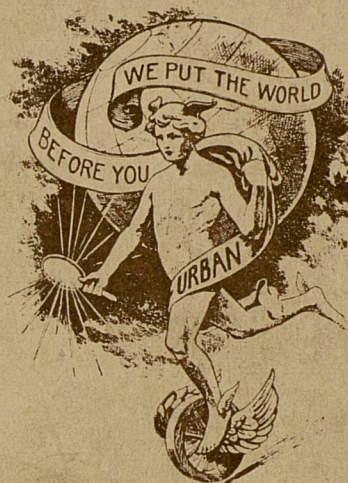


W. Way

URBANORA 1914 CATALOGUE

OF

**Kinematograph
Machines**



**Motion
Picture
Accessories.**

The Charles Urban Trading Co. Ltd.

(ERNEST REED, Manager).

**Kinematograph Specialists
and Film Publishers,**

**Urbanora House, 89 & 91, Wardour Street,
LONDON, W.**

Telephone:
CENTRAL 3118.

Telegrams:
"BIOSCOPE, LONDON."

Price List

1914

ALL PREVIOUS LISTS CANCELLED

**Urbanora Projectors
Cameras
and
Accessories.**



Charles Urban Trading Co. Ltd.

(ERNEST REED, Manager)

Kinematograph Specialists and Film Publishers,

Urbanora House,

(THE HOME OF KINEMATOGRAPHY)

89-91, Wardour St., London, W.

Telephone: Central 3118. Telegraphic Address: "Bioscope, London."

CODES USED: A.B.C. 5th Edition; "LIEBER'S CODE" and "WESTERN UNION."

— DISTRIBUTING BRANCHES IN EVERY COUNTRY. —

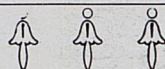
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IMPORTANT NOTICE

The Revision of Prices and Terms notified herein take effect from the date of Publication of this List (September, 1912) and

All previous Quotations are Cancelled.

The Prices, which depend on market fluctuations which affect the cost of raw material used in the manufacture of the Catalogued Goods, are subject to change without notice.



TERMS:

Cash with order. Machines, Cameras and Accessories are not sent on approval.

TRANSIT:

All Goods are sent at Consignee's risk. Scrupulous care is taken in packing, and we do not hold ourselves responsible for loss or damage in transit. *Customer's must claim from Carriers.*

CASES and PACKING:

Charged at cost price, are not returnable.

DELIVERY:

At Urbanora House, 89-91, Wardour Street, London, W.

COLONIAL and FOREIGN ORDERS:

Remittance, payable in London, with full shipping instructions, must accompany every order.

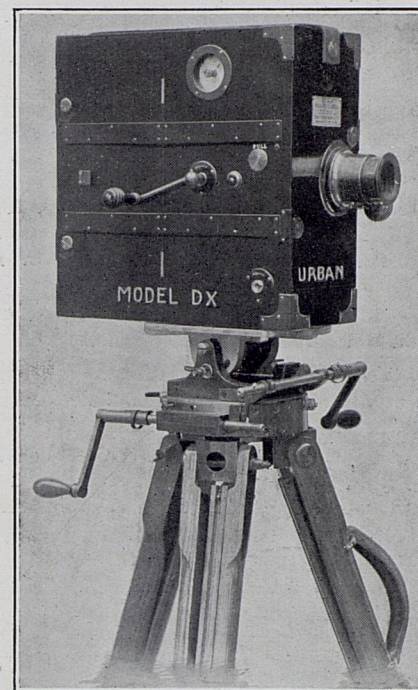
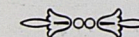
BANKERS:

"London City and Midland Bank, Limited," Shaftesbury Avenue Branch. All cheques and remittances should be crossed.

The Urban Bioscope Camera

. . . IS THE . . .

Handiest,
Most Compact
AND
Efficient
Machine
Obtainable.



Model "Dx" Urban Camera fixed on
"Maxim" Rotary Tripod

The many advantages of this Camera are so well recognised that it is unnecessary to enter into detail as to its scientific construction, high finish and workmanship.

Excessive cold, hot, moist or dry climates do not affect the smooth working, the accurate operation, or warp the case or mechanism of
URBAN BIOSCOPE CAMERAS.

These Instruments have stood the severest tests during many years by Explorers, Photographers and Film Makers in all Countries and Climates.

THE CAMERA FOR THE PRACTICAL KINEMATOGRAPHER

Many important pictures have been secured with the **URBAN** Camera (*which is self-contained and always ready for use*) during the time it took operators of other makes of Cameras to thread their instruments and adjust their film boxes, in consequence of which delay they lost opportunities of securing photographic records of events which could not be delayed to suit the user of an antiquated type of kinematograph camera.

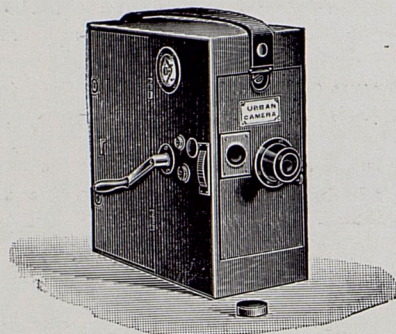
Urban Camera, Model "B"

CONSISTS OF

Six Daylight Loading Film Boxes (capacity 150 feet each) fitted with brass-centered Film Core and re-winding device (interchangeable).

One Zeiss "Tessar" 3-inch Focus Lens, full aperture F5.4 This Lens is mounted with lever distance adjustment, and disc for setting Iris diaphragm. This is the best "all round" Lens obtainable.

View Finder and Sighter.



Automatic Register for enumerating the number of feet of Film used after each series of exposures.

Automatic Film Punch for marking the Film between the incidents photographed, thus preventing the cutting of the Film in the wrong place when preparing it for development in the Dark Room.

Fitted with direct Focussing Sight-Hole.
Automatic Film Re-winding Device.

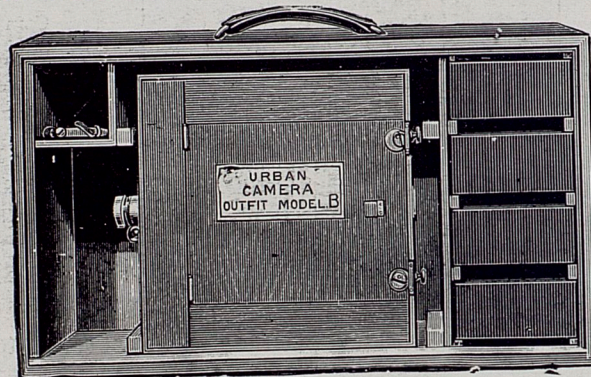
Special Travelling and Carrying Case for Camera and Accessories (Aluminium corners, and fitted with lock, key and handles).

THE MECHANISM IS OF A COMBINED CONTINUOUS AND INTERMITTENT PRINCIPLE, allowing the Film to be "fed" between two loops, preventing thereby any strain or "plucking" on the Film or injury to the perforations thereof, at the same time assuring **ABSOLUTELY CORRECT REGISTRATION.**

The best quality Steel Gun Metal and Brass and Aluminium is employed in the manufacture of these Instruments. All metal parts are oxydised, and are of the best workmanship. The cases and Film Boxes are made of thoroughly seasoned mahogany, and are guaranteed light-proof. Will stand all climatic changes Finished in highly-polished mahogany.

No one can afford to take an event or incident (which may only present itself once in a life-time) and have it turn out a failure owing to the inefficiency of a cheaply built apparatus. The best is always the Cheapest.

NOTE—All "Urbanora" Film Subjects are taken with the Bioscope Camera. You can thereby judge of the accuracy and steadiness of the Apparatus.



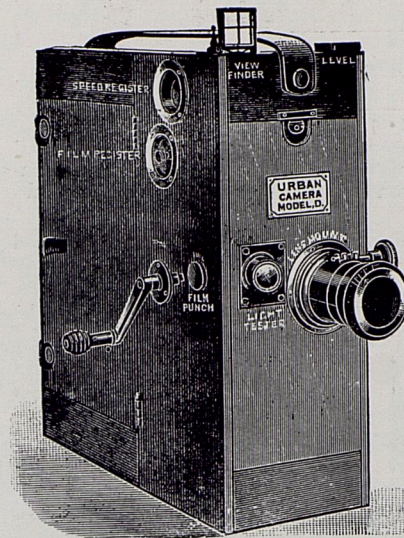
Model "B" Camera with 4 Spare Film Boxes in Travelling Case.

Outfit Model "B"	with 2 film boxes, view finder, and 3 masks, without lens, Code Word: Biob	£15 10 0
"	" complete as illustration " Bioac	£26 0 0
"	" with 2 Canvas Leather-bound Cases Biocan	£30 0 0
"	" with 2 All Sole Leather Cases, &c. Biolet	£31 10 0

An Outfit which is Light, Compact, Portable, Highly Efficient and UP-TO-DATE. BEWARE OF CHEAP IMITATIONS.

Urban Camera, Model "D."

Latest perfect type Camera, as used by our Photographic Staff, and all important Film Manufacturers.



The Mechanism is on the same principle as Model "B." While the case is slightly larger, it is exceedingly light, all metal parts being of Aluminum, with steel bushings and bearings.

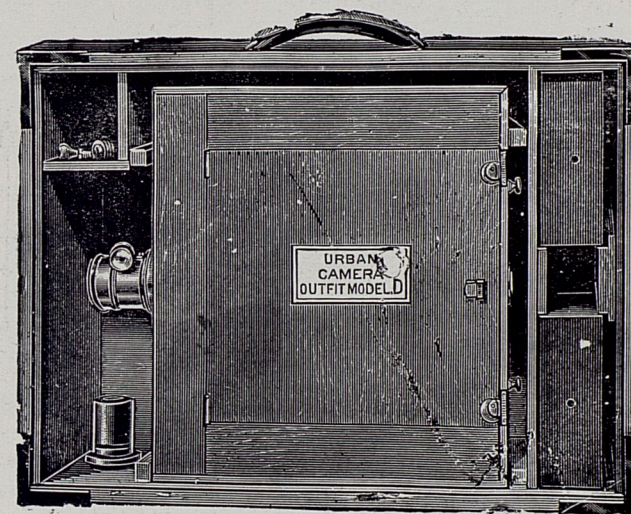
The Outfit is equipped with one Voigtlander or Zeiss Tessar lens mounted in interchangeable tube with nickelled rack and pinion mount.

The interchangeable Film Boxes, of which two extra are included, have a capacity of 350 feet of film each.

The Camera, is further equipped with a Speed Indicator, Film Length Register, and View Finder.

The Entire Outfit is contained in an Aluminium Corner-Bound Carrying Case, furnished with round leather handle and double lock and key.

This is the most perfect Camera Outfit on the Market.



Code.	PRICES—Model "D" Camera.	Price
"Biod"	With 2 film boxes, view finder and 3 masks, without lense	£21 0 0
"Bioblast"	Complete as illustration, with Voigtlander or Zeiss "Tessar" lense ..	£31 0 0
"Bioblat"	" " with two Canvas leather-bound Carrying Cases for Camera and extra Film Boxes ..	£35 10 0
"Biohide"	" " with two solid leather Carrying Cases	£38 10 0

Urban Cameras, Models "Bx & Dx"

Specially Constructed for Tropical Climates and Heavy use.

These Cameras are identical in fitting and in operation with Models "B" and "D," but with the addition of Oxydized Gun Metal Struts and Corners, the most recent improvements, which strengthen the case, prevent damage when in use and travelling, and greatly adds to the appearance of the cameras.

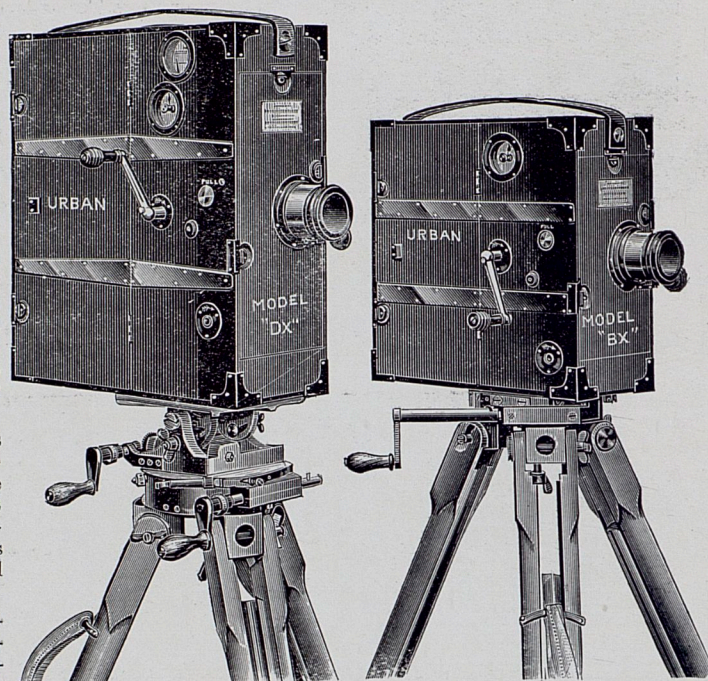
The Film Register, Speed Indicator, Handle Socket and Lens Jacket are also protected by circles of the same metal.

The Struts, being fixed in exact line with the hinges giving access to the the Film Boxes, not only lend additional strength to the case, but effectually prevent the door being sprung by an accidental jar or knock.

Greater clamping power is afforded by the addition of two extra turn buckles, top and bottom—a distinct improvement over previous types.

These Cameras are especially advantageous for use in moist and hot climates, where ordinary wooden cases are inclined to swell or warp.

Beautifully finished, in well-seasoned, highly polished mahogany Models "Bx" and "Dx" Cameras are elegant in design and of the highest class workmanship.



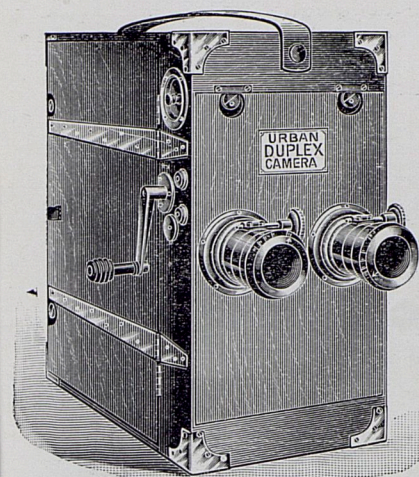
As fixed on the "Maxim" Tripod.

As fixed on the "Handy" Tripod.

Code	PRICES—OUTFIT MODEL "BX."	Price
"Biobx"	With 2 film boxes, view finder, and 3 masks, without lens	£26 0 0
"Biomac"	Complete with the Improvement above mentioned	£36 10 0
"Biomax"	Complete, with 2 canvas leather-bound cases	£40 0 0
"Biomar"	Complete, with 2 all-sole leather cases	£41 10 0
OUTFIT MODEL "DX."		
"Biobx"	With 2 film boxes, view finder, and 3 masks, without lens	£33 10 0
"Biomat"	Complete, with the Improvement above mentioned	£43 10 0
"Biomax"	Complete, with 2 canvas leather bound cases	£47 10 0
"Biomax"	Complete, with 2 all-sole leather cases	£50 10 0

Urban "Duplex" Bioscope Camera.

TWO MODEL "D" CAMERAS IN ONE



Many Film Makers desiring to obtain two negatives of any important event or subject of exact duplication are equipping themselves with this type of instrument, which is operated by one person.

The precaution of taking two negatives of any important event, simultaneously from one point of view, has often repaid the operator by saving at least one of his negatives, which sometimes is lost through some unforeseen failure of the mechanism, faulty film stock, careless developing and drying of negatives, etc., when only a single camera is employed.

A BEAUTIFULLY MADE AND PERFECTLY BALANCED INSTRUMENT.

Supplied with two Sets of Film Boxes, each of 350 feet capacity.

One Set of specially matched Voigtlander Collinear Objective (either 3 or 4 in. focus—F 5.4) in interchangeable tube mountings with nickelled lens-mount, rack and pinion adjustment.

The CAMERA is further equipped with Focal Plane Shutter, Film Register, Spirit Level, Direct Focus Tubes, View Finder, etc., etc.

PRICE (as above) - - - £50.

Code Word—"BIOCCOLL."

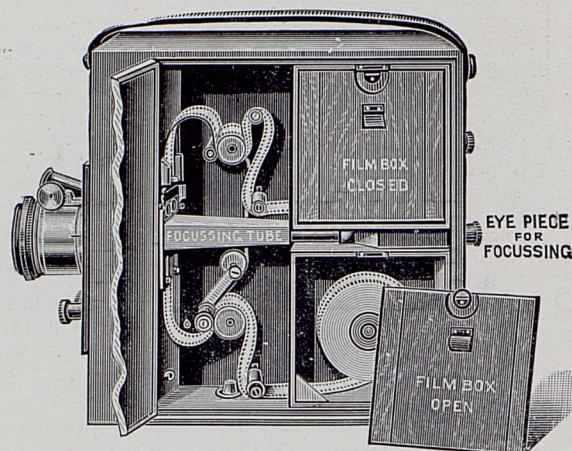
Extra Set (2) Matched Voigtlander No. 1 Lenses 4-inch Tube Mountings (per set of two) (4in. equivalent focus)	£10 10 0
Extra Set (2) Matched Voigtlander No. 00 Lenses 3in. Tube Mountings (per set of two) (3in. equivalent focus)	£8 8 0

Extra Parts of "Urban" Camera.

FILM BOXES for Model "B" Camera (cap. 150ft. film)	each	£0 13 0
" " " " "D" Camera (cap. 350ft. film)	"	0 16 0
CARRYING CASE Pine with Aluminium corners, locks and keys, etc., for Model "B" Outfit	"	2 0 0
1 SET OF 2 CARRYING CASES for Model "B" Camera, canvas, leather bound with handle, shoulder straps, lock and key to each, etc. ..	"	4 10 0
DITTO, all-sole leather (best quality)	"	7 10 0
CARRYING CASE, Pine with Aluminium corners, locks and keys, etc., for Model "D" Outfit	"	2 15 0
1 SET OF 2 CARRYING CASES for Model "D" Camera Outfit, sole leather, baize lined, with locks and keys, handle, shoulder straps, etc. ..	"	9 0 0
CANVAS CARRYING CASE for Four 350ft. Film Boxes	"	2 0 0
SOLID LEATHER CASE	"	3 10 0
CARRYING CASE for Model "Duplex" Outfit	"	3 0 0
VIEW FINDERS	"	0 3 9
SPIRIT LEVELS	"	0 2 0
GROUND GLASS PRESSURE PLATES	"	0 2 6
COILED WIRE TAKE-UP BELTS	"	0 2 0
TUBE CORE FILM BOBBINS WITH SPRING CLIP	"	0 0 9
HANDLES for Model "B" or "D" Cameras	"	0 6 0

Instructions and Precautions to be observed in operating The "Urban" Bioscope Camera.

Load your film Boxes in a dark room by a safe ruby light. Place film roll over spindle after withdrawing wooden spool. Slip end of film under roller inside box, through slot, making certain the emulsion side of film is uppermost and faces the lens when run through the camera. Film as supplied is rolled with emulsion on the inner side, which should thus protrude from the box in the proper manner. Make certain that film box cover is firmly closed and locked before leaving dark room. To prevent the end of the film from slipping back into the box, it is advisable to make several pleats or accordin folds in the end.



To Load the Camera, place box on the top division and screw firmly into position. Then thread the camera mechanism as shown in illustration not forgetting to leave a loop of about $1\frac{1}{2}$ inches between the top and lower sprocket where the film passes through the gate. To open the gate push back the focussing tube, raise the gate spring catch, swing back the gate, clean the pressure glass, turn the handle until the movement pins protrude through their channels, insert the films over these pins, making certain that the aforementioned top and bottom loops are equal. Close the gate and push the focussing tube into its proper position. Pass the end of the film over the lower sprocket, making certain that the sprocket pegs engage the perforation accurately. Pass the end under the lower pulley and into the lower film box, then insert end under the brass clip of wooden spool. Turn the handle of the camera one or two revolutions to see that everything is working in order, then close and lock the lower film box.

To Focus.—The most certain manner of focussing is to view the object directly through the back of the film, provided you have a good light sufficient for this purpose. The most satisfactory way, however, is to insert a piece of Matt surface film (which answers the purpose of ground glass) in the film gate by temporarily removing the sensitised film, which can be pushed outside the closed gate during this operation. Put the focussing tube again into position, remove the metal cap or cartridge from the end of the eye-piece, and rack your lens either backward or forwards as may be necessary, until the image in view appears absolutely sharp. You now remove the Matt film, replace the coated film, insert cap in the eye-piece of the focussing tube, and push the latter gently into the camera as far as it will go.

Preparing to take the Picture.—While you are focussing you should at the same time find your view, and adjust your camera and tripod for position, always keeping in mind that the camera should be in a position absolutely level with the subject, unless the latter be taken from an elevation. Now set the film registering dial at zero, so that, knowing the length of film available, you will always know how much you have in reserve for various exposures. See that your tripod is firmly fixed into the ground, and that the camera is tightly screwed to the top of the tripod to prevent any oscillation. Immediately before commencing to take the view, judge your light and arrange your stop diaphragm in lens accordingly. To judge the illumination on the film, you must now glance into the view finder tube to the right of the lens, by removing the cap, as in the focussing tube, which will assist you to form an estimate of the quality of the light which prevails at the time you are taking your photograph. You must use your individual judgment in this matter, as it is impossible for us to give any definite instructions on this point, adjusting the stops for a proper exposure

being largely a matter of experience. The revolving shutter can be adjusted by removing the front section of the camera case to which the lens is attached, the same adjustment being required in adjusting the shutter to its proper opening as in the case of manipulating the diaphragm or stop, this being strictly a matter of judgement and experience. The further object of the direct view finder is to enable you to adjust your camera speedily to any change of position for the following pictures. **Always photograph your views with the sun directly at the back of the camera,** if possible. To take the picture with the sun facing the lens is certain to produce the most unsatisfactory result. The sun should directly illuminate the object you are photographing, which will assure your getting every detail, provided our previous instructions are complied with.

Taking the Picture.—Turn the handle evenly at the rate of two complete revolutions per second, which is equivalent to sixteen separate exposures or pictures, the minimum speed allowable to procure even movement of the objects photographed. A less speed than this would result in dislocated or jerky movements of the objects on the film when projected on the screen. **IMPORTANT.**—A funeral procession (in order to assure natural motion) should be taken at precisely the same speed as a race or an express train. Should your film box contain one 150 feet roll, and you consider you have done justice to your subject, after exposing 50 or 75 feet, as the case may be, and intend taking further subjects on the remaining 75 or 100 feet, it is advisable to punch a few holes in the film by pulling out the brass knob (marked "film punch" on the camera case) thus enabling those who have the development of the film in the dark room to cut it at the punched holes, as each distinct exposure should be separately developed. One can feel a punched hole in the dark, whereas any other mark is most difficult to discover.

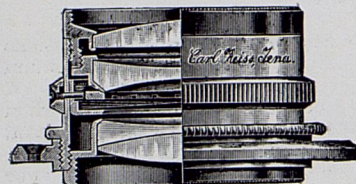
Reloading the Camera.—To reload for further exposures, after exhausting the film from the top box, remove the now filled box. Transfer the upper film box, which is now empty, into the lower section. Insert another filled box into the upper section, and repeat the operation as previously directed. All film boxes supplied with the camera are interchangeable.

DON'T FORGET

- To unscrew and remove your lens cap before starting operations.
- To replace focussing tube after using, otherwise you fog all the films you are exposing.
- To close all catches, thus assuring boxes being light tight before you leave the dark room — and after loading and threading the camera.
- To oil the mechanism and revolving shutter bearings occasionally. This does not mean the sprocket drums or any surface with which the film is likely to come in contact.
- To clean the pressure glass, film gate and plate and the interior of the camera, as the slightest particle of accumulated dust will scratch the surface of the very sensitive film.
- To always have your film boxes properly screwed into position.
- To use the film with the emulsion side towards your lens when passing it through the camera.
- To replace lens cap when camera is not in use, thus preventing the lens from becoming scratched or dirty.
- To make certain, before turning the handle, that the object you intend photographing comes within range of the instrument, otherwise you are wasting film.
- To include as picturesque a background as possible, as this enhances the value of your picture.
- That, in case of accident to the wire film-take-up strap, the same must be replaced or repaired by removing the front section of the camera to which the lens is attached, and inserted over the pulley from this position.
- That the object of an animated picture camera is to take animation, and plenty of it: the more action there is in the picture, the more successful will be the subject.
- That too much sky is detrimental to the reproduction of an animated picture, just as too much foreground without action therein is equally objectionable.
- That the best results are to be obtained by refraining from placing the camera closer than about 20 feet from the nearest object that you wish to include in your view.
- That if you desire further instructions with regard to any matter concerning animated photography, we shall be most pleased to furnish it.**

Special Carl Zeiss Lenses.

As supplied with URBAN CAMERA Models "B" and "D."



The "TESSAR."

1 : 6.3. SERIES 11.b.

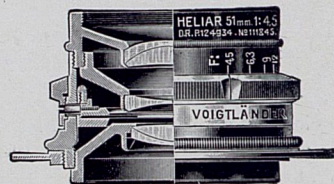
IN SPECIAL MOUNT, WITH IRIS DIAPHRAGM.

A new rapid objective (F 6.3), adapted for all requirements of photography, strongly to be recommended whenever special importance is attached to uniform precision and sharpness from centre to margin, that is, in cases where the negative is subsequently to be greatly enlarged, or when the objective is to be used for reproductions as well as for enlargements.

No. 1a.	3-inch FOCUS	F 6.3	PRICE	£5 5 0
No. 2	2-inch "	F 3.5	"	£5 5 0
No. 3	3-inch "	F 3.5	"	£5 5 0

Objective for Cinematography.

Voigtlander "Heliar."



Special Trade Discount on application.

Lenses for Cinematograph work must have excellent definition up to the edges, and the illumination must be so that they can be used under any conditions of light.

These points are all brought to perfection in our "Heliar" Lens, working at F 5.4.

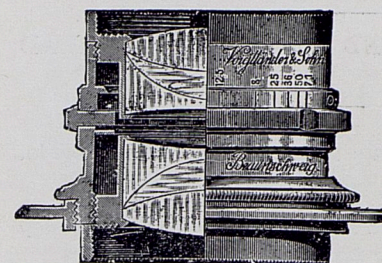
Equivalent Focus, ins.	Equivalent Focus, mm.	Diameter of Lens, ins.	For Cinematograph Films, ins.	PRICE.	Code Word.
1 3/8	35	5/16	9/16 x 3/4	£3 15 0	Fiac
2	51	1/2	1 1/16 x 1	4 0 0	Fiasco
2 3/4	70	9/16	1 1/16 x 1	4 15 0	Fiolon
3 3/8	85	5/8	1 1/16 x 1	4 15 0	Fiber

The "Heliar" Lens is usually supplied in ordinary Iris mount. In Helical focussing mount the price is 15/- extra.

Longer focus Lenses specially quoted for.

Notice—If Zeiss Lenses are desired instead of Voigtlander with Model "D" Urban Bioscope Camera, the difference in List Prices will be charged.

Voigtlander Collinear Lenses.



THE COLLINEAR LENS differs radically from the old style of Lenses and from those in common use to-day. It embodies a new principle—freedom from Astigmatism. It is the most perfect of modern anastigmats, representing **Perfection of Type, Perfection of Physical Qualities, Perfection in the Manufacture.**

The type of the Collinear is an ideal one. Not only does it embody all the corrections that a Lens of its kind should have, but it is planned and conducted on those lines which are considered the most desirable by Lens makers. A Lens is anastigmatic when it will make a simultaneously sharp picture of vertical and horizontal lines crossing each other, or a perfectly sharp picture of concentric circles. This is the most difficult problem for the Lens maker, and in no lens is it so well solved as in the Collinear. The effect of anastigmatism is to make a picture sharp and brilliant, to give it snap and detail.

Collinear Lenses are rectilinear, because they are symmetrical: the front Lens exactly like the rear: in fact interchangeable.

PRICES:

No. 00—2 3/4-inch, equivalent focus F 5.4, without Rack and Pinion Adjustment	£4 10 0
No. 1—3 1/2-inch ditto	£5 0 0
No. 00—2 3/4-inch, fitted with adjustable tube for interchangeable mount, as supplied with Urban Model "D" and "Duplex" Cameras	£5 5 0
No. 1—3 1/2-inch ditto	£6 0 0

The most suitable series of Objectives
:: for Bioscopic Photographs are ::

"Zeiss" and "Voigtlander" Lenses.

ALL "URBAN" BIOSCOPE CAMERAS

are fitted with these admirable Lenses—ALL "URBAN" FILM SUBJECTS are procured thereby.

"THE QUALITY OF THE PHOTOGRAPH IS A GUARANTEE FOR THE LENS."

Handy Extension Tripod.

A Combined Rotary and Rigid Extension Stand.
With Revolving Head, or Revolving Head and Tilting Table.

The **LIGHTEST FOLDING 6ft. TRIPOD STAND with REVOLVING HEAD EVER MADE.**



When closed ready for carrying, the length is 42 in. over all.

The weight with Revolving Head is 12½ lbs.

The weight with Revolving Head and Tilting Top is 15 lbs. 11 ozs.

The Stand is adjustable from a height of 43 in. up to 6 ft. 6 in.

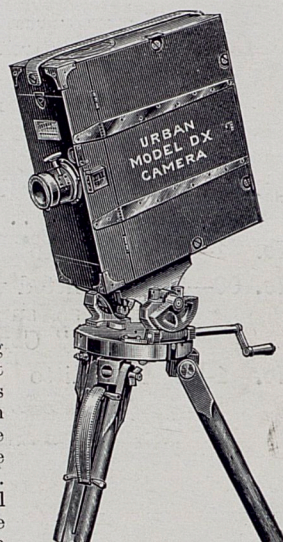
It can be set up or taken down in a few seconds.

By several ingenious arrangements, no nut, screw or carrying handle can be lost.

Its special construction secures absolute rigidity (at any height), together with a lightness which will be a revelation to the operator.

The legs are adjustable, enabling the Stand to be erected on uneven ground, such as the steps of a Town Hall, etc., and yet be perfectly rigid.

The handle for turning the revolving part can be secured and worked from either left or right of the Camera. The Tilting Table is worked from the back or front. A notable improvement has been effected in the revolving part of the head. Operators often experience great difficulty in getting the Camera trained on to the object quickly enough. This difficulty has been overcome by means of an arrangement which enables the worm on the Revolving Head to be instantly thrown out of gear. The head with the Camera still securely fastened to it, may be moved in any direction, the worm being put into gear as quickly as it was thrown out, and ready for



Showing angle attained by the "Maxim" Rotary Tripod—Fig. 2.

work again. With the combined head, that is, revolving and tilting, a new power is put into the hands of the operator. For Instance, it will enable him not only to follow a descending or ascending object, but will allow him to have his Camera at a height of 6 ft. or more, and take a complete circular panoramic view, whilst the Camera is tilted at any angle. All the upright objects will be found to be still upright in the circle swept by his Camera.

The entire tilting is detachable. Purchasers of the Stand with the Revolving Head only, can add the Tilting Table at any time, and it can be fixed in position in a few seconds.

Price of "Handy" Tripod with Revolving Head (as Figure 1) **£7 0 0**

Price of Tilting Table only **£3 10 0**

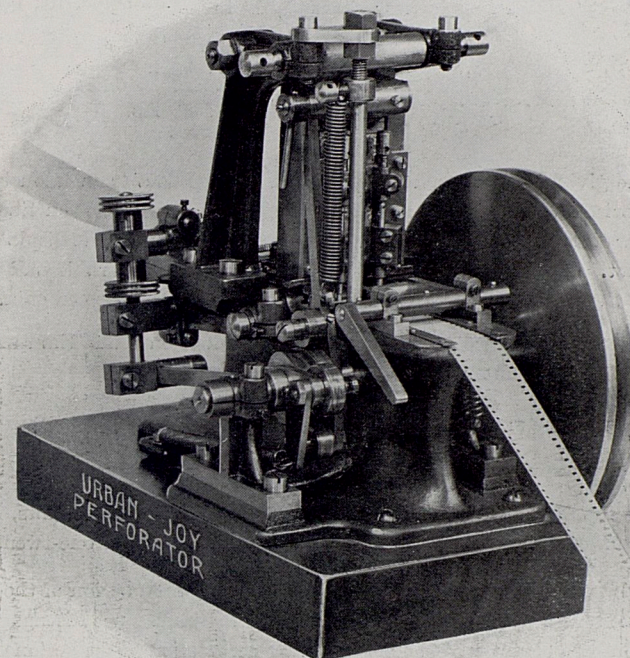
Price of "Maxim" Rotary Tripod, with Revolving Head and Tilting Table (Figure 2) **£10 0 0**

BEWARE OF INFERIOR IMITATIONS.

The Urban-Joy Film Perforator.

The usual machine, constructed to cut eight holes at one movement, invariably produces faulty results, as it is obvious that no means of adjustment can be obtained; hence the unsteadiness or flicker so common in most displays, which occasion unfavourable comment and unsatisfactory returns.

As it is generally considered to be almost a mechanical impossibility to produce two results which are scientifically and mathematically accurate, or exactly alike, the difficulty of producing eight holes of minutely equal dimensions is proportionately increased.



The Urban-Joy machine comes under what is known as the "Step-by-step" class, as distinct from the old rotary perforator.

Only two holes being simultaneously punched in the film, the perforations are made with absolute scientific accuracy, thus ensuring projection of the pictures on the screen without the slightest flicker.

The principal characteristic of this machine is the ease and certainty by which minute adjustments can be obtained, the recognised standard of 64 holes to the foot being accepted as universal. It follows, therefore, that a perforator is necessary which can easily be adapted to meet the varying qualities and thicknesses of film.

The fine adjustment of the Urban-Joy Perforator is obtained by altering the fulcrum of a system of levers by which means the stroke can be varied to the millionth part of an inch.

The machine is easily threaded; no "leader" is required as is the case with the 8-hole punches, and it is so constructed that perforations can be made at any point of the film from the first inch, thus saving the waste of a leader. It is more often threaded, with equal facility, in absolute darkness than with the ordinary dark room light.

The punches and dies are easily detachable for sharpening or renewing purposes and the cost of upkeep is necessarily smaller where one die is used than in the case of a machine which requires four. For an 8-hole machine, the upkeep for punches and dies is enormous by comparison, dies and punches for the Urban-Joy being one-twentieth of the cost of the 8-hole punch.

The Urban-Joy Perforator is constructed on true mechanical principles: that is to say, it does not work against friction caused by springs: consequently the parts run very freely and smoothly. It is fitted with a heavy balance wheel, which can be driven by a small motor of about 1/40 h.p. The machine is compact, of solid construction, and occupies a small space. Over-all dimensions, including base and balance wheel!—

Height, 14 inches: Length, 14 inches: Width 10½ inches.

Weight—Machine .. 46½ lbs.

„ Pulley .. 9½ „

Total weight .. 56 lbs.

A machine giving eight punches requires an upkeep at a tremendously exaggerated cost by comparison with a 2-hole punching machine. A machine cutting eight holes should last four times as long as a 2-hole. One punch in the 8-hole is displaced and all the others are upset. The consequent loss in cutting dies is considerable and immeasurably in excess, and the upkeep of the eight dies disqualifies the extra speed gain.

It is, consequently, more economical to use a 2-hole machine than an 8-hole going four times as fast with a chance of the works going wrong.

Die Plate and two Punches cost approximately .. 15s.

Eight-hole Die Plate and 16 Punches cost approximately .. £15.

The 8-die machine works four times as fast with inaccurate results, but the 2-die, slower in action, can be worked with more satisfactory effect at one-twentieth the cost.

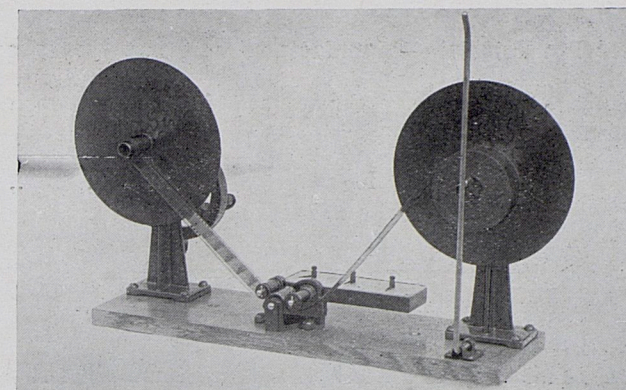
The film is passed through the machine by the pendulum action of the punches, thus avoiding undue strain upon the material. When the punches are disengaged, the film is held in position by a clamp working in opposute synchronism to the action of the punches, and this clamp is provided with a hand lever to raise the same when the operator is threading the machine.

PRICE OF THE URBAN-JOY FILM PERFORATOR, COMPLETE, £50.

Dies for ditto .. 6s. each

Punches for ditto .. 10s. per pair.

Urbanora Film Measuring Machine



Saves time and money. Absolutely Accurate. Entirely Automatic.

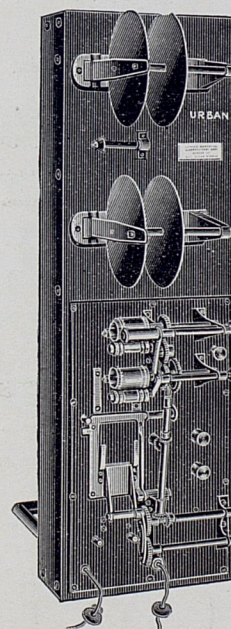
“You turn the handle—The Machine does the rest.” Does not vary one inch in 1,000 feet.

With capacity to measure up to 1,000 feet (or 300 metres).

Price, £4 5 0

NOTE.—We supply these measuring machines to record in feet and metres.

Urban Film Printing Machine.



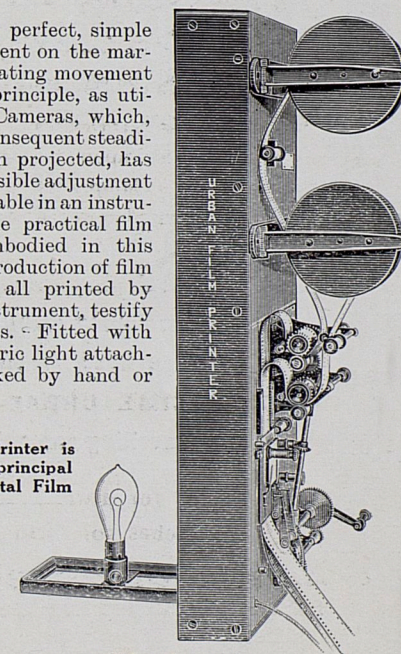
Front view

This is the most perfect, simple and accurate instrument on the market. The Film actuating movement is of the pin-clutch principle, as utilised in the Urban Cameras, which, for registration and consequent steadiness of the print when projected, has no equal. Every possible adjustment and contrivance desirable in an instrument required by the practical film manufacturer, is embodied in this machine. Our own production of film subjects, which are all printed by means of this type instrument, testify to its superior merits. Fitted with quick adjusting electric light attachment. Can be worked by hand or motor.

The "Urban" Film Printer is now used by the principal British and Continental Film Makers.

PRICE, COMPLETE,

£20



Side view

Film Developing Frames.

Spiral Pin Principle—Manufactured of Brass throughout.

Sizes—18 in. square by 2½ in. deep, Capacity 75 ft. film	Price each	£1 15 0
„ 23 „ 2½ „ „ 125 „ „ „	„ „	£2 2 0
„ 25 „ Capacity 165 feet film .. „ „	„ „	£2 10 0

Film Developing Troughs.

Made of three-quarter Oak, lead lined throughout, with Covers.

Sizes—19 inches square by 3½ inches deep ..	Price, each	£2 10 0
„ 24 „ „ 3½ „ „ „ „	„ „	£3 0 0
„ 26 „ „ 3½ „ „ „ „	„ „	£3 10 0

Washing Tank, Zinc-lined,

27 inches by 27 inches, 4½ inches deep, .. £2 15s.

Urban-Eclipse Developing Outfit.

Meets the requirements of Travellers and Explorers, as well as those who have use for a temporary or stationary installation requiring small space and readily transportable.

This Outfit consists of . . .

- 2 Developing Frames.
- 2 Developing Tanks (lead lined).
- 1 Zinc lined Washing Tank.
- 1 Portable Drying Frame.

In two travelling cases, iron bound corners, locks and keys.

Price of complete Outfit - £14

Table of Distances for Lantern Lenses.

Distance between Lantern and Screen.	FOCUS OF LENS.					
	4 in.	6 in.	8 in.	10 in.	12 in.	14 in.
	DIAMETER OF PICTURE.					
	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
10 feet	7 6	5 0	3 9	3 0	2 6	2 2
12 „	9 0	6 0	4 6	3 7	3 0	2 7
15 „	11 3	7 6	5 8	4 6	3 9	3 3
20 „	15 0	10 0	7 6	6 6	5 0	4 3
25 „	18 9	12 6	9 4	7 6	6 3	5 4
30 „	22 6	15 0	11 3	9 0	7 6	6 5
35 „	26 3	17 6	13 1	10 6	8 9	7 6
40 „	30 0	20 0	15 0	12 0	10 0	8 6
45 „	33 9	22 6	16 10	13 6	11 3	9 8
50 „	37 6	25 0	18 9	15 0	12 6	10 9
60 „	45 0	30 0	22 6	18 0	15 0	12 11
70 „	52 6	35 0	26 3	21 0	17 6	15 1
80 „	60 0	40 0	30 0	24 0	20 0	17 3
90 „	67 6	45 0	33 9	27 0	22 6	19 5
100 „	75 0	50 0	37 6	30 0	25 0	21 7

Table of Distances for Kinematograph Lenses.

Distance between Lantern and Screen.	FOCUS OF LENS.					
	2 in.	2½ in.	3 in.	3½ in.	4 in.	5 in.
	DIAMETER OF PICTURE					
	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
10 feet	5 0	4 0	3 4	3 0	2 6	2 0
12 „	6 0	4 9	4 0	3 6	3 0	2 6
15 „	7 6	6 0	5 0	4 6	3 9	3 0
20 „	10 0	8 0	8	5 8	5 0	4 6
25 „	12 6	10 0	8 4	7 2	6 3	5 6
30 „	15 0	12 0	10 0	8 6	7 6	5 10
35 „	17 6	14 0	11 8	10 0	8 9	6 2
40 „	20 0	16 0	13 4	11 6	10 7	7 8
45 „	22 6	18 0	15 0	13 0	11 3	9 2
50 „	25 0	20 0	16 9	14 3	12 6	10 0
60 „	30 0	24 0	20 0	17 0	15 0	12 0
75 „	37 0	30 0	25 0	21 6	18 0	15 0
100 „	49 6	40 0	33 5	29 0	23 9	20 0

Taking, Developing and Printing from Customers' Negatives.

(All Films used are perforated to accurate Standard Gauge).

PRICES—Skilled Operator and Special Apparatus , sent out per day or part of a day (plus Operator's Expenses)	15s.
Special Subjects arranged by us (according to Scenery and Actors required) from	21s.
Negative Film Stock (perforated) per foot nett	2½d.
Developing Negatives (per 50 feet lengths, minimum) .. per 100 feet	3s.
Printing and Developing Positives from Customers' Negatives, Positive Stock supplied by us, perforated to Accurate Gauge Standard (minimum length 50 feet) per foot	2½d.

"A New Lens"

Urbanora Special Double Illumination Cinematograph Projection Lenses.

However good your Machine may be, you cannot show a perfect picture unless you use a good quality lens.

In our Special Double Illumination Series we have produced a lens which will fill a long-felt want. The growing demand for a first-class Objective for Cinematograph Projection has led us to study this question very carefully, with the result that we are now able to offer showmen a lens that will guarantee them a perfect picture.

These Special Lenses form a series of first quality objectives which we can confidently recommend for giving the best possible results. They are constructed on the most approved formula, giving a brilliant and well-illuminated picture, and a sharp marginal definition.

In consequence of their wide aperture, the Urbanora Special Double Illumination Lenses surpass the ordinary type of cheap Lenses on the market in every detail, and we are sure that users of this New Lens will agree with us in saying that **"This is the Lens at last."**

The Urbanora "Special" Lenses are made in the following focii, mounted in Brass Cylinder Tubes to fit **all** Projectors:

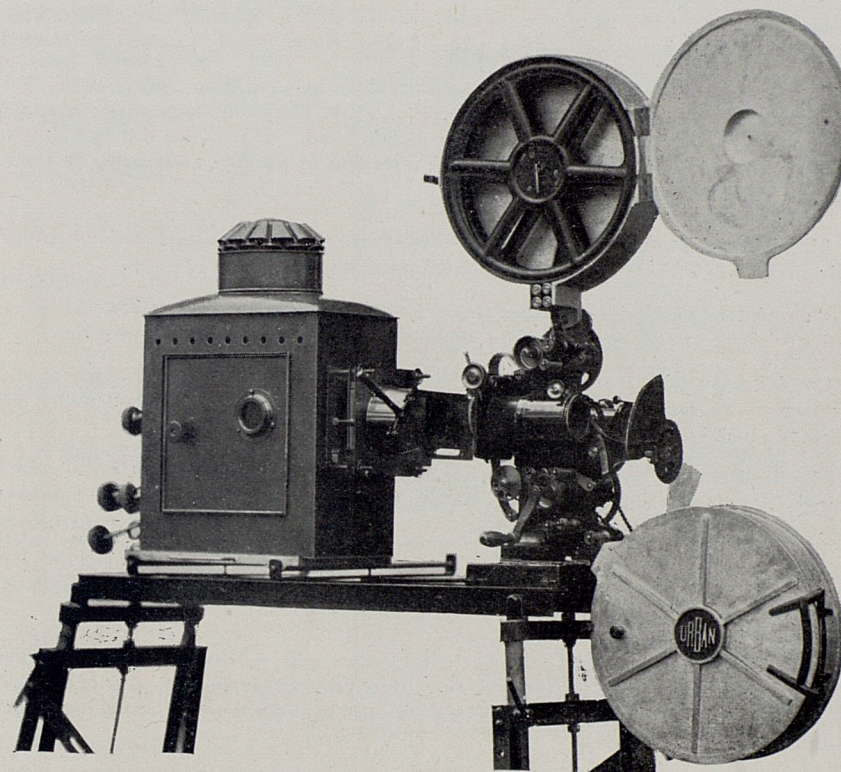
2in., 2¼in., 2½in., 2¾in., 3in. and every ¼in. up to 6in. equiv.

Price for any Focus, £1 1 0

The New Urban "P.P." (Panic Preventor) Projector.

This machine may be termed the "last word" in projectors. The bioscopes which have made the Charles Urban Trading Company world-famous seemed already perfect, but piling Pelion on Ossa, improvements have been added which in their turn will add popularity to its instruments.

While it is the proud—and reasonable—boast of this Company that an accident or panic has never been caused where its machines have been used, through falling into line with Parliamentary and County Council agitations and requirements, it has, by sundry devices which add little to the cost, further strengthened its position and its machines for fire or panic preventions, by means which secure even smoother working, which will gain the confidence of the whole trade. The appended blocks of the new projector, which define the additional movements and devices, have been carefully prepared, but the following notes and explanations may prove of interest.



Smooth working.—Total absence of vibration is brought about by the careful balancing on every revolving part, particularly the "Dog" and shutter shafts, to an extent not found in any other "Dog" machine. Some manufacturers claim this result, but the balance in most cases is not carefully made. In the Urban machine, the dog shaft is balanced to a grain, of which there are 480 to an ounce. It is essential that this balance should be even, and only by laying the dog shaft on carefully levelled knife edges (an engineering term), and also by accurately cut gears and sprockets can steadiness of projection be obtained.

The New Urban PP (Panic Preventor) Projector.

(continued.)

To take the strain of the winder off the film, the bottom sprocket is provided with a looping device, which absolutely prevents any pressure or strain upon the perforation holes, thus prolonging the life of the film, which would ordinarily suffer from increased strain in re-winding.

Masking Device.—In the ordinary fixed gate, to give an equal registration to the film, it is necessary to expose three times the surface to the light. But by means of the Urban device, only one picture is exposed to the rays, so that when the optical centre of the film is found, the rays of the lamp can be concentrated into a space no larger than the one picture, thereby saving about 40 per cent. of light which would otherwise be wasted.

The masking of the film in the machine is obtained by a rising and falling gate covering two pictures, so that no matter where the position of the film is on the sprocket, registration can immediately be secured by turning the milled head. This rising and falling gate is adopted with the view of exposing as small a portion of the film as possible to the rays of the arc lamp.

Aluminium Fire-proof Spool Boxes.—These are carefully constructed to meet the requirements of the London County Council, and other Municipal bodies.

The primary and chief object of these boxes is to save the entire film, in the event of a fire arising from any cause, except about one foot already in the machine.

Careful and prolonged experiment has proved that fire will not pass along a film where egress or ingress is by means of a narrow slit or channel. In these boxes such a split of about an inch in depth is provided as outlet and inlet to the interiors.

Here a difficulty occurs in most spool boxes of this class: the surface of the film becomes scratched by contact with the four rollers placed one at each corner of the aperture

In the Urbanora boxes, the rollers against which the face of the film comes in contact are hollowed, so that the picture side is untouched. The two rollers at the back of the film, or the celluloid side, are solid, which prevents the film from buckling, as is the case where all the four rollers are hollowed.

The film slit in this box is open to the operator's side, so that the film can be slid in or out of the box at any part of the picture, thus preventing the necessity of re-winding to reach the end. When the box is closed, the slit is covered by an extra lug of metal, which forms part of the cover.

Thus, in the absence of the Urban-Joy device, should the film fire in the machine from any cause whatever, it is only possible for about 18 inches not enclosed in the spool boxes to be burned, in which case the connection of the unfired parts causes only a few seconds' delay before the display is resumed.

The Urbanora Spool Boxes are subsequently cast in aluminium with hinged doors, and are accurately turned inside to receive the film spools. They are highly finished in natural colour, and it is impossible for fire to penetrate the boxes.

It will, in conclusion, therefore, at once be apparent that the new Urban P.P. Projector is absolutely fire-proof, "fool" proof, and panic proof.

Urban Bioscope Projector Parts.

When ordering any particular part of the mechanism it is only necessary to quote the designating letter—as "Fig 1—A."

- A—Raising and Lowering Gate.
- B—Swing Gate.
- C—Lens Clip.
- D—Lens Jacket.
- E—Eccentric Dog or Cam (patented).
- F—Masking Pinion.
- G—Bottom or Main Sprocket.
- H—Top Film Spool.
- I—Top Arm.
- J—Body Casting.
- K—Cut-off Shutter.
- L—Anti-Flicker Shutter.
- M—Turning Handle.
- N—Fly Wheel.
- O }—Top Sprocket Rollers.
- P }
- Q—Bottom Arm.
- R—Expansion Chamber.
- S—Shutter Boss.
- T—Bottom Sprocket Roller.
- U—Top Sprocket.
- V—Bottom Sprocket Roller.
- W—Relief Loop Roller.
- X }—Film Tension Springs.
- Y }
- Z—Sprocket Spring.

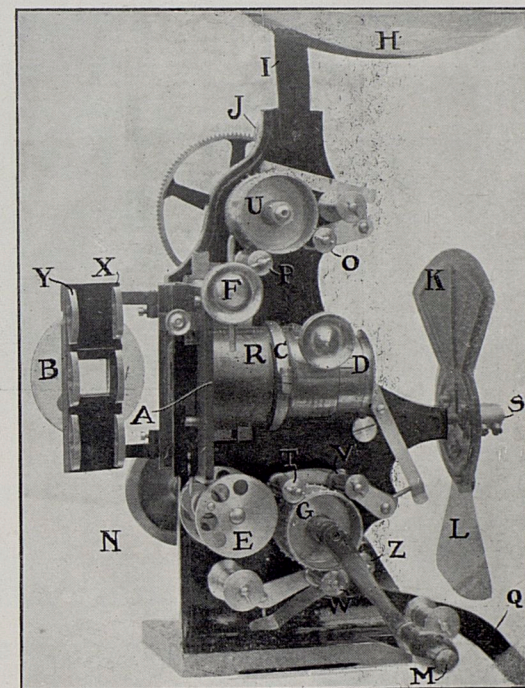


Figure 1

Detailed Portions of Urban Bioscope Projector Mechanism.

When ordering any part of the mechanism it is only necessary to quote the designating letter—as "Fig. 2-3."

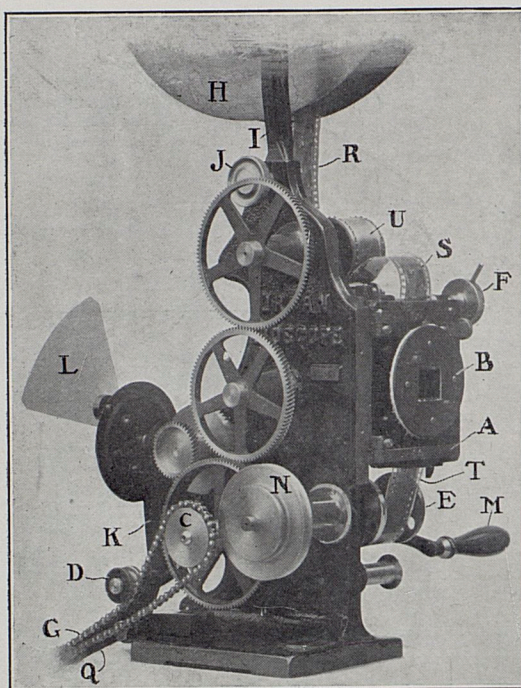


Figure 2

- | | |
|---------------------------------------|-------------------------|
| A—Raising and Lowering Gate. | J—Top Arm Grip Nut. |
| B—Asbestos Shield. | K—Cut-off Shutter. |
| C—Winding-up Sprocket Chain Wheel. | L—Anti Flicker Shutter. |
| D—"Idle" for Winding-up Chain Pulley. | M—Turning Handle. |
| E—Eccentric Dog. | N—Motor Driving Wheel. |
| F—Masking Pinions. | Q—Bottom Arm. |
| G—Winding-up Chain. | R }—Film in Position. |
| H—Top Film Spool. | S } |
| I—Top Arm. | T } |
| | U—Top Sprocket. |

The New Urban "P.P." (Panic Proof) Projector Outfit.

Illustrated on page 19.

Described on pages 19-20.

THE COMPLETE OUTFIT INCLUDES :

- URBAN BIOSCOPE MODEL "K" fitted with
- Fireproof Spool Boxes (Top and Bottom).
- Automatic Take-up.
- Spool Tension Clutch.
- URBAN-JOY FIREPROOF GATE.
- Special Urban Objective (any focus) and brass mount with rack and pinion adjustment.
- Aluminium Bioscope and Lantern Bases.
- Russian Iron Lantern, special size. Dome top, with brass double stage front and cone fitted for both 4in. and 4½in. condensers.
- Double Convex Meniscus Condenser in ventilating cells.
- Urban Arc Lamp for exceptionally heavy current, up to 100 amperes direct, or 120 amperes alternating.
- Side Brass Extension Flange for attaching lantern lens to mechanism.
- Lantern Objective, fitted with double combination achromatic lenses, rack, pinion and flasher, any focus desired, from 8ins. to 16ins.
- All-Metal Double Slide Carrier.
- Urban Curtain Light Cut-off.
- Two Adjustable Rheostats (each 50 amperes), aluminium frames, Kruppen wire coils, for alternating and direct currents, with fuse blocks and adjusting levers.
- Twenty-five feet of Flexible Covered Cable.
- Twenty-five Pairs of Special Carbons.
- Three Spools.
- Bottle of Film Cement, bottle of Refined Oil and Xylonite Oil Can.
- Adjustable Iron Stand with Runners, adaptable for use with Bioscope and Lantern.

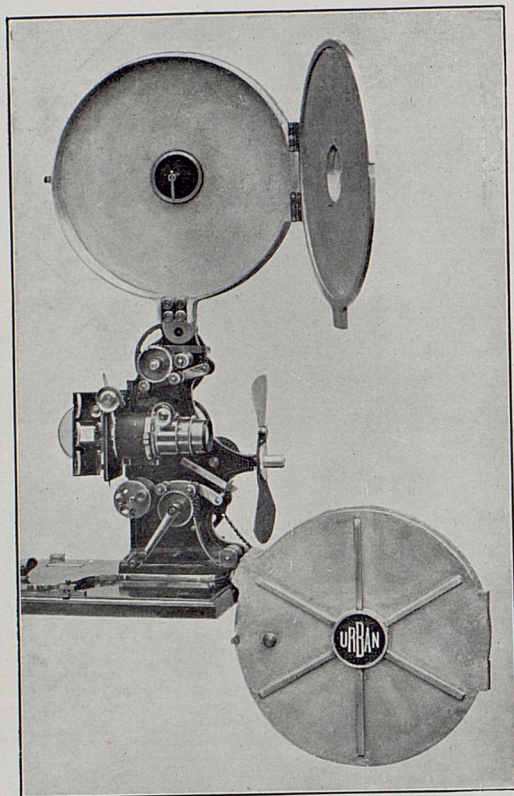


Small piece of film after three intentional firings in the Urban-Joy Gate.

Price of the New "P.P." Projector Outfit, as above, £45.

Urban Bioscope, Latest Model "K."

For Description, see pages 20-22.



MECHANISM

fitted with the

Urban-Joy
Patent
Fireproof Gate,
Take-up Chain,
Chain Tension
Clutch,

One Pair (top and bottom)

Fireproof
Boxes,

complying with the
L.C.C. Regulations.

One Lens (any
focus)
and Mount.

Price, complete - - - £23.

CODE WORD - - - "BIOSAFE."

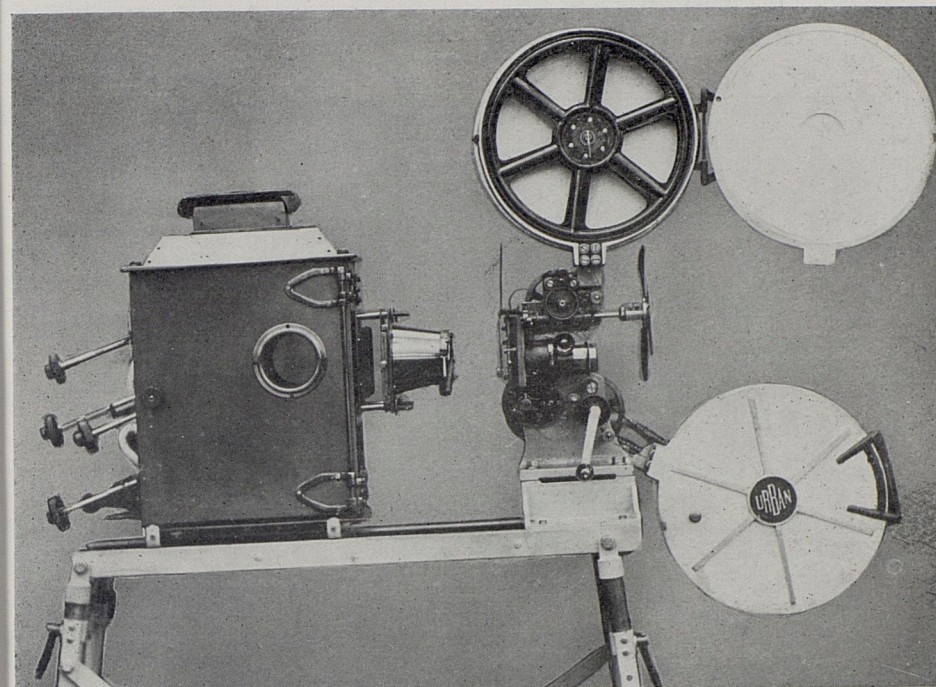
The Urban Bioscope, Optical and Electrical Systems, and Urban Film Subjects, have successfully withstood eight years' severe test at the First Variety Theatre in the World and are in Daily Use at hundreds of other Theatres and Halls the world over.

URBAN CAMERAS SECURED THE PICTURES,
— URBAN BIOSCOPES DISPLAY THEM —

THE FIRST IN THE FIELD,
The Urban Bioscope still holds the First Place

where Steadiness, Accuracy and Absence of Flicker are desired.

URBANORA "SILENT KNIGHT" Maltese Cross Outfit.



The COMPLETE OUTFIT includes:

"SILENT KNIGHT" MALTESE CROSS
MECHANISM.

Fireproof Spool Boxes (Top and Bottom).

Automatic Take-up.

Spool Tension Clutch.

FIREPROOF GATE.

Special Urban Objective (any focus) and
brass mount with rack and pinion adjust-
ment.

Russian Iron Lantern, special size. Dome
top, with brass double stage front and
cone fitted for both 4 in. and 4½ in. con-
densers.

Double Convex Meniscus Condenser in
ventilating cells.

Urban Arc Lamp for exceptionally heavy
current, up to 100 amperes direct or 120
amperes alternating.

Side Brass Extension Flange for attaching
lantern lens to mechanism.

Lantern Objective, fitted with double com-
bination achromatic lenses, rack, pinion
and flasher, any focus desired, from 8 in.
to 16 in.

All-Metal Double Slide Carrier.

Urban Curtain Light Cut-off.

Two Adjustable Rheostats each 50 amperes,
aluminium frames, Kruppen wire coils, for
alternating and direct currents, with fuse
blocks and adjusting levers.

Twenty-five feet of Flexible Covered
Cable.

Twenty-five pairs of Special Carbons.

Three 12-in. Spools.

Bottle of Film Cement, bottle of Refined
Oil and Zylonite Oil Can.

Adjustable Iron Stand with Runners,
adaptable for use with Bioscope and
Lantern.

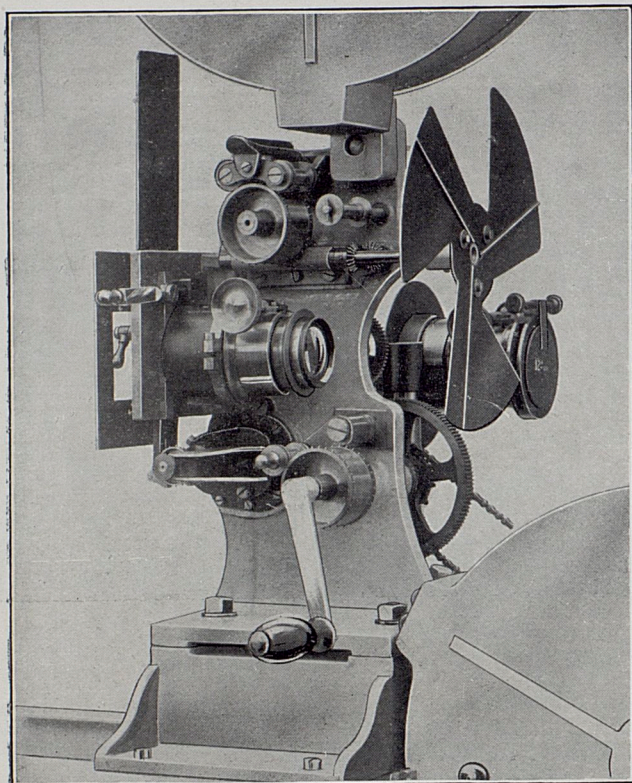
Price Complete - - - £50.

(Subject to usual Discount.)

CODE "BIOMAL."

The "Silent Knight" Bioscope Projector.

The "Silent Knight" is the outcome of years of experience in the manufacture of projectors, and has been acknowledged by competitors to be equal to any on the market, containing all the latest improvements, and being built throughout for hard wear and tear. All the registering parts are made of chilled steel running on the same metal in the oil bath.



Mechanism

fitted with the

**Fireproof Gate,
Take-up Chain,
Chain Tension
Clutch,**

**ONE PAIR (top
and bottom)**

Fireproof Boxes,
complying with all
regulations.

**One Lens (any
focus) and Mount**

The following are a few of the more prominent features :—

Rocking Frames to rollers.

Silent Running.

Flickerless and Rock Steady
Projection.

Masking Capacity, $1\frac{1}{4}$ pictures.

Immediate Adjustment.

Oil Holes fitted with caps.

Solid Steel Gate Runners, specially hardened.

PRICE complete, £27 0s. 0d. Code: Biocross

We will say nothing further—to see this Machine is to be convinced.

NOTICE.—All Articles included with the Following Bioscope Outfits, not desired, will be allowed for at 20 per cent. below their separate Prices.

The Urban Bioscope Outfits.

A Combined Bioscope and Optical Lantern Projector.

The OUTFIT consists of

Urban Bioscope, Model "H" Mechanism.

One Special Urban Objective (any focus).

One highly-burnished Brass Lens Mount with
rack and pinion adjustment.

Hand Polished Oak Base,
with brass plate swivel
adjustment for the pro-
jection of ordinary lantern
slides or announcements
alternately with animated
pictures.

Russian Iron (special size)
Lantern, dome top with
brass double stage front
and cone, fitted for both
4in. and 4½in. condensers.

One 4in. Double Convex and
Meniscus Condenser in
ventilating brass cell.

One Urban Electric Arc
Lamp, complete (for alter-
nating or direct electric
current).

Brass Extension O.G. Lens
Flange for attaching lan-
tern lens to mechanism.

Automatic Film Take-up
Gear, will wind 1,500 feet
of film.

One Lantern Objective, fitted with Double Combination Achro-
matic Lens, rack, pinion and flasher, either focus desired (8,
9, 10 or 12in).

All Metal Double Slide Carrier and Opaque Light Cut-off.

Adjustable Rheostat (Kruppen Wire Coils) for alternating and
direct current, with fuse block and adjusting lever (50 amperes
aluminium frame).

Fifteen Feet of Flexible Covered Wire (with Outfit B—12ft. India Rubber Tubing instead).

Twenty-five Pairs Special Carbons (with Outfit B—One dozen $1\frac{1}{4}$ in. Limes instead).

One Rapid Film Winder (nickelled), separately mounted.

Bottle of Best Film Cement.

Bottle of Best Refined Oil and Xylonite Oil Can.

Three Spools.

NOTE.—Outfit B is equipped with the best GWYER JET (2,000 candle power), the
most powerful jet for Kinematograph projections on the market.

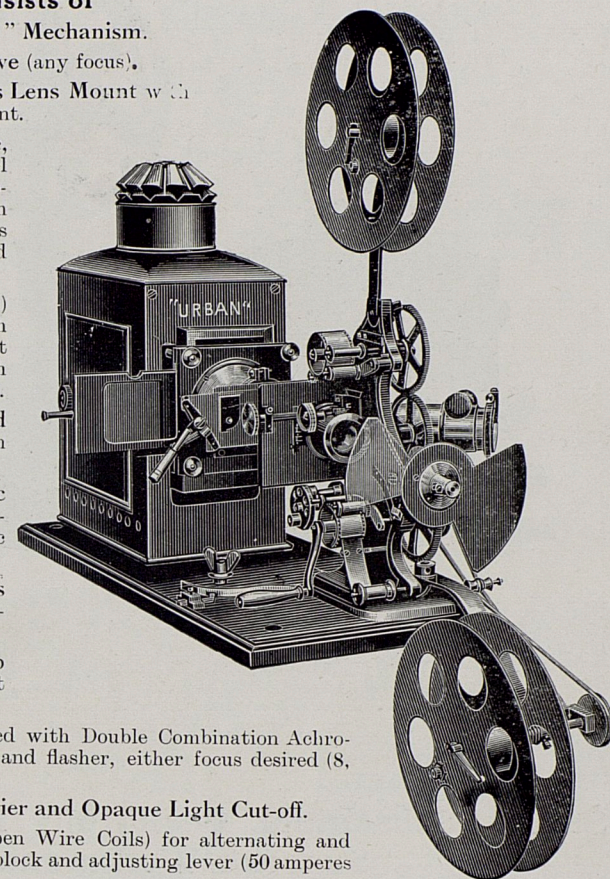
OUTFIT A (Electric) Code Word "BIODOTOS." **Price £37 10s.**

OUTFIT B (Gas) With Bye-pass, Gwyer Jet and Special $1\frac{1}{4}$ in. Limes and Rubber Tubing
instead of Electrical Equipment. Code Word "BIOGENY." **Price £35.**

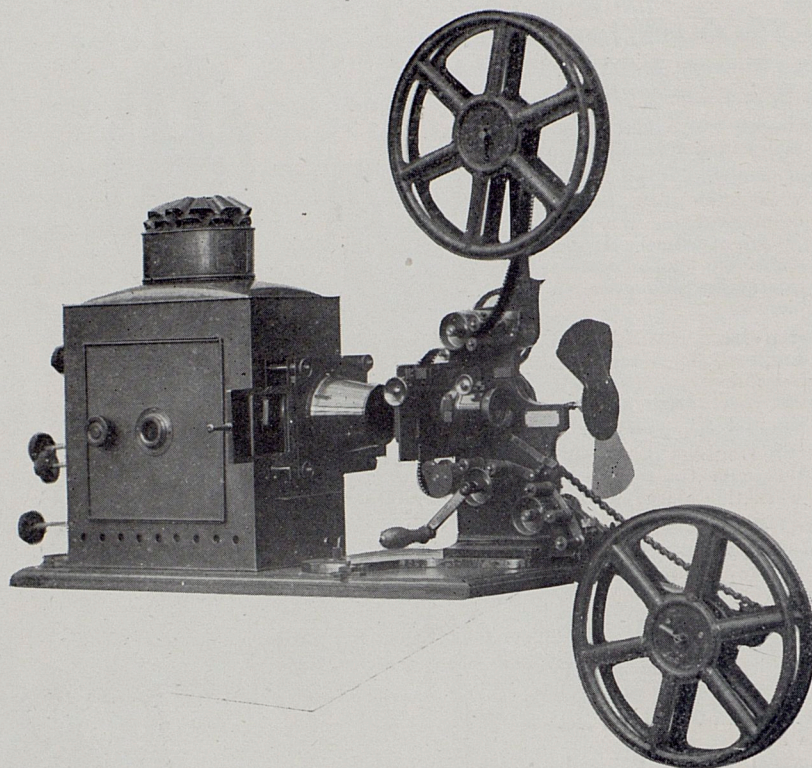
Combination Travelling Case & Exhibition Stand.

Fitted with removable supports, adjustable tilting top and drawer, iron bound and strongly
made, fitted with handles and double locks and keys.

Price . . . £3 10s.



The Urban Trading Co.'s Latest Cheap Bioscope Outfit.



Steady, Substantial, Beautifully Finished and of
Superior Workmanship.

THIS OUTFIT INCLUDES

Three Sprocket Projector, 2 Lenses, Lantern and Condenser, Arc Lamp (40 amperes)—or Mechanical Tray and No. 2 Gwyer Jet instead of Arc Lamp—Take-up, Swivel Baseboard, 2 Reels and Slide Carrier.

PRICE complete - £22 10s.

Cash with Order. Case and Packing extra. Delivery at Urbanora House.

On Light.

To those about to become Bioscopists.

In producing the best effect of animated pictures upon the screen, a powerful light is the primary consideration. Owing to the scattered radiant (or rays) derived from oil, acetylene, or spirit burners, their use is very unsuitable for lantern work, and absolutely useless for the kinematograph. The stronger the radiant, the brighter and sharper the definition of animated pictures.

The various powers obtained from the different sources of light, according to photometric tests are:—

4-wick Oil Lamp	80 to 100 c.p.
Acetylene Generators	100 to 150 c.p.
Oxygen with ordinary house gas, used with blow-through jet	300 to 500 c.p.
Oxygen gas compressed in cylinders and used with mixing jet	1,000 to 1,500 c.p.
Oxygen with an independent Ether Saturator of good capacity and used with a high-power mixing jet	1,000 to 2,000 c.p.
The Electric Arc light from	1,000 c.p. upwards

The best and most concentrated radiant is derived from the electric arc, and most favourably from the arc of a direct current circuit, which keeps the crater of the carbons in a more fixed position than if it were produced through an alternating current, which has a tendency to make the crater move round, and so cause the luminous point of light to travel also, necessitating frequent adjustment.

At various places of public entertainment it is not uncommon for some operators to use a most powerful current through hand-feed arc lamps, taking as much as 50 to 150 amperes for throwing a light to a great distance, and from 20 to 40 feet in diameter upon the screen.

Electric Light and its Management — for Projecting Purposes. —

In houses where the electric light is laid on, it is a simple matter to obtain the electric current for the arc light. In most cases, it is best to call in the local electrician to examine the wiring and see whether it be heavy enough to carry the amount of current required. If it is not, two wires should be joined somewhere near the main and brought in separately to the locality where the electric light would be used. This wire should be large enough to carry at least 25 amperes.

A Rheostat or resistance is necessary in order to reduce the current to the desired amperage. When the current is 100 or 200 volts, our special Kruppin wire resistance as illustrated in this catalogue is most convenient, giving from 20 to 50 amperes by means of the adjustable sliding switch. When the voltage of the current is 200, the resistance should be doubly as large in wire coils, and when purchasing a resistance it should be distinctly mentioned whether it is for a 100 or 200 volt circuit. Many corporations have a 230 voltage, which is less favourable for reducing the current. A transformer or coil is recommended to be inserted in the circuit with the resistance. This answers the purpose of reducing the current from 230 volts to 70 or 100 volts, thus making the current less unpleasant should a shock be met with. The size of the resistance necessary would be practically the same whether for alternating or direct current.

If the current be alternating, the carbons should be of equal diameter, and set in a vertical position. The most convenient size is about 16 or 18 millimetres. When the installation consists of a direct current, two carbons should be employed of different diameter, and set at an angle of 30 degrees. The best size for the carbons in this case is 13 millimetres for the lower one and 16 millimetres for the upper. The reason why uneven carbons are employed is that the negative pole will consume the carbon quicker than the positive, and by using uneven carbons, this difference of consumption is equalized. For increased amperage, proportionately larger sizes of carbon become essential.

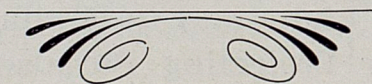
A wall switch or plug should be fixed up, containing a safety fuse in porcelain mountings as well as two terminals, as shown by illustration. It is recommended that from this switch-board flexible wire of best insulation should be used, of dimensions to carry 20 to 30 amperes with ease.

Before joining up to the switch-board, (1) make your connections at the arc lamp, setting both the carbons apart (2) insert the necessary resistance in accordance with the instructions given on the resistance (3) join up the two wires to the switch-board near the wall (4) turn on the switch (5) to create an arc light close and open the carbons sharply, by this means the carbons are brought into contact and separated again, thus creating the arc.

The most convenient arc lamp is the **Urban Model K**, as it obviates any complication or liability to get out of order. The construction is so simple that the working suggests itself, and the regulating is performed by a mere turn of the screw at intervals, according to the distance of the carbons from each other. Another advantage arising from the use of the hand feed lamp is that, at the time of projecting, a more powerful current can be used to get the best effect, and when not in use the current can be reduced. This cannot be done with an automatically fed arc lamp. The **Urban Arc Lamp** meets every requirement of the operator, and is simplicity itself. Through its universal adjustment, the light can be centered in a few seconds.

After using the arc lamp the greatest care must be taken to switch off at the wall before disconnecting or removing any parts of the apparatus.

Electric light is, however, still unobtainable in some places. The only substitute for electric light has, up to the present, been found in oxy-hydrogen. Oxygen mixed with hydrogen will, next to the electric, yield the most powerful light.



The "Urban" Electric Arc Lamp.

"SIMPLICITY, EFFICIENCY, PERFECTION."

THE Electrical Arc Lamp, for Optical Projection, has for many years withstood the strongest tests, and established a reputation for itself strictly through its merits. It is acknowledged by lanternists and electricians alike to be the most efficient and best hand-fed Arc Lamp that has yet been produced. Possibly it owes this distinction to one fact: that it is the outcome of practical experience of a bioscopist and electrician. It was designed, therefore, purely from the Kinematographist's point of view, and is a thoroughly practical instrument in every way.

The Lamp is of the "hand-feed" variety, for experience has shown that this is by far the more preferable for Lantern or Kinematograph work. The attention required by a good hand regulator is so trifling as to add practically nothing to the operator's duties; certainly not so much as a limelight exacts. An automatic regulator, on the other hand, is very liable to derangement, especially when carried from place to place, and when once out of order only an experienced electrician can humour it back again into a due sense of its duties and responsibilities.

The Lamp is constructed to carry carbon rods of equal length, but of such relative diameter as to burn at exactly equal rates, and this arrangement is found to yield the steadiest and most efficient light.

Special provision is made in the upper carbon-holders by means of which the positive carbon may be set at a certain distance behind the negative, so that the "crater" forms towards the front, and all the light is projected through the lenses. This necessary adjustment may be accurately made while the Lamp is actually burning, and the effect on the screen duly observed; and re-adjustments may, with equal facility, be made from time to time, if any inequality in the carbon rods renders them necessary.

Every necessary movement is mechanically provided for in this lamp. The light centre may be raised or lowered, or shifted from side to side, accurately to centre it in the optical axis of the lens system, and keep it there should inaccuracies in the carbons cause it slightly to alter its position. Every possible requirement of the lanternist has been anticipated and provided for. It will carry carbons of various sizes to 30 m/m. and is applicable to the alternating current as well as to the continuous.

As the upper and lower carbon holding arms are insulated with mica at the arm junction block, to which the electrical connection is made direct, no other portion of the Lamp is charged with the current, and it can therefore be freely handled without the least danger to the operator.

These Lamps are noted for their excellent workmanship and high finish.

Special Features of the Urban Arc Lamp

An improved slow feeding movement, ensuring perfect steadiness of the light.

A fine Adjustment for the backward displacement of the positive carbon.

A rapid movement for separating the Carbon holder when re-trimming, etc.

A universal Centering Movement, combining in the one instrument all the advantages (without the disadvantages) of a separate centering table.

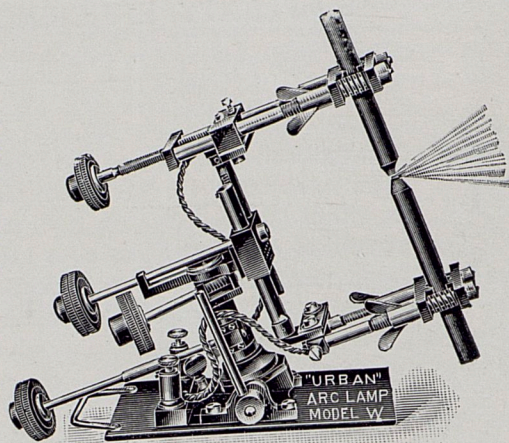
Great Portability, enabling the smaller sized lamps to be used in all ordinary limelight lanterns.

Special Adaptability for use with widely varying currents and voltages, either alternating or direct.

Being neither automatic nor semi-automatic, the lamp is **entirely under the control of the Operators,** giving a continuous and steady light.

Durability and first-class workmanship at a moderate price.

Immense Current Capacity (in the large sizes) without risk of over-heating.



Model "W"—Angle for Direct Current

PRICES :

URBAN ARC LAMP, MODEL "S," tested for use on direct current to 20 amperes : alternating current to 35 amperes. This type lamp is used for optical slide projection, amateur kinematographs and stage lighting. Will fit any ordinary optical lantern
Price £2.

URBAN ARC LAMP, MODEL "T." This type is similar in every respect to Model "S," with the addition of a hand feed raising and lowering device .. **Price £2 5s**

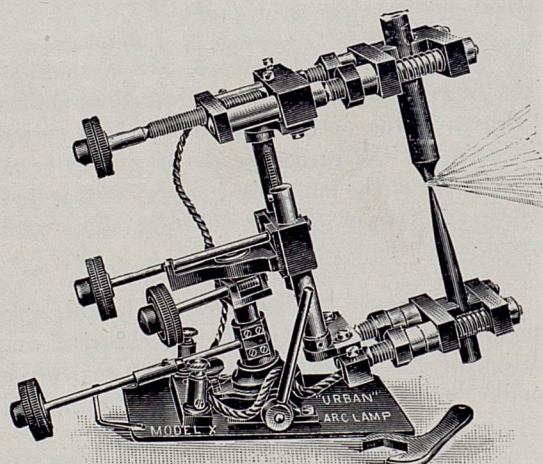
URBAN ARC LAMP, MODEL "A." This type embodies all necessary adjustments, and is the most practical lamp for lanternists and kinematographers using direct current to 30 amperes : alternating current to 50 amperes. Will fit any ordinary optical lantern
Price £2 15s.

Urban Arc Lamp.

Model "X."

A special lamp for exceptionally heavy electric currents. Guaranteed for direct current up to 100 amperes, alternating to 120 amperes. This style lamp is used for the Urbanora exhibits at the Palace Theatre, London, and accounts for the great brilliancy of the large sized pictures on the screen.

PRICE (with wrench) £5 10s.



Urban Arc Lamp, Model "X."

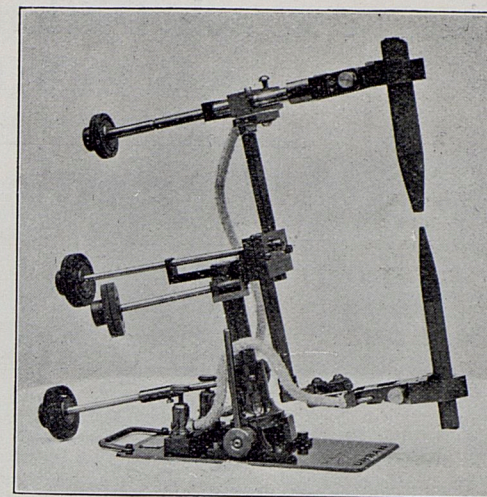
URBAN ARC LAMP

Models "W." and "W.W."

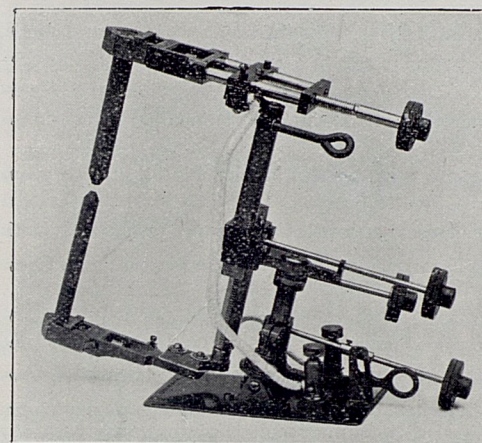
The popular Arc Lamp for kinematographers and for all projecting or lighting purposes where heavy currents are utilized. Tested for use with direct current to 50 amperes and 70 amperes alternating current.

Price, Model "W." £3 15s.

Model "W.W." £4 5s.



Model "W.W."—Urban Arc Lamp



Urban Model "C.C."

URBAN ARC LAMP

Model "C.C."

The most adaptable Lamp for all electric current to 100 amperes. This lamp is of heavier build than Model "W.W." but not so heavy as Model "X."

Fitted with scissors pattern carbon holders, to take two 6-inch carbons, triangular racks, adjustable top carbon holder and new lever at base.

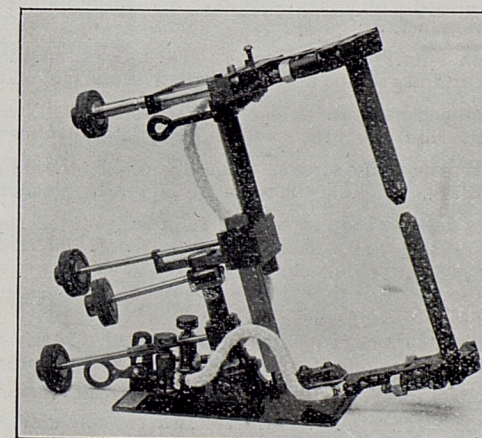
Price, £5.

URBAN ARC LAMP

Model "K."

Fitted with adjustable carbon holder and compression springs, to prevent carbons from slipping; new triangular rack supports and attachment for tilting the arc lamp. Will take two 6-in. carbons. Amperage 100 direct; 120 alternating.

Price, £5 10s.



Urban Model "K."

Kinematograph Difficulties and how to deal with them.

No matter how perfect a well-made machine may prove, it is a delicate instrument at best, and requires delicate treatment. Many operators do not realize these truisms, especially when the apparatus happens to be the property of others, and they handle their machines with small show of tenderness.

Not only must a good machine be well balanced and well made, but it must be constructed that a minimum number of accidents to its parts shall result from a maximum use and constant jars in transit from place to place. A poor machine is too expensive a luxury to receive our consideration.

A good kinematograph is the cheapest, for it is constructed in all its complex parts to resist the wear and tear caused by running at a high rate of speed day after day, week in and week out. But, by virtue of superior construction, gently handled, it will, with care and attention, repay its original cost time and again.

Many of its troubles are simple, and may be avoided by the exercise of a little forethought and an occasional examination of the machine, to detect and renew worn parts, and adjust those requiring perhaps no more than a touch to set them right.

While it is impossible for any machine entirely to resist the ravages of time and constant use, many of the annoyances are so simple and so easily remedied, that a few hints as to their treatment may not be out of place.

New Machine damaged in transit. Do not tinker. Return it at once for inspection and re-adjustment.

Stiff Mechanism. Well oil the running parts with special lubricating oil and so prevent overheating.

A discoloured disc. Clean your condenser lenses with soft tissue paper or chamois leather.

"Ghost." Adjust the shutter by setting it correctly. See that it is large enough to cover the movement of the film.

Scratched Films : Unsteady Pictures. Scrape the bow springs before each display, and rub over them a little vaseline. The trouble is caused by dust on bow springs or runners.

Imperfect definition of objective. See that the lenses, after cleaning, are accurately replaced.

Unsteady Pictures. Clear all runners and springs of dust. See that the gate springs press evenly on the film. Inspect the spindles, bottom sprocket, pinion, and teeth of the driving wheel to detect wear or looseness. If the parts are worn, send them to be overhauled.

Film out of centre. Equalize the tension of the springs if the film is out of centre in the gate, to ensure an equal pressure. Set the gate true with the sprocket wheels if it is not in alignment.

Broken Film. Caused by too much tension on the gate springs, or else by a bad join. Carefully scrape off the emulsion at one end and use the cement sparingly.

Broken perforations. The "Dog" or the "Dog" roller, is not true, but unevenly strikes the film. Adjust, so that they strike accurately.

Pictures run up the screen. This is caused by the slipping of the film on the bottom sprocket wheel. Tighten the roller spring on the bottom sprocket.

Faulty action of top sprocket. Film runs off the top sprocket. See that the guide roller and spool are in complete alignment. If the roller spring acting against the top sprocket is too weak, replace it. In the case of a much-used film, make a loop between the two rollers of the top sprocket. The trouble is sometimes caused by a badly perforated or shrunken film.

Unsatisfactory action of the take-up spool. If the spring band has stretched, cut a piece out and rejoin. If the spool bow spring has weakened, replace it by a new one.

Top spool jerky. Lubricate the disc on the tension spring.

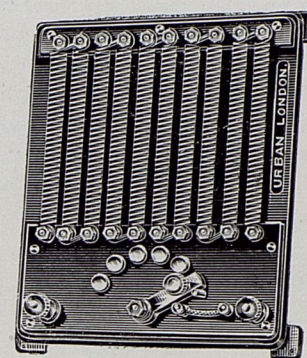
Ragged edged Disc. See if the mask be truly cut. Remove dust accumulations from the mask.

Urban Adjustable Arc-Lamp Resistances.

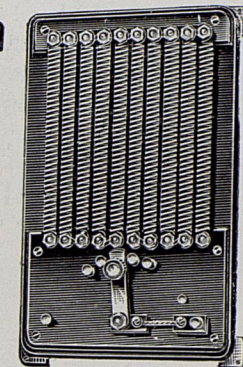
For Regulating Current for Arc Lamps in Lanterns, Projectors or Kinematographs, producing Stage Effects, Dynamo Regulating and Testing.

THE CIRCULAR SWITCH PATTERN.

Iron and Aluminium Frames.



No. D 34.



No. C 33.

A Rheostat, or Electrical Resistance, is a necessary adjunct of the outfit of a lanternist who depends for his light upon electricity, for the electric current must be controlled in its flow through the lamp, or it would become utterly unmanageable. For the lanternist who moves from place to place, and consequently encounters electric supply systems of various voltages, the resistance should be variable, in order to reduce the voltage and adjust it to exactly the required extent. Further than that, it is found of great advantage to be able to control the intensity of the light to suit the particular work which the lantern or kinematograph is called upon to perform. The Rheostat under consideration has been specially designed for the use of lanternists, and while it is particularly light and portable, it combines in the one instrument all the advantages which can usually only be secured by means of various accessories. In this instrument the current resisting wire which converts the surplus voltage into heat, is strung into a number of spirals from end to end of a light iron frame.

The lugs to which these wires are attached are mounted on slate insulators at top and bottom, and are connected with the contact "buttons" by strips of heavy copper. The mere movement of the switch over this contact varies the length of wire through which the current must pass on its way to the lamp, and, consequently, alters the voltage and varies the intensity of the light according to the operator's wishes. The arrangements of these wires is such, that cooling currents of air circulate freely between and around them, so that the instrument never becomes unduly heated. The regulating lever acts as a switch for cutting off the current, and there is fitted also a "cut-out" for the insertion of a fuse. It is a light and thoroughly well-made Rheostat, and is a wonderfully convenient instrument for the purpose for which it was designed.

SPECIFICATION.

Strong iron frame, fitted with enamelled slate slab, Spiral of special alloy, which does not become brittle, spaced apart to prevent accidental short circuiting, and of ample section to avoid the overheating which commonly occurs in cheaply made resistances. Pattern C has 20, and D 28, spirals, connected two in parallel. The switch is substantial, and fitted with adjustment to take up wear, and has six contacts in C and eight in D, and an "off" position: fuse terminals are provided. The iron frames are stove enamelled and picked out in gold, the aluminium pattern being left bright. Lugs are drilled for screwing to wall.

PRICE :

Urban Resistance Type C33 (15 to 40 amperes) Aluminium Frame	£3 0 0
Urban Resistance Type D34 (20 to 50 amperes) Aluminium Frame	£3 5 0

FOR HIGH VOLTAGES AND HEAVY CURRENTS.

The most satisfactory results for High Voltages will be obtained by using two or three of Type C33 or D 34 in series. For Heavy Currents use them in parallel.