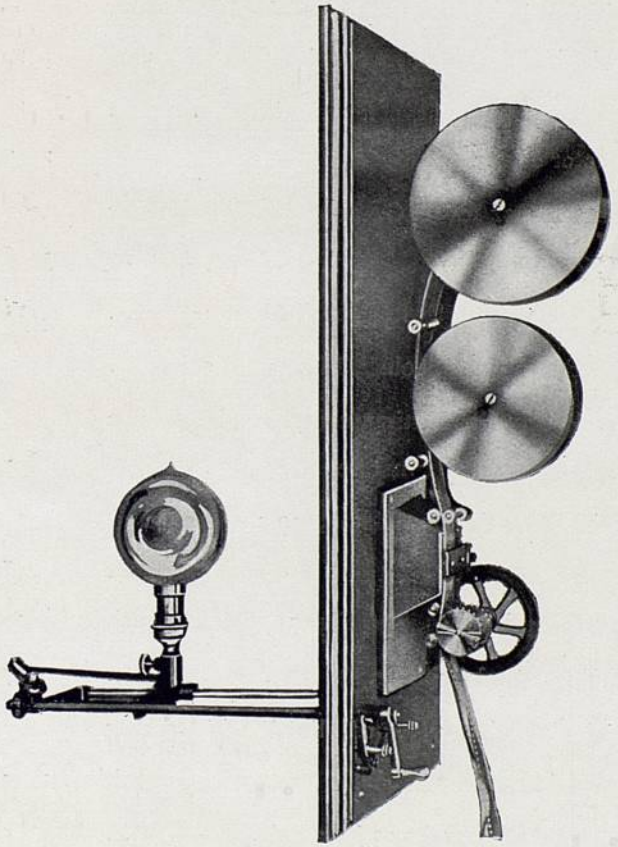


Fig. 6.

PRINTING & DEVELOPING—

	£	s.	d.
Printing Machine, mechanism only	3	0	0
Ditto, fitted on mahogany base-board, complete with light-shifting mechanism (see Fig. 6)...	4	10	0
Set of wooden pulleys for gearing down when motor driven	1	0	0
Special Motor for D.C., 100 volts to 115 v., or 200 v. to 230 v.	3	6	0
Speed Regulating Switch for ditto		13	9
Spare Spool plates, polished brass		2	0
Incandescent Gas Fitting, complete with flexible gas tubing and 1 mantle		7	6
Special Electric focus lamp, 50 c.p., 110 v. or 220 v.		7	6
Developing Frames, (see Fig. 7) ... each		10	0
Winding Stand (see Fig. 8)		~~17~~	~~6~~
Developing Tray, wood, lined with rubber sheeting, Fig. 7 ... ... each	1	5	0
Metol-Quinol Developer for 3 gals.		5	0
Acid Fixing Salt, sufficient for 4 gals.		1	0

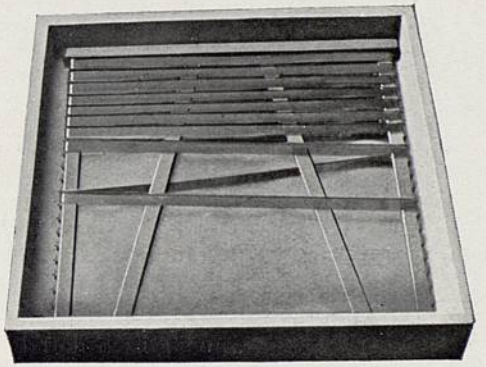


Fig. 7.

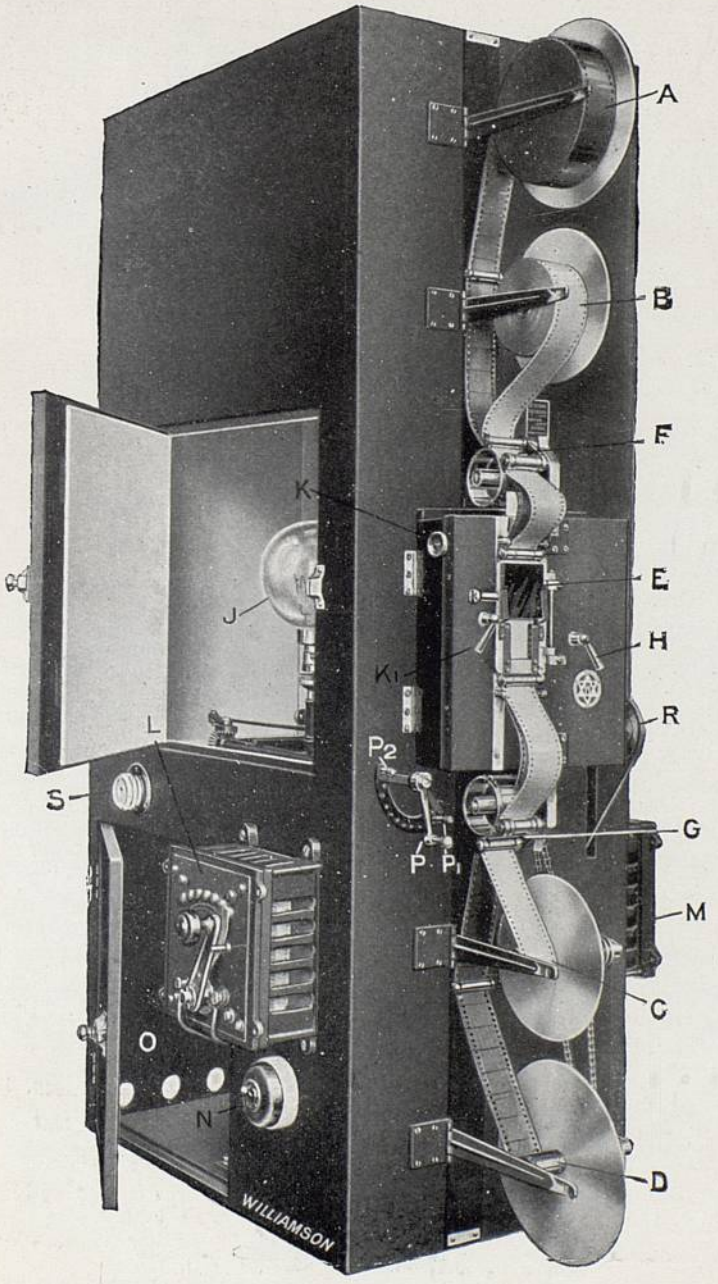
Fig. 8.

BUSINESS TERMS:

All prices quoted are nett cash, thirty days limit of credit allowed on receipt of approved trade references. Foreign orders should be accompanied by order on London Bank for payment against bill of lading; if sent through shippers, duplicate should be sent direct to us.

The WILLIAMSON KINEMATOGRAPH Co., Ltd. are makers of Cameras, Printing Machines, Perforating Machines, and all accessory apparatus for Film production.

Complete Illustrated Catalogue sent free on application. On the opposite page will be found an illustration of our complete Model Printer.



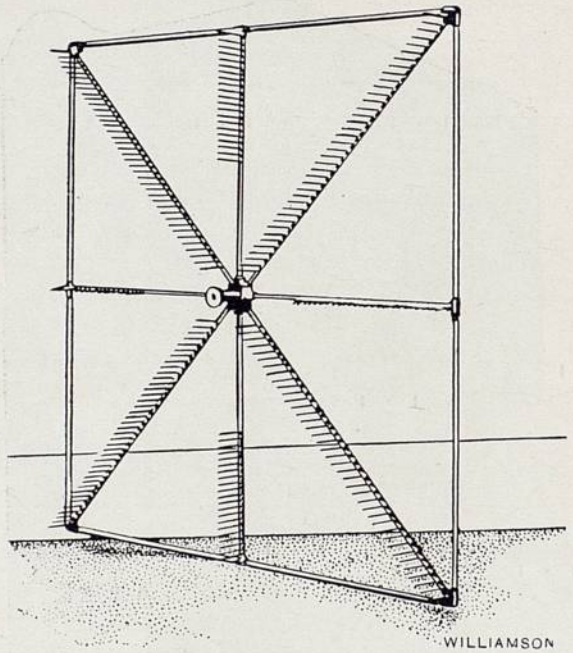


Fig. 9.

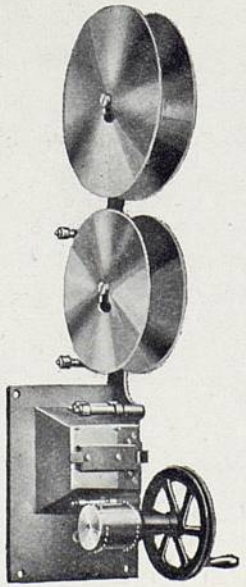


Fig. 10.

Williamson's "TOPICAL" CAMERA.

INSTRUCTIONS FOR USE.

Figure 2 shows the manner of threading up the film. Each roll of negative film supplied by us for use in this Camera is supplied with a "lead" of blank film, marked to show exactly where each part should be threaded up to. The roll of film must, of course, be inserted in the film box in the dark room, and each roll will be supplied with a centre hole large enough to slip over the bobbin; the end is to be threaded through the opening and left. To avoid the danger of the film end slipping back into the film box, necessitating another visit to the dark room, the end should be turned back and pushed into the slot, forming a loop.

The end will be found marked thus—"This end to be fixed to bobbin inside the bottom box." Pull the blank end out and lead it under the fixed roller beside the sprockett, then under the spring finger which presses the film on the sprockett. See that the teeth of the sprockett are engaged in the holes in the film. Turn the Camera handle now until the word STOP shows at the mouth of

the film box, the portion marked TOP OF SPROCKETT should now be in correct position. Now move the claw so as to allow the gate to be opened to the widest extent and slip the film in sideways, at the same time noting that the line marked TOP OF GATE on the back of the film is in position. This will leave a loop of the right size between top of sprockett and top of gate. Now form a loop at the bottom of the gate by fixing the portion of film marked BOTTOM OF SPROCKETT into position.

There will now be sufficient film left to thread through the slot of bottom box and fix to the take-up bobbin, and the film will be in the position indicated in Fig. 2. Before closing the bottom box give about another half-turn of the handle to ensure that the take-up is winding properly, and also noting that the film is travelling properly in the film gate. The film box may now be closed, taking care that the snap catch is properly engaged with the pin; close and fasten the Camera door and everything is ready to make an exposure.

Turn the handle a steady two turns per second, counting all the time, so that you count one for each double turn. The operator will soon learn to do this automatically, and will be able by this means to know exactly how much film he has used and how much left.

If you are not sure about turning steadily, try turning the handle when the Camera is empty, timing yourself with a watch, until you get a perfectly even and steady movement.

Follow the movements of the subject in the view-finder, and in

looking at this be careful to view it so that the circular end of the pointer is just at the intersection of the lines. See also that the lines of buildings coincide with the vertical line.

In designing this Camera we have been careful to eliminate everything which can reasonably be dispensed with, so as to simplify the operations and render failure almost impossible, so far as the mechanism is concerned. But with regard to the lens we have fitted what we consider

THE BEST LENS PROCURABLE.

Nearly one-half of the value of the Camera is in the lens. We realise that operators using this Camera, are using film costing exactly the same as if they were using a £45 Camera, and there is no reason why the lens in that case should be less efficient. There are some things about the lens which will be new to the projector operator, if he has not had photographic practice with a lens of a similar kind. Without making any attempt to enter into the optical principles involved, we will content ourselves by giving a brief description and directions.

First, a milled ring with white graduating marks will be found on the body of the lens, as shown in Fig. 4. These marks are F. 3.5 4, 5.6, 8, 11, 16, adjacent this scale.

Upon turning this milled ring round and looking into the lens a diaphragm will be seen, which opens or closes as the ring is turned. These marks are very important, and, in a way, indicate the value of the lens. F, stands for the focus of the lens, in this case 2 inches, so that a fraction stated thus—F/3.5, means an aperture which

has a diameter of 3.5 of the focus. As this is a compound fraction we will take the next, which is simple; F/4 means a diameter equal to the focus (2 inches) divided by 4, which equals ½ an inch. These varying apertures regulate the amount of light passing through the lens. and therefore control the photographic exposure. The difference in relative exposure between f/3.5 and f/4 is not great, but the difference in the exposure necessary between each of the others is exactly double that of the next larger, f/5.6 requires double the exposure of f/4, f/8 double that of f/5.6 and so on. But the question will be asked "how can we vary the exposure when the shutter is fixed and the handle always turned at the same speed." We reply that the diaphragm must be suited to the light available, and this is the only factor in using this Camera which has to be estimated. We have fitted a shutter with a fixed opening; our experience in the making of large Cameras proving to us that an adjustable shutter is of slight utility, and the source of much trouble, through having to open the Camera at the last minute. We also recommend the even turning of 16 pictures per second; so that the only thing the operator has to think about, when making an exposure, is the aperture of the lens. With this rate of turning and the size of opening of the shutter with which this Camera is fitted a Zeiss Tessar lens enables us to make exposures all the year round. With this same lens fitted to our professional model Cameras, many successful pictures of football matches on a Winter's afternoon have been taken. This explains what we said above about the aperture indicating in a way the quality of the lens. A lens which will give a clear image at an aperture larger than a

fourth of its focal length, must of necessity be made of very special glass and with mathematical accuracy. Cheaper lenses will be found to have apertures of f/5.6 or f/8 only, requiring from 3 to 4 times the exposure, rendering the taking of pictures on dull days almost impossible. Cheap lenses also having other faults which we need not enumerate.

An exposure on a football match on a Winter's afternoon may be taken as the limit in one direction. On such a subject you are testing your lens, Camera and speed of your negative film to the utmost of its capacity to give a good picture in a feeble light. When we come to the other extreme, for instance, yachts sailing in Summer sunshine, if we were to expose our film upon such a subject at the same aperture as our Winter football, we should find our negative so over exposed as to be practically useless. If, however, instead of aperture f/3.5 we turn the diaphragm down to f/16, we shall have given only about one-twelfth of the exposure and stand a better chance of getting a good picture. The size of the diaphragm aperture must therefore be proportionate to the amount of light on the subject to be taken. If this were the only factor to take into account, the actual stop which should be used, on any given subject, could easily be estimated by a small instrument called an Actinometer, which measures the actinic value of the light. There are, however, certain advantages in using as small a stop as possible, and there is so much latitude in the film itself that the following brief directions will be found all that the operator need concern himself with at first.

Use f/3.5 on a dull day in Winter; on a well lighted interior,

or on a subject at any time of the year, where there are heavy shadows—such as under trees.

Use f/4 on a bright day in Winter, dull days Spring and Autumn.

Use f/5.6 for ordinary out-of-door exposures in Sept., Oct., March and April, or very dull Summer weather.

Use f/8 on street scene in bright Summer weather.

Use f/11 on open fields in bright sunshine.

Use f/16 on bright sea and sky subjects.

THE FILM GATE. The pressure plate will be found to be quite loose, being held in position by the spring gate. There are several reasons for this. First, it can be slipped up so as to uncover the exposure window, enabling the operator to focus up special subjects. Second, it can be easily slipped out for cleaning and polishing; and third, being loose. it is not possible to have the exposure aperture open, because the first movement of the claw brings it back into position.

FOCUSSING. For the great majority of topical subjects it is quite unnecessary to consider the focus. With a Zeiss Tessar Lens of 2 in. focus, practically everything is in focus at the INF, (Infinity) mark, see Fig. 4. When using the largest aperture, it is necessary to be careful that nothing important in the picture is nearer than 20 ft. But when the light is good enough to enable you to stop down to f/8 objects quite near—say 12 ft. distant will be in focus. The other focussing marks on the mount are 5, 10, 15, and 20 feet; these are for use when the principal object in the

picture is at either of these distances. When critical focussing is required, use the focussing window. Raise the pressure plate until the aperture comes opposite the exposure window and insert a piece of plain matt film, placing it with the matt surface towards the lens and move the focussing mount by means of the milled edged ring, until the required sharpness is obtained.

TRIPOD. Any ordinary photographic tripod which is rigid may be used with this Camera. The most important thing to guard against in the tripod is a loose head. However rigid the legs may be, if the head is loose, you are likely to get a side-to-side sway on the picture. We recommend the tripod here illustrated, Fig. 5, with revolving and tilting top. The tilting top should be kept for special work, and the revolving head only, used for ordinary subjects.

A leather case, as shown in the same illustration, is strongly recommended to be used. This is made to carry the Camera and two spare boxes when the lens is unscrewed and carried inside the Camera. Or to take the Camera with the lens attached without the two extra boxes.

DEVELOPING THE NEGATIVE. Just as in operating the Camera there is nothing but what any intelligent projector operator will quickly learn, so in developing the negative or printing the positive, there is little more to learn than in developing and printing a Kodak spool. All the same we suggest doing one thing at a time. Send your first exposures to us, we will undertake to get the best possible results, and you will then have

something to guide you if you decide to do your own developing and printing later. We have no doubt you will decide to do this later on, because a good deal of the drawing power of a local topical depends upon the smartness with which it is screened after the event.

Assuming that you can find a convenient room with electric light and water laid on, not smaller than 10ft. by 8 ft, which can be made perfectly dark, you will require an ordinary sink with water tap over and a free waste, and alongside of this a bench, 3 ft. wide, the whole length of the room, up to 12 ft., that will be about 9 ft. long in addition to the sink. On this bench you will require 3 trays, 33 inches square inside. These may be made of wood with glass bottom, or of wood only, if well made and water-tight, or they may be made of ordinary deal and lined with waterproof fabric. The latter are quite efficient and cheap, as well as light in weight. Lead lined trays do not offer any special advantage, and, as in the frame method of developing, which is the one we recommend, the trays should be rocked, lead-lined trays are heavy and cumbersome.

It will be well at this point to say something about the different methods of developing in use. It seems to be a perfectly natural thing for everyone who knows anything about photography, to think of a drum as the best and easiest method of developing kinematograph film. Quite a number of beginners in our experience have not been satisfied until they have tried it. We advise you not to think of it. The advantages are obvious, but the disadvantages are an unpleasant experience, only to be discovered

in actual use. The pin frame shown in Fig. 9, has been in use for many years, and has many points in its favour. It is tedious, however, to wind on, takes time, and has to be unwound on to a drum for drying. We believe we are right in saying that this method is dying out, and very few firms are using it.

The square frame method is that illustrated in Fig. 8, where the film is wound over and over on a skeleton frame, and the whole is developed like a large photographic plate, except that the sensitive material is upon both sides.

On a commercial scale these frames to carry 150 ft. or 200 ft. are developed in vertical tanks, holding as much as 70 gals. of developer. The frame necessary to carry 100 ft. of film is 33 inches square and is more conveniently and economically developed in a flat tray. These trays should be fitted with rockers, so that the developer is made to flow to and fro over the surface of the film.

In arranging the trays on the bench in the dark room, let the one farthest from the sink be the developer, the next one the fixing tray, but between these two there should be fixed a dividing board at least 9 inches above the top of the tray, to avoid splashing the hypo solution into the developer. If there is room, it is better to have a rinsing tray between the developing and the fixing tray, but with care and using the dividing board, the film may, before fixing, be rinsed in the third or washing tray. The washing tray should overhang the sink, so that it can be easily filled from the tap and emptied into the sink. After fixing, the film should be washed in six changes of water. These three trays and this

method of washing, are only suitable where one or two frames have to be handled at a time. If as many as six or more have to be done at a time, it will be necessary to provide a washing tank, holding at least six frames, and provided with a spraying tap and a syphon outlet.

After washing, the winding frame as shown in Fig. 7, may be used for drying, keeping it twirled round by hand. This should be done first of all in some place where no damage will be done by the water thrown off, but afterwards it may be twirled in front of a fire, or in a warm room, or out of doors in the sun; but wherever it is done the greatest care must be taken to avoid dust.

PRINTING. A volume might be written about this, and the operator now making his first essay, may one day write it, but we are sure he would not make the attempt if he had to read a book about it first. We will, therefore, spare him that and encourage him so far as to say that he need not fear this part of the process any more than the taking of the negative. Our whole idea in bringing the process of taking, developing and printing home to the picture theatre operator and the amateur, is to put in their hands the means of making kinematograph pictures equal to the professional. We know what we are writing about, having been engaged in this business since the days when everyone had to find out for himself how to do things. There are some steps in the process which may be more or less makeshifts—the developing arrangements for instance; so long as your trays hold water and your room is dark and your solutions right, anything else of a

makeshift will do. We have developed in trays made of Willesden paper before to-day. There is nothing makeshift about our Camera, and there must be nothing makeshift about your printing arrangement. You must have a Printing Machine, and as we realised that you could not pay £45 for your Camera, we also realised that you could not pay even £20 for a Printing Machine. We make these machines for professional use, costing £45 complete.

We have succeeded in making a thoroughly practical printer, which we have tested in our own dark rooms, and we will guarantee that it will produce prints equal to that made by our £45 machine. The difference here is similar to the difference between the Camera at £10 10s. and one at £45, all the little conveniences and adjustments which cost money have been omitted. The machine consists merely of an iron framework carrying a double arm for the negative and positive spools, a continuous turning sprockett, a pressure gate in front of the exposure aperture and a handle to turn. The machine may be screwed upon a partition wall in front of an aperture behind which a light is placed, the negative and positive threaded through the machine and allowed to run into any convenient receptacle. Fig. 10 shows the plain mechanism. Fig. 6 shows a complete Printer, fitted on polished mahogany board with light shifting arrangement. The light-shift is arranged to take either an electric lamp or an incandescent gas burner. The light can be instantly shifted by means of a lever operating on a quadrant with 10 stops, and by means of two other levers which are set beforehand, the light can be shifted to any point with the left hand, without stopping turning with the right.

The necessity of altering the light during exposure need not occur. The negative may be printed in lengths which are sufficiently evenly exposed to print at the same rate. With the light shifting arrangement the rate of turning may be kept constant, and until the operator has had sufficient experience to calculate the exact position at which the light should be for the density of the negative, he should make trial exposures with the light at different distances. The rate of turning will depend upon the candle-power and form of lamp used. We recommend a lamp of 50 c.p. with a special filament formed with a smaller coil than usual, and known as a focus lamp. With this lamp and a negative of average density the handle may be turned at usual projecting speed; in this case 12 pictures per second, as the sprockett is a six-picture one. If an ordinary lamp of less candle power be used the rate of turning will be slower. It is, of course, very important that the handle should be turned perfectly evenly. The turning handle is fitted on a pulley wheel and may be driven with a small power motor, using a set of reducing pulleys, which we can supply.

The developing of the positive is in all respects the same as developing the negative, and in judging the respective qualities of negative and positive, practice and experience must guide you. Our experts in this department are always at the service of our customers and will be pleased to criticise their work and give advice whenever called upon.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