

**1912**

**ALL PREVIOUS LISTS CANCELLED.**

**No. 1**

# **PHOTOGRAPHIC LIST**

**CAMERAS**

**LENSES**

**OUTFITS**



**Opticians by Appointment to  
HIS MAJESTY THE KING**

**ROSS L<sup>td.</sup>**

**Optical Works: Clapham Common**

**Telegraphic Address  
"ROSSICASTE," London**

**Telephone  
No. 376 Battersea**

**LONDON, S.W.**



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TAKEN WITH

[Negative by Elwyn Neame.

**ROSS' 'HOMOCENTRIC' LENS, f/4.5.**

**ROSS LIMITED, By Royal Warrant to H.M. The King.**

*Contractors to His Majesty's Governments, British & Colonial;  
also to the principal Foreign Governments.*

— Established 1830. —

Optical Works

CLAPHAM COMMON, LONDON, S.W.

W.D.  
8°  
217  
BR





TAKEN WITH

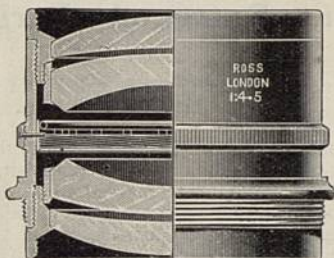
**ROSS' 'HOMOCENTRIC' LENS, f/6.3. Focus, 7 ins.**

[Copyright by W. U. Kirk.]

# ROSS' HOMOCENTRIC LENSES.

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THE "HOMOCENTRIC" gains in popularity year by year, and is undoubtedly the best all-round Lens for those who wish to secure the most perfect negatives and do the finest work in all departments of photography.



Hitherto the "Homocentric" has been made in four series of various apertures,  $f/5.6$ ,  $f/6.3$ ,  $f/6.8$ ,  $f/8$ . This year a new series,  $f/4.5$ , has been added, for very rapid hand camera photography, for portraiture, and for other work requiring extremely large aperture.

The new Lens possesses the "Homocentric" characteristic of freedom from Zonal aberration, and maintains the excellent qualities of those of less aperture. Like them it gives the finest definition, even illumination, and covering over the whole plate.

It differs from the other series in being of the unsymmetrical type. The back combination has a focal length one and a half times and the front twice that of the complete Lens. Three foci are therefore available, an advantage much appreciated, especially by amateur photographers. For studio work the  $f/4.5$  "Homocentric" is simply invaluable. (See page 2).

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## OPTICAL WORKS:

**3, NORTH SIDE, CLAPHAM COMMON,  
LONDON, S.W.**





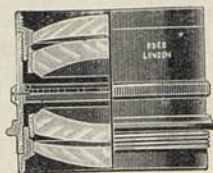






# PATENT 'Homocentric' Lenses.

f/6.3



f/6.3

Specially constructed for

**Instantaneous Views & Groups, and Snap-Shot Hand Camera Work.**

Ratio of Stops ... f/6.3 f/8 f/11.3 f/16 f/22.6

No.	Equiv. Focus.	Plate Covered.		Price, In Iris Setting.	Code Word.	Flange No. see page 25.
		Full Aperture.	Medium Stops.			
000 ...	2 3/4 inch ...	1 3/4 x 1 3/4 ...	3 x 2 ...	3 15 0	Heady	...
00 ...	3 1/2 " ...	2 x 2 ...	3 1/4 x 2 1/4 ...	3 15 0	Heard	...
0 ...	4 " ...	3 1/2 x 2 1/2 ...	3 1/2 x 3 1/2 ...	3 15 0	Heal	0
1 ...	5 " ...	4 1/4 x 3 1/4 ...	5 x 4 ...	4 0 0	Heath	0
2 ...	5 1/2 " ...	4 3/4 x 3 3/4 ...	6 x 5 ...	4 5 0	Hebra	1
3 ...	6 " ...	5 x 4 ...	6 1/2 x 4 3/4 ...	4 10 0	Hector	1
4 ...	7 " ...	6 1/2 x 4 3/4 ...	7 1/2 x 5 ...	5 10 0	Hedon	2
5 ...	8 1/2 " ...	7 1/2 x 5 ...	8 1/2 x 6 1/2 ...	7 0 0	Heeg	3
6 ...	10 " ...	8 1/2 x 6 1/2 ...	10 x 8 ...	9 10 0	Hefra	4
7 ...	12 " ...	10 x 8 ...	12 x 10 ...	12 10 0	Hegron	6
8 ...	15 " ...	12 x 10 ...	15 x 12 ...	17 10 0	Hehlor	9

**Cost of Pairing two Lenses for Stereoscopic Work, 8/-.**

The Lenses of this Series are admirably adapted for Hand Cameras. Their Single combinations may be used for work requiring Lenses of long focus, giving excellent results when used with medium stop on the same sizes of plates as the Doublets, the focus of each being about 1 5/10 times that of the Doublet.

**THE ABOVE PRICES ARE NET.**

**SOLD BY ALL LEADING PHOTOGRAPHIC DEALERS.**

# PATENT 'Homocentric' Lenses. f/6.3

Mounted in Between-Lens Shutters (see pages 40 to 43, 50 & 51), or in Focussing Jackets.

No.	Equiv. Focus.	IN B. & L. AUTOMAT.		No.	Equiv. Focus.	IN MULTISPEED.	
		Price.	Code Word.			Price.	Code Word.
1	5 inch	£ s. d. 5 5 0	Heathucar	1	5 inch	£ s. d. 9 5 0	Heathmult
2	5 1/2 "	5 10 0	Hebrucar	2	5 1/2 "	9 10 0	Hebramult
3	6 "	5 15 0	Hectraur	3	6 "	9 15 0	Hectomult
4	7 "	7 15 0	Hednaur	4	7 "	11 5 0	Hedmult
5	8 1/2 "	9 17 6	Heegaux	5	8 1/2 "	12 15 0	Heegmult
6	10 "	12 7 6	Hefraux				
IN IBSO.							
1	5 "	5 5 0	Heathbis	1	5 "	7 12 6	Heathjun
2	5 1/2 "	5 10 0	Hebrabis	2	5 1/2 "	7 17 6	Hebrajun
3	6 "	5 15 0	Hectorbis	3	6 "	8 2 6	Hectojun

No.	Equiv. Focus.	IN COMPOUND.		No.	Equiv. Focus.	IN KOILOS.	
		Price.	Code Word.			Price.	Code Word.
1	5 "	£ s. d. 5 15 0	Heathcom	1	5 inch	£ s. d. 5 15 0	Heathkos
2	5 1/2 "	6 5 0	Hebracom	2	5 1/2 "	6 5 0	Hebrakos
3	6 "	6 10 0	Hectorcom	3	6 "	6 10 0	Hectorkos
4	7 "	7 12 0	Hedcom	4	7 "	7 10 0	Hedonkos
5	8 1/2 "	9 14 0	Heegcom	5	8 1/2 "	9 8 0	Heegkos
6	10 "	12 10 0	Hefracom	6	10 "	12 10 0	Hefrakos
7	12 "	15 15 0	Hegracom				

IN FOCUSING MOUNTS.							
No.	Equiv. Focus.	Price.	Code Word.	No.	Equiv. Focus.	Price.	Code Word.
1	5 inch	£ s. d. 4 15 0	Hefta	4	7 inch	£ s. d. 6 5 0	Heidar
2	5 1/2 "	5 0 0	Hegar	5	8 1/2 "	8 0 0	Hekar
3	6 "	5 5 0	Hehnan	6			

The Special Focussing Mounts provided with Iris Diaphragms are for hand cameras of fixed extension.

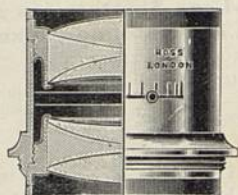
Focussing Mounts do not admit of Between-Lens Shutters.

**THE ABOVE PRICES ARE NET.**

**Special Terms to Hand Camera Manufacturers for large quantities of Lenses in Special or Ordinary Settings.**



## ‘Homocentric’ Lenses.



f/6.8

**f/6.8**

**For Outdoor Work generally; Views, Groups  
and Architecture.**

**Ratio of Stops** ...  $f/6.8$   $f/8$   $f/11.3$   $f/16$   $f/22.6$   $f/32$   $f/45$   $f/64$

No.	Equiv. Focus.	Plate Covered.		Price, In Iris Setting.	Code Word.	Flange No., see page 25.
		From	To			
000 ...	2 $\frac{1}{2}$ inch ...	1 $\frac{3}{4}$ × 1 $\frac{3}{4}$ ...	3 × 2 ...	$\frac{£}{s. d.}$ 3 15 0	Hylas	... —
00 ...	3 $\frac{1}{2}$ " ...	2 × 2 ...	3 $\frac{1}{2}$ × 2 $\frac{1}{2}$ ...	3 15 0	Hylbo	... —
0 ...	4 $\frac{1}{4}$ " ...	3 $\frac{1}{2}$ × 2 $\frac{1}{2}$ ...	4 $\frac{1}{4}$ × 3 $\frac{1}{4}$ ...	3 15 0	Hylcar	... —
1 ...	5 " ...	4 $\frac{1}{4}$ × 3 $\frac{1}{4}$ ...	6 $\frac{1}{2}$ × 4 $\frac{3}{4}$ ...	4 0 0	Hylem	... 0
2 ...	5 $\frac{1}{2}$ " ...	4 $\frac{3}{4}$ × 3 $\frac{1}{2}$ ...	7 × 5 ...	4 5 0	Hymn	... 1
3 ...	6 " ...	5 × 4 ...	7 $\frac{1}{2}$ × 5 ...	4 10 0	Hypho	... 1
4 ...	7 " ...	6 $\frac{1}{2}$ × 4 $\frac{3}{4}$ ...	8 $\frac{1}{2}$ × 6 $\frac{1}{2}$ ...	5 10 0	Hypet	... 2
5 ...	8 $\frac{1}{2}$ " ...	7 $\frac{1}{2}$ × 5 ...	10 × 8 ...	7 0 0	Hykon	... 3
6 ...	10 " ...	8 $\frac{1}{2}$ × 6 $\frac{1}{2}$ ...	12 × 10 ...	9 10 0	Hybed	... 4
7 ...	12 " ...	10 × 8 ...	15 × 12 ...	12 10 0	Hysus	... 5
8 ...	14 ( <i>f</i> /7.7)	12 × 10 ...	18 × 16 ...	16 0 0	Hytipe	... 6

Larger Sizes to Order.

### Cost of Pairing two Lenses for Stereoscopic Work, 8/-.

These excellent Rapid and Wide-Angle Lenses are made to the same formulæ, and replace our Series III. Double Anagimats. They are specially recommended for Wide-Angle work and for Copying, as they give uniform sharpness of the image from centre to margin of the plate, even with the largest stop. The combinations give, stopped down, excellent results used singly, the focus of each being about  $1\frac{1}{10}$  that of the Doublet.

THE ABOVE PRICES ARE NET.

SOLD BY ALL LEADING PHOTOGRAPHIC DEALERS.

COMPOUND

## 'Homocentric' Lenses.

f/6.8

**Mounted in Between-Lens Shutters** (see pages 40 to 43, 50 & 51).  
**or in Focussing Jackets.**

No.	Equiv. Focus.	IN B. & L. AUTOMAT.		No.	Equiv. Focus.	IN MULTI-SPEED.	
		Price.	Code Word.			Price.	Code Word.
		£	s. d.			£	s. d.
1	5 inch	5	5 0	1	5 inch	9	5 0
2	5½ "	5	10 0	2	5½ "	9	10 0
3	6 "	5	15 0	3	6 "	9	15 0
4	7 "	7	15 0	4	7 "	11	5 0
7	8½ "	9	17 6	5	8½ "	12	15 0
6	10 "	12	7 6				
						IN JUNIOR MULTI-SPEED	
				1	5 "	7	12 6
				2	5½ "	7	17 6
				3	6 "	8	2 6

No.	Equiv. Focus.	IN COMPOUND.		No.	Equiv. Focus.	IN KOILOS.	
		Price.	Code Word.			Price.	Code Word.
		£	s. d.			£	s. d.
1	5 inch	5	15 0	1	5 inch	5	15 0
2	5½ "	6	5 0	2	5½ "	6	5 0
3	6 "	6	10 0	3	6 "	6	10 0
4	7 "	7	12 0	4	7 "	7	10 0
5	8½ "	9	14 0	5	8½ "	9	8 0
6	10 "	12	10 0	6	10 "	12	10 0
7	12 "	15	15 0				

No.	Equiv. Focus.	In IBSO.		No.	Equiv. Focus.	In FOCUSsing MOUNTS.	
		Price.	Code Word.			Price.	Code Word.
		£	s. d.			£	s. d.
1	5 inch	5	5 0	1	5 inch	4	15 0
2	5½ "	5	10 0	2	5½ "	5	0 0
3	6 "	5	15 0	3	6 "	5	5 0
				4	7 "	6	5 0
				5	8½ "	8	0 0

The Special Focussing Mounts provided with Iris Diaphragm are for hand cameras of fixed extension.

Focussing Mounts do not admit of Between-Lens Shutters.

THE ABOVE PRICES ARE NET.

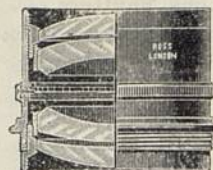
Special Terms to Hand Camera Manufacturers for large quantities of Lenses in Special or Ordinary Settings.



PATENT

# 'Homocentric' Lenses.

f/8



f/8

For

Views, Groups, Interiors, Copying, & Stand  
Camera Work with large aperture.

Ratio of Stops ... f/8 f/11.3 f/16 f/22.6

No.	Equiv. Focus.	Plate Covered.		Price, In Iris Setting. £ s. d.	Code Word.	Flange No., see page 25
		From	To			
1	5 inch	4 1/4 x 3 1/4	6 1/2 x 4 3/4	3 10 0	Hiata	0
2	5 1/2 "	4 3/4 x 3 1/2	7 x 5	3 15 0	Hibba	0
3	6 "	5 x 4	7 1/2 x 5	4 0 0	Hicory	0
4	7 "	6 1/2 x 4 3/4	8 1/2 x 6 1/2	5 0 0	Hida	1
5	8 1/2 "	7 1/2 x 5	10 x 8	6 0 0	Hiendel	2
6	10 "	8 1/2 x 6 1/2	12 x 10	8 0 0	Hiffar	3
7	12 "	10 x 8	15 x 12	10 10 0	Higor	4
8	15 "	12 x 10	18 x 16	13 10 0	Hihone	6
9	18 "	13 x 11	22 x 18	18 10 0	Hikur	8
10	21 "	15 x 12	25 x 22	24 10 0	Hileh	9
11	24 "	18 x 16	30 x 24	31 10 0	Himal	11

Cost of Pairing two Lenses for Stereoscopic Work, 8/-.

The Single Combinations of the "Homocentric" Lenses may be used for work requiring lenses of long focus. They give excellent results when used with medium stop on the same size of plate as the complete combination for distant landscapes, the focus being each about 1 1/10 that of the Doublet.

THE ABOVE PRICES ARE NET.

SOLD BY ALL LEADING PHOTOGRAPHIC DEALERS.

PATENT

# 'Homocentric' Lenses.

f/8

Mounted in Between-Lens Shutters (see pages 40 to 43, 50 & 51),  
or in Focussing Jackets.

No.	Equiv. Focus	IN B. & L. AUTOMAT.		No.	Equiv. Focus	IN MULTISPEED.	
		Price.	Code Word.			Price.	Code Word.
		£ s. d.				£ s. d.	
1	5 inch	4 15 0	Hiatucar	1	5 inch	8 15 0	Hiatmult
2	5 1/2 "	5 0 0	Hibbaum	2	5 1/2 "	9 0 0	Hiabmult
3	6 "	5 5 0	Hicaum	3	6 "	9 5 0	Hicumult
4	7 "	6 5 0	Hidaum	4	7 "	10 5 0	Hidamult
5	8 1/2 "	8 5 0	Hindlaur	5	8 1/2 "	11 15 0	Hindmult
6	10 "	10 17 6	Hiffaux	6	10 "	13 15 0	Hiffmult
7	12 "	13 7 6	Higraux				

No.	Equiv. Focus	IN COMPOUND.		No.	Equiv. Focus	IN KOILOS.	
		Price.	Code Word.			Price.	Code Word.
		£ s. d.				£ s. d.	
1	5 inch	5 5 0	Hiatcom	1	5 inch	5 5 0	Hiatkos
2	5 1/2 "	5 10 0	Hibbcom	2	5 1/2 "	5 10 0	Hibbakos
3	6 "	5 15 0	Hiccom	3	6 "	5 15 0	Hickos
4	7 "	7 0 0	Hidacom	4	7 "	7 0 0	Hidakos
5	8 1/2 "	8 8 0	Hiencom	5	8 1/2 "	8 0 0	Hienkos
6	10 "	10 14 0	Hiffcom	6	10 "	10 8 0	Hiffkos
7	12 "	13 10 0	Higocom	7	12 "	13 10 0	Higkos

No.	Equiv. Focus	IN IBSO.		No.	Equiv. Focus	IN FOCUSSING MOUNTS.	
		Price.	Code Word.			Price.	Code Word.
		£ s. d.				£ s. d.	
1	5 inch	4 15 0	Hiatbis	1	5 inch	4 5 0	Hinka
2	5 1/2 "	5 0 0	Hibbabis	2	5 1/2 "	4 10 0	Hioto
3	6 "	5 5 0	Hicobis	3	6 "	4 15 0	Hoppas
4	7 "	6 5 0	Hidabis	4	7 "	5 15 0	Hirado

The Special Focussing Mounts provided with Iris Diaphragm are for hand cameras of fixed extension.

Focussing Mounts do not admit of Between-Lens Shutters.

THE ABOVE PRICES ARE NET.

Special Terms to Hand Camera Manufacturers for large quantities of Lenses in Special or Ordinary Settings.



## Wide-Angle Lenses.

f/16.

For Landscapes, Architecture, and use in confined situations.

No.	Size of Plate with medium Stop.	Size of Plate with full Aperture.	Equiv. Focus.	Price. Wheel or Iris. Brass Settings.	Code Word.
1 ...	5 × 4	4½ × 3½	3 inch	3 0 0	Ladas
2 ...	7½ × 4½	5 × 4	4 "	3 5 0	Lebanon
3 ...	8½ × 6½	6½ × 4½	5 "	3 15 0	Levant
4 ...	10 × 8	8½ × 6½	6 "	4 10 0	Lexicon

These Lenses are remarkable for the sharp definition given over the whole of the plate covered with equal illumination, and their freedom from distortion.

They are constructed for 90° and upwards, a wider angle, perhaps, than given by any wide-angle lenses hitherto issued.

They are confidently recommended for architectural subjects, and for use in confined situations.

## Ross-Zeiss 'Protar.'

Series V. f/16.

### Wide-Angle and Copying Lens.

No.	Equivalent focus.	Size of plate covered with stop.	Price with Iris or Wheel Diaphragms.	Code Word
	m/m. inch.	f/16. Inches. f/32. Inches.	£ s. d.	
1 ...	86 3½	4½ × 3½ 5 × 4	3 4 0	Labrador
2 ...	112 4½	5 × 4 6½ × 4½	3 4 0	Lagune
3 ...	141 5½	6½ × 4½ 8½ × 6½	4 0 0	Lama
4 ...	182 7½	8½ × 6½ 10 × 8	5 0 0	Lapsus
5 ...	212 8½	10 × 8 12 × 10	6 5 0	Lateran
6 ...	265 10½	12 × 10 13 × 11	7 15 0	Lava
7 ...	315 12½	13 × 11 15 × 12	9 5 0	Lawine

This Doublet consists of four single lenses cemented to form two combinations. The field measures in the smaller numbers over 100°, in the larger ones about 90°. The seven sizes are specially useful for interiors or work in confined situations. We make to order larger sizes specially intended for the reproduction of maps, plans, and drawings; they yield a perfectly flat and anastigmatic image, and are entirely free from distortion.

The Cost of Pairing two Lenses for Stereoscopic Work is 8/-.

THE ABOVE PRICES ARE NET.

## 'Cinematograph' Special Camera Lenses.

ROSS' 'HOMOCENTRIC'

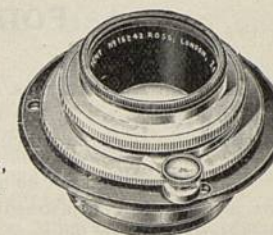
f/4.8.

In Special Iris Rigid Mount.

3 inches Equiv. Focus, Plate Covered 2½ × 1½.

£4 15 0

Code Word—Cineco.



## ROSS-ZEISS 'TESSAR.'

Series 1c., f/3.5.

No.	Equiv. Focus.	Plate Covered.	With Iris Diaphragm.	Code Word.	With Focussing Adjustment.	Code Word.
	mm. inches.		£ s. d.		£ s. d.	
1 ...	50 ... 2 ...	1 × ¾ ...	4 0 0	Adecenar	4 15 0	Adecto
1a...	75 ... 3 ...	1½ × 1½ ...	5 0 0	Adecuno	5 15 0	Adnoto

## SPECIAL PROJECTOR LENSES.

ROSS' NEW CINE-HOMO has been constructed after the formulæ of the Patent "Homocentric," the best corrected Photographic lens made. The aberrations so noticeable in Projection lenses, which are almost without exception of the old Petzval Portrait type, have been entirely eliminated, with the result that Ross' Cine-Homo, while being of sufficiently large aperture to pass all the light available from the illuminant employed, insuring the utmost brilliancy, yields an image on the screen showing exquisite definition from corner to corner, and not merely a circle in the centre. The colour correction is also perfect, making the Cine-Homo the lens for projecting coloured films. It is formed of four single thin uncemented lenses of great transparency, two in each combination. In purchasing a Cine-Homo Maximum Brilliancy, Critical Detail, Perfect Colour Rendering, and Marked Relief are secured, the principal objects standing out clearly from the background, and Pictures of unequalled quality.

	Price.	Code Word.
	£ s. d.	
3 inch Cine-Homo	4 0 0	Cinetra
4 " "	4 10 0	Cinequod
5 " "	4 10 0	Cinepent

Mounted in plain tubes to slide into standard size jacket.



RAPID

# 'Cabinet' and Portrait Lenses. f/3.5 f/4

FOR THE STUDIO.

The back combinations of our Cabinet Lenses are mounted in such a way that by a few turns of the outer cell any desired degree of diffused focus is obtainable for the production of softened pictures.

This device need not be used, and when the back cell is screwed home the lens is in perfect adjustment and gives the extreme sharpness of definition characteristic of our lenses and for which they are celebrated.



No. 3. CABINET LENS.

## ROSS' 'CABINET' LENSES

differ from ordinary Portrait Lenses in being constructed to give as flat a field as is consistent with good marginal definition. They are invaluable for the production with full aperture, of either standing or sitting figures, Heads, Busts, and Groups, and give very rapid results with brilliancy and exquisite defining power.

The prices quoted are for the lenses mounted in Rigid Setting, with Iris Diaphragm.

- |  |   |
|--|---|
| No. 1. Cabinet Lens, 2 3/4 inches clear aperture, 8 1/4 inches equivalent focus; for Cabinet Pictures in short studios; should be placed at 12 feet from the sitter, 17 feet for full length Carte-de-Visite Portraits ... | Code Words<br>Iris Diaph.<br>and<br>Rigid Setting.<br><br>Quagris.<br><br>£12 0 0 |
| No. 2. Ditto, ditto, 3 1/4 inches clear aperture, 10 inches equivalent focus; recommended where there is not sufficient space for the use of a lens of longer focus; should be placed at 14 feet from the sitter ...       | Queris.<br><br>£16 10 0   |
| No. 3. Ditto, ditto, 3 1/2 inches clear aperture, 12 inches equivalent focus; for use when the studio exceeds 20 feet; should be placed at 18 feet from the sitter for Cabinet Portraits ...                               | Quivris.<br><br>£18 10 0  |
| Many of the finest Cabinet portraits from leading Studios in Paris, London and New York are taken with this No. 3 Lens.  |   |
| No. 3a. Portrait Lens, 4 inches diameter of lenses, 16 inches equivalent focus; for pictures on 8 1/2 x 6 1/2 plates and under, for Promenade Portraits and Cabinets in long studios ...                                   | Quiltris.<br><br>£26 0 0  |

LARGER SIZES TO ORDER.

RAPID

# 'Cabinet' and Portrait Lenses. f/3.5 f/4

FOR PROFESSIONAL USE.

For Studio purposes the lenses employed have, until recently, been almost exclusively of the Petzval type.

These excellent lenses give central sharpness for Busts and Single Figures, but for Groups and Pictures requiring more extensive covering our "Homocentrics" are now largely used, possessing as they do a definition more perfect both at centre and margin than any other Anastigmats.

The New Series, f/4.5 (see page 2), have the same exquisite sharpness, covering, and field, and they so nearly approach the aperture of the Petzvals that they meet requirements at all points. They are therefore strongly recommended for Portraits and Groups, and for Studio work generally.

For convenience in selection of a Portrait Lens the following are given as the approximate distances required between the **subject** and the **focussing screen**. This shows at a glance the most suitable lens for any purpose and for any particular studio. The height assumed for Full-length Subject is 5 ft. 8 in., and for head and shoulders, 2 ft. 6 in.

	Distance—Subject to Screen.			
	Full Length.	Head and Shoulders.	For Groups up to	
<b>For C. de V. Pictures.</b>				
No. 1 Cabinet Lens, focus $8\frac{1}{4}$ inch ...	17 feet	8 feet	...	—
No. 6 E.R. "Homocentric" $f4.5$ Lens, focus $8\frac{1}{4}$ inch ...	17 feet	8 feet	...	$\frac{1}{2}$ plate
No. 2 Cabinet Lens, focus 10 inch ...	21 feet	9 feet	...	—
<b>For Cabinet Pictures.</b>				
No. 1 Cabinet Lens, focus $8\frac{1}{4}$ inch ...	12 feet	$5\frac{1}{2}$ feet	...	—
No. 2 Cabinet Lens, focus 10 inch ...	15 feet	$6\frac{1}{2}$ feet	...	—
No. 7 E.R. "Homocentric" $f4.5$ Lens, focus $10\frac{1}{8}$ inch ...	15 feet	$6\frac{1}{2}$ feet	...	1/1 plate
No. 3 Cabinet Lens, focus 12 inch ...	18 feet	8 feet	...	—
No. 8 E.R. "Homocentric" $f4.5$ Lens, focus 12 inch ...	18 feet	8 feet	...	9×7
No. 3A Portrait Lens, focus 16 inch ...	24 feet	$10\frac{1}{2}$ feet	...	—
No. 9 E.R. "Homocentric" $f4.5$ Lens, focus 15 inch ...	23 feet	10 feet	...	10×8
<b>For Boudoir Pictures.</b>				
No. 3A Portrait Lens, focus 16 inch ...	17 feet	8 feet	...	—
No. 10 E.R. "Homocentric" $f4.5$ Lens, focus $18\frac{1}{2}$ inch ...	19 feet	9 feet	...	12×10

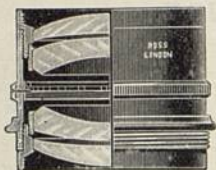
For an increased size of image less distance is required in every case and for a smaller image greater distance.

It should be borne in mind that the longer the focus permissible by the length of studio the more pleasing the picture.



## SPECIAL PROCESS 'Homocentric' Lenses.

f/8.



The Lenses of this series are mounted when required in special settings with Iris Diaphragm as well as slot for Waterhouse stops. Diaphragms with square or special form openings can be supplied as an extra.

### Ratio of Stops.

f/8 f/11.3 f/16 f/22.6 f/32 f/45 f/64

### For Process, Line, Half-Tone, and Three-Colour Work.

No.	Equiv. Focus.	Large Aperture.	Smaller Stops Up to	In setting with Iris or Waterhouse Stops.	Code Word.	Flange No. (see p. 25).
7	12 inch	10×8	15×12	10 10 0	Hoang	4
8	15 "	12×10	18×16	13 10 0	Hobart	6
9	18 "	13×11	22×18	18 10 0	Hocher	8
11	21 "	15×12	25×22	24 10 0	Hodder	9
11	24 "	18×16	30×24	31 10 0	Hoei	11

The "Homocentric" Lens, from its zoneless spherical correction, freedom from Astigmatism and curvature, is specially adapted for all Process Work, including that in Three Colours. The most delicate work is copied, reduced, or enlarged by it with absolute accuracy and sharpness.

## Three-Colour Light Filters.

We are now able to secure suitable glass for Red, Green, and Blue Light Filters.

The Red passes all rays of a wave length of 644 to 590  $\mu\mu$ ., the Green 600 to 480  $\mu\mu$ ., and the Blue 490 to 360  $\mu\mu$ ., covering the whole spectrum from red to violet.

### Sets of Three-Colour Filters—Red, Green, and Blue.

Size 2½ inches square	...	...	...	...	£4 13 6
" 3 "	...	...	...	...	6 16 6
" 3½ "	...	...	...	...	7 18 6
" 3½ "	...	...	...	...	9 6 0
" 4 "	...	...	...	...	12 0 0
" 4½ "	...	...	...	...	15 0 0
" 5 "	...	...	...	...	18 10 0

## Reversing Prisms FOR Photo-Mechanical Process Work, etc.

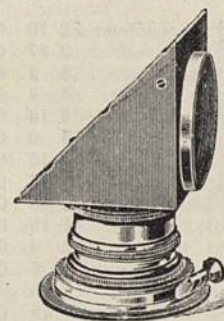
These Prisms are made of carefully annealed and colourless crown glass; they are accurately rectangular.

It is essential that the Prism should be accurately centred with the lens, and to enable us to make this adjustment the lens must be in our hands.

The mount of the Prism screws directly to the hood of the objective in such a manner as to bring one of the non-reflecting surfaces into close proximity to the front lens. By this arrangement the Prism becomes fully utilised.

### Prices of Prisms Mounted in Metal Box.

The Hypothenuse surfaces are surface-silvered to ensure complete reflection.



No.	Length and breadth of Non-reflecting Surfaces.		PRICE.	Code Word.
	Ins.	mm.	£ s. d.	
1	1	25	4 10 0	Prime
2	1½	35	5 10 0	Prince
3	1¾	45	7 0 0	Print
4	2	50	9 0 0	Prior
5	2½	60	12 0 0	Prize
6	2¾	70	16 0 0	Prism
7	3½	80	21 0 0	Psalm
8	3½	90	30 0 0	Puddle

The prices of the Prisms include an objective ring, fitted with revolving collar and clamp, which allows of the objective being turned about its axis and clamped in any position which the Prism is desired to occupy.

No. 7 Homocentric Lens, f/8, requires No. 4 Prism.	
No. 8	5 "
No. 9	6 "
No. 10	7 "
No. 11	8 "



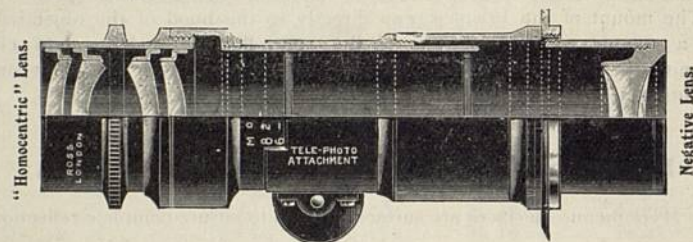
## Tele-Photographic Lenses.

A Tele-Photographic Combination consists essentially of a Positive lens and a Negative lens, the focus and consequent magnification of the image being regulated by their relative positions.

Were the separation equal to the difference of their focal lengths, a telescopic combination would be formed, or if the separation were equal to the focus of the Positive lens, no magnification would take place, but all approximation from this point lengthens the focus, enlarging the image. To obtain the necessary adjustments, a setting with rack and pinion is provided in eight sizes to suit various Positive and Negative lenses.

Any good photographic objective may be used in conjunction with Tele-negative lenses, but the "Homocentric" is specially recommended, and it is to utilise to the full the excellent qualities of this lens that the Ross' Tele-negatives have been specially constructed.

The tables given show the various magnifications, the extension of camera bellows, and the prices of the settings and negative lenses.



Setting No. 1 for Positive Lenses, flange not exceeding $1\frac{1}{2}$ in. diameter	£2 10 0
" No. 2 " " " " " " $1\frac{1}{2}$ in. " "	2 17 6
" No. 3 " " " " " " " 2 in. " "	3 2 6
" No. 3a " " " " " " " $2\frac{1}{4}$ in. " "	3 7 6
" No. 4 " " " " " " " $2\frac{1}{2}$ in. " "	3 12 6
" No. 4a " " " " " " " $2\frac{3}{4}$ in. " "	4 0 0
" No. 5 " " " " " " " 3 in. " "	4 10 0
" No. 6 " " " " " " " $3\frac{1}{4}$ in. " "	5 5 0
Tele-negative Lens, $1\frac{1}{2}$ in. focus, suitable for Setting No. 1 and larger	1 10 0
" " " $1\frac{1}{2}$ in. " " " " No. 1 " "	1 15 0
" " " $2\frac{1}{4}$ in. " " " " No. 1 " "	2 5 0
" " " 3 in. " " " " No. 3 " "	3 5 0
" " " 4 in. " " " " No. 4 " "	5 5 0
" " " 5 in. " " " " No. 5 " "	7 15 0

### Approximate Extensions from Negative Lens to Focussing Screen.

Magnifications.	5	6	7	8	...	Suitable for
Negative $1\frac{1}{2}$ in. focus ...	7	$8\frac{1}{2}$	$10\frac{1}{2}$	$12\frac{1}{2}$	...	$3\frac{1}{2} \times 2\frac{1}{2}$ to $5 \times 4$ .
" $2\frac{1}{4}$ in. " ...	9	$11\frac{1}{4}$	$13\frac{1}{4}$	$15\frac{1}{4}$	...	$\frac{1}{2}$ -plate to $\frac{1}{2}$ -plate.
" 3 in. " ...	12	15	18	21	...	$5 \times 4$ to whole-plate.
" 4 in. " ...	16	20	24	28	...	$\frac{1}{2}$ -plate to $10 \times 8$ .
" 5 in. " ...	20	25	30	35	...	whole-plate to $12 \times 10$ .

Extension for lower or higher magnifications are proportionate to the above.

Larger Size Settings and Negative Lenses of Longer Foci Specially Constructed to Order.

## THE NEW Ross' 'Telecentric' Lens

(PATENT).

Giving Critical Definition at Full Aperture.

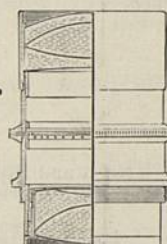
Tele-photography with Focal Plane Shutter Exposures.  
Large Image at short Camera Extension.



An Ideal Lens for  
Sporting Events.

Very suitable for  
Portraiture.

Two Series, f/5.4 and f/6.8.



	Equiv. focus	9"	11"	12"	13"	17"
	Back focus	$4\frac{1}{2}$ "	$5\frac{1}{2}$ "	6"	$6\frac{1}{2}$ "	$8\frac{1}{2}$ "
(Code	f/6.8	Telar	Teles	Telit	Telow	Teluz
(Words	f/5.4	Artel	Estel	Ittel	Wotel	Zutel

After prolonged and exhaustive calculations, ROSS, LTD., have succeeded in producing a lens of entirely new construction, quite free from the softness and diffusion of image so noticeable when endeavouring to focus sharply lenses of a similar type.

The new "Telecentric" Lens gives a universally flat image with exquisite definition to the corners of the plate. Coma and spherical aberration away from the axis have been so fully corrected that the brilliancy of image equals that of the finest Anastigmat. Like the Ross "Homocentric," the "Telecentric" is absolutely free from spherical zones, and negatives taken with it are perfect in detail. The chromatic correction is also perfect. It fills the want so forcibly felt of a lens possessing the sharp definition and other good qualities of the Anastigmat, and at the same time enlarging the image of distant objects.

The ordinary Tele-photo Objective, even when composed of the most rapid Anastigmat and suitable Negative lens, does not permit of a larger aperture being used than about f/11, and to secure satisfactory definition, considerable stopping down is imperative. The very small aperture and consequent lengthened exposure render it practically useless in dull weather, and for snap-shot work even in a good light. This question of the length of exposure, and the absence of sharpness in the image, invites unfavourable comparison with the results obtained with Anastigmats generally.

In the "Telecentric" Lens, f/6.8, which is slightly faster than other lenses of this type, the definition and brilliancy at full aperture are quite equal to those of the most perfectly corrected modern Anastigmats.

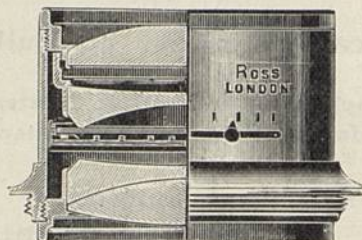
	Focus.			Focus.			Focus.			Focus.									
	Back.	Equiv.		Back.	Equiv.		Back.	Equiv.		Back.	Equiv.								
Ins.	4½	9	...	5½	11	...	6	12	...	6½	13	...	8½	17					
f/6.8	£5	0	0	...	£6	0	0	...	£6	10	0	...	£7	0	0	...	£9	0	0
f/5.4	6	15	0	...	8	5	0	...	9	0	0	...	9	15	0	...	12	15	0

In the extra rapid "Telecentric" Lens, the extreme aperture of f/5.4 has been attained, and this without any sacrifice of critical defining power.



# Ross-Zeiss 'Tessar.'

(PATENT).



**Series Ic. f/3.5.**

No. 1 and No. 1A are specially for Cinematograph work. The longer foci are for Portraiture, when extreme rapidity is required.

No.	Equivalent Focus. m/m ins.	Plate Covered.	With Iris Diaphragm. £ s. d.	Code Word.	Flange No.	With Focussing Adjustment. £ s. d.	Code Word.	Flange No.
1	50 2	1 × 1 1/2	4 0	0...Adecenar...	0...	4 15 0	Adecto	1
1A	75 3	1 1/2 × 1 1/2	5 0	0...Adecuno...	0...	5 15 0	Adnoto	2
6	210 8 1/2	3 1/2 × 2 1/2	15 0	0...Adebant...	7...	—	—	—
7	250 10	4 1/2 × 3 1/2	20 0	0...Adendrus...	9...	—	—	—
8	300 12	6 1/2 × 4 1/2	25 0	0...Aderant...	11...	—	—	—

# Ross-Zeiss 'Tessar.'

(PATENT).

**Series Ic. f/4.5.**

The shorter foci of this Series are specially for Snap-shot work in Hand Cameras, and the longer foci are intended for Portrait, Group and Projection work.

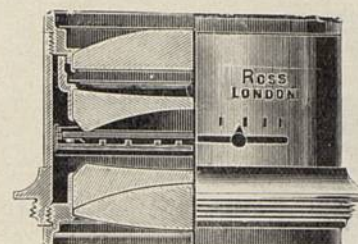
No.	Equivalent Focus. m/m ins.	Plate Covered.	With Iris Diaphragm. £ s. d.	Code Word.	Flange No.	With Focussing Adjustment. £ s. d.	Code Word.	Flange No.
13	112 4 1/2	3 1/2 × 2 3/8	5 0	0...Adisti...	1...	5 10 0	Asaron	2
14	135 5 1/2	4 1/2 × 3 1/2	5 15	0...Adando...	2...	6 5 0	Asopto	3
15	150 6	4 1/2 × 3 1/2	6 10	0...Afaglid...	3...	7 2 0	Adheso	4
15A	180 7 1/2	6 1/2 × 4 1/2	8 0	0...Afagia...	4...	9 0 0	Alaar	5
16	210 8 1/2	7 × 5	10 0	0...Afesios...	6...	11 0 0	Alanto	7
17	250 10	9 × 5	16 0	0...Agerant...	8...	—	—	—
18	300 12	8 1/2 × 6 1/2	22 10	0...Agistis...	8...	—	—	—
18A	370 14 1/2	9 × 7	30 0	0...Asdut...	12...	—	—	—
19	400 16	10 × 8	35 0	0...Asadas...	14...	—	—	—
19A	450 18	10 × 8	42 10	0...Asocon...	16...	—	—	—
20	500 20	12 × 10	50 0	0...Asais...	18...	—	—	—

The Cost of Pairing two Lenses for Stereoscopic Work is 8/-.

THE ABOVE PRICES ARE NET.

# Ross-Zeiss 'Tessar.'

(PATENT.)



**Series IIb. f/6.3.**

**A High-class Anastigmat for all Purposes.**

These Lenses are perfectly corrected for Astigmatism and embrace a large angle.

The Smaller Sizes are specially suitable for Hand Cameras.

No.	Focus. m/m Inches.	Plate Covered. From To	Price. with Iris Diaphragms. £ s. d.	Code Word.	Flange No.
1a	75 3	1 1/2 × 1 1/2 ... 3 1/2 × 2 1/2	4 0 0	Adescando	0
2	84 3 1/2	2 × 2 ... 3 1/2 × 2 1/2	4 0 0	Adescantis	0
3	112 4 1/2	3 1/2 × 2 1/2 ... 4 × 3 1/2	4 10 0	Adescarent	0
4	136 5 1/2	4 1/2 × 3 1/2 ... 5 × 4	4 15 0	Adescassi	1
5	150 6	5 × 4 ... 6 × 4 1/2	5 0 0	Adescavamo	1
5a	180 7 1/2	6 1/2 × 4 1/2 ... 7 × 5	7 0 0	Adeschero	2
6	210 8 1/2	7 × 5 ... 8 1/2 × 5	8 10 0	Adesco	3
7	255 10	8 1/2 × 5 ... 9 1/2 × 6 1/2	11 10 0	Adesivo	5
8	305 12	9 1/2 × 6 1/2 ... 10 1/2 × 7 1/2	17 0 0	Adesmie	6

Larger sizes to order.

# Ross-Zeiss 'Tessar.'

(PATENT.)

**Series IIb. f/6.3.**

In Focussing Mounts for Hand Cameras with Fixed Extension.  
In Between-lens Shutters.

No.	Equiv. Focus. Inches.	In Focussing Mount. £ s. d.	Flange No.	In Multispeed. £ s. d.	In Between-lens Shutters. In Automat. £ s. d.	In Compound. £ s. d.	In Koilos. £ s. d.
4	5 1/2	5 5 0	2	10 0 0	6 0 0	6 10 0	6 11 0
5	6	5 10 0	2	10 5 0	6 5 0	7 0 0	7 0 0
5a	7 1/2	7 12 0	3	12 15 0	9 5 0	9 8 0	9 0 0
6	8 1/2	—	—	14 15 0	11 7 6	11 4 0	11 10 0
7	10	—	—	—	14 7 6	14 10 0	14 10 0

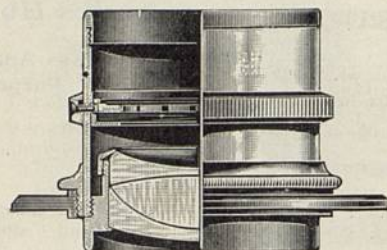
The cost of Pairing two Lenses for Stereoscopic work is 8/-.

Objectives with focussing mounts cannot be used in conjunction with Hand Cameras where the shutter works between the Lenses of the objective.

THE ABOVE PRICES ARE NET.



# ROSS-ZEISS CONVERTIBLE Single 'Protar' Lenses.



Series VII. f/12.5.

Admirably adapted for Portraits, Groups, Landscapes, and every class of Photography, in the Studio or out of doors, when used either Singly or Combined as in Series VIIa. They are unapproached by any other Single Lens in existence.

The "relative rapidity" of this Anastigmatic Lens is f/12.5, and the field embraced is about 85°. The anastigmatic flatness of the image is unapproachable in any Single Landscape Lens hitherto produced, while the marginal distortion, when used on a moderate angle, is practically inappreciable. The Lens is therefore suitable for instantaneous outdoor pictures such as landscapes and seascapes, and also for large portraits and groups in a good light.

Ratio of Stops ... f/12.5, f/16, f/22.6, f/32, f/45, f/64.

No.	Equivalent focus. m/m. inch.	Plate covered. f/12.5. c/m. inch.	Price with Iris			Price in Cell only. £ s. d.
			No.	Flange	Diaphragm. Code Word.	
0 ... 100	4 ... 6 × 9	3½ × 2½	1 ... 4	10	0...Abdera	3 15 0
00 ... 135	5½ ... 7 × 10	4 × 2½	1 ... 4	10	0...Absynth	3 15 0
000 ... 170	6¾ ... 9 × 12	4½ × 3½	1 ... 4	10	0...Abydos	3 15 0
1 ... 183	7¼ ... 12 × 15	6½ × 4½	1 ... 3	15	0...Acacia	3 0 0
2 ... 224	9 ... 13 × 18	7½ × 5	1 ... 4	5	0...Acarina	3 10 0
2a ... 248	9¾ ... 13 × 20	8 × 5	1 ... 4	15	0...Acazto	4 0 0
3 ... 285	11½ ... 16 × 21	8½ × 6½	1 ... 5	0	0...Aceton	4 4 0
4 ... 350	14 ... 21 × 27	10 × 8	2 ... 6	0	0...Achilles	5 3 0
5 ... 412	16¾ ... 24 × 30	12 × 10	4 ... 7	15	0...Acidalia	6 17 0
6 ... 480	19¼ ... 29 × 34	13 × 11	6 ... 10	15	0...Aconitum	9 14 0
7 ... 590	23½ ... 30 × 40	15 × 12	7 ... 13	15	0...Adinol	12 2 0
8 ... 690	27½ ... 34 × 39	15 × 12	9 ... 18	0	0...Aeneas	15 15 0
9 ... 782	30½ ... 39 × 47	18 × 16	11 ... 25	0	0...Aeolus	22 5 0
10 ... 862	34 ... 40 × 50	20 × 16	... 32	10	0...Aequator	29 4 0
11 ... 1000	39 ... 47 × 57	22 × 18	... 42	10	0...Aether	38 15 0

THE ABOVE PRICES ARE FOR NET PROMPT CASH.

Sold by Leading Dealers everywhere.

For Rapid and Extra Rapid Doublets and Sets formed from the above Series of Single Lenses see two following pages.

# ROSS-ZEISS Convertible 'Protar' Lenses.

Series VIIa., f/6.3 to f/8.

Universal Series of Lenses specially suitable for Portraits and Groups in the Studio, and for all classes of Outdoor Photography, also for Interiors, Copying, etc.

These Lenses are formed by combining suitable single Lenses of Series VII. (f/12.5) as described on the preceding page.

No.	Front.	Combination of Two Lenses. (f/12.5)		Largest Aperture. Inches.	Size of Plates. At Full Aperture. Inches.	Price in London. In Brass Settings. with Iris.			Cable Code Word.
		Resulting Back.	Combined Focus.			£	s.	d.	
0 ... 4	4	4	2½	6.3	1½ × 1½	8	5	0	Accord
00 ... 5½	5½	5½	3½	6.3	2 × 2	8	5	0	Agathe
000 ... 6¾	6¾	6¾	4	6.3	2½ × 2½	8	5	0	Agnes
1 ... 7¼	7¼	7¼	4½	6.3	3½ × 3½	6	15	0	Agonie
2 ... 9	9	9	5	7	4½ × 3½	7	5	0	Alabaster
3 ... 11½	11½	11½	5½	8	5 × 4	8	0	0	Alaude
4 ... 9	9	9	5	6.3	5 × 4	7	15	0	Albatros
4a ... 9¾	9¾	9¾	5½	6.3	5 × 4	8	15	0	Alcasta
5 ... 11½	11½	11½	5½	7	6 × 5	8	10	0	Alizarin
6 ... 14	14	14	6½	8	6 × 5	9	10	0	Alkaloid
7 ... 11½	11½	11½	6½	6.3	6½ × 4½	9	4	0	Alkohol
8 ... 14	14	14	7	7	7½ × 5	10	4	0	Amidon
9 ... 16½	16½	16½	7½	8	8 × 5	11	19	0	Ananas
10 ... 14	14	14	8	6.3	8 × 5	11	3	0	Anchovis
11 ... 16½	16½	16½	8½	7	8½ × 6½	12	18	0	Anilin
12 ... 19¼	19¼	19¼	9	8	8½ × 6½	15	18	0	Anthracit
13 ... 16½	16½	16½	9½	6.3	8½ × 6½	14	12	0	Antimon
14 ... 19¼	19¼	19¼	10	7	9 × 7	17	12	0	Antipyrin
15 ... 23½	23½	23½	11	8	9 × 7	20	12	0	Apostat
16 ... 19¼	19¼	19¼	11	6.3	9 × 7	20	9	0	Aristos
17 ... 23½	23½	23½	12	7	10 × 8	23	9	0	Asbest
18 ... 27½	27½	27½	12½	8	10 × 8	27	14	0	Athene
19 ... 23½	23½	23½	13½	6.3	10 × 8	25	17	0	Atlas
20 ... 27½	27½	27½	14	7	12 × 10	30	2	0	Atropin
22 ... 27½	27½	27½	15½	6.3	12 × 10	33	15	0	Aurora
25 ... 30½	30½	30½	18½	6.3	13 × 11	47	5	0	Aurum
28 ... 34	34	34	20½	6.3	13 × 11	61	14	0	Ave
30 ... 39	39	39	23½	6.3	15 × 12	81	5	0	Azalie

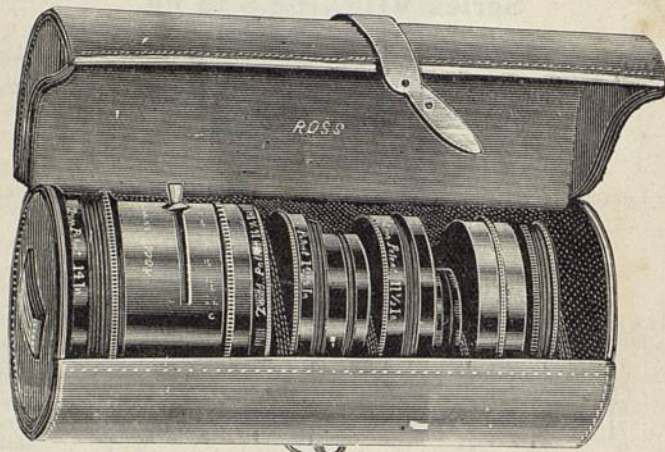
The size of flanges for each of these Doublets is that required for the largest of the Single Lenses of Series VII. in the combination.

More than two single lenses may be used in the same setting, the size of which is determined by the longest focus single lens. A movable Ring must be adapted, so constructed that the engraving indicates 3 to 6 Scales of Apertures as the case requires. Price of Ring, with 3 scales, 7s. 6d.; with 6 scales, 10s. For engraving additional scales on customers' own lens Rings 2s. 6d. will be charged for each scale.



## SETS OF ROSS-ZEISS Convertible 'Protars.'

Composed of Anastigmatic Lenses, f/12.5, Series VII.



### SET C.—For Plates $6\frac{1}{2} \times 4\frac{3}{4}$ or $7\frac{1}{2} \times 5$ inches.

Consisting of Single Lenses, Nos. 2, 3, and 4, Series VII., with setting scale and screen rings complete in Leather Case.

No.	Front Lens Inches.	Back Lens Inches.	Combined Focus Inches.	Largest Aperture f.	Plate Covered Inches.	Price £14, with 10s. extra for additional Ring of Apertures.	Code Word, Alpha.	Prices are strictly net.
1	...	9	9	12.5	$7\frac{1}{2} \times 5$			
2	...	$11\frac{1}{2}$	$11\frac{1}{2}$	12.5	$8\frac{1}{2} \times 6\frac{1}{2}$			
3	...	14	14	12.5	$10 \times 8$			
4	$11\frac{1}{2}$	9	$5\frac{3}{4}$	7	$6 \times 5$			
5	14	9	$6\frac{1}{4}$	8	$6\frac{1}{2} \times 4\frac{3}{4}$			
6	14	$11\frac{1}{2}$	7	7	$7\frac{1}{2} \times 5$			

### SET D.—For Plates $8\frac{1}{2} \times 6\frac{1}{2}$ or $9 \times 7$ inches.

Consisting of Single Lenses, Nos. 3, 4, 5, and 6, Series VII., with setting scale and screen rings complete in Leather Case.

No.	Front Lens Inches.	Back Lens Inches.	Combined Focus Inches.	Largest Aperture f.	Plate Covered Inches.	Price £27 8s. with 15s. extra for additional Ring and Scales of Apertures.	Code Word, Alphabet.	Prices are strictly net.
1	...	$11\frac{1}{2}$	$11\frac{1}{2}$	12.5	$8\frac{1}{2} \times 6\frac{1}{2}$			
2	...	14	14	12.5	$10 \times 8$			
3	...	$16\frac{1}{2}$	$16\frac{1}{2}$	12.5	$12 \times 10$			
4	...	$19\frac{1}{4}$	$19\frac{1}{4}$	12.5	$13 \times 11$			
5	14	$11\frac{1}{2}$	7	7	$7\frac{1}{2} \times 5$			
6	$16\frac{1}{2}$	$11\frac{1}{2}$	$7\frac{1}{2}$	8	$8 \times 5$			
7	$16\frac{1}{2}$	14	$8\frac{1}{2}$	7	$8\frac{1}{2} \times 6\frac{1}{2}$			
8	$19\frac{1}{4}$	14	$9\frac{1}{4}$	8	$8\frac{1}{2} \times 6\frac{1}{2}$			
9	$19\frac{1}{4}$	$16\frac{1}{2}$	10	7	$9 \times 7$			

SOLD BY LEADING DEALERS EVERYWHERE.

## Yellow Glass Screens.

In Cells to fit front of Lens Settings.

Glass Diameter of Lenses not exceeding	Colour Screens of Ordinary Glass.	Yellow Glass Light Filters of Special Jena Glass.
$\frac{7}{16}$ inch	...	5 times. 10 times.
$\frac{1}{2}$ "	£0 5 0	£0 8 6
$\frac{3}{4}$ "	0 5 6	0 10 0
1 "	0 6 0	0 11 6
$1\frac{1}{8}$ "	0 6 6	0 13 0
$1\frac{3}{8}$ "	0 7 0	0 15 0
$1\frac{5}{8}$ "	0 7 0	0 17 6
$1\frac{7}{8}$ "	0 8 0	0 19 0
$1\frac{9}{8}$ "	0 8 0	1 0 0
$2$ "	0 9 0	1 2 6
	0 10 0	1 4 6
		1 13 0

Larger Sizes to order.

## Lens Flanges.

Sizes and Prices.

Flange No. ....	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Diam., inches...	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	2	$2\frac{1}{4}$	$2\frac{3}{8}$	$2\frac{1}{2}$	$3\frac{1}{8}$	$3\frac{1}{4}$	$3\frac{3}{8}$	4	$4\frac{1}{4}$	$4\frac{3}{8}$	$4\frac{1}{2}$	$4\frac{3}{4}$	5	$5\frac{1}{4}$
Price, Brass.....	1/9	1/9	2/0	2/3	2/6	2/9	3/0	3/3	3/6	4/0	4/6	5/0	5/6	6/0	6/6	7/0	7/6
„ Staminium	2/3	2/3	2/9	3/0	3/3	3/6	3/9	4/0	4/6	5/0	5/6	6/0	6/6	7/0	7/6	8/0	8/6

## Screw Adapters.

Sizes and Prices.

From Flange	No. to any	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Smaller Size																	
Price, Brass...		2/6	3/0	3/6	4/0	4/6	5/0	5/6	6/0	6/6	7/0	7/6	8/0	8/6	9/0	9/6	10/0
„ Staminium		3/0	4/6	4/6	5/0	5/6	6/0	6/6	7/0	7/6	8/0	8/6	9/0	9/6	10/0	10/6	11/0

## Leather Caps.

Sizes and Prices.

Number .....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Diam., inches	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$2\frac{1}{4}$	$2\frac{3}{8}$	$2\frac{1}{2}$	$3\frac{1}{8}$	$3\frac{1}{4}$	$3\frac{3}{8}$	$4\frac{1}{4}$	$4\frac{3}{8}$	$4\frac{1}{2}$	$4\frac{3}{4}$	5	$5\frac{1}{4}$	$5\frac{1}{2}$
Price.....	1/0	1/0	1/3	1/3	1/6	1/6	1/9	2/0	2/0	2/6	2/6	3/0	3/0	3/6	3/6	4/0

The prices of Leather Caps not to exact measurements above are charged as the nearest higher size indicated. It will prevent delay and mistakes if, when ordering spare caps, customers will either give the diameter of the lens tube or hood the cap is intended to fit, or send a slip of paper which exactly fits round it.

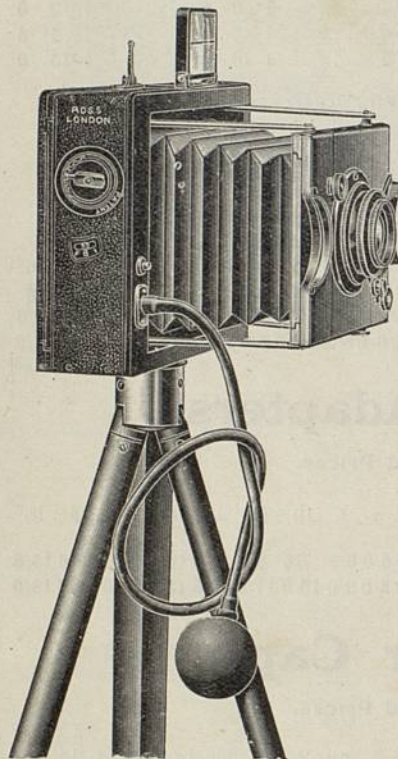


PATENT  
**Ross' 'Panros' Camera.**

LATEST MODEL.

Made throughout at Ross' Optical Works, Clapham Common.

**With the Latest Self-Capping Focal-plane Shutter.**



Is the most perfect form of Hand Camera and has been constructed to meet the demand for a Folding Camera of the Highest Class, suitable for all the requirements of up-to-date photography.

It will be found reliable under all circumstances, and efficient in every emergency that is likely to arise.

The "PANROS" is compact and of convenient size, light in weight, and easy of manipulation. Its freedom from mechanical complication, combined with most careful construction, is such that it cannot be easily deranged or damaged without unduly rough usage.

The Framework is of thoroughly seasoned, ebonized hard wood, all external parts, front and back, being neatly finished with a dull black polish, while the body, which contains the shutter, is covered with best quality morocco leather.

The appearance is therefore extremely trim, compact and unobtrusive; and the lens being sunk almost level with the front, the Camera is very portable in a light case of leather of small size.

The Bellows is of the form ordinarily used in portable cameras, and not flat, as in many of the collapsing cameras of recent introduction.

In consequence, internal reflections are cut off by the block and folds of the bellows.

The Front is held extended, perfectly rigid and parallel to back, by means of very strong struts or stays, which automatically lock themselves into position by the simple action of drawing out the Front.

**Ross' 'Panros'**

PATENT

**FOCAL-PLANE CAMERA (CONTINUED).**

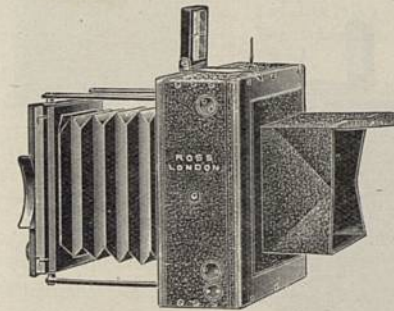
The Lens Board has extensive rise and fall, so that the foreground may be limited, and high buildings or monuments included in the picture.

A Cross Movement is also provided for horizontal pictures.

One Winding Head sets the Shutter, and regulates for time and instantaneous exposures of varying duration, so that the Camera is **without any other external projection**. It is unlike other Cameras in this respect, as also in the advantage of re-adjustment of the blinds for speed **either before or after** setting the shutter.

One of the most important features of the "Panros" Camera is the **Patent Focal-plane Blind Shutter**. It has the highest efficiency, and is more easily

adjusted than any other hitherto introduced. There are two short blinds winding from one roller on to another, without any strain beyond the tension of the Springs.



In many shutters the blinds are connected by silk tapes, and the variation of aperture is accomplished by winding one blind away from the other, producing considerable friction and strain, which wear the tapes. Moreover, this arrangement only permits of the aperture being adjusted when shutter is shut.

In the "Panros" the mechanism connected with the two blinds becomes locked in such a manner that the distance between the edges of the blinds remains constant during the whole time the blinds are in motion, and there is no possibility of any alteration in the width of aperture during exposure. The increase or decrease of exposure value is shown by the indicator, and is controlled by the one and only milled head, the actual speed of blind travel being automatically increased as the aperture is decreased.

The Instantaneous Exposures range from  $\frac{1}{16}$  to  $\frac{1}{1000}$  of a second.

Automatic Exposures of  $\frac{1}{3}$ ,  $\frac{1}{4}$ ,  $\frac{1}{2}$ , 1, 2, or 3 seconds, or prolonged Time may be given by Pneumatic Ball release, and, a certain speed having been used, there is no need to readjust before making a second exposure at the same speed.

The Shutter Blinds are self-closing, that is one blind overlaps the other and remains in this position during the next setting of the shutter, so that should the slide of plate-holder be withdrawn, no light will reach the sensitized plate or film. In other focal-plane shutters of fixed aperture the slide must, to avoid fogging, be reinserted in the carrier, should it have been withdrawn before the shutter is set, or else recourse must be had to a lens-cap, which is liable to be forgotten.

There is no rebound of the blinds after exposure, and they work without vibration.

For Prices, etc., see page 29.



# Ross' 'Panros'

PATENT

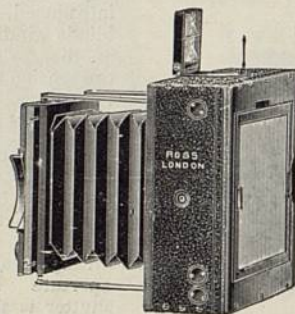
## FOCAL-PLANE CAMERA (CONTINUED).

### OPENING THE BLINDS FOR FOCUSING. SETTING THE SHUTTER FOR SPEED. WINDING FOR EXPOSURE.

One Winding Head, the only projection on the "Panros" Camera, accomplishes all operations usually allotted to divers milled-heads and other arrangements extending beyond the framework of Hand Cameras.

To set the shutter the winding head must be turned **as far as it will go**.

The block-piece which serves as Indicator inside winding head when drawn out slightly may be turned to any speed, and is positively locked by allowing pointer to drop into slot.



By pushing the small knob immediately below the winding head from **I** to **B**, time exposures at full blind apertures may be given, **irrespective of the speed at which the Shutter is set**.

The change from Instantaneous to Time, or *vice versa*, is immediate, and can be effected **whether Shutter is set or not**. Care must be taken that the knob is pushed to *end* of slot or no exposure will be made.

Further, full aperture is always available for focussing by simply pushing the same knob from either **I** to **F** or **B** to **F** when Shutter is set.

If Shutter is not set, push knob to **F** and turn winding head.

When finished focussing push knob to **B** or **I**, as may be required, and then set the Shutter.

The Mechanical Working Parts of the Shutter are entirely concealed in a small internal space, and from their design and the great care taken in construction they are not at all liable to get out of order.

The Finder attached to the Camera is a folding concave glass, reproducing in miniature the picture to be taken with the lens. Being ruled with cross lines and supplied with a centreing sight, it is easy to see if the camera is being held straight.

The camera is furnished with a Hood for focussing, which also acts as a protector for the glass screen.

The whole is made by experienced workmen at Ross' Optical Works, Clapham Common, and every camera is thoroughly tested before being sent out.

# Ross' 'Panros'

PATENT

## Focal-Plane Camera (Continued).

### LATEST MODEL.

#### Prices of "Panros" Cameras.



"Panros" Focal-plane Camera, with Ross Patent "Homocentric" Lens, *f*/6.3, in focusing Mount, adjustable Focal-plane Shutter for Time or Instantaneous Exposures, three solid Double Dark Slides and Black Leather Carrying Case ... ..

Ditto, with "Homocentric" Lens *f*/6.8 instead of *f*/6.3 ... ..

Ditto, with "Homocentric" Lens, *f*/5.6, instead of either of the above ... ..

"Panros" Focal-plane Camera, with E. R. "Homocentric" Lens, *f*/4.5, instead of above ... ..

Additional Double Dark Slides ... .. each

Changing Box with 12 sheaths ... ..

Holder to take Premo Film Pack ... ..

Mackenzie-Wishart Daylight Slides, Model B ... .. each

Envelopes for ditto ... ..

Antinous Release, specially fitted ... ..

Best quality Leather Sling Case, hand sewn, with spring Lock and Sling Shoulder Strap in place of ordinary case, to hold Camera and three Double Dark Slides ... .. extra

Ditto, to hold Camera and six Double Dark Slides or Camera and Changing Box ... .. extra

Light Wooden Tripod Stand ... ..

Aluminium Folding Stand ... ..

Telephoto and Telecentric Attachments, see pages 18 and 19.

4-plate with 5 in. Lens	5×4 6 in. Lens	Post Card 6½ in. Lens
£ s. d.	£ s. d.	£ s. d.
Code Word	Code Word	Code Word
Pandus 12 17 6	Pandora 14 0 0	Pancreas 14 10 0
Pango 12 17 6	Pangoat 14 0 0	Pangolo 14 10 0
Panmaur 13 17 6	Pancrate 15 15 0	Pancruel 17 5 0*
Panesh 14 17 6	Panen 16 5 0	Panad 17 10 0
0 12 6	0 13 0	0 14 0
1 15 0	2 0 0	2 10 0
0 15 0	0 18 0	0 18 0
0 13 0	0 16 0	Model A 1 3 0
0 1 6	0 2 0	0 2 0
0 4 6	0 4 6	0 4 6
0 10 6	0 12 6	0 12 6
0 15 0	0 17 6	0 17 6
0 18 6	0 18 6	0 18 6
1 5 0	1 5 0	1 5 0

\* The *f*/5.6 "Homocentric" Lens on P.C. Camera has a focus of 7 ins.

Cameras without Lenses are charged 25/- extra.

For Particulars of Dark Slides, Changing Box and Tropical  
"Panros" Camera, see page 30.



# Ross' 'Panros'

PATENT

## FOCAL-PLANE CAMERA (CONTINUED).

The Dark Slides supplied with the "Panros" Camera are of ebonized wood, solid form. The shutters of hard vulcanite can be wholly withdrawn. Either dry plates or cut films may be used. A special feature in the construction of this dark slide is the means adopted to avoid the possibility of light leakage even should the shutter be carelessly withdrawn or replaced.

The light traps in slides are almost invariably defective, and the special arrangement in the Ross' "Panros" slide is therefore greatly appreciated, as it entirely does away with this source of annoyance.

The Changing Box made for the "Panros" Camera is of similar high finish to the Camera, and is morocco-covered. It is for 12 plates or 24 films, carried in sheaths. It is extremely simple and efficient, and slides into the back grooves of camera without the least difficulty. The exposure is made by the withdrawal of the roller shutter, and the return of the shutter pushes the exposed plate or film in sheath into the leather bag, whence it is transferred to the back of the pack. The non-actinic window in the box lid permits of the bold legible numbers on the back of the sheaths being read with ease.

## TROPICAL MODEL.

The Tropical Model is similar to those described on preceding pages, but the material used in its construction is Teak Wood, polished and brass bound. The fittings are of lacquered brass and the bellows are of Russia leather, to withstand the effects of hot and humid climates and the attacks of insects.

The Dark Slides, changing boxes, and film-pack adapters, for use with the Tropical Model, are made of Teak.

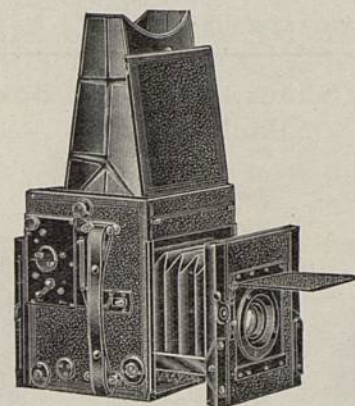
The Tropical "Panros" is made for 5x4 plates, that being the most satisfactory size for records of the nature likely to be required. The Backs are also made for the Continental size, 9x12 c/m, when desired, as such plates are frequently easier to procure when travelling abroad.

PRICE—as described, with 3 Solid Double Dark Slides and Carrying Case:—

With Ross' "Homocentric" Lens, f/6.3 in focussing mount,									
6-inch focus	...	...	...	...	...	...	...	...	£18 10 0
With "Homocentric," f/6.8, 6-inch focus	...	...	...	...	...	...	...	...	18 10 0
With "Homocentric," f/5.6, 6-inch focus	...	...	...	...	...	...	...	...	20 5 0
With "Homocentric," f/4.5, 6½-inch focus	...	...	...	...	...	...	...	...	20 15 0
Additional Double Dark Slides in Teak	...	...	...	...	...	...	...	(each)	0 19 0
Film Pack Adapters in Teak	...	...	...	...	...	...	...	...	1 5 0
Changing Box in Teak	...	...	...	...	...	...	...	...	3 0 0

# Focal-Plane 'Reflex' Camera

Light,  
Portable,



and  
Efficient.

	Weight of Camera.	Dimensions of Camera.	Longest Extension.
¼-plate ...	4 lbs.	5½ × 6½ × 7½	10½ ins.
5×4 ...	5½ lbs.	6½ × 7½ × 8½	13 "
Post Card ...	4 lbs.	6½ × 6½ × 7	10 "
½-plate ...	8½ lbs.	8½ × 10 × 10½	16 "

The Improved Model is provided with sky shade, special rack rising front and hinged hood. It is compactly and strongly made in mahogany, covered morocco, with leather carrying handle and shoulder strap, and is the most portable camera of its type. The fittings are finished black, with the exception of those parts likely to be handled, which are nickelled.

1. All movements and adjustments are effected from the outside with ease and certainty. 2. The front is specially rigid and steady in all positions by reason of the particular construction of its carrying supports and attached rackwork. 3. The back has not to be removed to reverse; it is made to revolve and lock into position for taking pictures either way of the plate. 4. The front, which has rise and fall, is racked out and in by conveniently placed milled head. 5. The bellows has extension for lenses of long focus. 6. The mirror, which is surface silvered to afford best definition, allows of the lens board being racked back further than usual, for short focussed lenses. 7. The shutter cannot be released until the mirror is out of the way. 8. The same trigger by one action releases both mirror and shutter. 9. The duration of exposure is directly indicated, thus obviating all calculation. 10. The scale ranges from 1/100 to 1/1000 second, and time exposures of any duration may be made. 11. A special feature is the simplified and improved focal-plane shutter, in which the alteration of speed depends entirely upon the slit, the tension spring having been dispensed with. 12. A swing front of special construction can be supplied with this Camera. The horizontal swing is obtained by pressing in the focussing milled head, slipping off the rack at one side, allowing the front to advance while the vertical is effected by simply releasing the clamp screws.

For full working directions and further particulars apply for Special Booklet, which will be forwarded free by post on receipt of application.

A very useful addition is the Stereo-Magnifier, which attaches to the Hood, and is of great assistance in focussing. It also helps to keep the Hood well open.

For Prices see page 33.



# Focal Plane 'Reflex' Camera

## THE NEW $3\frac{1}{2} \times 2\frac{1}{2}$ SIZE.

For Dark Slides, Changing Box, or Film  
Pack Adapter.



Size  $5\frac{3}{8} \times 5 \times 5$  in.

Weight  $2\frac{1}{2}$  lbs.

Without Reversing Back.



Size  $6\frac{7}{8} \times 5 \times 5\frac{3}{8}$  in.

Weight  $3\frac{1}{2}$  lbs.

With Reversing Back.



This extremely small size Reflex Camera is made of Mahogany ebonised, covered with morocco leather, the fittings being in black enamel.

All movements and adjustments are effected from the outside, as in the larger models, all the advantages of which it possesses.

The bellows are of leather, extending eight inches; nine inches in the Reversing Model. The focussing hood on top is of an improved form, hinged to permit of cleaning the focussing screen.

Back focussing screen is hooded in Ordinary Model, and not hooded in the Reversing Model. The camera can be used without mirror movement if desired. The ordinary model is readily turned for oblong or upright pictures. The mechanism works equally well, and bushes for attachment are provided in either position. It has rising and cross-front movements. With reversing back the model is slightly larger. Provided with Ross' "Homocentric" or Ross-Zeiss' "Tessar" Lens, the pictures obtained are of such excellent quality that they are suitable for considerable enlargement.

For every circumstance where portability is desirable, this camera is a most useful form. A carrying handle is attached.

Best materials and workmanship ensure the camera withstanding any climate.

### TO SET UP FOR WORK.

To erect the Hood, press small nickelled catch at back and open lid.

The Trigger releases both shutter and mirror simultaneously. The front milled head sets the mirror, and the back one the shutter.

To increase or decrease the shutter slit, after bringing the pointer vertical, draw out the knob slightly and turn either way as required. Turn the milled head until the desired indication of speed is opposite the pointer, then let it go back home.

The disc marked 20, 35, 50, gives value in fractions of a second.

Instructions for using Reversing back Model, see special booklet.

For Prices, see page 33.



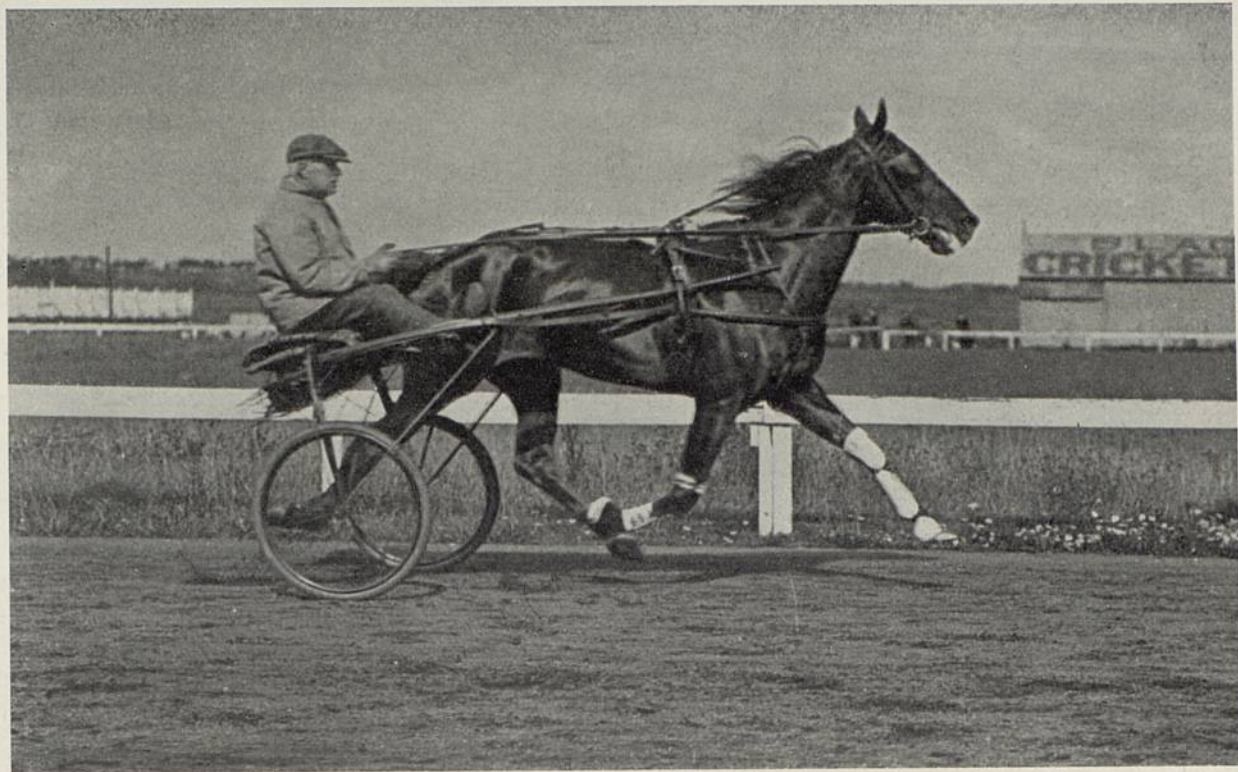


TAKEN WITH

[Negative by Adolphe Abrahams, F.R.P.S.]

**ROSS' 'HOMOCENTRIC' LENS,  $f/4.5$ , Focus  $6\frac{1}{8}$  ins.,  
and Multispeed Shutter.**





Frank S., Winner of the Championship Race at Wigan, October, 1911. 1 mile in 2.20.

TAKEN WITH

[Negative by G. Beever.]

**ROSS' 'HOMOCENTRIC' LENS, f/6.3, Focus  $6\frac{1}{2}$  ins.,  
and Multispeed Shutter.**



# PRICES.

## Focal Plane 'Reflex' Cameras.

	$\frac{1}{4}$ -plate, 5 $\frac{1}{2}$ -in. Lens	Post-Card Size, Non- Reversing, 6-in. Lens	5 $\frac{1}{2} \times 3\frac{1}{2}$ , with Stereo attachment & 2 Lenses.	5×4 or 9×12 c/m. 6-in. Lens	$\frac{1}{2}$ -plate, 8 $\frac{1}{2}$ -in. Lens
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Price with 3 Double Slides and Ross "Homocentric" Lens, f/6.3 .....	16 5 0	17 0 0	22 18 0	22 10 0	31 10 0
Code words.....	Reflap	Reflate	Refster	Reffloor	Reffloat
Ditto, with "Compound Homo- centric" Lens f/6.8.....	16 5 0	17 0 0	22 18 0	22 10 0	31 10 0
Code words.....	Refaah	Refbag	Refcot	Refdun	Refenu
Ditto, with "Homocentric" Lens, f/5.6.....	17 10 0	18 10 0	24 18 0	24 0 0	33 0 0
Code words.....	Reffin	Refliss	Refsters	Reffitor	Refflorite
Ditto, with E.R. "Homocentric" Lens, f/4.5, instead of above...	17 15 0	19 15 0	26 8 0	25 5 0	34 10 0
Code words.....	Reflake	Reffetsi	Reffized	Reffcon	Refflotz
Ditto, with Ross-Zeiss "Tessar," f/6.3 .....	16 15 0	17 10 0	23 18 0	23 0 0	33 0 0
Code words.....	Reflaz	Reffextor	Reffset	Reffizote	Refflotiz
Ditto, with Ross-Zeiss "Tessar," f/4.5 .....	18 10 0	20 10 0	27 8 0	26 0 0	34 10 0
Code words.....	Riflam n	Refflew	Reffisco	Refflits	Refflobt
Solid Double Backs, each .....	0 7 0	0 10 0	0 10 0	0 10 0	0 15 0
Code word—Reboc					
Book-Form Backs, each .....	0 12 6	0 15 0	0 15 0	0 15 0	1 0 0
Code word—Reboom					
Extra for Swing Front, as above described .....	1 10 0	2 0 0	2 0 0	2 5 0	3 0 0
Changing Box with 12 Sheaths ..	1 15 0	2 0 0	2 0 0	2 0 0	2 10 0
Film Pack Holder .....	0 15 0	0 18 0	0 18 0	0 18 0	1 5 0
Antinous Release, specially fitted	0 7 6	0 7 6	0 7 6	0 7 6	0 7 6
Extension Cones, for use with back combination of Lens and with Telephotographic attach- ment .....	1 5 0	1 10 0	—	1 10 0	2 0 0

Stereo Focuser for attachment to Hood, as above described, 10/-.

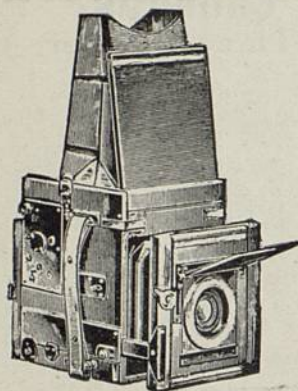
## PRICES of 3 $\frac{1}{2} \times 2\frac{1}{2}$ REFLEX CAMERA.

Camera as described, with 3 solid form Double Backs and Ross 5-inch "Homocentric" Lens, f/6.3 .....	£ s. d.	Code Words.	With-Rever- sing Back.	Code Words.
Ditto, with 5-in. Compound "Homo- centric" Lens, f/6.8 .....	14 0 0	Miniflap	16 10 0	Miniflapco
Ditto, Ross 5-in. "Homocentric" Lens, f/5.6 .....	14 0 0	Miniflock	16 10 0	Miniflockco
Ditto, Ross 5 $\frac{1}{2}$ -in. "Homocentric" Lens, f/4.5 .....	15 0 0	Miniflin	17 10 0	Miniflinco
Ditto, Ross-Zeiss 4 $\frac{1}{2}$ -inch "Tessar" Lens, f/6.3 .....	15 0 0	Minilem	17 10 0	Minilemco
Ditto, Ross-Zeiss 4 $\frac{1}{2}$ -inch "Tessar" Lens, f/4.5 .....	14 10 0	Miniflaz	17 0 0	Miniflazco
Solid form Double Backs, each .....	0 7 0	Minicoz	17 10 0	Minicozco
Book form .....	0 12 6	—	0 7 0	—
Changing Box for 12 plates or 24 cut films .....	0 12 6	—	0 12 6	—
Film Pack Adapter .....	1 15 0	—	1 15 0	—
Solid Leather Sling Case for Camera & 3 backs or changing box .....	0 12 6	—	0 12 6	—
Light Wood Tripod Stand .....	0 15 0	—	1 0 0	—
Aluminium Folding Stand, extra light ...	0 18 6	—	0 18 6	—
Antinous Release, fitted .....	1 5 0	—	1 5 0	—
	0 7 6	—	0 7 6	—



## Focal-Plane 'Reflex' Camera.

### NEW TROPICAL MODEL.



Made of Polished Teak, specially selected, with fittings of lacquered brass, and the body brass-bound. The bellows are of Russia leather to withstand the attacks of insects. Supplied with Skyshade, Shoulder Strap, and special rack-rising front and hinged hood.

In general construction the Tropical Model is similar to Regular Model, of which it has all the movements and advantages.

The dark slides, changing boxes, and film pack adapters for use with the Tropical Model are all specially made of Teakwood like the Camera.

The prices given below are for Tropical Models for the same size plates as the Regular Model, each being furnished with three double dark slides and Ross' lenses.

	$\frac{1}{2}$ -plate 5 $\frac{1}{2}$ -in. Lens.	Post-card Size, non- reversing, 6-in. Lens.	5x4 6-in. Lens. 9x12 c/m.	$\frac{1}{2}$ -plate 8 $\frac{1}{2}$ -in. Lens.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Price with 3 Double Slides and Ross' "Homocentric" Lens, f/6.3 ... ..	22 2 0	23 0 0	31 0 0	43 0 0
Code words ...	Troflap	Troflap	Trofloor	Trofloat
Ditto, with Compound "Homocentric" Lens, f/6.8 ... ..	22 2 0	23 0 0	31 0 0	43 0 0
Code words ...	Troflash	Troflap	Trofdun	Trofemu
Ditto, with "Homocen- tric" Lens, f/5.6 ...	23 7 0	24 10 0	33 10 0	44 10 0
Code words ...	Troflin	Trofliss	Troflitor	Troflorite
Ditto, with Ross' E.R. "Homocentric" Lens, f/4.5 ... ..	23 12 0	6 $\frac{1}{2}$ -in. Lens 25 15 0	6 $\frac{1}{2}$ -in. Lens 34 0 0	46 0 0
Code words ...	Troflash	Troflen	Troflenko	Troflope
Ditto, with Ross-Zeiss' "Tessar" Lens, f/6.3...	22 12 0	23 10 0	31 10 0	44 10 0
Code words ...	Troflaz	Troflexzor	Troflizote	Troflotiz
Ditto, with Ross-Zeiss' "Tessar" Lens, f/4.5...	24 7 0	6-in. Lens 26 10 0	7 $\frac{1}{16}$ -in. Lens 34 10 0	46 0 0
Code words ...	Troflamen	Troflow	Troflints	Troflobt
Solid Double Backs, each ... ..	0 9 6	0 14 0	14 0 0	1 1 0
Code word—Trobooc...				
Book Form Backs, each.	0 18 0	1 2 0	1 2 0	1 10 0
Code word—Troboom.				
Film Pack Adapters ..	1 1 0	1 5 0	1 5 0	2 0 0
Changing Boxes ..	2 12 6	3 0 0	3 0 0	3 15 0

Stereo Focusser for Attachment to Hood, 10/-

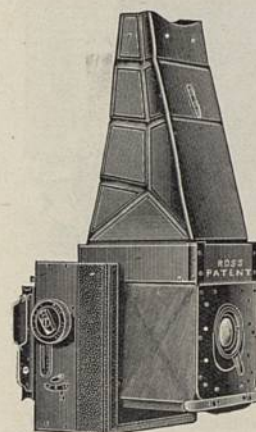
ROSS' PATENT

## New Folding Reflex Camera With Self-Capping Focal-Plane Shutter.

A Camera, British made throughout, possessing all the advantages of the Box type of Reflex in an extremely portable form.

These advantages are universally appreciated, and the one inconvenience, that of size when closed, has been removed in this new Folding Model.

To avoid projection the lens is sunk into the front of Camera, being focussed by means of a lever.



The Front folds back into the top or cover containing the focussing screen, which in turn folds down against the Back, forming a most neat and compact package. The flexible bellows is so constructed that during the closing it rolls up and again straightens to assume a position with the mirror between the front and back. To open out the Camera these motions are simply reversed. When extended, metal struts, or rather a continuous strut, hinged on both sides to the camera body, swings down and attaches by spring clips to the Front in such a way that it is maintained absolutely rigid with, and parallel to, the camera body. When the release is made the mirror is lifted from its inclined position to the horizontal, and the shutter comes into action by the same mechanism immediately this lifting is completed.



The body is of well-seasoned wood, covered in morocco leather, and the adjuncts are of metal.

The Focal-Plane Shutter is that self-capping form now become so deservedly popular in connection with the "Panros" Camera.

A Rotating Back is provided to permit of the slide being inserted vertically or horizontally.

The Folding Hood over the focussing screen easily detaches for cleaning the ground glass, mirror, and back combination of lens.

### SIZE OVER ALL.

7 ins. wide, 3 $\frac{1}{2}$  back to front,  
6 ins. deep.

### WEIGHT.

Including the Lens, 4 lbs. 5 ozs.;  
of 3 Double Slides, 11 ozs.

### PRICE:

Ross' Patent Folding Reflex Camera, with improved Focal-Plane Shutter, Rising Front, 3 Double Dark Slides, and 5 $\frac{1}{2}$ -in. "Homocentric" Lens f/5.6-in Focussing Jacket ...

£23 0 0

Leather Sling Case to carry Camera and 3 Dark Slides ...

1 0 0

*This Camera is at present made in quarter-plate size only, and no other lens than that specified is fitted.*



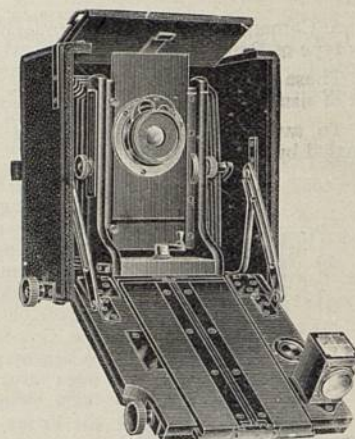
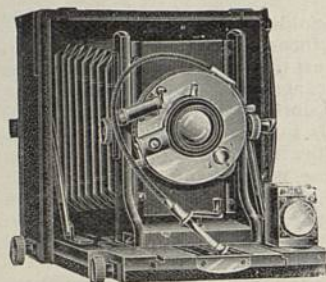
## ROSS' NEW 'KEROS' CAMERA.

A new Camera of the Universal Hand and Stand type, strongly made in mahogany, covered Morocco leather. The inside is black polished and the metal fittings are finished in permanent dull black, so much admired in our Reflex Cameras.

Measurement .....  $6\frac{1}{8} \times 6\frac{1}{8} \times 3\frac{3}{4}$

Weight without lens or shutter,  
2 lbs. 14 ozs.

With  $f/6.3$  "Homocentric" and  
Multispeed Shutter, 3 lbs. 4 ozs.



It will be observed that, while not exceeding the dimensions of similar Cameras, the great advantages of the Revolving Back and Wide-Angle Movement are included.

This new Camera has all the usual movements, including Double Extension, Double Rising Front, the rise being  $2\frac{1}{4}$  inches, Swing Front, &c. Instead of the usual reversing back a very smooth working Revolving Back is provided.

The hinged Base-board may be lowered and the top board of camera can be raised to permit of all the advantages of the novel Wide-Angle Movement being utilised. Separate Rack and Pinion focussing adjustment is provided to this.

Minimum extension of camera,  $1\frac{1}{2}$  for lenses of very short focal length; maximum extension, 12 inches.

$4\frac{1}{4} \times 3\frac{1}{4}$ Camera with 3 Solid Slides and View-finder, without lens or shutter—Code word, Keros ... ..				£9 0 0
Do. With "Homocentric" lens...	5" $f/6.3$	5" $f/6.8$	5½" $f/4.5$	
In Ibsco Shutter ... ..	£13 10 0	£13 10 0	—	
Code word ... ..	Kerac.	Keratos.		
Do. In Compound Shutter ... ..	14 0 0	14 0 0	16 8 0	
Code word ... ..	Kelifi.	Kelmos.	Kelaton.	
Do. In Koilos Shutter ... ..	14 0 0	14 0 0	16 8 0	
Code word ... ..	Ketac.	Ketaros.	Ketand	
Do. In Multispeed Shutter—				
Junior Form ... ..	15 17 6	15 17 6	—	
Code word ... ..	Kemgo.	Kempos.	—	
Standard Form ... ..	17 10 0	17 10 0	19 15 0	
Code word ... ..	Kesmit.	Kestos.	Kesillo.	

Leather Sling Case to carry Camera and three dark slides ... £1 0 0

9×12 c/m Cameras carry 5½" lenses, and the difference in cost is that in the corresponding lenses and shutters.

Addition of Multispeed Shutter entails no increase in size, which will be greatly appreciated by photographers accustomed to the size and bulk of Focal-Plane Shutter Cameras.

## NEW MODEL Twin-Lens 'Reflex' Cameras



The absolute accuracy of the system of using a second lens for focussing and watching the object photographed, of the same construction and focus as the working lens, has induced **Ross, Ltd.**, to design a Camera on this principle of quite novel arrangement.

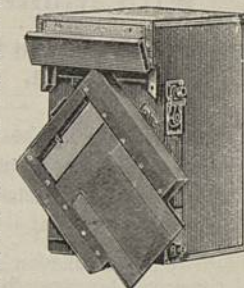
The great advantage of the twin-lens over other Reflex Cameras is that the second lens not only serves for focussing and directing the Camera towards any object or any particular part of the object, but there is no obliteration of the image after focussing.

### IT REMAINS VISIBLE ON THE SCREEN DURING THE EXPOSURE.

Ross' Twin-Lens Camera was originally made with a door closing over the front; afterwards with considerable reduction in size. The New Model retains the two doors, and is still smaller and less in weight with many serviceable additions; the idea being to introduce a camera embodying every possible convenience for easy manipulation, to be absolutely reliable in use, and compact and portable when closed up. The working lens is furnished with the new "Koilos" diaphragmatic shutter working at from 1 to  $\frac{1}{300}$ th second, more generally useful than the focal-plane, which is principally for high-speed work. Nevertheless the New Camera may be furnished with a focal-plane shutter if desired; the "Automat," "Multispeed," or other suitable between-lens shutter substituted at the difference in Catalogue prices.

A conveniently-shaped Automatic Hood is provided, enabling the operator to work in the strongest light. Want of rigidity in the lens-carrying part of cameras is often a source of trouble, but in the new model the arrangement of front is such that it is absolutely rigid in any position. Dim lighting of the visual picture in reflecting cameras is exceedingly irritating and misleading. It is frequently caused by the accumulation of dust on the mirror and inside of grey glass, and no adequate means has hitherto been provided for its removal. A prominent feature of the New Camera is the hinging of the top part so that it can be thrown open and the interior become accessible for cleaning. A rising front is fitted, worked by rack and pinion.

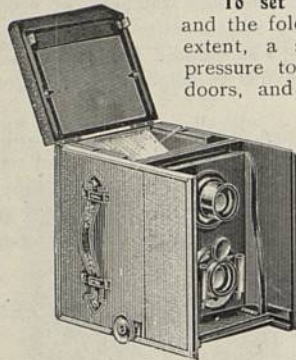
The reflector is surface-silvered to give the full sharpness to the image projected by the lens.





# NEW MODEL

## Twin-Lens 'Reflex' Camera.



To set up the Camera for work open the lid at top, and the folding leather hood will be drawn up to its full extent, a strut providing support for the lid. Apply pressure to the fastening under front edge of the folding doors, and turn the pinion head at right hand towards left, when the front carrying the lenses will move forward, and the picture may be focussed on the screen.

When closing the hood bend the strut before lowering the lid. The Camera is suspended from the neck by a sling or mounted upon a stand, suitable bushes being provided for the purpose. This Camera may not only be made with focal-plane shutter if desired, but also with revolving back and square finder portion, so that objects may be viewed and pictures taken either way of the plate.

For Prices, see page 39.

## Twin-Lens 'Reflex' Camera With Multi-Speed Shutter.

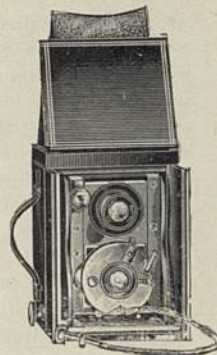
The smallest and lightest Apparatus of its kind. For  $\frac{1}{4}$ -Plate.

Size— $7\frac{1}{8} \times 5\frac{3}{8} \times 5$  inches.

Weight—3lbs. 11ozs., including 2 Lenses and Shutter.

Size— $9\frac{1}{4} \times 5\frac{3}{8} \times 5\frac{3}{8}$  inches.

Weight—4lbs. 3 ozs., with addition of Rotating Back.



The introduction of the Multi-Speed Shutter has rendered it possible to construct this specially small and portable Twin-Lens Camera on the Reflex principle, considerably smaller and lighter than the ordinary Reflex.

The Camera in itself is similar to that described on page 37, and has all the advantages of this well-tested and popular Camera. It is therefore ideal for Press Photography, and when extreme portability is of importance.

PRICE.—Including 3 Double Dark Slides, with pair 5-inch "Homocentric" Lenses,  $f/6.3$ , and new Multi-Speed Shutter, Code word, Twamult ... .. £19 7 6  
Ditto, with Revolving Back, Code word, Twamultir ... .. 20 17 6

For full particulars of the Multi-Speed Shutters, see pages 40 to 43.

# PRICES—

## Twin-Lens 'Reflex' Cameras.

DIMENSIONS of  $\frac{1}{4}$ -plate Camera— $7\frac{1}{8}$  inches high,  $5\frac{3}{8}$  inches wide by 5 inches back to front, closed.

If with rotating back  $9\frac{1}{4}$  inches high,  $5\frac{3}{8}$  inches wide by  $5\frac{3}{8}$  inches back to front.

WEIGHT, fitted with pair 5-inch "Homocentric" Lenses,  $f/6.3$ , and new "Koilos" Shutter,  $3\frac{1}{2}$ lbs. approximately, Rotating  $5\frac{1}{2}$ lbs.

	$\frac{1}{4}$ -plate 5-in. lenses.	$5 \times 4$ 6-in. lenses.	$\frac{1}{4}$ -plate 7-in. lenses.
PRICES.—Including 3 Double Dark Slides with "Homocentric" Lens $f/6.3$ and "Koilos" Shutter ... ..	£15 17 6	£18 12 6	£22 10 0
Code words ... ..	Twapok	Twerok	Twigok
Ditto ditto, and B. & L. Automatic Shutter ... ..	15 7 6	17 17 6	22 7 6
Code words ... ..	Twapant	Twerant	Twigan
Ditto ditto, and New Multi-Speed Shutter ... ..	19 7 6	21 17 6	26 5 0
Code words ... ..	Twamult	Twereba	Twigogo
With "Homocentric" Lens $f/5.6$ and "Koilos" Shutter ... ..	18 2 6	21 12 6	26 0 0
Code words ... ..	Twinok	Twemok	Twutok
Ditto ditto, and "Automat" Shutter ... ..	17 7 6	21 17 6	25 15 0
Code words ... ..	Twinant	Twomant	Twutant
Ditto ditto, and New Multi-speed Shutter ... ..	21 7 6	25 7 6	29 5 0
Code words ... ..	Twindo	Twomelo	Twutere
Ditto ditto, with E.R. "Homocentric" Lens $f/4.5$ and "Koilos" Shutter ... ..	20 0 0	23 0 0	28 10 0
Code words ... ..	Twinesh	Twween	Twudoc
Ditto ditto, with "Automat" Shutter ... ..	19 17 0	22 17 6	28 7 6
Code words ... ..	Twamesh	Twemen	Twigrok
Ditto ditto, with E.R. "Homocentric" Lens $f/4.5$ and 'Multi-speed' Shutter ... ..	23 7 6	26 7 6	
Code words ... ..	Toomult	Toomoil	
Either of the above with Square Finder and Revolving Back—add "ir" to code word and ... ..	1 10 0	1 15 0	2 0 0
Time and Instantaneous Focal-Plane Shutter and Constructing Camera to take same—add "os" to code word and ... ..	4 5 0	5 5 0	6 0 0
Focal-Plane Shutter and Revolving Back Combined—add "ut" to code word and ... ..	5 15 0	7 0 0	8 0 0

NOTE.—If Diaphragmatic Front Shutter is not required, add "zo" to altered Code word, and List Price of the Shutter will be deducted.

Twin-Lens Cameras sold without lenses will be charged £2 extra.

Extra Double Dark Slides.— $4\frac{1}{4} \times 3\frac{1}{4}$ , 15/-;  $5 \times 4$ , 18/-;  $6\frac{1}{2} \times 4\frac{3}{4}$ , 22/-;  $8\frac{1}{2} \times 6\frac{1}{2}$ , 25/-  
Bag Changing Boxes with Roller Shutter (12-plate Sheaths).— $4\frac{1}{4} \times 3\frac{1}{4}$ , 40/-;  $5 \times 4$ , 45/-;  $6\frac{1}{2} \times 4\frac{3}{4}$ , 55/-.

# EXTRAS.

Extra for Camera in Polished Mahogany with 3 Dark Slides, fully brass-bound,  $4\frac{1}{4} \times 3\frac{1}{4}$ , 50/-;  $5 \times 4$ , 55/-;  $6\frac{1}{2} \times 4\frac{3}{4}$ , 60/-.  
Double Swing Back Attachment, polished black,  $4\frac{1}{4} \times 3\frac{1}{4}$ , 25/-;  $5 \times 4$ , 30/-;  $6\frac{1}{2} \times 4\frac{3}{4}$ , 35/-.  
Steel-Plate or Film Sheaths for Changing Box, per doz.:  $4\frac{1}{4} \times 3\frac{1}{4}$ , 5/-;  $5 \times 4$ , 6/6;  $6\frac{1}{2} \times 4\frac{3}{4}$ , 7/6.

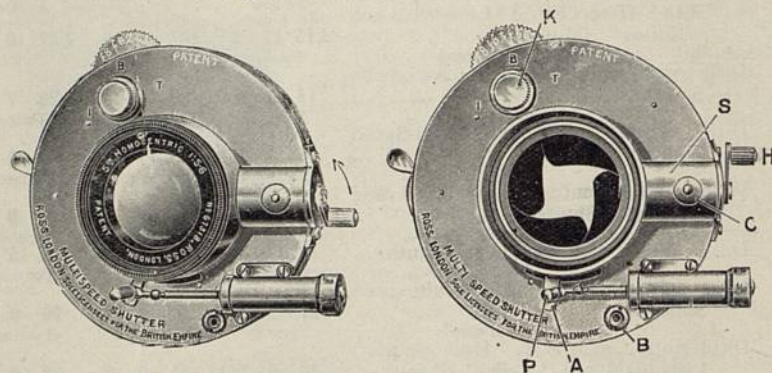


## A REVOLUTION IN HIGH-SPEED WORK.

The New Between-Lens Shutter, superseding the Focal-Plane.

### The Multi-Speed Patent IN TWO SIZES.

Suitable for HOMOCENTRIC and all LENSES  
admitting a Between-Lens Shutter.



#### PRICES.

SMALL SIZE for—5in., 6in., 7in.,  $f/8$ ; 5in., 6in.,  $f/6.8$  and  $f/6.3$ ;  
5in., 6in.,  $f/5.6$ ... £5 5 0  
MEDIUM SIZE for—5 in. and 6in.,  $f/4.5$ ; 5in. to 10in.,  $f/8$ ; 5in.  
to 8½in.,  $f/6.8$ ; 5in. to 8½in.,  $f/6.3$ ; 5in. to 7in.,  $f/5.6$ ... 5 15 0

These Prices include Antinous Release.

**THIS SHUTTER** provides speeds varying by successive steps from one second to a minute fraction of time beyond the limits of the photographic plate, besides providing for bulb and time exposures of any duration. The speeds furnish equally efficient exposures, and so the single instrument fulfils every duty which can be required of any shutter, uniting the well-known advantages of the Diaphragm shutter with higher speeds than can be obtained by the focal-plane shutter. For high speeds the tension of the unencumbered spring is used; for low speeds (1 sec. to 1/100th sec.) a retarding piston is attached to the mechanism—thus the motive power is the same in each case, and reliability is ensured.

**Extra Rapid Instantaneous Exposures**—1/600th, 1/800th, 1/1000th, etc., of second,  $f/6.8$  aperture being sufficiently rapid for fastest work.

**Slower Exposures**, bulb and time, from several seconds to 1/100th of a second.

**Horizontal Distortion**, frequently apparent when focal-plane shutters are used, in consequence of the movement of object during the descent of the blind opening, is entirely absent from the Multi-speed, as the exposure being so truly instantaneous the image is formed as originating from a stationary object.

SEE FOLLOWING PAGES.

**ROSS, Ltd.,** Sole Manufacturing Licensees for the  
British Empire.

## Instructions for use of the Multi-Speed Shutter.

The necessary openings of the Diaphragm are obtained by moving the milled disc upon which the stop values are marked.

For Focussing—press Trigger down and move arm A to the centre of slot. To close, push arm to either end of slot when shutter will lock.

**HIGH SPEEDS.**—See that pin P is screwed into brass bush B, so that it may be out of the way, as the retarding piston takes no part in these speeds. Turn pointer (dot) of knob K to I (meaning "Instantaneous"). Note where the figure 1 nearest the arm A stands on or between letters A, B, C, D, engraved on speed-indicating ring at the edge of shutter, the position opposite this figure 1 is the reading point for the speed about to be set. Now turn the handle H. The direction in which it has to be turned depends upon the position of arm A (see illustrations on page 40), the shutter setting from opposite sides for alternate exposures. If arm A is on the right side of slot turn handle to right; if on left side turn handle to left, always turning it so that the speed-indicating ring moves towards arm A. If turned to the right, the right No. 1 gives the reading point; if to the left, the left No. 1. Turn the handle until desired tension number comes opposite reading point; then lock spring by pushing catch-knob C towards handle. Make exposure by pressing trigger or Antinous release.

The second figure 1 equals  $\frac{1}{200}$ th; No. 2,  $\frac{1}{500}$ th; No. 3,  $\frac{1}{800}$ th; No. 4,  $\frac{1}{1300}$ th; No. 5,  $\frac{1}{2000}$ th.

To set for the next exposure, release spring tension by pushing the catch towards the lens and turn handle in opposite direction from that used for previous exposure.

**NOTE.**—After using the shutter at high speed on one side, it should be set correspondingly high on the other and discharged before being set for low speed, as when the shutter has been used at high speed torsion prevents spring from returning back to normal at once, and the graduated ring settles in wrong position. The result is that a slow speed on other side will give totally inaccurate results unless the precaution named is taken.

Shutter can be reset for exposures up to  $\frac{1}{1000}$ th by pressing the trigger release down and pushing the arm A over to the other end of slot. Immediately the finger is taken off the trigger, the shutter will lock and is ready for another exposure of the same duration. It is recommended these exposures be made from right to left. The shutter opens if so set, and this method of setting therefore should not be used with Roll Film Cameras.

**INSTANTANEOUS SLOW EXPOSURES.**—These are obtained by retarding the action of the spring by means of an air-brake, any speed from 1 second to  $\frac{1}{1000}$ th second being obtainable with lowest tension (from 1 to 1).

Unscrew pin P from bush B, and screw it into hole in arm A. Turn air-valve cover V until the required figures come opposite reading dot on cylinder. Intermediate speeds may be obtained from intermediate positions. Then proceed as instructed for high speeds, setting the tension at 1.

**BULB EXPOSURES.**—Are made with or without retarding piston connected to arm A, by turning knob K to B and giving handle one turn, press trigger release down quickly, especially if retarding piston is not connected.

**TIME EXPOSURES.**—Are locked bulb exposures, and it is necessary to press trigger release down as far as it will go. The second pressure need only be a light one. Set engraved dot on knob K hard against T and give handle one turn.

**ROSS, Ltd.,** Sole Manufacturing Licensees for the  
British Empire.



## General Remarks on the use of the Multi-Speed Shutter.

The air valve is only used if exposures longer than  $\frac{1}{100}$ th are desired. Higher speeds than  $\frac{1}{100}$ th must be made with air hole full open and higher tension.

When shutter is not used it is most important to keep swinging arm on left side of shutter where the word "Rest" is engraved. This will protect the piston of air cushion, as in this position it is pushed in and can not get rusty in damp weather.

On Bulb and Time exposures the blade opening is not the same in both directions, but as the shutter is designed for instantaneous work and bulb and time is provided to make it a complete instrument for all-round work, this should not be considered a fault (stops are used mostly with such exposures). If blades were cut to give even opening on time both ways it would cause a loss of at least 30% on speeds, and besides would increase the size of shutter.

### Speed Table for Fast Work.

No. 1. Is sufficiently high for all speed work as met in city streets—such as carriages, autos. Also athletic work, front views.

No. 2. Is sufficient for jumping and athletics, taken diagonally.

No. 3. Is sufficient for horse work, athletics, and for all speed work as done at present with focal-plane shutters, and will effectively stop all movement, no matter in what direction to the plate.

No. 4 and 5. Are reserved, and tend to make the image considerably sharper than the lower tensions, and can be used in fair light if it is intended to enlarge an object to large size.

### WHY the MULTI-SPEED SHUTTER is SUPERIOR TO ALL OTHER SHUTTERS.

The shutter has actual speeds as claimed.

Speeds of  $\frac{1}{2000}$ th will give printable negatives.

Instantaneous speeds from several seconds to  $\frac{1}{2000}$ th of a second.

On all instantaneous speeds satisfactory definition with full aperture.

Slow instantaneous speeds absolutely NOISELESS.

Bulb and Time exposures.

It is an all-round Shutter for all-round work and surpasses all others in every direction.

### DESCRIPTIVE OPINIONS OF USERS.

"I have used many focal-plane shutters, but my experience of about 5 months' use of the 'Multi-speed' convinces me that it surpasses all other kinds in every way."—ALPHONSE AUDY.

"The Multi-speed shutter will not only do all that any focal-plane will do, but will also do what in my experience no focal-plane shutter has ever come near achieving. The pictures enclosed represent results which no focal-plane shutter, even at top speed, could possibly have done. The Multi-speed will render sharply those examples of rapidly moving objects which would be blurred or distorted with a focal-plane."—A. A.

"I have taken hundreds of photographs with focal-plane shutters, but I never got anything like the enclosed. There is a great amount of distortion with the focal-plane, but on this picture taken with the Multi-speed there is absolutely no distortion, and the detail is marvellous. The shutter was working at  $\frac{1}{10000}$ th of a second."

"As far as I am concerned I consider the Multi-speed shutter renders the focal-plane obsolete for the photography of fast moving objects."—G. BEEVER.

"The number of exposures I have made with the Multi-speed shutter give every indication that your claims for it are well founded. Negative of dog-cart driven at top speed, with horse tossing its head, not only shows no sign of motion (photo taken broadside on), but the wheels were a revelation to a focal-plane worker, being perfectly spherical. The photograph of Leeds to London express, travelling at about 55 miles an hour, shows that all motion is arrested by the speed used (No. 4). I have taken a number of photographs while travelling in a motor car at over 30 miles an hour, and they have come out absolutely sharp."

With the "HOMOCENTRIC" Lens adapted this Shutter forms the most reliable combination for all purposes.

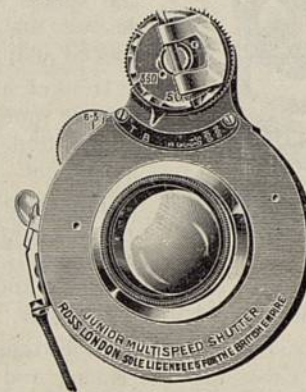
## NEW 'Junior' Multi-Speed Shutter

For  $4\frac{1}{4} \times 3\frac{1}{4}$ ,  $5 \times 4$  and  $7\frac{1}{2} \times 5$  Cameras;

No. 3, 3A and 4 Kodaks; and similar instruments.

Designed for Roll Film Cameras, but just as efficient for Plate Cameras.

Time, bulb and slow instantaneous exposures from  $\frac{1}{2}$  second to  $\frac{1}{2000}$ th on lowest tension,  $\frac{1}{250}$ th and  $\frac{1}{500}$ th on highest tensions.



**Greatest Accuracy.  
Widest Latitude.  
Easiest in Operation.**

This new Shutter is based upon the carefully developed principle of the Regular "Multi-speed." It is not designed to work at the same extreme high speeds, and several expensive features have been omitted from its construction, permitting of its being sold at a more popular price. Its efficiency up to its limit of  $\frac{1}{250}$ th second actual exposure is, however, of the same high standard as the Regular Shutter.

The new Shutter is easily operated by turning the key on the dial above the shutter from one side to the other. Set on opposite side after each exposure. It is provided with an automatic lock, whereby only the lowest tension can be given on all exposures below  $\frac{1}{250}$ th second and on bulb and time exposures.

Higher tension can only be had when the pointer is set to the  $\frac{1}{250}$ th second mark, then the spring can be set to two successive higher tensions or speeds— $\frac{1}{500}$ th and  $\frac{1}{1000}$ th actual exposure.

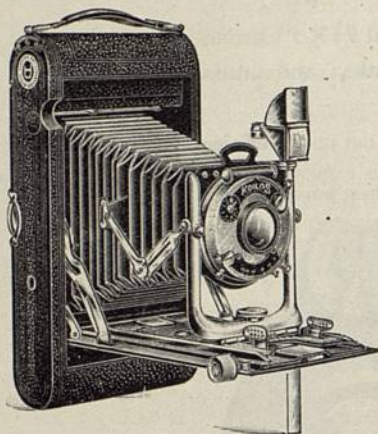
After using the higher speeds, it is advisable to release the key and give a turn in the opposite direction, in order to get uniform exposures at the lower speeds.

In outline the new model is similar to the ordinary style of shutter, showing on the outside only the key for the spring, and it is therefore easily adapted for use in small cameras.

PRICE ... **£3 12 6**



## Roll Film & Plate Camera.



This Camera is made for  $4\frac{1}{4}$  by  $3\frac{1}{4}$ , or for Post-card size ( $5\frac{1}{2} \times 3\frac{1}{2}$ ), and by special arrangement of Sliding Door at back admits of Plates being used as well as Roll Films.

It takes the ordinary commercial spools of Films or Plates as desired, the carriers requiring no special adaptation.

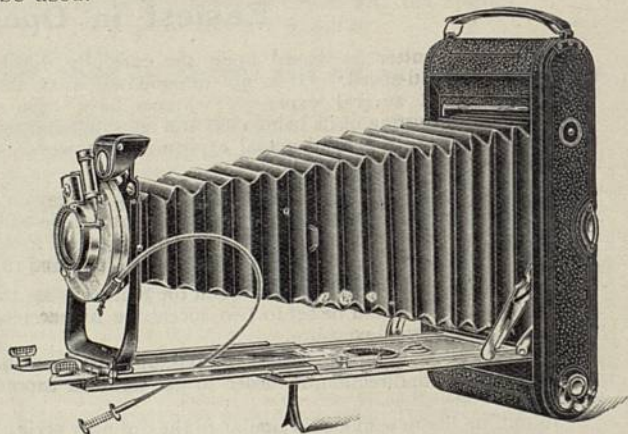
It is of Metal, leather covered, of the finest workmanship and finish, and has every desirable movement.

The Quarter-plate size is made in two forms, one with Single Extension and the other with Double Extension, both worked by Rack and Pinion, and having Cross Motion and Rising and Falling Front.

The Post-card size has Double Extension, with Rack and Pinion Adjustment, Cross Motion, Rising and Falling Front as in the Quarter-plate size.

Each Camera is provided with Sliding Door, removable when Plates are to be used.

This Illustration shows the Double Extension and Multi-speed Shutter attached.



Each Camera is provided with Circular Level, Brilliant Pattern Finder, Shutter, and the Ross' "Homocentric" Lens, f/6.3.

## Roll Film and Plate Camera.

As described on opposite page.

### PRICES.

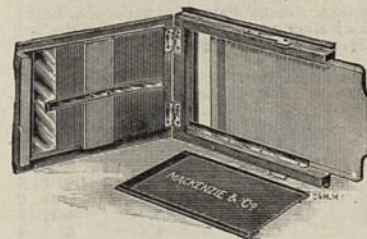
For pictures $4\frac{1}{4} \times 3\frac{1}{4}$ on Roll Films only, with Single Extension, Rack Adjustment, &c., as described on page 44, "Automat" Shutter and Ross' "Homocentric" Lens, f/6.3 ... ..	£7 14 0
Equipment for pictures on Plates, consisting of Focussing Screen with hood and 6 Metal Plate Holders in wallet... .. extra	0 17 0
With "Koilos" Shutter instead of "Automat" ... ..	0 10 0
With Multi-speed Shutter ditto ... ..	4 0 0
For pictures $4\frac{1}{4} \times 3\frac{1}{4}$ on Roll Films only, with Rack and Pinion, Double Extension, Rising Front, Cross Motion, "Automat" Shutter and Ross' "Homocentric" Lens, f/6.3 ... ..	8 14 0
Equipment for Plates as above ... .. extra	0 17 0
With "Koilos" Shutter instead of "Automat" ... ..	0 10 0
With Multi-speed Shutter ditto ... ..	4 0 0
Extra Metal Plate Holders (single) ... .. each	0 1 9
For pictures $5\frac{1}{2} \times 3\frac{1}{2}$ (Post Card Size) on Roll Films only, with Double Extension, Rising and Falling Front, Cross Motion, "Automat" Shutter, and Ross' "Homocentric" Lens, f/6.3 ... ..	10 6 6
Equipment for Plates as above ... .. extra	0 18 6
With "Koilos" Shutter instead of "Automat" ... ..	0 15 0
With Multi-speed Shutter ditto ... ..	4 0 0
Extra Metal Plate Holders (single) ... .. each	0 2 0

### MACKENZIE-WISHART

## Daylight Slides and Envelopes.

The first and most reliable daylight plate system.

Used by the leading Press, Professional and Amateur Photographers.



	Slides.	Envelopes.	Case for 12	
$\frac{1}{4}$ -plate.....	15/0	1/3	3/0	Model A.
$5 \times 4$ .....	18/0	1/6	3/6	
$5\frac{1}{2} \times 3\frac{1}{2}$ .....	18/0	1/6	3/6	
Stereo.....	20/0	1/9	4/6	
$\frac{1}{2}$ -plate.....	21/0	2/0	4/6	Model B.
$\frac{1}{4}$ -plate.....	27/6	3/0	8/0	
$\frac{1}{4}$ -plate.....	8/0	1/6	3/0	
$5 \times 4$ .....	10/6	2/0	3/6	
$5\frac{1}{2} \times 3\frac{1}{2}$ .....	10/6	2/0	3/6	Model B.
Stereo.....	12/6	2/6	4/6	
$\frac{1}{2}$ -plate.....	12/6	2/6	4/6	

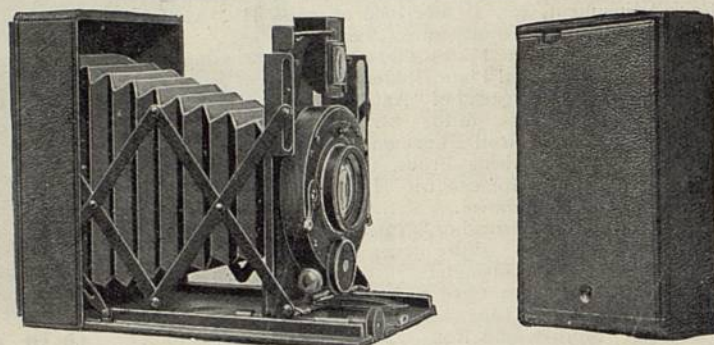
Fitting to Camera extra.

State type of Camera, and send Reversing Back for fitting.



# THE ADAMS VESTA

PATENT



Absolutely the Smallest & Lightest Camera in the World.

	Size.	Long.	Wide.	Thick.	Weight.
Size and Weight with Dark Slide,	$3\frac{1}{2} \times 2\frac{1}{2}$ ( $6\frac{1}{2} \times 9$ c/m) ...	$4\frac{1}{2}$	$3\frac{1}{2}$	$1\frac{1}{2}$	20 ozs.
F/4.5 Lens, Identoscope and Level	$4\frac{1}{2} \times 3\frac{1}{2}$ ...	$5\frac{1}{2}$	$4\frac{1}{2}$	$1\frac{1}{2}$	28 "

**Lenses.**—Ross-Zeiss "Tessar," f/4.5. Other Lenses to order. The  $3\frac{1}{2} \times 2\frac{1}{2}$  is fitted with Lenses of  $4\frac{1}{2}$  in. focus,  $4\frac{1}{2} \times 3\frac{1}{2}$  size 6 in.

**Shutter.**—Pneumatically controlled for speeds from 1-200th of a second to 1 second, also time and bulb exposures, and the  $4\frac{1}{2} \times 3\frac{1}{2}$  from 1-150th of a second. Focal-plane Self-capping Shutter 1-1000th to 3 seconds, TIME and BULB.

**Plates and Films.**—Single metal dark slides for plates, and Film Pack Adapter for daylight loading Premo film packs. Slides and adapter are interchangeable in the same camera with **one** focussing scale and screen. The extreme inconvenience of **two** focussing screens and **two** focussing scales is thus avoided.

**Finder.**—Adams' IDENTOSCOPE, showing action of rising front. "A" and Vest Models have usual Visual Finder.

**Rising Fronts.**—The VESTA is the **only** camera having a horizontal and vertical rising front, and this to the extent of a quarter of the plate **each** way, on ALL sizes and models.

**Opening and Closing.**—Upon opening the flap or baseboard, the front will pull out. Press its catch, and it can be closed. The action is instantaneous.

**Focussing.**—Focusses to about ONE yard by **non-slippable** device, and pulls out instantly to "infinity" or other distance. Besides engraved scale, ground-glass focussing screen is supplied.

**Tripod Bushes.**—Two are fitted to the camera, permitting it to be used on a tripod both horizontally and vertically. This advantage is not usually provided upon such an instrument.

**PRICES** include Camera, six slides and focussing screen, Adams' Patent IDENTOSCOPE, Level and Ross-Zeiss Patent Tessar f/4.5 Lens, and a leather case for the slides. If slides are not required, 15/- may be deducted for the  $3\frac{1}{2} \times 2\frac{1}{2}$ , and 17/6 for the  $4\frac{1}{2} \times 3\frac{1}{2}$ .

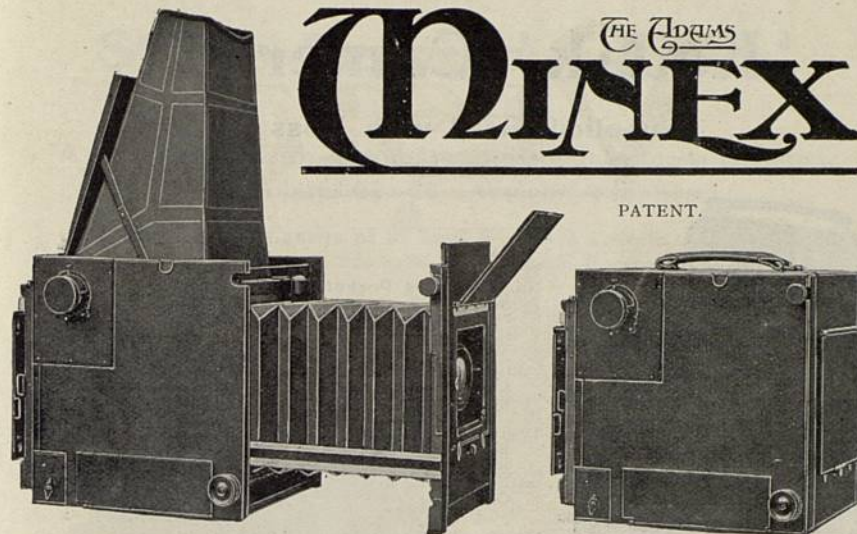
	"A" Model. Ross Homo., f/6.8.	De Luxe Model. —	Focal-plane Model. — Ross-Zeiss f/4.5 Tessar.
2.5-16 $\times 1\frac{1}{2}$ ( $4\frac{1}{2} \times 6$ c/m) ...	£10 10 0	...	£18 18 0
$3\frac{1}{2} \times 2\frac{1}{2}$ ( $6\frac{1}{2} \times 9$ c/m) ...	10 10 0	£15 15 0	21 0 0
$4\frac{1}{2} \times 3\frac{1}{2}$ ...	11 11 0	18 18 0	...

## EXTRAS.

	$3\frac{1}{2} \times 2\frac{1}{2}$	$4\frac{1}{2} \times 3\frac{1}{2}$
Antinous Release (on Vest Models, 6/6) ...	£0 2 6	£0 2 6
Extra 6 Slides, in case ...	0 17 6	0 19 0
Special Metal Film Pack Adapter ...	1 5 0	1 12 6
Magnesium Collapsible Lens Hood ...	0 8 6	0 9 6
Tripod Top for Camera ...	0 4 6	0 5 0
Stiffened Morocco Case for Camera, screen or adapter or slide ...	0 15 6	0 17 6
Best Leather Case, with shoulder strap, to hold Camera, Screen and Slides, side by side ...	0 17 6	1 0 0

# THE ADAMS MINEX

PATENT.



1—The Adams Revolving Back **automatically** masks picture upon top focussing screen. The drawback to a square screen is that the operator may think he is taking a vertical picture, but his back may be horizontal, or *vice versa*. In MINEX if vertical picture is seen, revolving back **must** be in correct position for taking it. Error is **impossible**.

2—Adams **Self-capping** Focal-plane Shutter, 1-1000th to 3 secs., time and bulb.

3—Three-quarters of a turn of shutter knob sets shutter, **also mirror!**

4—No restrictions in setting speeds with shutter. May be instantaneously set whilst shutter is in **any** position, and are **always** correctly indicated, whether shutter is set or not.

5—Shutter and mirror released from **single** release, on **all** speeds, whether instantaneous, time or bulb. Never accomplished before!

6—Only **one** movement required to change from time, bulb or instantaneous speeds.

7—Extra ground-glass focussing screen for **back** of camera, also three double dark slides are all carried self-contained **inside** the camera.

8—New mirror system, **entirely** free from vibration.

9—Patent four-ways swing front can be supplied.

10—Spectacle Lenses fitted **inside** hood. Do **not** have to be carried separately.

Complete with three best quality double dark slides (Lens extra). "A" Model contains ALL features. "B" is slightly modified "A" pattern.

SIZE.	"A" Model.	"B" Model.	If Slides not required, deduct	*Extra Cost for Patent 4-ways Swing Fronts.
$3\frac{1}{2} \times 2\frac{1}{2}$ or $4\frac{1}{2} \times 3\frac{1}{2}$ ...	£29 0 0	£21 0 0	21/0	25/0
5 x 4 or 9 x 12 c/m	32 0 0	25 0 0	27/0	25/0
$5\frac{1}{2} \times 3\frac{1}{2}$ sq. model	36 0 0	—	30/0	27/6
$6\frac{1}{2} \times 4\frac{1}{2}$ ...	41 0 0	33 0 0	45/0	30/0

## Ross f/6.8 Homocentric.

	$3\frac{1}{2} \times 2\frac{1}{2}$	$4\frac{1}{2} \times 3\frac{1}{2}$	5 x 4 or 9 x 12 c/m	$6\frac{1}{2} \times 4\frac{1}{2}$
5 inch ...	£4 0 0	...	£4 10 0	...
6 " ...	...	£4 10 0	5 10 0	...
7 " ...	...	5 10 0	...	...
8 " ...	...	...	7 0 0	7 0 0

## Ross-Zeiss Patent Protar, f/6.5.

No.	Special $5\frac{1}{2} \times 9\frac{1}{2}$	8 15 0	...	...
" 7. $6\frac{1}{2}$ in. & $11\frac{1}{2}$ in.	...	9 4 0	9 4 0	...
" 10. 8 in. & 14 in.	...	...	11 3 0	11 3 0

## Ross-Zeiss Patent Tessar, f/4.5.

Ross-Zeiss Patent Press, 1/4 in.										
No. 13.	4½ inch	...	5	0	0	...	—	...	—	...
" 14.	5½ inch	...	5	15	0	...	—	...	—	...
" 15.	6 inch	...	6	10	0	...	6	10	0	...
" 15a.	7-1/10th in.	...	—	—	—	...	8	0	0	...
" 16.	8½ inch	...	—	—	—	...	—	10	0	0

All are 20/0 less if a listed lens is purchased.

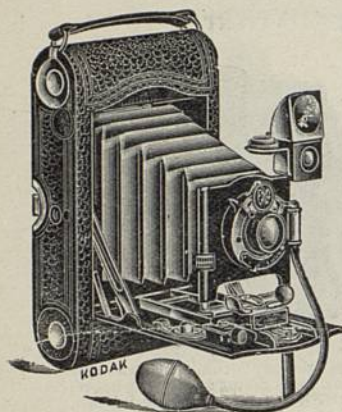
Prices of Telephoto Attachments upon application.

\* Swing Fronts 7/6 extra for other than Lenses supplied by us.



# 'Kodak' Cameras.

Supplied fitted with Ross  
or Ross-Zeiss Lenses.



**No. 3 Folding Pocket "Kodak,"** with  
Ross 5-in. "Homocentric" Lens,  $f/6.3$ , and  
"Automat" Shutter for pictures  $4\frac{1}{2} \times 3\frac{1}{4}$ .  
Code word—Kapant ... .. £8 5 0

Ditto, with Ross-Zeiss "Tessar"  $5\frac{1}{2}$  inch Lens,  
 $f/6.3$ , instead of "Homocentric." Code  
word—Kapaz ... .. 9 0 0

Twelve-Exposure Spool of "Kodak" N.C.  
Film. Code word—Filca ... .. 3 0

Six-Exposure Spool of "Kodak" N.C. Film.  
Code word—Filcars ... .. 1 6

**No. 3a Folding Pocket "Kodak,"** with  
Ross  $6\frac{1}{2}$  inch "Homocentric" Lens,  $f/6.3$ ,  
and "Automat" Shutter, for pictures  
 $5\frac{1}{2} \times 3\frac{1}{4}$ . Code word—Keraut ... .. 9 12 6

Ditto, with Multi-speed Shutter. Code word—Kertemu ... .. 14 12 6

Ditto, with Ross-Zeiss "Tessar" 6-inch Lens,  $f/6.3$ , instead of "Homocentric." Code  
word—Kerez ... .. 10 2 6

Ditto, with Multi-speed Shutter. Code word—Kertor ... .. 15 2 6

Ten-Exposure Spool of "Kodak" N.C. Film. Code word—Filbe ... .. 3 0

Six-Exposure " " " " Filbers ... .. 1 9

**No. 4 Folding Pocket "Kodak,"** for  $5 \times 4$  pictures. Fitted with Ross "Homocentric"  
or Ross-Zeiss "Tessar" Lens. Same price as for No. 3a Folding Pocket Kodak.

**No. 4a Folding "Kodak"** embodies all the features of the popular No. 3a Folding  
Pocket "Kodak." Gives large direct picture,  $6\frac{1}{2} \times 4\frac{1}{2}$ , on roll films or plates. With  
Ross "Homocentric" Lens,  $f/8$ . Code word—Kifaut ... .. 13 7 0

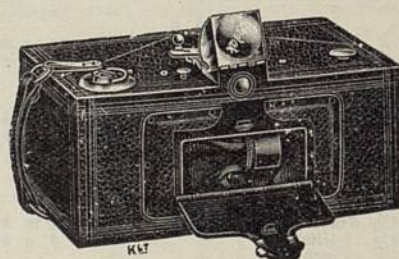
The "**Panoram Kodak**," fitted with "Homocentric" Lens, Series IV.,  $f/6.8$ , in  
special setting and four diaphragms, in pull-off case.

**No. 4.** For pictures  $12 \times 3\frac{1}{2}$  inch, capacity  
four exposures without reloading. Size  
of camera,  $10\frac{1}{2} \times 4\frac{1}{2} \times 5\frac{1}{2}$ , weight 2 lbs. 14  
ozs. Code word—Pako.  
Price with Lens ... .. £9 5 0

Leather Case. Code word—Pakocas 10 6

Four-Exposure Spool of "Kodak"  
N.C. Film. Code word—Fildo 3 2

Two-Exposure Spool of "Kodak"  
N.C. Film. Code word—Fildoes 1 11



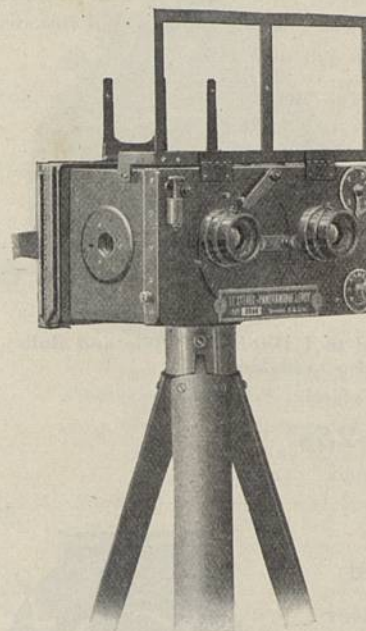
The "Homocentric" Lenses can be adapted to customers'  
own "Kodaks," etc.

# Stereo-Panoram Camera.

(LEROY'S PATENT.)

A New Device with Automatic Shifting of Stereo Division.  
Size of Plate,  $5\frac{1}{2} \times 2\frac{3}{8}$ . Weight, 1 lb.  $8\frac{3}{4}$  oz.

The Smallest Camera of its kind. Made entirely of Metal.  
Perfect Adjustment, Strength, and Climatic Resistance.



This Apparatus takes Portraits as  
well as Stereoscopic and Panoramic  
Pictures, so that it may be said to  
be a very generally useful camera,  
independently of its special capa-  
bilities.

It is furnished with **Ross' Anastigmat Lenses**, with Iris Diaphragms,  
specially mounted. Working at  
 $f/8.5$ , it permits of instantaneous  
stereo exposures under all conditions.  
Perfect Panoramic Pictures are ob-  
tainable at  $f/11$ , at  $f/16$ , and even  
at  $f/22$ , with the shutter at its highest  
speed.

The Focus is constant, from 4  
yards to Infinity.

One of the Lenses is mounted on  
a rotating plate, which, in action,  
automatically removes for Pano-  
ramic work the interior division,  
and brings it back for Stereo work  
when returned to its original posi-  
tion. The Lenses are set above the  
height of the plate, so that super-  
fluous foreground is cut off, and  
tall objects may be photographed  
without cut-off.

The **Shutter** is quite unique. It has three Apertures, the centre one for  
Panorams, and the other two for Stereoscopes.

It works behind the lenses and is extremely simple. Instantaneous  
exposures from  $1/10$ th to  $1/75$ th can be given, also time exposures by means  
of an Antinous release. As no light passes through when setting the shutter it  
is not necessary to cover the lenses.

**Price of the Leroy Stereo-Panoram Camera, Latest Model**, entirely of  
Metal, with Shutter working at 5 rapidities and at Time:  
Improved Finder, and 6 Nickel Single Backs, Antinous  
Release, 2 Lens Caps, and Leather Case, with pair of Ross'  
Anastigmat Lenses,  $f/8$ , of  $3\frac{1}{2}$  in. focus. Code word, Lestepa... £12 8 0

Besides the Backs, a special Changing Box may be used without  
special adaptation, Price ... .. 3 16 0

On application a Special Pamphlet will be forwarded giving fuller  
particulars and instructions for the use of the Apparatus.

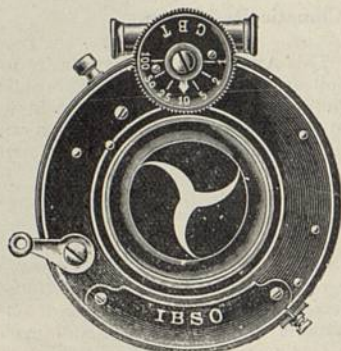


## Between-Lens Shutters.

### The 'IBSO' DIAPHRAGMATIC SHUTTER

Suitable for Ross' "Homocentric" and Ross-Zeiss "Tessar" Lenses.

For 5in., 5½in., 6in., 7in., f/8. 4½in., 5in., 5½in., 5¾in., and 6in., f/6.3.  
5in., f/5.6. 4½in., f/4.5.



The three-blade system insures efficiency, smooth working, and freedom from Vibration.

The "Ibso" is ever-set, and provided with Trigger and Antinous Releases.

Special feature—Locking action—preventing accidental exposures.

In general appearance the "Ibso" is very similar to the Koilos.

Fixed Exposures range from 1 second to 1/100th and Time and Bulb Exposures are also available.

Mounted in Aluminium Case with Nickel Fittings (Dustproof).

**Price 25s.**

Including "Antinous" Release.

### The "KOILOS" Improved Diaphragmatic Sector Shutter with Air Brake.

Suitable for "Homocentric" and Ross-Zeiss  
"Tessar" Lenses.



	Price.	Code Word.
5in. and 6in. f/8; 5in. f/6.3	35/0	Koilos
7in. f/8; 5½in. and 6in. f/6.3; 5in. f/5.6	40/0	Koilata
8½in. f/8; 7in. f/6.3; 6in. f/5.6; 4in. f/4.5	40/0	Koiluter
10in. f/8; 8½in. f/6.8; 7in. f/5.6; 5½in. and 6½in. f/4.5	48/0	Koilion
12in. f/8; 10in. f/6.3; 8½in. f/5.6; 6½in. and 7½in. f/4.5	60/0	Koilina

"Antinous" Release, extra 2/6.

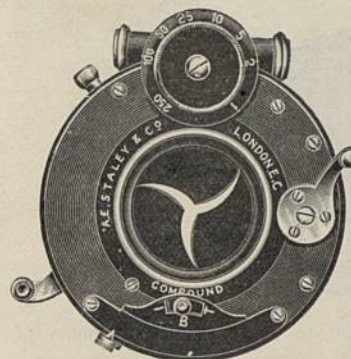
Cost of Fitting to customers' own Lenses, 7/6 each.

## Between-Lens Shutters.

### The 'COMPOUND' SHUTTER

With Iris Diaphragm and Distinct Automatic and Spring Actions.

Suitable for "Homocentric" and Ross-Zeiss "Tessar" Lenses.



The Compound Shutter opens instantly to full aperture and closes quickly, thus giving most rapid and uniform exposures.

The dimensions and weight are reduced to a minimum and it may be adapted to all modern Cameras and lenses.

No. 0 Shutter is speeded from 1/250 second.

No. 1 Shutter is speeded from 1/150 to 1/200 second.

No. 2 Shutter is speeded from 1/100 to 1/150 second.

Larger sizes speed from 1/100 second.

	Price.	Code Word.
No. 0 5 and 6in. f/8; 5in. f/6.8; 5in. f/6.3	35/0	Companil
No. 1 7in. f/8; 6in. f/6.8; 6in. f/6.3; 5 and 5½in. f/5.6; 4½in. f/4.5...	40/0	Compcar
No. 1A 7in. f/6.3 and 7 in. f/6.8	42/0	Compexil
No. 2 8½in. f/8; 6in. f/5.6; 5½in. and 6½in. f/4.5...	48/0	Complot
No. 2A 10in. f/8; 8½in. f/6.8; 8½in. f/6.3; 7in. f/5.6; 6½in. f/4.5	54/0	Compos
No. 3 12in. f/8; 10in. f/6.8; 10in. f/6.3; 8½in. f/5.6; 7½in. and 8½in. f/4.5	60/0	Comptum
No. 4 12in. f/6.8; 12in. f/6.3; 10in. f/5.6; 10½in. f/4.5	65/0	Comptura

Compound "Antinous" Release, extra 2/6.

Cost of fitting to Customers' own Lenses, 7/6 each.

### Bausch & Lomb Shutters.

For Lenses with opening of 23 m/m ... Automat ... £1 5 0 ... Autom

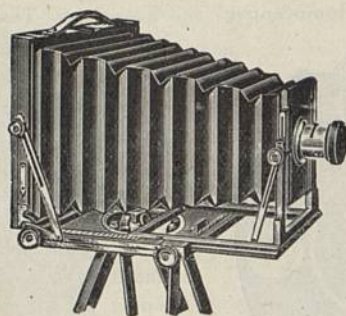
Fitted to customers' own Lenses ... 32/6.

I.R. Pneumatic Release, 1/- extra. "Antinous" Release, 2/6 extra.



## 'Century' Camera.

An Instrument of the highest quality and finish in which the advantages of the "Square" and "Tourist" Pattern Cameras are combined.



This Camera has been specially designed to meet the requirements of the modern Anastigmatic Lenses.

The chief advantages of the "Century" Camera are:—

- 1st.—ITS LIGHTNESS AND PORTABILITY.
- 2nd.—ITS EXTENSIVE RISING FRONT.
- 3rd.—ITS DOUBLE RACK FOCUSING.

### Description.

Expert users of modern high-class Lenses have hitherto found that the old-fashioned square bellows cameras, notwithstanding their weight, possessed some points of advantage over the lighter and more popular tourist patterns. The defects of the usual conical bellows cameras are especially noticeable when photographing architectural subjects with wide-angle lenses or copying. In the former case the bellows is forced backwards in front of the plate when the Lens is raised, and unless great care is taken a portion of the picture is lost. When copying it is a great advantage to have the Lens fixed and to focus from the back, but with most portable cameras the contrary is the case.

The "Century" Camera has been introduced because it is entirely free from the defects enumerated above, and combines in a most effective manner the advantages of both systems.

## 'Century' Camera

(CONTINUED).

The "Century" Camera is made of the finest selected and seasoned Spanish Mahogany, and can be recommended for any climate. Although it is very light, the lightness has not been secured by weakening any part of the instrument, but by eliminating wood and brass from places where it served no useful purpose. Great care has been taken to make the camera as rigid as possible, and in all cases where there are metal parts it will be found that these work on metal, and not on wood. The various screws are kept in position with locking screws, and therefore there is no danger of their working loose and getting lost.



### GENERAL INFORMATION.

The "Century" Camera has, in addition to the great rise on the front, a swing motion to the front, also swing back. The dark slides are made in the best possible manner, and have special light-tight hinges, rendering them safe in all climates.

The camera may be had either with or without turntable, but we strongly recommend that the turntable be fitted, for it makes the camera far more rigid, and permits of its being rotated into any position and then firmly clamped.

### PRICES.

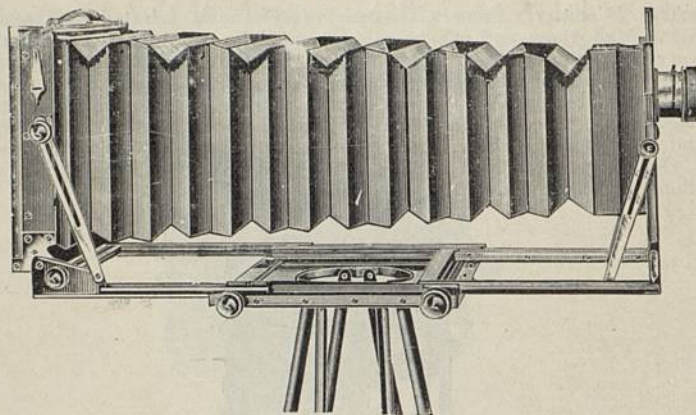
The following prices include camera, three double dark slides, best quality three-fold tripod, and revolving turntable, complete:

Size in inches.	Prices.			Code Word.	Extra Double Dark Slides.			Brass-binding extra.	Size of Camera closed.
	£	s.	d.		£	s.	d.	£	
6½ × 4¾ ...	11	10	0	Centasa	1	2	0	1 10 0	8½ × 8½ × 2
7½ × 5 ...	12	10	0	Centem	1	2	0	1 10 0	9½ × 9½ × 2
8½ × 6½ ...	14	0	0	Contipo	1	5	0	1 15 0	11 × 10½ × 2½
10 × 8 ...	16	0	0	Centor	1	12	0	2 0 0	12½ × 12½ × 3
12 × 10 ...	19	0	0	Centus	2	0	0	2 10 0	14½ × 14½ × 3
15 × 12 ...	24	0	0	Centale	2	15	0	3 0 0	17½ × 17½ × 3½
18 × 16 ...	35	0	0	Centup	3	10	0	4 0 0	21 × 21 × 3½

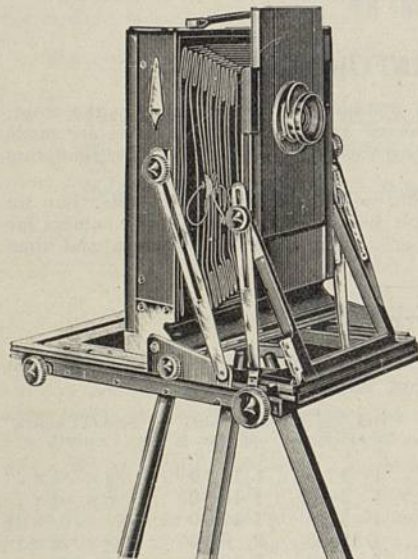
For 12×10 and larger sizes we recommend a light supplementary leg for the front of camera. The price of this, including camera fittings, is 10/6.



TRIPLE-EXTENSION  
'Century' Camera.



Specially designed for the Pictorial and Professional Photographer.



Amongst the many good points claimed for this new Camera are the following, viz. :—

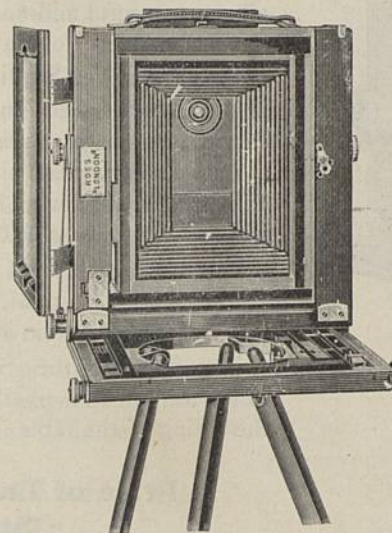
- 1ST. Its Extreme Lightness and Portability.
- 2ND. The Triple Extension of bellows, enabling Lenses of long focus to be used, such as the single combinations of the Ross-Zeiss Convertible "Protar" and other Lenses. The  $\frac{1}{2}$ -plate Camera has an extension of fully 22 inches.
- 3RD. Its Extensive Rising and Swing Front.
- 4TH. Its Adaptability for Short-Focus or Wide-Angle work.
- 5TH. Its Strength and Rigidity when in use.
- 6TH. Its Simplicity of Working Parts and its First-class Workmanship and High Finish.

This camera has all the advantages of the square bellows camera without its bulk, weight, and other drawbacks. It has every movement requisite for the Pictorial and Technical Photographer, and the extensions, back and front, render the adjustment for size of copy in reproduction particularly easy and convenient.

For Prices see next page.

TRIPLE-EXTENSION  
'Century' Camera

(CONTINUED).



The extensive rising front is a special feature. The  $\frac{1}{2}$ -plate size can be used with a 3-inch lens if required, and a 2-inch rise is obtainable without moving the bellows. With longer focus lenses a  $3\frac{1}{2}$ -inch rise can be obtained by raising the Camera front between the fork standards and clamping in position.

PRICES.

The following prices include Camera, three Double Dark Slides, best quality Three-fold Tripod, and Revolving Turntable, complete :—

Size in Inches.	Prices.	Code Word.	Extra Double Dark Slides.	Brass Binding extra	Size of Camera closed about.
	£ s. d.		£ s. d.	£ s. d.	
$6\frac{1}{2} \times 4\frac{3}{4}$ ...	14 0 0 ...	Dastric ...	1 2 0 ...	1 10 0 ...	$9\frac{1}{4} \times 9\frac{1}{4} \times 2\frac{1}{2}$
$8\frac{1}{2} \times 6\frac{1}{2}$ ...	17 10 0 ...	Deutric ...	1 5 0 ...	1 15 0 ...	$11\frac{1}{4} \times 11\frac{1}{4} \times 2\frac{3}{4}$
$10 \times 8$ ...	22 0 0 ...	Diotric ...	1 12 0 ...	2 0 0 ...	$13 \times 13 \times 3\frac{1}{4}$
$12 \times 10$ ...	26 0 0 ...	Duptric ...	2 0 0 ...	2 10 0 ...	$15\frac{1}{4} \times 15\frac{1}{4} \times 3\frac{1}{4}$

With the exception of extra Extension, the remarks on the opposite page referring to the advantages of this Camera are equally applicable to the Double Extension "Century" Camera.



# Ross' New Camera and Stand for the Studio.

**R**OSS, LIMITED, have constructed a greatly improved form of **Studio Camera** for 12×10 Plates and upwards.

This new construction is original in itself, and embraces all recent useful additions, affording the operator facilities that have been hitherto unattainable.

**Ross' Improved Studio Camera** provides a very long extension and has newly-designed Rack and Pinion work. The application of front and rear pinions on a novel system, producing a particularly even and sweet motion. There is Rack and Pinion to the swing, and the Roller Slide takes the plate either way. A Repeating Back for two pictures on one plate is supplied.

The Special Stand is quite novel in design, and being very elegant and substantial, forms in combination with the Camera, a most attractive studio apparatus.

The top of the Stand, on unusually substantial column, is raised or lowered by the action of a hand wheel at the back, and the tilting of the table is effected by Rack and Pinion.

## Price of Improved Studio Camera with Stand as described:

Size.		Code Words.	£	s.	d.
12×12	for plates 12×10 and under	Studall	29	5	0
15×15	" 15×12 " "	Student	32	10	0
20×20	" 20×18 " "	Studio	43	0	0

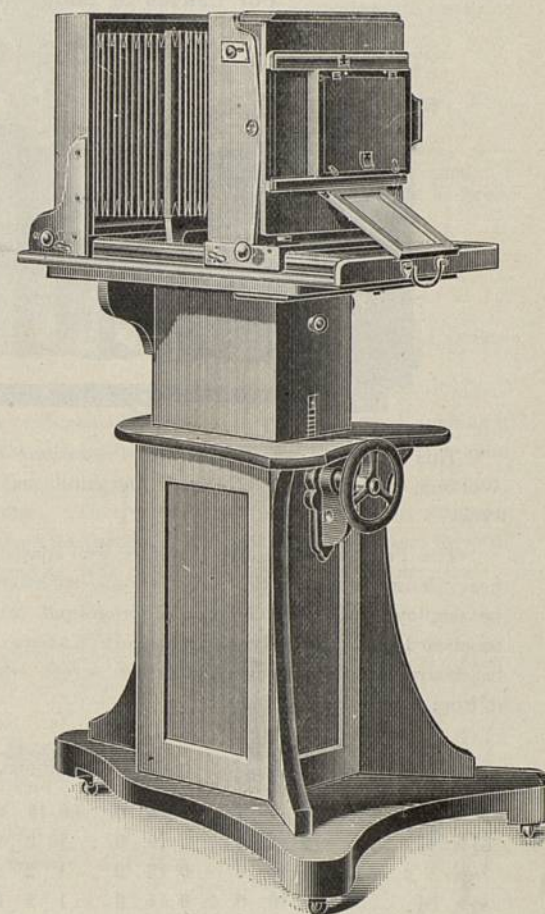
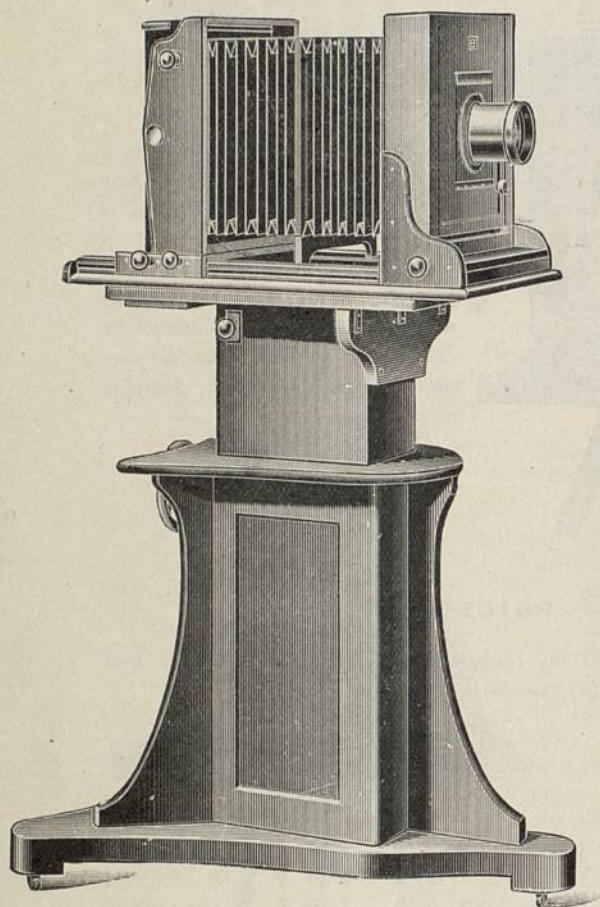
## CAMERAS and OUTFITS

For Line Reproduction, Photo Copying, Enlarging; for Collotype, Photogravure and Photo-Lithography; for Half-Tone, Photo Engraving in Monochrome or Three Colours, and for all Process Work.

**SPECIAL RULED SCREENS.** For Prisms, Mirrors, Filter Cells, etc., see pages 16 and 17.

THE ABOVE PRICES ARE NET.

**SOLD BY LEADING DEALERS EVERYWHERE.**



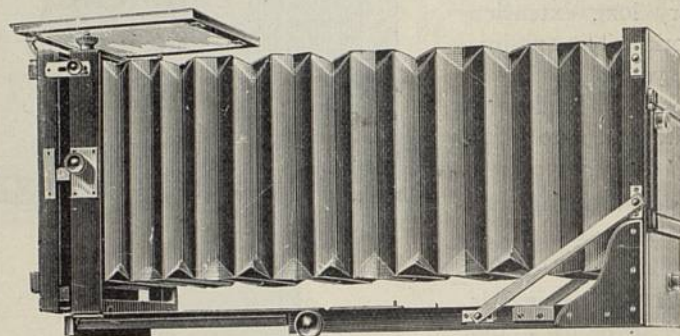


## IMPROVED PORTABLE Square Bellows Cameras.

Double-Extension with Reversible Holders.

For Lenses of Long Focus.

The  $7\frac{1}{2} \times 5$  size extends from 3 to  $17\frac{1}{2}$  in.



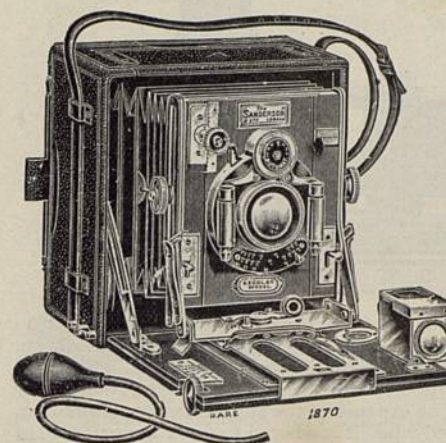
This pattern is a favourite with Professional Photographers and Process Workers, and also for Railway, Shipyard, and Engineering Photographic Work.

The Front is rigid, and therefore well-adapted for carrying long focus heavy lenses, and, as the bellows rack backwards, wide-angle lenses may be employed without having the foreground of the picture cut off by the baseboard, as frequently happens with Cameras of other patterns. The baseboard folds over the ground-glass screen when closed, thus protecting it from danger of breakage.

Size.	Price of Camera only.	Brass Binding extra.	Double Dark Slides each.	Brass Binding Dark Slides each.	Rack & Pinion to double Swing Back.	
5 x 4	£6 0 0	£0 15 0	£0 18 0	£0 5 0	£0 10 0	Squall
$6\frac{1}{2} \times 4\frac{1}{2}$	7 5 0	0 15 0	1 2 0	0 5 0	0 10 0	Squamos
$7\frac{1}{2} \times 5$	7 10 0	0 15 0	1 2 0	0 5 0	0 10 0	Squande
$8\frac{1}{2} \times 6\frac{1}{2}$	9 10 0	0 15 0	1 5 0	0 5 0	0 10 0	Squash
10 x 8	10 0 0	1 0 0	1 12 0	0 6 0	0 15 0	Squat
12 x 10	11 10 0	1 10 0	2 0 0	0 6 0	0 15 0	Squib
15 x 12	13 10 0	1 15 0	2 15 0	0 7 6	1 0 0	Squint
18 x 16	22 0 0	2 10 0	3 10 0	0 10 0	1 0 0	Squire

The prices of Cameras include two fronts or lens boards.

## The SANDERSON Hand Camera.



"REGULAR"  
Model.

Perfect for every class of work.

"TROPICAL"  
Model.

A Teak Camera. Specially designed for use in the Tropics.

"DE LUXE"  
Model.

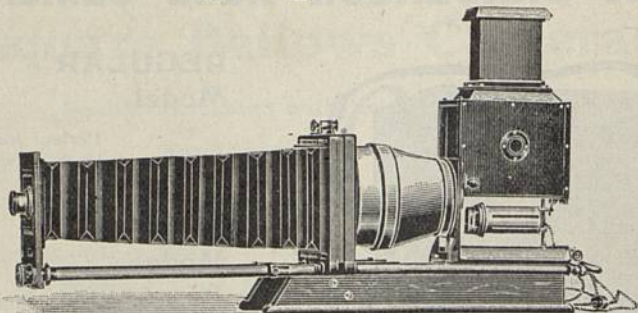
Highest-class Camera.

The "Sanderson" Hand Camera is provided with a range of movements and adjustments never before embodied in a single instrument, making it capable of performing the widest range of work. It is, nevertheless, in its main features **simplicity itself**, and fulfils all its various functions in a simple, positive, and complete manner. The merest novice in photography can use it with satisfaction. In fact, when the camera is open and the front drawn forward (which can be done in a second or two), the camera is ready for ordinary use.

Description.	Model.	$4\frac{1}{4} \times 3\frac{1}{4}$ in.	$5 \times 4$ in. or $9 \times 12$ c/m	$6\frac{1}{2} \times 4\frac{1}{4}$ in.	$7 \times 5$ in. or $13 \times 18$ c/m
In "Automat" Shutter.					
Camera, complete with Ross "Homocentric" Lens, Series III., $f/6.3$ . Shutter, Bright Finder, and 3 Double Plate Holders	"Regular"	£ 9 17 6	£ 11 7 6	£ 15 12 6	£ 16 12 6
	"Tropical"	11 2 6	12 17 6	17 2 6	18 2 6
	"De Luxe"	13 10 0	15 10 0	23 5 0	24 5 0
Ditto, with Ross-Zeiss Double "Protar" Lens, Series VIIa., $f/6.3$	"Regular"	14 0 0	16 10 0	22 5 0	23 5 0
	"Tropical"	15 5 0	18 0 0	23 15 0	24 15 0
	"De Luxe"	17 12 6	20 12 6	29 17 6	30 17 6
Ditto, complete with Bright Finder and 3 Double Plate Holders, but without Lens or Shutter	"Regular"	5 10 0	6 10 0	9 5 0	10 5 0
	"Tropical"	6 15 0	8 0 0	10 15 0	11 15 0
	"De Luxe"	9 2 6	10 17 6	16 17 6	17 17 6
Extra for 3 Mahogany Book-form Slides in place of 3 Plate Holders, as listed					
Solid Leather Case to hold Camera and 3 Slides		0 15 0	0 15 0	—	—
Ditto, for "De Luxe" Model		0 10 6	0 12 6	0 17 6	1 0 0
		0 15 0	0 17 6	1 2 6	1 5 0



## Enlarging Lanterns.



The general features and advantages of the form hitherto so much appreciated have been maintained; but by a modification of the body of the Lantern it is now suitable for illuminants of all descriptions without special adaptation for the "Nernst" Lamp, Lime Light, Oil Lamp, Spirit Incandescent, and the "Nelson" Arc Lamp as at foot. The expense of the supplementary aluminium and brass body need only be incurred when it is desired to use a larger form of arc lamp than that indicated.

No.	Diameter of Condenser.		Negative fully covered.		PRICES, without Objective, but including Good Oil Lamp.	Code Word.
	Inches.	m/m	Inches.	c/m		
0	5½	140	4½ × 3½	—	£10 0 0	Enactor
1	6½	163	5 × 4	9 × 12	12 0 0	Enchanter
2	7	177	5½ × 4½	—	13 10 0	Endower
3	8	203	6½ × 4½	12 × 16	15 0 0	Engrosser
4	9	228	7 × 5	13 × 18	20 10 0	Enfilade
5	10	253	8 × 5	—	25 10 0	Enigma
6	11	270	8½ × 6½	—	32 0 0	Enroller

NOTE.—Arc Lamps or small illuminants require the size larger Condenser than those listed.

Fine Focussing and Locking Device	...	...	...	...	£1 10 0
Ditto, with Extra Bellows Extension	...	...	...	...	1 15 0
Incandescent fittings instead of Oil Lamp	...	...	...	...	0 12 6
Brass and Aluminium Body in place of Russian Iron for Ross' Arc Lamp (page 62)	...	...	...	...	3 15 0
Special Tray to fit this body to take any jet	...	...	...	...	0 8 0
Ross' Jet with cut-off for Limelight body	...	...	...	...	2 12 6
Ordinary Jets, from	...	...	...	...	£1 5 0 to 2 15 0
"Radiant" Jets (patent)—No. I., powerful enough for almost every purpose	...	...	...	...	4 4 0
No. II., for use with screens of excessive size, and when the maximum amount of light must be had	...	...	...	...	4 4 0
Or without the vertical and lateral motions, but adapted to fit on any ordinary lime tray	...	...	...	...	5 10 0
The "Nelson" Arc Lamp, up to 100 volts	...	...	...	...	1 10 0
up to 200 volts	...	...	...	...	2 2 0
"B" Arc Lamp (see page 62), requiring special body	...	...	...	...	5 5 0
The "Alcool" Spirit Incandescent Lamp, burns ordinary methylated Spirit	...	...	...	...	2 2 0

"NERNST" LAMPS.	Price.		Extra Burner.	Spare Resistance.
	£	s. d.		
No. 2, 300 to 500 c.p.	1	10 0	5 0	2 0
No. 3, 500 to 1000 c.p.	2	5 0	10 0	2 6

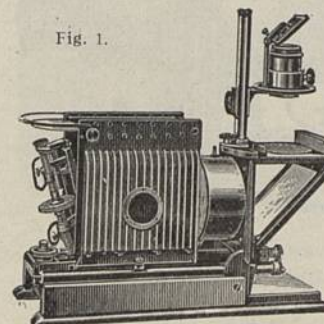
THE ABOVE PRICES ARE NET.

Sold by Dealers everywhere.

## UNIVERSAL 'Combination' Lanterns.

For Projection Science Work or Enlarging.

Fig. 1.



This is an extremely fine instrument, and will be found of much service in colleges and institutions where a great variety of work is performed. Whether used for Science Demonstration, for ordinary Projection, or Enlarging, it is a most satisfactory apparatus. The Body is constructed of stout black brass plates, with an outer shell or body of aluminium, and the ventilation thus obtained is very perfect and admirably adapted for powerful illuminants, and there is nothing whatever to warp or get on fire with the intense heat.

Illustration (Fig. 1) shows the instrument as arranged for vertical projection, and this can be lowered in a moment for ordinary projection, or removed altogether, and another front with bellows to exclude the light substituted.

Complete with 4½-in. Triple Condenser, Double Condenser of 5½-in. diameter, fine objective for Projection, and Block front on which can be mounted any suitable Photographic Lens for Enlarging, best quality Jet, Vertical Attachment, and strong Wooden Case with lock and key. Code word, Alumbco... £28 10 0

If fitted with patent "Radiant" Jet ... extra 3 0 0  
" Ross' Arc Lamp ... " 4 0 0

Another form of the Combination Lantern, as illustrated in Fig. 2, is supplied without vertical attachment, and with Patent Limelight Body instead of the special brass and aluminium pattern. The metal body can, by a patent arrangement, be raised several inches from its base, disclosing that portion of the jet which carries the lime, and leaving it entirely free for fixing. When this is done, the body can with equal facility be lowered into its original position. The jet taps and lime turner are placed outside this rising body, and the ventilation of the instrument is very thorough, both the direct and radiated heat being carried off thoroughly, no part of the apparatus being liable to undue heating.

Price—Complete with the two Condensers and Objective (better than the usual "best quality" commercial objective) Ross' Special Jet with cut-off, neat case. Code word, Colant... £20 10 0  
Vertical Attachment ... extra 5 5 0

The above Prices are Net. Sold by Leading Dealers everywhere.

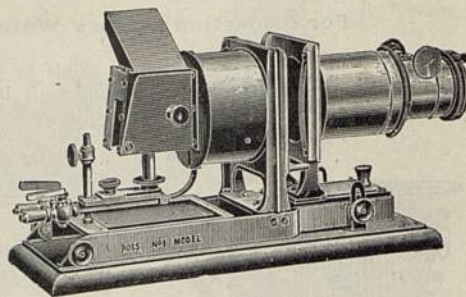


## No. 1 MODEL Limelight Lantern.

The Condenser does not get nearly so hot as is usually the case. Every part is exceedingly rigid and substantial, and this makes the working of it a positive pleasure.

Any thickness of slide or carrier can be used, from two or three inches down to the thinness of paper.

The Lenses are excellent, and taken altogether, it may be said that a more convenient Limelight Lantern for all ordinary purposes could not possibly be constructed.



**Price**—Complete with 7-inch Objective and "Blow-Through" or "Mixed" Jet. Code word, Minilant ... .. £10 0 0  
Prices of extra Objectives, 2½ in. diameter, in plain brass tubes, to slide into the racked Jacket, 8½ in., 10½ in., or 12½ in.—  
Equivalent Focus... .. each 2 5 0  
With Triple-Extension Brass Front ... .. extra 2 5 0

## PATENT PROJECTION ARC LAMPS.

Briefly summarised, the leading features of the Lamp are:—

1. Very quick and accurate centreing.
2. Great ease and comfort in manipulation.
3. No current in the Lamp itself, therefore less liability to "shocks."
4. Great steadiness of the light.
5. Excellent workmanship.
6. Moderate Price.

Since first introduced the lamp has been modified, so that it may be useful in laboratory work; this is known as Lamp B, now so constructed that it can be removed to work in the tray of any lantern.

**Price** of A Lamp ... .. Code word, Projex ... £4 15 0  
" B " ... .. " Projenitor .. 5 5 0  
Case for either Model, 5/0.  
Rheostats ... .. from 5 5 0

## BEST ELECTRIC LIGHT CARBONS.

The quality of the Carbon Rods used in the production of the Electric Light is of the greatest importance, for with poor carbons the very best lamp is incapable of yielding a perfectly steady and satisfactory light.

Arrangements have therefore been made to supply best quality Carbon Rods of suitable size, pointed and cut to length for the Ross' Optical Lamps.

### Price, per Half-dozen Pairs—

1. For Continuous Current, 5 to 10 ampères ( 7 m/m Solid & 10 m/m Cored) 1/0
2. " " 10 to 15 " (10 " " 13 " ) 1/6
3. For Alternating Current, 5 to 10 " (10 m/m Cored)... .. 1/3
4. " " 10 to 15 " (13 " " )... .. 1/9

THE ABOVE PRICES ARE NET. SOLD BY LEADING DEALERS EVERYWHERE.

## Prism Binocular Glasses.

Model Medium Aperture.

Object Glasses: ¾-in. Clear Aperture.

The Power and Field of a Telescope in the compass of an Opera Glass. With Simultaneous Screw Focussing Adjustment and one adjustable Eye-piece (fig. 1).

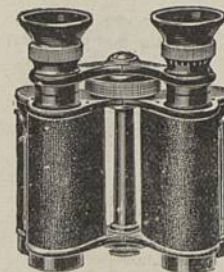


FIG. 1.

### Prices in London.

Magnifications. Diameters.	£ s. d.	Code Word.	Focussing by Adjustment of Eye- pieces only.	Code Word.
8	6 10 0	Proof	5 10 0	Poet
10	7 10 0	Prop	6 10 0	Point
12	8 10 0	Prose	7 10 0	Poor

### Power, Size & Weight, with Simultaneous Focussing Adjustment (Fig. 1).

8 times	...	4½ inches high, 3½ inches wide	...	15 ozs.
10 "	...	5 " " 3½ " "	...	16 "
12 "	...	5½ " " 3½ " "	...	17 "

In the case of the model focussing only by Eye-piece Adjustment, the weight of each size is about 2 ozs. less

## Stereo Prism Binoculars.

New Improved Model, Large Aperture with increased Field.

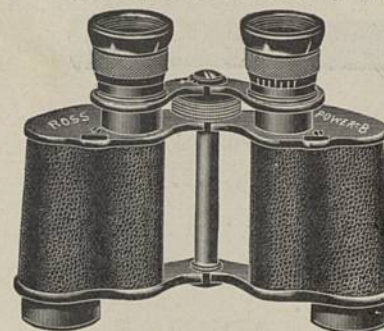


FIG. 2.

Affording a series of low and high powers, wide angles, large and extra large apertures for every requirement. They are of the most perfect construction, both optically and mechanically.

Linear Magnifi- cations.	Code Word.	Focussing Adjustment.		Code Word.
		Screw	Eyepiece	
×	6	—	6 5 0	Stepoul
×	6	—	7 10 0	Stepoach
×	8	Steproof	7 10 0	Stepoet
×	10	Steprop	7 10 0	Stepoint
×	12	—	9 0 0	Stepoor

Linear Magnifications.	FIELD OF VIEW.		Effective Diameter of Object Glasses.	APPROXIMATE WEIGHT.	
	Apparent Angular.	Linear per 1000 yards.		With S.F.A.	With E.F.A.
×	6 LA	52°	152	21 m/m	19 oz.
×	6 ELA	50°	146	30 " ELA	24 "
×	8 LA	50°	110	24 " LA	19 "
×	10 LA	50°	87	24 " LA	19 "
×	12 ELA	40°	58	30 " ELA	24 "

\* Specially for Marine and Military Purposes. Focussing by Adjustment of Eyepieces only.

These Stereo Prism Binocular Glasses have been adopted by the War Office and the Admiralty.

For further particulars see Special Optical List.



# ROSS' Military & Sporting Telescopes.



No.	Description of Telescope.	Magnifying Power.	Aperture in ins.	No. of Draws.	Length.		Price in Light Metal. Very Durable.		Price in Aluminium.	
					Open.	Closed.				
		Times					£	s. d.	£	s. d.
1	Watcher .....	15	1 1/4	2	23 1/2	10 1/2	3	0 0	4	10 0
2	Reconnoitring ...	20	1 3/8	4	21	6 1/2	4	0 0	6	0 0
3	Deer Stalking ...	20	1 1/2	3	30 1/2	10 1/2	4	10 0	6	15 0
4	Large Aperture ..	20	1 3/4	3	30 1/2	10 1/2	5	0 0	7	10 0
5	Do. Pancratic	20, 25 & 30	1 3/4	3	30 1/2	10 1/2	5	10 0	8	5 0
6	Extra Large									
	Aperture	20	2	3	30 1/2	10 1/2	7	0 0	10	10 0
7	Milit'ry P'ncr'tic	30, 40 & 50	2 1/4	4	43	12 1/2	9	10 0	14	10 0

These Prices include a Solid Leather Sling Case with each Telescope.



## Ross' Naval Telescopes

German Silver Mounts and One Draw.

No.		Magnifying Power.	Aperture in Inches.	LENGTH.		Price.	EXTRA.	
				Open.	Closed.		Signals.	Caps and Slings.
	Naval Telescope	Times				£ s. d.		
1		15	1 1/4	23 1/2	17 1/2	2 10 0	7/0	10/6
2		15	1 1/2	25	18 1/2	3 10 0	7/0	11/6
3	"	20	1 3/8	31	25	4 10 0	*12/6	12/6
4	"	20	2	31	25	6 0 0	*12/6	12/6
4a	"	25	2 1/4	36 1/2	30 1/2	7 0 0	*12/6	—
5	"	30, 40 & 50	2 3/4	43	37 1/2	7 10 0	*12/6	—
6	"	40	2 3/4	48	42	12 10 0	—	—
7	"	50, 60 & 70	3	75	dividg	16 0 0	—	—

The Nos. 6 and 7 Naval Telescopes are specially suitable when mounted on a Tripod Stand for coastguard work and look-out stations. They are provided with a Rack and Pinion for easy focussing.

\* Signals mounted separately to slip on to the Telescope body. If so made for No. 1 or No. 2, 10/6.

## ROSS, Ltd.

## MANUFACTURING OPTICIANS

By Royal Warrant to HIS MAJESTY THE KING.

Contractors to His Majesty's Governments,  
British and Colonial.  
Also to the principal Foreign Governments,  
Universities and Hospitals.

Medals and Highest Awards  
at all great  
International Exhibitions.

### TERMS.

WE pay Carriage on all deliveries in London, and also to any place in Great Britain or Ireland, on Goods of our own manufacture of which the net invoice value exceeds £1.

Experienced Packers only are employed, and all possible care is exercised to ensure safe transit. ROSS, LIMITED, do not, therefore, hold themselves responsible for any breakages or damage that may occur after the goods leave their establishment.

Orders from Customers having no regular ledger account with us must be accompanied by remittance or two Trade references. In the case of Shipping Orders a remittance of not less than 25 per cent. of the value will suffice, the balance being payable against Bills of Lading.

Remittances may be made through London Bankers or Agents.

Unless instructions are received to the contrary all goods for abroad are packed in tin-lined cases and forwarded by the quickest route, insured at Customer's expense.

Packages are charged at cost price.

To prevent errors and avoid delay, copies of all orders through Merchants should be sent to us direct.

Goods are delivered free to London Docks.

General Indents executed on moderate terms.

Address:

**ROSS' Optical Works, CLAPHAM COMMON.**

Telegraphic:

"Rossicaste," London.

Telephone:

No. 376 Battersea.

Sole Sale Agents for Ross' Lenses and Cameras:

In Australia—

KODAK, Ltd., Sydney, Melbourne, Adelaide, Brisbane.

In U.S. America—

GEO. MURPHY, Inc., 57, East Ninth Street, New York.

In Canada—

UNITED PHOTOGRAPHIC STORES, Ltd.,

108, St. Antoine Street, Montreal; and at Ottawa, Quebec, and Toronto.

In New Zealand—

KODAK, Ltd., 6, Mercer Street, Wellington.

MUIR & MOODIE, Princes Street, Dunedin.

In Italy—

PIETRO SBISA,

Piazza Signoria 4, Florence; and Corso Umberto 162 & 163, Rome.

In Argentine, Uruguay, Chili, and Paraguay—

DEAKIN, STEWART & Co.,

Casella del Correo 603, Buenos Aires.

Casella del Correo 289, Montevideo.

In Ceylon—

PLÂTE & Co., Bristol Studios, Colombo.

In Burmah—

D. A. AHUJA, 47, Sule Pagoda Road, Rangoon.



**ROSS L<sup>td.</sup>**

Opticians by Appointment to  
HIS MAJESTY THE KING

Optical Works—Clapham Common,

LONDON, S.W.