

**1914**

**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  
Indicator word "CLAPCOM."

Telephone  
Battersea 576

**LONDON, S.W.**



# INDEX.



	PAGE
Xpres Lenses .. .. .	1 to 3
Homocentric Ditto .. .. .	4 to 7 & 10 to 11
Compound Ditto .. .. .	8 & 9
Wide-Angle Lenses .. .. .	12
Cinematograph Lenses .. .. .	13
Portrait Lenses .. .. .	14 & 15
Process Lenses .. .. .	16
Tele-photographic Lenses .. .. .	17 to 19
Telecentric Lenses .. .. .	18 & 19
Ross-Zeiss Lenses .. .. .	20 to 21
Combinable Lenses .. .. .	22 to 24
Reversing Prisms .. .. .	25
Screens, Flanges, Adapters and Caps .. .. .	26
Hand Cameras .. .. .	27 to 45
Focal-Plane Cameras .. .. .	27 to 35
Reflex Cameras .. .. .	27 to 31
Folding Reflex Cameras .. .. .	30 & 31
"Panos" Cameras .. .. .	32 to 35
"Keros" Cameras .. .. .	36 & 37
Twin Lens Cameras .. .. .	38 & 39
Portable Bellows Cameras .. .. .	27 to 45 & 56 to 58
Century Cameras .. .. .	56 to 57
Double and Triple-Extension Cameras .. .. .	56 to 57
Between Lens Shutters .. .. .	49 to 55
Multi-speed Shutters .. .. .	49 to 52
Newman and Sinclair's Shutter .. .. .	53
Newman & Guardia's Cameras .. .. .	43
Roll-Film and Plate Cameras .. .. .	40 & 41
Adams' Cameras .. .. .	45 & 46
Studio Cameras .. .. .	46 & 47
Sanderson Cameras .. .. .	48
Kodak Cameras .. .. .	44
Stereoc-Panoram .. .. .	42
Enlarging and Projection Lanterns .. .. .	59 to 61
Projection Arc Lamps .. .. .	61
Telescopes and Prism Binoculars .. .. .	62
Terms .. .. .	Inside Back Cover

C56/967

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

*By Royal Warrant to  
HIS MAJESTY THE KING.*

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

— Established 1830. —

Optical Works, Clapham Common,  
LONDON, S.W.

W.D.

8°

995

BR





TAKEN WITH

[Negative by Elwin Neame.]

**ROSS' No. 3a PORTRAIT LENS,**

16 in. Focus; at Full Aperture,  $f/4$ .





TAKEN WITH

[Negative by the Dover Street Studios, Ltd.]

## ROSS' New 'XPRES' LENS,

12 in. Focus; at Full Aperture,  $f/4.5$ .

## TWO NEW LENSES.

### Ross' 'Xpres' (Patent)

See following pages.

### Ross' 'Combinable' (Patent).

See pages 22, 23 and 24.

#### ROSS' 'XPRES' UNIVERSAL LENS.

Hitherto it has been necessary to employ uncemented combinations to obtain good central and marginal definitions at extra large apertures, but in the "Xpres," Ross, Ltd., have successfully constructed a five-lens system with triple-cemented back, possessing the defining power which yields negatives excelling in brilliancy and superior in definition to those taken with the Petzval Portrait Lens—a standard unapproached by any  $f/4.5$  Anastigmat yet produced. Further, this perfect definition is maintained over an extremely wide angle right to the margins.



The "Xpres" has great light-gathering and transmitting power, excellent colour correction, and is absolutely free from distortion, coma, flare or ghost.

The perfect formula permits of long-focus lenses without any reduction of aperture.

Ross "Xpres" in the larger sizes is, therefore, particularly useful for portraits and groups in the studio and out of doors, and in the smaller sizes for all classes of extra-rapid work, press photography, focal-plane and high-speed instantaneous, as well as autochrome and three-colour work.



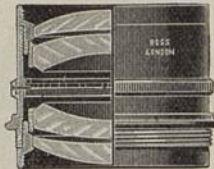




PATENT

# 'Homocentric' Lenses.

f/5.6



f/5.6

Specially constructed for

**Portraits, Groups, Instantaneous Pictures,  
and Snap-Shot Hand Camera Work.**

Ratio of Stops .. .. f/5.6 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 26.
		Full Aperture.	Medium Stops.			
*00 ..	3 inch ..	2 1/8 x 1 3/8 ..	2 1/2 x 2 ..	4 15 0 ..	Hahay ..	—
1 ..	5 ..	4 1/4 x 3 1/4 ..	4 3/4 x 3 1/2 ..	5 0 0 ..	Haarlem ..	1
2 ..	5 1/2 ..	4 3/4 x 3 1/2 ..	5 x 4 ..	5 10 0 ..	Habesh ..	2
3 ..	6 ..	5 x 4 ..	6 1/2 x 4 3/4 ..	6 0 0 ..	Hachen ..	2
4 ..	7 ..	6 1/2 x 4 3/4 ..	7 1/2 x 5 ..	7 0 0 ..	Hadda ..	3
5 ..	8 1/2 ..	7 1/2 x 5 ..	8 1/2 x 6 1/2 ..	8 10 0 ..	Haelen ..	5
6 ..	10 ..	8 1/2 x 6 1/2 ..	10 x 8 ..	12 0 0 ..	Haffen ..	6
7 ..	12 ..	10 x 8 ..	12 x 10 ..	17 0 0 ..	Hague ..	7
8 ..	15 ..	12 x 10 ..	15 x 12 ..	23 0 0 ..	Hahma ..	9
9 ..	18 ..	13 x 11 ..	18 x 16 ..	30 0 0 ..	Haida ..	12
10 ..	21 ..	15 x 12 ..	22 x 18 ..	38 0 0 ..	Hakata ..	14
11 ..	24 ..	18 x 16 ..	25 x 22 ..	47 10 0 ..	Haleb ..	16

\*This Lens works at f/4.8.

Cost of Pairing two Lenses for Stereoscopic Work, 8/0.

The Lenses of this Series are specially recommended for all kinds of extremely rapid work for Portraits and Groups, also for Cinematograph work and Lantern Projection.

THE ABOVE PRICES ARE NET.

Sold by all Leading Photographic Dealers.

PATENT

# 'Homocentric' Lenses.

f/5.6

Mounted in Between-Lens Shutters (see pages 49 to 55),  
or in Focussing Jackets.

No.	Equiv. Focus.	IN COMPOUND.		No.	Equiv. Focus.	IN MULTI-SPEED.	
		Price.	Code Word.			Price.	Code Word.
1	5 in.	7 0 0	Haarcom	1	5 in.	10 5 0	Haarmult
2	5 1/2 ..	7 10 0	Habcom	2	5 1/2 ..	10 15 0	Habmult
3	6 ..	8 5 0	Hackcom	3	6 ..	11 5 0	Hackmult
4	7 ..	9 5 0	Haddcom	4	7 ..	12 15 0	Haddmult
5	8 1/2 ..	11 5 0	Haelucom				
6	10 ..	15 0 0	Haffcom				
				IN JUNIOR MULTI-SPEED			
				1	5 in.	8 12 6	Haarjun
				2	5 1/2 ..	9 2 6	Habjun
				3	6 ..	9 12 6	Hackjun
No.	Equiv. Focus.	IN KOILOS.		No.	Equiv. Focus.	IN "NS" ACCURATE, with KEW CERTIFICATE.	
		Price.	Code Word.			Price.	Code Word.
1	5 in.	7 0 0	Haarkos	1	5 in.	7 5 0	Haarsac
2	5 1/2 ..	7 10 0	Habkos	2	5 1/2 ..	7 15 0	Habeno
3	6 ..	8 0 0	Hadakos	3	6 ..	8 12 6	Hackisi
4	7 ..	9 8 0	Haelkos	4	7 ..	9 12 6	Haddote
5	8 1/2 ..	11 10 0	Haffkos				
No.	Equiv. Focus.	IN IBSO.		No.	Equiv. Focus.	IN FOCUSSING MOUNTS.	
		Price.	Code Word.			Price.	Code Word.
1	5 in.	6 5 0	Haarbis	3	6 in.	7 0 0	Haoz
2	5 1/2 ..	6 5 0	Handa	4	7 ..	8 0 0	Hapura

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.

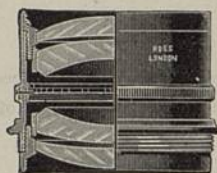
Special Terms to Hand Camera Manufacturers for large quantities of Lenses in Special or Ordinary Settings.



PATENT

## 'Homocentric' Lenses.

f/6.3.



f/6.3.

Specially constructed for

## Instantaneous Views &amp; 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 26.
		Full Aperture.	Medium Stops.			
000 ..	2 1/4 in.	1 1/4 x 1 1/4	3 x 2	3 15 0	Heady	—
00 ..	3 1/4 "	2 x 2	3 1/4 x 2 1/4	3 15 0	Heard	—
0 ..	4 "	3 1/4 x 2 1/4	3 1/4 x 3 1/4	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 1/4	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, 8/0.

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  $1\frac{1}{10}$  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 49 to 55),  
or in Focussing Jackets.

No.	Equiv. Focus.	IN COMPOUND.		No.	Equiv. Focus.	IN MULTI-SPEED.	
		Price.	Code Word.			Price.	Code Word.
1	5 in.	5 15 0	Heathcom	1	5 in.	9 5 0	Heathmult
2	5 1/2 "	6 5 0	Hebracom	2	5 1/2 "	9 10 0	Hebramult
3	6 "	6 10 0	Hectorcom	3	6 "	9 15 0	Hectomult
4	7 "	7 10 0	Hedcom	4	7 "	11 5 0	Hedmult
5	8 1/2 "	9 5 0	Heegcom	5	8 1/2 "	12 15 0	Heegmult
6	10 "	12 5 0	Hefracom				
7	12 "	15 10 0	Hegracom				
IN JUNIOR MULTI-SPEED.							
1	5 "	7 12 6	Heathjun				
2	5 1/2 "	7 17 6	Hebrajun				
3	6 "	8 2 6	Hectojun				
IN "NS" ACCURATE, with KEW CERTIFICATE.							
No.	Equiv. Focus.	IN KOILOS.		No.	Equiv. Focus.	IN FOCUSING MOUNTS.	
		Price.	Code Word.			Price.	Code Word.
1	5 in.	5 15 0	Heathkos	1	5 in.	4 15 0	Hefta
2	5 1/2 "	6 5 0	Hebrakos	2	5 1/2 "	5 0 0	Hegar
3	6 "	6 10 0	Hectokos	3	6 "	5 5 0	Hehnan
4	7 "	7 10 0	Hedonkos	4	7 "	6 5 0	Heider
5	8 1/2 "	9 8 0	Heegkos	5	8 1/2 "	8 0 0	Hekar
6	10 "	12 10 0	Hefrakos				
7	12 "	15 10 0	Hegrakos				
IN IBSO.							
1	5 "	5 5 0	Heathbis				
2	5 1/2 "	5 10 0	Hebrabis				
3	6 "	5 15 0	Hectorbis				

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.

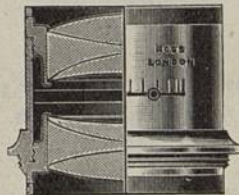
Special Terms to Hand Camera Manufacturers for large quantities of Lenses in Special or Ordinary Settings.



## COMPOUND

## '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 26.
		From	To			
ooo ..	2 1/4 inch ..	1 1/4 x 1 1/4 ..	3 x 2 ..	3 15 0 ..	Hylas ..	—
oo ..	3 1/2 ..	2 x 2 ..	3 1/2 x 2 1/2 ..	3 15 0 ..	Hylbo ..	—
o ..	4 1/4 ..	3 1/2 x 2 1/2 ..	4 1/4 x 3 1/4 ..	3 15 0 ..	Hylcar ..	—
1 ..	5 ..	4 1/4 x 3 1/4 ..	6 1/2 x 4 3/4 ..	4 0 0 ..	Hylem ..	0
2 ..	5 1/2 ..	4 3/4 x 3 1/2 ..	7 x 5 ..	4 5 0 ..	Hymn ..	1
3 ..	6 ..	5 x 4 ..	7 1/2 x 5 ..	4 10 0 ..	Hypho ..	1
4 ..	7 ..	6 1/2 x 4 3/4 ..	8 1/2 x 6 1/2 ..	5 10 0 ..	Hypet ..	2
5 ..	8 1/2 ..	7 1/2 x 5 ..	10 x 8 ..	7 0 0 ..	Hykon ..	3
6 ..	10 ..	8 1/2 x 6 1/2 ..	12 x 10 ..	9 10 0 ..	Hybed ..	4
7 ..	12 ..	10 x 8 ..	15 x 12 ..	12 10 0 ..	Hysus ..	5
8 ..	14 (f/7.7) ..	12 x 10 ..	18 x 16 ..	16 0 0 ..	Hytipe ..	6

Cost of Pairing two Lenses for Stereoscopic Work, 8/0.

These excellent Rapid and Wide-Angle Lenses are made to the same formulae, and replace our Series III. Double Anastigmats. 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 1/10 times 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 49 to 55),  
or in Focussing Jackets.

No.	Equiv. Focus.	IN COMPOUND.		No.	Equiv. Focus.	IN MULTI-SPEED.	
		Price.	Code Word.			Price.	Code Word.
1	5 in.	£ 5 15 0	Hylemcom	1	5 in.	£ 9 5 0	Hylemult
2	5 1/2 ..	6 5 0	Hymncom	2	5 1/2 ..	9 10 0	Hymnmult
3	6 ..	6 10 0	Hyphocom	3	6 ..	9 15 0	Hyphomult
4	7 ..	7 10 0	Hypetecom	4	7 ..	11 5 0	Hypetmult
5	8 1/2 ..	9 5 0	Hykcom	5	8 1/2 ..	12 15 0	Hykmult
6	10 ..	12 5 0	Hybucom				
7	12 ..	15 10 0	Hysucom				
IN JUNIOR MULTI-SPEED.							
				1	5 ..	7 12 6	Hylejun
				2	5 1/2 ..	7 17 6	Hymnjun
				3	6 ..	8 2 6	Hyphojun
IN "NS" ACCURATE, with KEW CERTIFICATE.							
						£ s. d.	
1	5 in.	£ 5 15 0	Hylemkos	1	5 in.	6 5 0	Hylmac
2	5 1/2 ..	6 5 0	Hymnkos	2	5 1/2 ..	6 10 0	Hymneno
3	6 ..	6 10 0	Hyphukos	3	6 ..	6 15 0	Hyphisi
4	7 ..	7 10 0	Hypetkos	4	7 ..	7 15 0	Hyphote
5	8 1/2 ..	9 8 0	Hykkos	5	8 1/2 ..	9 12 6	Hypitula
6	10 ..	12 10 0	Hybukos				
IN FOCUSING MOUNTS.							
						£ s. d.	
				1	5 in.	4 15 0	Hylot
				2	5 1/2 ..	5 0 0	Hymot
				3	6 ..	5 5 0	Hypot
				4	7 ..	6 5 0	Hyrot
				5	8 1/2 ..	8 0 0	Hykot

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

Focussing Mounts do not admit of Between-Lens Shutters.

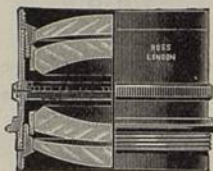
THE ABOVE PRICES ARE NET.

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.	Code Word.	Flange No., see page 26.
		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 ..	13 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, 8/0.

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 times 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 49 to 55),  
or in Focussing Jackets.

No.	Equiv. Focus.	IN COMPOUND.		No.	Equiv. Focus.	IN MULTI-SPEED.	
		Price.	Code Word.			Price.	Code Word.
1	5 in.	£ 5 5 0	Hiatcom	1	5 in.	£ 8 15 0	Hiatmult
2	5 1/2 ..	5 10 0	Hibbcom	2	5 1/2 ..	9 0 0	Hiabmult
3	6 ..	5 15 0	Hiccom	3	6 ..	9 5 0	Hicumult
4	7 ..	7 0 0	Hidacom	4	7 ..	10 5 0	Hidamult
5	8 1/2 ..	8 5 0	Hiencom	5	8 1/2 ..	11 15 0	Hindmult
6	10 ..	10 5 0	Hiffcom	6	10 ..	13 15 0	Hiffmult
7	12 ..	13 5 0	Higocom				
IN "NS" ACCURATE, with KEW CERTIFICATE.							
IN KOILOS.							
1	5 in.	£ 5 5 0	Hiatkos	1	5 in.	£ 5 15 0	Hiatac
2	5 1/2 ..	5 10 0	Hibbakos	2	5 1/2 ..	6 0 0	Hibbeno
3	6 ..	5 15 0	Hickkos	3	6 ..	6 5 0	Hicisi
4	7 ..	7 0 0	Hidakos	4	7 ..	7 5 0	Hidanote
5	8 1/2 ..	8 0 0	Hienkos	5	8 1/2 ..	8 12 6	Hicnula
6	10 ..	10 8 0	Hiffskos	6	10 ..	10 12 6	Hiffardo
7	12 ..	13 10 0	Higskos				
IN IBISO.							
1	5 in.	£ 4 15 0	Hiatbis	1	5 in.	£ 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	Hoppo
4	7 ..	6 5 0	Hidabis	3	7 ..	5 15 0	Hirado

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.



# Ross' Wide-Angle Lenses.

For Landscapes, Architecture, Copying, and use in confined Situations.

## Wide-Angle Anastigmat, f/16.

No.	Equiv. Focus.	Size of plate covered with stop.		Price with Iris or Wheel Diaphragms.	Code Word.
	Inches.	f/16. Inches.	f/32. Inches.	£ s. d.	
1	3½	4½ × 3½	5 × 4	3 4 0	Labor
2	4½	5 × 4	6½ × 4½	3 4 0	Lacta
3	5½	6½ × 4½	8½ × 6½	4 0 0	Ladit
4	7½	8½ × 6½	10 × 8	5 0 0	Lafus
5	8½	10 × 8	12 × 10	6 5 0	Lagon
6	10½	12 × 10	13 × 11	7 15 0	Laher
7	12½	13 × 11	15 × 12	9 5 0	Lapte

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.

## Wide-Angle Symmetrical, f/16.

No.	Size of Plate with medium Stop.	Size of Plate with full Aperture.	Equiv. Focus.	Price. Wheel or Iris. Brass Settings.	Code Word.
	Inches.	Inches.	Inches.	£ s. d.	
1	5 × 4	4½ × 3½	3	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.

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

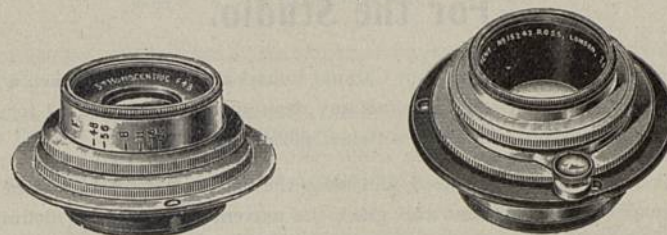
The Cost of Pairing two Lenses for Stereoscopic Work is 8/0.

THE ABOVE PRICES ARE NET.

# 'Cinematograph' Special Camera Lenses.

## Ross' 'Xpres.'

Series f/3.5.



No.	Equiv. Focus. inches.	Plate Covered.	With Iris Diaphragm. £ s. d.	Code Word.	With Focussing Adjustment. £ s. d.	Code Word.
1	2	1 × ¾	4 0 0	Zenar	4 15 0	Zecto
1a	3	1½ × 1½	5 0 0	Zecuno	5 15 0	Zoton

3 in. Equiv. Focus, f/4.8, "Homocentric," in Special Iris Rigid Mount £4 15 0  
Code Word—Cineco.

## 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, ensuring 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. £ s. d.	Code Word.
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 f/3.5 Lenses. 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, 2½ inches clear aperture, 8½ 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>Quagris. | £12 0 0 |
| No. 2. Ditto, ditto, 3½ 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 15 feet from the sitter .. ..    | Queris.   | 16 10 0 |
| No. 3. Ditto, ditto, 3½ 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.  | 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 8½ × 6½ plates and under, for Promenade Portraits and Cabinets in long studios .. .. | Quiltris. | 26 0 0 |
|--|-----------|--------|

LARGER SIZES TO ORDER.

RAPID

# 'Cabinet' and Portrait f/3.5. Lenses. 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 "Xpres" are now largely used, possessing as they do a definition more perfect both at centre and margin than any other Anastigmats.

The "Xpres" 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 Subjects is 5 ft. 8 in. and for head and shoulders, 2 ft. 6 in.

For C. de V. Pictures.	Distance—Subject to Screen.			For Groups up to
	Full Length.	Head and Shoulders.		
No. 1 Cabinet Lens, focus 8½ inch	17 feet	8 feet	..	—
No. 6 "Xpres" f/4.5 Lens, focus 8½ inch .. ..	17 feet	8 feet	..	1-plate
No. 2 Cabinet Lens, focus 10 inch	21 feet	9 feet	..	—
For Cabinet Pictures.				
No. 1 Cabinet Lens, focus 8½ inch	12 feet	5½ feet	..	—
No. 2 Cabinet Lens, focus 10 inch	15 feet	6½ feet	..	—
No. 7 "Xpres" f/4.5 Lens, focus 10 inch .. ..	15 feet	6½ feet	..	1/1-plate
No. 3 Cabinet Lens, focus 12 inch	18 feet	8 feet	..	—
No. 8 "Xpres" f/4.5 Lens, focus 12 inch .. ..	18 feet	8 feet	..	9 × 7
No. 3A Portrait Lens, focus 16 inch	24 feet	10½ feet	..	—
No. 9 "Xpres" f/4.5 Lens, focus 16½ inch .. ..	23 feet	10 feet	..	10 × 8
For Boudoir Pictures.				
No. 3A Portrait Lens, focus 16 inch	17 feet	8 feet	..	—
No. 10 "Xpres" f/4.5 Lens, focus 21 inch .. ..	19 feet	9 feet	..	12 × 10

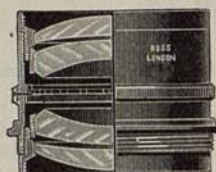
For an increased size of image less distance is required in every case and for a smaller image greater distance.

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 page 26.
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
10	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  $\mu$ , the Green 600 to 480  $\mu$ , and the Blue 490 to 360  $\mu$ , covering the whole spectrum from red to violet.

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

Size	£	s.	d.
2 1/2 inches square	4	13	6
3 "	6	16	6
3 1/2 "	7	18	6
4 "	9	6	0
4 1/2 "	12	0	0
5 "	15	0	0
5 1/2 "	18	10	0

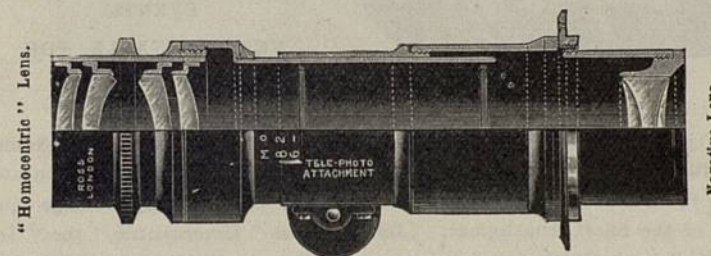
## Tele-Photographic Lenses.

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 length, 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 utilize 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 1/2 in. dia.	£	s.	d.
No. 2	"	1 1/4 in.	2	17	6
No. 3	"	2 in.	3	2	6
No. 3a	"	2 1/4 in.	3	7	6
No. 4	"	2 1/2 in.	3	12	6
No. 4a	"	2 3/4 in.	4	0	0
No. 5	"	3 in.	4	10	0
No. 6	"	3 1/4 in.	5	5	0
Tele-negative Lens, 1 1/8 in. focus, suitable for Setting No. 1 and larger			1	10	0
" " 1 1/4 in. " " " " " " " "	No. 1	"	1	15	0
" " 2 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 1/4 in. focus	7	8 1/2	10 1/2	12 1/2	3 1/2 × 2 1/2 to 5 × 4.
" 2 1/4 in. "	9	11 1/4	13 1/4	15 1/4	1/2-plate to 1/4-plate.
" 3 in. "	12	15	18	21	5 × 4 to whole-plate.
" 4 in. "	16	20	24	28	1/2-plate to 10 × 8.
" 5 in. "	20	25	30	35	whole-pl. to 12 × 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.)

Two Series,  $f/5.4$  and  $f/6.8$ .

FOR RAPID EXPOSURES ON DISTANT OBJECTS.



Enlarged Image with Short Camera Extension.

Tele-photography without Softness or Diffusion with Focal Plane Shutter Exposures.

AN IDEAL LENS FOR SPORTING EVENTS.

VERY SUITABLE FOR PORTRAITURE.

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 "Telecentric" gives an image about twice as large as that given by an ordinary lens requiring the same bellows extension. Therefore — pictures of objects that from circumstances or of their nature cannot be sufficiently approached to allow of the desired size of image may be satisfactorily obtained by using the Ross "Telecentric." These pictures will have critical definition secured with the shortened exposure afforded by the large full aperture of the "Telecentric."

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.

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' "Telecentric" Lenses may be fitted to customers' own cameras without interfering with other lenses already attached. For adapting to suitable shutters a small extra charge will be made.



TAKEN WITH

[Negative by E. J. Jacob.]

**ROSS' 'TELECENTRIC' LENS,  $f/5.4$ ,**  
Focus, 13 inches.



TAKEN WITH

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

**ROSS' 'HOMOCENTRIC' LENS,**  
Twin-Lens Reflex Camera and Multi-speed Shutter.





TAKEN WITH

**ROSS' ANASTIGMAT LENS, f/6.3.**



TAKEN WITH

**ROSS' 'TELECENTRIC' LENS, f/6.8.**

COMPARISON PICTURES, TAKEN FROM SAME STANDPOINT.

Negatives by P. G. Harris.



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.

## 'Telecentric' f/5.4.

Equiv. Focus.	Size. Plate.	Flange. Inside dia.	Length Overall.	Infinity. Back cell to Screen.	Back cell to Flange.	Price. In Iris Setting.	Code Word.
9 in.	3 1/2 x 2 1/4	1 1/2 in.	3 1/2 in.	4 1/2 in.	1 in.	£6 15 0	Artel
11 "	4 1/2 x 3 1/4	2 1/2 "	3 3/4 "	5 1/2 "	1 "	8 5 0	Estel
12 "	5 x 4	2 1/2 "	3 3/4 "	6 1/2 "	1 1/4 "	9 0 0	Ittel
13 "	5 1/2 x 3 3/4	2 1/2 "	4 1/4 "	6 1/2 "	1 1/2 "	9 15 0	Wotel
17 "	6 1/2 x 4 1/2	3 1/2 "	5 1/4 "	9 1/4 "	1 1/2 "	16 0 0	Zutel

Mounted in Between-Lens Shutters or in Focussing Jackets.

IN FOCUSING SETTINGS.				IN KOILLOS.				IN COMPOUND.			
Equiv. Focus.	Price.	Code Word.	No.	Price.	Code Word.	No.	Price.	Code Word.	No.	Price.	Code Word.
9 in.	£8 5 0	Farsel	3	£9 3 0	Kartel	2	£9 3 0	Cartel	1a	£7 2 0	Ctelac
11 "	10 5 0	Ferstel	4	11 5 0	Kestel	3	11 5 0	Cestel	2a	8 14 0	Cteles
12 "	11 0 0	Fittel	4	12 0 0	Kittel	3	12 0 0	Cittel	2a	9 4 0	Ctelit
13 "	—	—	—	—	—	4	13 0 0	Cwetol	3	10 0 0	Ctelow
9 "	—	—	—	In "Multispeed" Shutter				12 10 0	4	14 5 0	Cteluz

The 17 in. "Telecentric" f/5.4 is an inexpensive Portrait lens of large aperture, giving very pleasing results.

## 'Telecentric' f/6.8.

Equiv. Focus.	Size. Plate.	Flange. Inside dia.	Length Overall.	Infinity. Back cell to Screen.	Back cell to Flange.	Price. In Iris Setting.	Code Word.
9 in.	3 1/2 x 2 1/4	1 1/2 in.	2 1/4 in.	4 1/2 in.	1/2 in.	£5 0 0	Telac
11 "	4 1/2 x 3 1/4	2 1/2 "	3 1/4 "	5 1/2 "	1 "	6 0 0	Teles
12 "	5 x 4	2 1/2 "	3 1/4 "	6 1/2 "	1 1/4 "	6 10 0	Tellit
13 "	5 1/2 x 3 3/4	2 1/2 "	3 1/4 "	6 1/2 "	1 1/2 "	7 0 0	Telow
17 "	6 1/2 x 4 1/2	3 1/2 "	4 1/4 "	9 1/4 "	1 1/2 "	11 0 0	Teluz

Mounted in Between-Lens Shutters or in Focussing Jackets.

IN FOCUSING SETTINGS.				IN KOILLOS.				IN COMPOUND.			
Equiv. Focus.	Price.	Code Word.	No.	Price.	Code Word.	No.	Price.	Code Word.	No.	Price.	Code Word.
9 in.	£6 10 0	Felac	2	£7 0 0	Ktelac	1a	£7 2 0	Ctelac	1a	£7 2 0	Ctelac
11 "	7 10 0	Feles	3	8 8 0	Kteles	2a	8 14 0	Cteles	2a	8 14 0	Cteles
12 "	8 5 0	Felit	3	8 18 0	Ktelit	2a	9 4 0	Ctelit	2a	9 4 0	Ctelit
13 "	9 0 0	Felow	4	10 0 0	Ktelow	3	10 0 0	Ctelow	3	10 0 0	Ctelow
17 "	13 10 0	Feluz	—	—	—	4	14 5 0	Cteluz	4	14 5 0	Cteluz

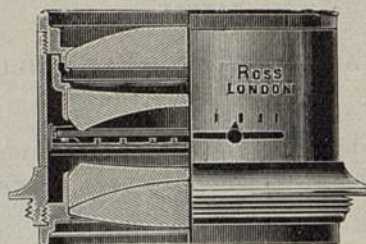
The f/6.8 "Telecentrics" of 9 and 11 inches focus are also supplied in "Multispeed" Shutters, prices respectively, £10 15s. and £11 15s.

The Helical Focussing Setting necessitates larger Flanges.



# Ross-Zeiss 'Tessar.'

(PATENT).



## Series 1c. f/3.5.

No. 1 and No. 1a are specially for Cinematograph work.  
The longer foci are for Portraiture, possessing about the same rapidity as Lenses of the Petzval Type and a flat field of 35°.

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

# Ross-Zeiss 'Tessar.'

(PATENT).

## Series 1c. f/4.5.

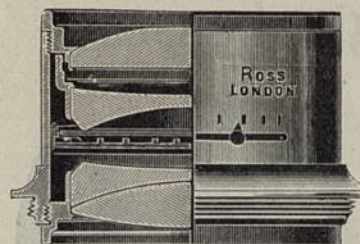
The f/4.5 "Tessars" are preferable for Groups and General Portrait work, the smaller sizes affording increased possibilities to users of hand cameras with focal plane shutters.

No.	Equivalent Focus.		Plate Covered.	PRICE.			
				With Iris Diaphragm.	Code Word.	With Focussing Adjustment	Code Word.
	m/m	inches		£ s. d.		£ s. d.	
11b	75	3	2 1/2 x 2 1/2	4 10 0	Azolitit	5 0 0	Abater
13	112	4 1/2	3 1/2 x 2 1/2	5 0 0	Adisti	5 10 0	Asaron
14	135	5 1/2	4 1/2 x 3 1/2	5 13 0	Adando	6 5 0	Asopto
15	150	6	4 1/2 x 3 1/2	6 10 0	Afaglid	7 2 0	Adheso
15b	165	6 1/2	6 x 4 1/2	7 5 0	Bacchiolo	7 17 0	Aeles
15a	180	7 1/2	6 1/2 x 4 1/2	8 0 0	Afagia	9 0 0	Alaar
16	210	8 1/2	7 x 5	10 0 0	Afesios	11 0 0	Alanto
17	250	10	8 x 5	16 0 0	Agerant	—	—
18	300	12	8 1/2 x 6 1/2	22 10 0	Agistis	—	—
18a	370	14 1/2	9 x 7	29 0 0	Asdut	—	—
19	400	16	10 x 8	35 0 0	Asadas	—	—
20	500	20	12 x 10	50 0 0	Asais	—	—

The Cost of Pairing two Lenses for Stereoscopic Work is 8/-  
THE ABOVE PRICES ARE NET.

# Ross-Zeiss 'Tessar.'

(PATENT).



## Series 11b. 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.		Plate Covered.		Price. With Iris Diaphragms.	Code Word.	Flange No.
			From	To			
	m/m	Inches.			£ s. d.		
1a	75	3	1 1/2 x 1 1/2	3 1/2 x 2 1/2	4 0 0	Adescando	0
2	84	3 5/16	2 x 2	3 1/2 x 2 1/2	4 0 0	Adescantis	0
3	112	4 1/2	3 1/2 x 2 1/2	4 x 3 1/2	4 10 0	Adescarent	0
4	136	5 1/2	4 1/2 x 3 1/2	5 x 4	4 15 0	Adescassi	1
5	150	6	5 x 4	6 x 4 1/2	5 0 0	Adescavamo	1
5a	180	7 1/10	6 1/2 x 4 1/2	7 x 5	7 0 0	Adeschero	2
6	210	8 1/2	7 x 5	8 1/2 x 5	8 10 0	Adesco	3
7	255	10	8 1/2 x 5	8 1/2 x 6 1/2	11 10 0	Adesivo	5
8	305	12	8 1/2 x 6 1/2	9 1/2 x 7 1/2	17 0 0	Adesmie	6

# Ross-Zeiss 'Tessar.'

(PATENT).

## Series 11b. f/6.3.

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

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

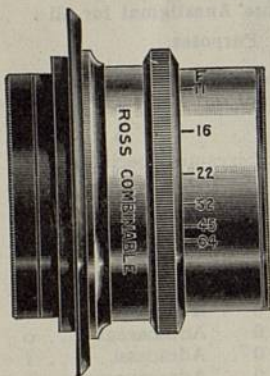
The Cost of Pairing two Lenses for Stereoscopic Work is 8/0.

Objectives with focussing mounts cannot be used in conjunction with Hand Cameras fitted with between-lens shutter.

THE ABOVE PRICES ARE NET.



## Ross' New (Patent) 'Combinable' Universal Single Lenses.



Single.  
f/11.



Doublet.  
f/5.5 to f/6.3.

The construction of a **three-foci lens** of larger aperture than the world-famous Ross "Convertible" has been long considered as impracticable, but has now been accomplished in the Ross "**Combinables**," which greatly surpass the older series in optical properties as well as in aperture. **Singly** these remarkable lenses work at f/11 full aperture, equal ends combined at f/5.5, unequal ends at f/5.7 to f/6.3.

The Singles are not make-shift long-focus lenses that require stopping down to such an extent as to be useless for all but time exposures; their definition at full aperture is of the highest quality, the inherent brilliancy of the Single lens being retained.

The "**Combinables**" are recommended for all purposes, being absolutely **Universal** in their capabilities.

**Sets** of three or four Single Lenses screwing into the same mount are supplied in neat cases to provide 6, 9 or 10 foci—see page 24.

Ratio of Stops ... f/11, f/16, f/22.6, f/32, f/45, f/64.

No.	Equiva- lent Focus. Inches.	Plate covered f/11 inches.	Flange No.	Price, with Iris Diaphragm. £ s. d.	Code Word.	Price in Cell only. £ s. d.	Code Word.
0	7	5 × 4	—	4 5 0	Sibo	3 10 0	Siboaco
1	8	6½ × 4½	—	4 5 0	Simba	3 10 0	Simbaco
2	9½	7½ × 5	—	4 17 6	Sicco	4 2 6	Siccoco
3	10¼	8 × 5	—	5 7 6	Sidri	4 12 6	Sidrico
4	11¼	8½ × 6½	—	5 15 0	Sifso	5 0 0	Sifsoco
5	12½	9 × 7	—	6 5 0	Sigtu	5 7 6	Sigtuco
6	14½	10 × 8	—	7 0 0	Sihda	6 2 6	Sihdaco
7	17	12 × 10	—	8 15 0	Sikde	7 15 0	Sikdeco
8	21	13 × 11	—	14 0 0	Siffi	12 15 0	Siffico
9	28	15 × 12	—	20 10 0	Simna	18 5 0	Simnaco
10	36	20 × 16	—	37 0 0	Sinlu	34 0 0	Sinluco

## Ross' New (Patent) 'Combinable' Universal Lenses (Doublets).

f/5.5 to f/6.3.

Specially suitable for Portraits and Groups in the Studio, and for all Classes of outdoor work, also for Interiors, Copying and for all Rapid and up-to-date Photography.

These Lenses are formed by combining suitable single Lenses (f/11), as described on the preceding page.

No.	Combination of Two Lenses (f/11).			Largest Aperture.	Size of Plates at Full Aperture	Prices in London in Brass Setting with Iris.	Cable Code Word.
	Resulting Combined Focus.						
	Front.	Back.	Ins.		Inches.		
0	7	7	4	f/5.5	3½ × 2½	£ s. d. 7 15 0	Coman
1	8	8	4½	f/5.5	3½ × 3¼	7 15 0	Combat
2	9½	8	5¼	f/5.9	4½ × 3¼	8 7 6	Comcet
3	10¼	8	5½	f/6.2	4½ × 3½	8 17 6	Comdit
4	9½	9½	5½	f/5.5	4½ × 3¼	9 0 0	Comcow
5	10¼	9½	5½	f/5.7	5 × 4	9 10 0	Comdun
6	11¼	9½	6	f/5.9	5 × 4	9 17 6	Comfaw
7	10¼	10¼	6	f/5.5	5 × 4	10 0 0	Comrex
8	11¼	10¼	6½	f/5.7	6 × 5	10 7 6	Comsiz
9	12½	10¼	6½	f/6.0	6 × 5	10 17 6	Comtox
10	11¼	11¼	6½	f/5.5	6 × 5	10 15 0	Comsoy
11	12½	11¼	6½	f/5.9	6½ × 4½	11 5 0	Comtub
12	14½	11¼	7½	f/6.2	6½ × 4½	12 0 0	Comvax
13	12½	12½	7½	f/5.5	6½ × 4½	11 12 6	Comtuz
14	14½	12½	7½	f/5.9	7 × 5	12 7 6	Comwab
15	17	12½	8½	f/6.3	8 × 5	14 2 6	Comwec
16	14½	14½	8½	f/5.5	8 × 5	12 2 6	Comdec
17	17	14½	9½	f/5.9	8 × 5	14 17 6	Comfib
18	21	14½	10	f/6.4	8½ × 6½	20 2 6	Comgoc
19	17	17	10	f/5.5	8½ × 6½	16 10 0	Comked
20	21	17	11	f/6.0	8½ × 6½	21 15 0	Comlif
21	21	21	12	f/5.5	9 × 7	26 15 0	Comfig
22	28	21	14	f/6.3	10 × 8	33 5 0	Comhok
23	28	28	16½	f/5.5	10 × 8	38 15 0	Commog
24	36	28	18½	f/6.2	12 × 10	55 5 0	Commul
25	36	36	21	f/5.5	13 × 11	71 0 0	Comleig

More than two single lenses may be used in the same setting, the size of which is determined by the longest focus single lens. The movable Ring, so constructed that the engraving indicates 3 or more Scale: of apertures as the case requires, is included in the price of each lens. For engraving additional scales on customer's own Lens Rings 2/6 will be charged for each scale.



# Sets of Ross' New (Patent) 'Combinable' Universal Lenses.

Composed of Single Lenses, f/11.

(See pages 22 and 23.)

## No. 1 SET, $4\frac{1}{4} \times 3\frac{1}{4}$ ,

Consisting of Single Lenses Nos. 1, 2 and 3, interchangeable in Setting.

No.	Front Lens.	Back Lens.	Combined Focus.	Largest Aperture.	Plate covered	Price.
1	—	8 in.	Single	f/11	$6\frac{1}{2} \times 4\frac{1}{2}$	£13 0 0 including Ring with Scales of Apertures and Screen Ring in Case complete.  Code Word...Comone.
2	—	$9\frac{1}{2}$ "	"	f/11	$7\frac{1}{2} \times 5$	
3	—	$10\frac{1}{4}$ "	"	f/11	$8 \times 5$	
4	$9\frac{1}{2}$ in.	8 "	$5\frac{1}{2}$ in.	f/5.9	$4\frac{1}{2} \times 3\frac{1}{2}$	
5	$10\frac{1}{4}$ "	8 "	$5\frac{1}{2}$ "	f/6.2	$4\frac{1}{2} \times 3\frac{1}{2}$	
6	$10\frac{1}{4}$ "	$9\frac{1}{2}$ "	$5\frac{1}{2}$ "	f/5.7	$5\frac{1}{2} \times 4$	

## No. 2 SET, $6\frac{1}{2} \times 4\frac{1}{4}$ ,

Consisting of Single Lenses Nos. 3, 4, 5 and 6 with Setting.

No.	Front Lens.	Back Lens.	Combined Focus.	Largest Aperture.	Plate covered	Price.
1	—	$10\frac{1}{4}$ in.	Single	f/11	$8 \times 5$	£22 0 0 including Ring with Scales of Apertures and Screen Ring in Case complete.  Code Word...Comtoo.
2	—	$11\frac{1}{4}$ "	"	f/11	$8\frac{1}{2} \times 6\frac{1}{2}$	
3	—	$12\frac{1}{2}$ "	"	f/11	$9 \times 7$	
4	—	$14\frac{1}{2}$ "	"	f/11	$10 \times 8$	
5	$11\frac{1}{4}$ in.	$10\frac{1}{4}$ "	$6\frac{1}{2}$ in.	f/5.7	$6 \times 5$	
6	$12\frac{1}{2}$ "	$10\frac{1}{4}$ "	$6\frac{1}{2}$ "	f/6.0	$6 \times 5$	
7	$12\frac{1}{2}$ "	$11\frac{1}{4}$ "	$6\frac{1}{2}$ "	f/5.9	$6\frac{1}{2} \times 4\frac{1}{2}$	
8	$14\frac{1}{2}$ "	$10\frac{1}{4}$ "	7 "	f/6.4	$6\frac{1}{2} \times 4\frac{1}{2}$	
9	$14\frac{1}{2}$ "	$11\frac{1}{4}$ "	$7\frac{1}{2}$ "	f/6.2	$6\frac{1}{2} \times 4\frac{1}{2}$	
10	$14\frac{1}{2}$ "	$12\frac{1}{2}$ "	$7\frac{1}{2}$ "	f/5.9	$7 \times 5$	

## No. 3 SET, $8\frac{1}{2} \times 6\frac{1}{2}$ ,

Consisting of Single Lenses Nos. 5, 6, 7 and 8, with Setting.

No.	Front Lens.	Back Lens.	Combined Focus.	Largest Aperture.	Plate covered.	Price.
1	—	$12\frac{1}{2}$ in.	Single	f/11	$9 \times 7$	£33 5 0 including Ring with Scales of Apertures and Screen Ring in Case complete.  Code Word—Comdri.
2	—	$14\frac{1}{2}$ "	"	f/11	$10 \times 8$	
3	—	17 "	"	f/11	$12 \times 10$	
4	—	21 "	"	f/11	$13 \times 11$	
5	$14\frac{1}{2}$ in.	$12\frac{1}{2}$ in.	$7\frac{3}{4}$ in.	f/5.9	$7 \times 5$	
6	17 "	$12\frac{1}{2}$ "	$8\frac{1}{2}$ "	f/6.3	$8 \times 5$	
7	17 "	$14\frac{1}{2}$ "	$9\frac{1}{4}$ "	f/5.9	$8 \times 5$	
8	21 "	$14\frac{1}{2}$ "	10 "	f/6.4	$8\frac{1}{2} \times 6\frac{1}{2}$	
9	21 "	17 "	11 "	f/6	$8\frac{1}{2} \times 6\frac{1}{2}$	

The above Prices are Net.

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

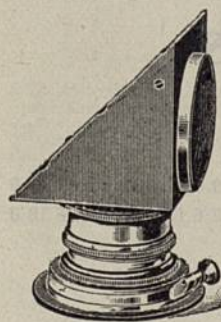
These Prisms are made of carefully annealed and colourless crown glass ; they are accurately rectangular.

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.	Ins.	m/m.	Length and breadth of Non-reflecting Surfaces.			PRICE.	Code Word.
			f	s.	d.		
1	..	1	..	25	..	4 10 0	.. Prime
2	..	$1\frac{1}{8}$	..	35	..	5 10 0	.. Prince
3	..	$1\frac{1}{4}$	..	45	..	7 0 0	.. Print
4	..	2	..	50	..	9 0 0	.. Prior
5	..	$2\frac{1}{8}$	..	60	..	12 0 0	.. Prize
6	..	$2\frac{1}{4}$	..	70	..	16 0 0	.. Prism
7	..	$3\frac{1}{8}$	..	80	..	21 0 0	.. Psalm
8	..	$3\frac{1}{2}$	..	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	"	"
No. 9	"	"
No. 10	"	"
No. 11	"	"



## 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.				
						5 times.	10 times.			
$\frac{7}{16}$ inch	..	..	..	..	—	£0 8 6	£0 9 0	..	..	..
$\frac{1}{2}$ "	..	..	..	..	£0 5 0	0 10 0	0 11 0	..	..	0 11 0
$\frac{3}{4}$ "	..	..	..	..	0 5 6	0 11 6	0 12 6	..	..	0 12 6
1 "	..	..	..	..	0 6 0	0 13 0	0 14 0	..	..	0 14 0
$1\frac{1}{16}$ "	..	..	..	..	0 6 6	0 15 0	0 16 6	..	..	0 16 6
$1\frac{3}{8}$ "	..	..	..	..	0 7 0	0 17 6	0 19 0	..	..	0 19 0
$1\frac{5}{8}$ "	..	..	..	..	0 8 0	1 0 0	1 2 0	..	..	1 2 0
$1\frac{7}{8}$ "	..	..	..	..	0 9 0	1 2 6	1 4 6	..	..	1 4 6
$1\frac{9}{8}$ "	..	..	..	..	0 10 0	1 10 0	1 13 0	..	..	1 13 0
2 "	..	..	..	..				..	..	

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 ..	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{3}{4}$	3	$3\frac{1}{4}$	$3\frac{1}{2}$	$3\frac{3}{4}$	4	$4\frac{1}{4}$	$4\frac{1}{2}$	$4\frac{3}{4}$	5	$5\frac{1}{4}$
Price, Brass ....	1/9	1/9	2/0	2/3	2/6	2/9	3/0	3/6	4/0	4/6	5/0	5/6	6/0	6/6	7/0	7/6	8/0
.. Staminium	2/3	2/3	2/9	3/0	3/6	3/9	4/0	4/6	5/0	5/6	6/6	7/0	7/6	8/0	9/0	10/0	11/0

## Screw Adapters.

Sizes and Prices.

From Flange No. to any Smaller Size	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Price, Brass ..	2/6	3/0	3/6	4/0	4/6	5/0	5/6	6/0	6/9	7/6	8/6	9/6	10/6	12/0	13/6	15/0
.. Staminium	3/0	4/6	4/6	5/0	5/6	6/6	7/0	8/0	9/0	10/0	11/6	12/6	13/6	15/0	16/6	18/0

## Leather Caps.

Sizes and Prices.

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

## Focal-Plane 'Reflex' Camera.



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  $1/14$  to  $1/800$  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 variable 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.

	$\frac{1}{4}$ -plate 5 $\frac{1}{2}$ in. lens.	Post-card Size, non- reversing, 6 in. lens.	5 $\frac{1}{4}$ x 3 $\frac{1}{4}$ with Stereo attachment and 2 lenses.	5 x 4 6 in. Lens.	$\frac{1}{4}$ -plate 8 $\frac{1}{2}$ in. lens.
Price, with 3 Double Slides and Ross "Homocentric" Lens, f/6.3 .. ..	£ s. d. 16 5 0	£ s. d. 17 0 0	£ s. d. 22 18 0	£ s. d. 22 10 0	£ s. d. 31 10 0
Code Words .. ..	Reflap	Reflate	Refster	Refloor	Refloat
Do., with "Compound Homocentric" 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	Refemu
Do., with "Homocentric" Lens, f/5.6 .. ..	17 10 0	18 10 0	24 18 0	24 0 0	33 0 0
Code Words .. ..	Reflin	Refliss 6 $\frac{1}{2}$ in. lens.	Refsters 4 $\frac{1}{2}$ in. lens.	Refitor 6 $\frac{1}{2}$ in. lens.	Reflorite
Do., with "Xpres" Lens, f/4.5 .. ..	17 12 6	19 15 0	24 18 0	25 5 0	34 10 0
Code Words .. ..	Refule	Refews	Refdazi	Refnok	Refnole
Do., with Ross - Zeiss "Tessar" f/4.5 .. ..	6 in. lens. 18 10 0	7 $\frac{1}{2}$ in. lens. 20 10 0	—	7 $\frac{1}{2}$ in. lens. 26 5 0	8 $\frac{1}{2}$ in. lens. 34 10 0
Code Words .. ..	Riflamen	Reflew		Refints	Refloft
Solid Double Backs, each ..	0 7 6	0 10 0	0 10 0	0 10 0	0 15 0
Book Form Backs, each ..	0 12 6	0 15 0	0 15 0	0 15 0	1 0 0
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		1 5 0
Antinous Release, specially fitted .. ..	0 7 6	0 7 6	0 7 6	0 18 0	0 7 6

Extra for Reversing Hood ( $\frac{1}{4}$ -plate size only) 20/0.

Stereo Focuser for attachment to Hood 10/0.



# Focal-Plane 'Reflex' Camera.

The New 3½×2½ Size.

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



Size 5½×5×5 in. Weight 2½ lbs. Without Reversing Back.

Size 6½×5×5½ in. Weight 3½ lbs. With Reversing Back.

This extremely small size Reflex Camera is made of Mahogany, ebonized, 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. This small Camera is readily turned for oblong or upright pictures. Provided with Ross "Xpres" or Ross-Zeiss "Tessar" Lens, the pictures obtained are of such excellent quality that they are suitable for considerable enlargement. The mechanism works equally well, and bushes for attachment are provided in either position. It has rising and cross-front movements.

For every circumstance where portability is desirable this Camera is therefore the most useful form. A carrying handle is attached.

With reversing back the model is slightly larger.

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, etc., gives value in fraction of a second.

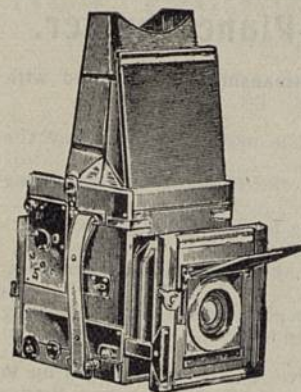
Instructions for using Reversing back model see Special Booklet.

## PRICES OF 3½×2½ REFLEX CAMERA.

		Code Words.	With reversing Back.	Code Words.
Camera as described with three solid form double backs and Ross 5 in. "Homocentric" Lens, f/6.3 ..	£14 0 0	Miniflap	£16 0 0	Miniflapco
Ditto, with 5 in. Compound "Homocentric" Lens, f/6.8 ..	14 0 0	Miniflock	16 0 0	Miniflockco
Ditto, Ross 5 in. "Homocentric" Lens, f/5.6 ..	15 0 0	Miniflin	17 0 0	Miniflinco
Ditto, Ross 4½ in. "Xpres" Lens, f/4.5 ..	15 0 0	Minileg	17 0 0	Minileco
Ditto, Ross-Zeiss 4½ in. "Tessar" Lens, f/6.3 ..	14 10 0	Miniflaz	16 10 0	Miniflazco
Ditto, Ross-Zeiss 4½ in. "Tessar" Lens, f/4.5 ..	15 0 0	Minicoz	17 0 0	Minicozco
Solid form Double Backs, each ..	0 7 0	—	0 7 0	—
Book form ..	0 12 6	—	0 12 6	—
Changing Box for 12 plates or 24 cut films ..	1 15 0	—	1 15 0	—
Film Pack Adapter ..	0 12 6	—	0 12 6	—
Solid Leather Sling Case for Camera and 3 backs or changing box ..	1 0 0	—	1 2 0	—
Light Wood Tripod Stand ..	0 18 6	—	0 18 6	—
Aluminium Folding Stand, extra light ..	1 5 0	—	1 5 0	—
Antinous Release, fitted ..	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 the 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.

	½-plate 5½-in. Lens.	Post-card Size, non-reversing, 6-in. Lens.	5×4 6-in. Lens. 9×12 c/m.	½-plate 8½-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 ..	Trofash	Trofbag	Trofdun	Trofemu
Ditto, with "Homocentric" Lens, f/5.6 ..	23 7 0	24 10 0	32 10 0	44 10 0
Code words ..	Troflin	Trofliss	Troflitor	Troflorite
Ditto, with Ross "Xpres" Lens, f/4.5 ..	23 9 6	6½-in. Lens	6½-in. Lens	46 0 0
Code words ..	Trolexo	25 15 0	33 15 0	Trolup
Ditto, with Ross-Zeiss 5½-in. Lens, f/6.3 ..	22 12 0	Trolam	Troloni	8½-in. Lens
Code Words ..	Troflaz	23 10 0	31 10 0	44 10 0
Ditto, with Ross-Zeiss 6-in. Lens, f/5.6 ..	24 7 0	Troflaz	Troflize	Troflotiz
"Tessar" Lens, f/4.5 ..	24 7 0	7½-in. Lens	7½-in. Lens	46 0 0
Code words ..	Troflamen	28 10 0	34 10 0	Troflotb
Solid Double Backs, each ..	0 10 0	Troflaw	Troflints	
Code word—Trobo.	0 14 0		0 14 0	1 1 0
Book-form Backs, each ..	0 18 0	1 2 0	1 2 0	1 10 0
Code word—Troboom.				
Film Pack Adapters, ea.	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 Focuser for Attachment to Hood, 10/0.



ROSS' PATENT

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

This Camera is of the finest English workmanship, and is fitted with Ross "HOMOCENTRIC" Lens.

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

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

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

The image is shown on the Screen right up to the time of exposure, and the square Finder serves to compose the picture and focus the way of the plate desired.

### To Set Up and to Close the Folding Reflex.

To open Out the Camera press spring at top right-hand corner, disengaging the metal frame, which is then turned right down. The catch at centre of camera base being depressed, the hood frame is turned on its hinges to right angle, and, by means of the leather tab, the metal front is then drawn out. The spring forming right limb of the metal frame on being pressed allows the two pins on the front to enter the holes cut in frame to receive them, and the pressure

being removed, the front is locked in position. The Camera thus set up is as rigid as the Box-form.

The Folding Hood is drawn up after release from spring clip, and when closed acts as a protector for the glass screen.

To Close Up the Camera release front by pressing spring of base frame, fold Front into the top containing Focussing Screen, and, in turn, fold this down against the Back and return base frame to position.

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
Code word .. Follin.	
Leather Sling Case to carry Camera and 3 Dark Slides	1 0 0
" " " " " 6 " "	1 6 0

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

ROSS' PATENT

## New Folding 'Reflex' Camera.

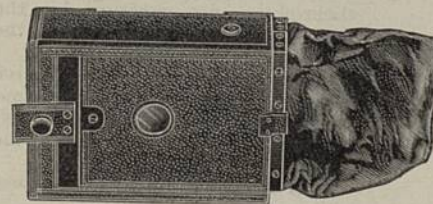
Picture-making with the Focal-Plane Reflex Camera is delightfully simple and sure.

### TO USE THE FOLDING REFLEX.

Having opened out the Camera as explained on page 30, set the Shutter by turning the winding milled head as far as it will go. The Block piece inside this head serves as indicator, and when drawn out slightly may be turned to any speed; it is positively locked by allowing pointer to drop into slot.

By pushing the small knob immediately below the winding head 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 the Shutter is set or not. When making instantaneous exposures care must be taken that the knob is pushed to the 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. 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.

## Accessories for the New Folding 'Reflex' Camera.



The Changing Box carries indiscriminately 12 plates or films in sheaths. It is made of seasoned mahogany covered in morocco leather. The changing is efficiently effected in a very simple way. The box being on the Camera, the roller-blind shutter is withdrawn, exposing the front plate. Closing the

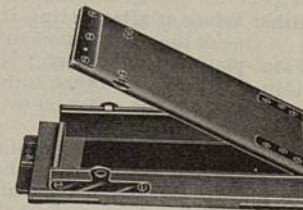
Shutter pushes the exposed plate into the leather bag, whence it is returned to the back of the box.

Changing Box, as described, with 12 Sheaths, for  $\frac{1}{4}$ -plate .. 35/0  
Sheaths, 5/0 per dozen.

### FILM PACK ADAPTER.

This Adapter takes the Premo daylight loading packs. It is of ebonized mahogany with black fittings.

$\frac{1}{4}$ -plate .. 15/0



### MACKENZIE-WISHART DAYLIGHT SLIDE AND ENVELOPES.

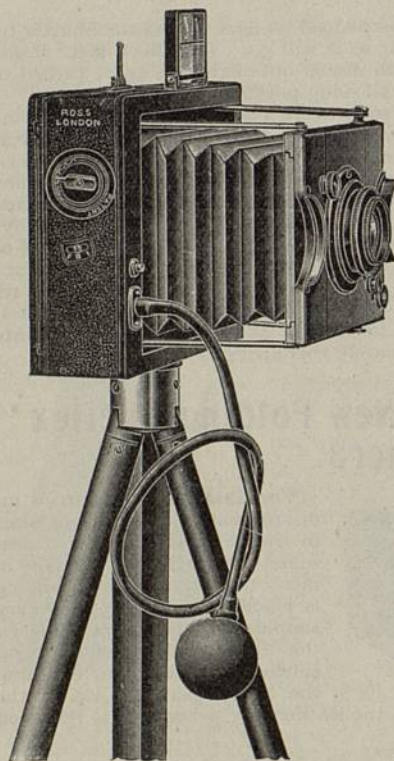
	Slide.	Envelopes.	Case for 12.
Model A, adapted .. ..	18/6	1/3	3/0



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 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.

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.

PATENT  
**Ross' 'Panros'**  
 Focal-Plane Camera (CONTINUED).

The Instantaneous Exposures range from 1/15 to 1/1000 of a second.

Automatic Exposures of  $\frac{1}{4}$ ,  $\frac{1}{2}$ , 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.

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 centring 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.

For Prices, etc., see page 34.



# Ross' 'Panros'

PATENT

## Focal-Plane Camera (CONTINUED).

### Latest Model.

Prices of "Panros" Cameras.	$\frac{1}{2}$ -plate with 5 in. Lens.	5×4 6 in. Lens.	Post Card $6\frac{1}{2}$ in. Lens.
	£ s. d.	£ s. d.	£ s. d.
"Panros" Focal-plane Camera, with Ross Patent "Homocentric" Lens, f/6.3, in focussing Mount, adjustable Focal-plane Shutter for Time or Instantaneous Exposures, three solid Double Dark Slides and Black Leather Carrying Case ..	Code Word. Pandus. 12 17 6	Code Word. Pandora. 14 0 0	Code Word. Pancreas. 14 10 0
Ditto, with "Homocentric" Lens f/6.8, instead of f/6.3 .. .. .	Pango. 12 17 6	Pangoat. 14 0 0	Pangolo 14 10 0
Ditto, with "Homocentric" Lens, f/5.6, instead of either of the above .. ..	Panmaur. 13 17 6	Pancrate. 15 15 0	Pancruel. 17 5 0*
"Panros" Focal plane Camera, with $5\frac{1}{2}$ in. "Xpres" Lens, f/4.5, instead of above .. .. .	Panodo. 14 15 0	Panlge. 16 5 0	Panors. 17 10 0
Additional Double Dark Slides .. each	0 12 6	0 13 0	0 14 0
Changing Box with 12 sheaths .. ..	1 15 0	2 0 0	2 10 0
Holder to take Premo Film Pack .. ..	0 15 0	0 18 0	0 18 0
Mackenzie-Wishart Daylight Slides, Model B .. each	0 13 0	0 16 0	Model A. 1 3 0
Envelopes for ditto .. .. .	0 1 6	0 2 0	0 2 0
Antinous Release, specially fitted .. ..	0 4 6	0 4 6	0 4 6
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	0 10 6	0 12 6	0 12 6
Ditto, to hold Camera and six Double Dark Slides or Camera and Changing Box, extra	0 15 0	0 17 6	0 17 6
Light Wooden Tripod Stand .. ..	0 18 6	0 18 6	0 18 6
Aluminium Folding Stand .. .. .	1 5 0	1 5 0	1 5 0
Telephoto and Telecentric Attachments, see pages 17, 18 and 19.			

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

Cameras without Lenses are charged 25/0 extra.

For Particulars of Dark Slides, Changing Box and Tropical

"Panros" Camera, see page 35.

# 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 sort 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 4×5 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, 9×12 cm., 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 :—

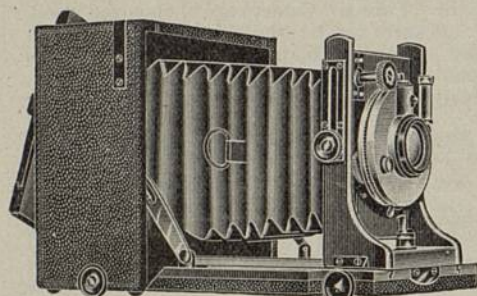
With Ross "Homocentric" Lens, f/6.3, in focussing mount, 6-inch focus .. ..	£18 10 0	Code Word Tandor
With "Homocentric," f/6.8, 6-inch focus .. ..	18 10 0	Tangoa
With "Homocentric," f/5.6, 6-inch focus .. ..	20 5 0	Tancret
With "Xpres," f/4.5, 6-inch focus .. ..	20 15 0	Tanego
Additional Double Dark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



# Ross' New 'Keros' Camera.

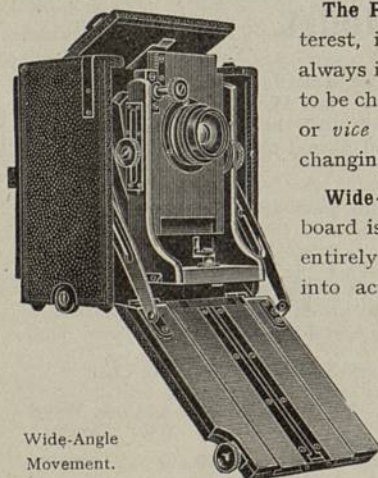
OF THE UNIVERSAL HAND AND STAND TYPE.

Designed to meet the demands of those requiring a full range of movements suitable for Architectural, Telephoto, Natural Colour Photography, and other stand camera subjects, as well as for the various forms of hand-camera work. It is in fact a thoroughly efficient all-round instrument.



Open Ready for Work.

This new Camera is provided with all necessary movements, including **Double Extension**, **Double Rising Front**, the rise being  $2\frac{1}{4}$  inches, with **Rack and Pinion**, **Swing Front**, separate and complete **racked Baseboard** for use with wide-angle Lenses, **Revolving Back**, etc.



Wide-Angle Movement.

**The Revolving Back** is a feature of special interest, inasmuch that the Camera can be held always in the same position and allows the plate to be changed from the vertical to the horizontal, or *vice versa*, and without removing slide or changing box, with no loss of time.

**Wide-angle Movement.**—The hinged baseboard is lowered, automatically locking, and an entirely novel wide-angle movement brought into action. A separate Rack and Pinion is provided and the top board of Camera can be raised to facilitate the use of rising front with wide-angle or short-focus lenses.

Focussing Screen is provided with leather shielded hood. An excellent

Finder is supplied and marked for single and double combinations of the lens fitted.

Levels are fitted on the baseboard, in easy view of the operator; also Bushes in two positions for use on a tripod.

## Measurements.

When closed,  $6\frac{1}{8} \times 6\frac{9}{16} \times 3\frac{1}{4}$ .

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

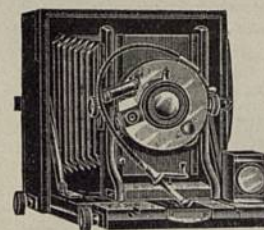
With  $f/6.3$  "Homocentric" and Multi-speed shutter, 3 lbs. 4 oz.

To obtain this portability and compactness no essential to complete efficiency has been sacrificed.

# Ross' New 'Keros' Camera.

OF HIGHEST ORDER OF WORKMANSHIP THROUGHOUT.

The body is constructed of well-seasoned mahogany covered in fine black morocco leather, the inside being black polished and the metal fittings are finished in permanent dull black.

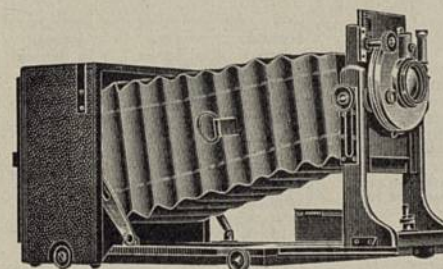


When closed the "Keros" has no projections and all working parts are completely covered.

The **Double extension** provides a maximum range of 12 inches, while the minimum extension is  $1\frac{1}{4}$  inches for lenses of very short focal length.

The **Double Rising Front** is quickly and easily adjusted to the extent of  $2\frac{1}{4}$  inches. The whole front is raised by means of the slots provided and the lens panel by Rack and Pinion to its extreme in strict parallelism with the focussing screen.

A **Universal Swing Front** by simple movement fitted on one side of the Camera does away with the necessity for a swing back. This is controlled by a small screw-locking device on left-hand side of front and allows the lens to swing only on its optical axis.



## PRICES.

For the present the "Keros" Camera is supplied only in the quarter-plate ( $4\frac{1}{4} \times 3\frac{1}{4}$ ) or  $9 \times 12$  c/m. sizes.

$4\frac{1}{4} \times 3\frac{1}{4}$  Camera with 3 Solid Slides and View Finder, without lens or shutter.

Code word, Keros, £9 0 0

		"Homocentric"		"Xpres"
Do.	With Ross lens ..	$5'' f/6.3$	$5'' f/6.8$	$5\frac{1}{2}'' f/4.5$
	In Ibsco Shutter ..	£13 10 0	£13 10 0	—
	Code word ..	Kerap.	Keratos.	—
Do.	In Compound Shutter ..	14 0 0	14 0 0	£16 5 6
	Code word ..	Kelap.	Kelmos.	Kelaxton.
Do.	In Koilos Shutter ..	14 0 0	14 0 0	16 5 6
	Code word ..	Ketac.	Ketaros.	Ketexan.
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 12 6
	Code word ..	Kesmit.	Kestos.	Kesilexo.

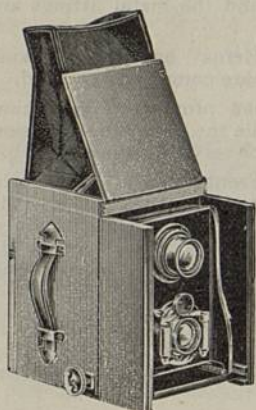
Leather Sling Case to carry Camera and three dark slides .. £1 0 0

$9 \times 12$  c/m Cameras carry  $5\frac{1}{2}''$  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.



## Ross' Twin-Lens 'Reflex' Camera.



This Camera is designed on the principle of using a second lens for focussing and watching the object photographed, of the same construction and focus as the working lens.

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

It remains visible on the Screen during the Exposure.

Dimensions of  $\frac{1}{4}$ -plate Camera—7 $\frac{1}{2}$  inches high, 5 $\frac{1}{2}$  inches wide by 5 inches back to front, closed.

If with rotating back 9 $\frac{1}{2}$  inches high, 5 $\frac{1}{2}$  inches wide, by 5 $\frac{1}{2}$  inches back to front.

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

	$\frac{1}{4}$ -plate 5 in. lenses	5 x 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 ..	Twapokl	Twerok	Twigok
Ditto ditto with New Multispeed 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 with New Multispeed Shutter ..	21 7 6	25 7 6	29 5 0
Code Words ..	Twindo	Twomelo	Twutere
Ditto ditto with "Xpres" Lens $f/4.5$ 5 $\frac{1}{2}$ in. lenses.	19 15 0	23 0 0	28 10 0
and "Koilos" Shutter ..	Twincor	Twomxi	Twolox
Code Words ..	Twincor	Twomxi	Twolox
Ditto ditto with "Xpres" Lens $f/4.5$ 7 $\frac{1}{2}$ in. lenses.	23 2 6	26 7 6	
and "Multispeed" Shutter ..	Toomar	Twomexl	
Code Words ..	Toomar	Twomexl	
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 Construction 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 $\frac{1}{4}$  x 3 $\frac{1}{4}$ , 15/0; 5 x 4, 18/0; 6 $\frac{1}{2}$  x 4 $\frac{1}{2}$ , £1 2s.; 8 $\frac{1}{2}$  x 6 $\frac{1}{2}$ , 25/0.

BAG CHANGING BOXES with ROLLER SHUTTER (12 plate Sheaths).—4 $\frac{1}{4}$  x 3 $\frac{1}{4}$ , £2; 5 x 4, £2 5s.; 6 $\frac{1}{2}$  x 4 $\frac{1}{2}$ , £2 15s.

### EXTRAS.

Extra for Camera in Polished Mahogany, with 3 Dark Slides, fully brass-bound, 4 $\frac{1}{4}$  x 3 $\frac{1}{4}$ , 50/0; 5 x 4, 55/0; 6 $\frac{1}{2}$  x 4 $\frac{1}{2}$ , 60/0.

Double Swing Back Attachment, polished black, 4 $\frac{1}{4}$  x 3 $\frac{1}{4}$ , 25/0; 5 x 4, 30/0; 6 $\frac{1}{2}$  x 4 $\frac{1}{2}$ , 35/0.

Steel Plate or Film Sheaths, for Changing Box, per doz., 4 $\frac{1}{4}$  x 3 $\frac{1}{4}$ , 5/0; 5 x 4, 6/6; 6 $\frac{1}{2}$  x 4 $\frac{1}{2}$ , 7/6.

## Ross' 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 38.

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

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



Size—7 $\frac{1}{2}$  x 5 $\frac{1}{2}$  x 5 inches.

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

Size—9 $\frac{1}{4}$  x 5 $\frac{1}{2}$  x 5 $\frac{1}{2}$  inches.

Weight—4 lbs. 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 38, 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.

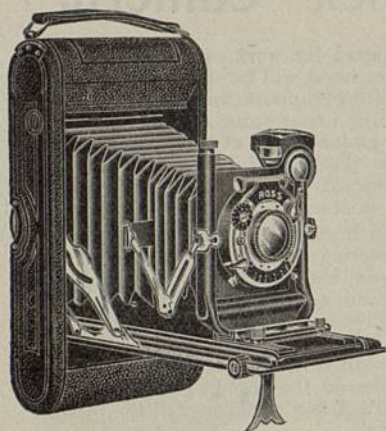
Code word, Twamult .. .. . £19 7 6

Ditto, with Revolving Back. Code word, Twamultir .. 20 17 6

For full particulars of the Multi-Speed Shutters, see pages 49 to 52.



## Roll Film and Plate Camera.



This Camera is made for  $4\frac{1}{2}$  by  $3\frac{1}{4}$ , or for Post-card size ( $5\frac{1}{2} \times 3\frac{1}{4}$ ), 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.

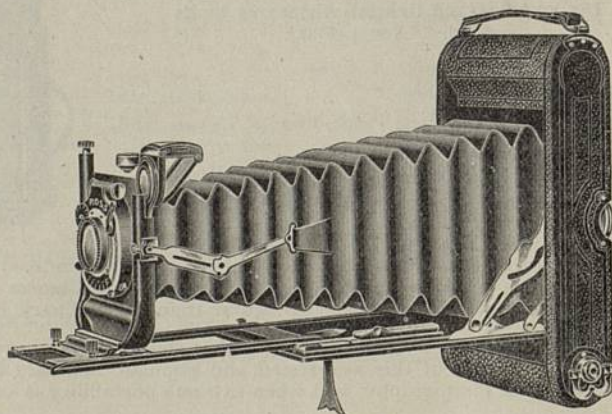
The Quarter-plate size is made in two forms, one with Single Extension and the other with

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 "Koilos" 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.

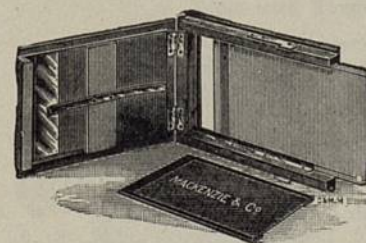
### PRICES.

For pictures $4\frac{1}{2} \times 4\frac{1}{2}$ on Roll Films only, with Single Extension, Rack Adjustment, etc., as described on page 40, "Ibso" Shutter and Ross "Homocentric" Lens, $f/6.3$ .. .. .	£8 0 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 "Ibso" .. .. .	0 10 0
With Multi-speed Shutter ditto .. .. .	4 0 0
For pictures $4\frac{1}{2} \times 3\frac{1}{4}$ on Roll Films only, with Rack and Pinion, Double Extension, Rising Front, Cross Motion, "Ibso" 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 "Ibso" .. .. .	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, "Ibso" 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 "Ibso" .. .. .	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	
$\frac{1}{4}$ plate .....	21/0	2/0	4/6	
$\frac{1}{4}$ plate .....	27/6	3/0	8/0	Model B.
$\frac{1}{4}$ 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	
Stereo .....	12/6	2/6	4/6	
$\frac{1}{4}$ plate .....	12/6	2/6	4/6	

Fitting to Camera extra.

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

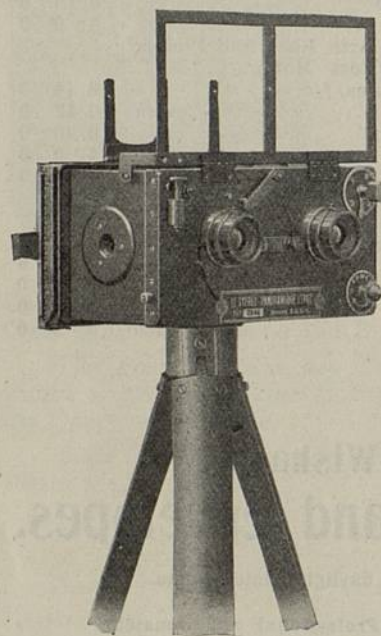


# Stereo-Panoram Camera.

(LEROY'S PATENT.)

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

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 obtainable 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 Panoramic work the interior division, and brings it back for Stereo work when returned to its original position. The Lenses are set above the centre, about  $1/10$ th of the height of the plate, so that superfluous 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.

# The New 'N. & G.' Folding Pocket 'Sibyl' Cameras.

Fitted with Ross "Homocentric"  $f/6.8$ , Ross "Telecentric"  $f/6.8$ , and Ross Zeiss-Tessar  $f/4.5$  and  $f/6.3$  Lenses.

"SIBYL,"



showing Horizontal Rising Front.

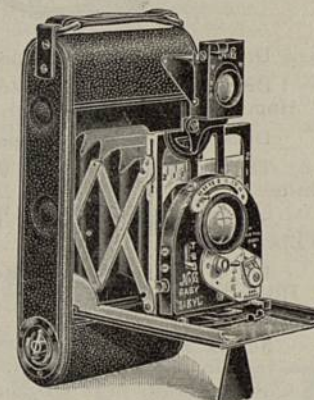
The exquisite "Sibyl" Cameras, representing the Highest Class British Workmanship, has this year been greatly improved in the  $3\frac{1}{2} \times 2\frac{1}{2}$ ,  $6\frac{1}{2} \times 9$  c/m, and  $\frac{1}{4}$ -plate models, which are now equipped with a full range of movements, as given on the already popular Vest Pocket "Baby" "Sibyl" with a few additional features.

The "New Special" ( $3\frac{1}{2} \times 2\frac{1}{2}$  or  $6\frac{1}{2} \times 9$  c/m), the "New Ideal"  $\frac{1}{4}$ -plate, and the "Post Card" ( $5\frac{1}{2} \times 3\frac{1}{2}$ ) "Sibyl" Cameras are obtainable fitted with Ross  $f/6.8$  "Homocentric" Lenses, the perfect qualities of which are used to best advantage, as mounted in these excellent Cameras.

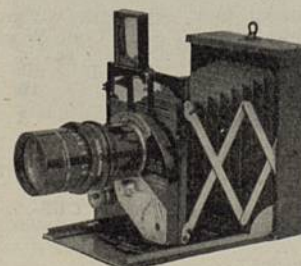
Roll Film "BABY," "NEW," "SPECIAL," and "NEW IDEAL" MODELS.

The "N. & G." "Sibyl de Luxe"  $\frac{1}{4}$ -plate Folding Double Extension Model may be obtained fitted with Ross "Convertible" Doublet Lens, of 5 in. focus,  $f/6.3$ , and Single Combination 9 in. focus,  $f/12.5$ .

The "New Special" and "New Ideal" "Sibyls" are further obtainable fitted with Ross New "Telecentric" Lens (a special Model having been designed for same) of 9 in. and 11 in. focus respectively. These "Sibyls" thus fitted will be found invaluable for Snapshot Portrait Studios, etc.



"NEW SPECIAL" or "NEW IDEAL" "SIBYL," fitted with Ross "Telecentric" Lens.



All "N. & G." Reflex and Trellis Cameras can be fitted with Ross "Homocentric," "Convertible," and "Telecentric" Lenses.

The "Baby," "New Special," and "New Ideal" Models can be obtained for use with Plates, Film Packs, or Autochromes, and a model for Roll Films is also made in these sizes.

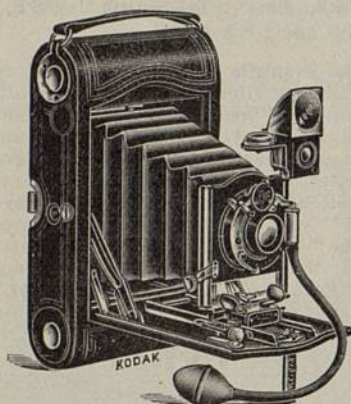
All "N. & G." Shutter Speeds Guaranteed Accurate and Constant.

Fullest Description of these Cameras will be sent on Application to  
**ROSS, Ltd., Manufacturing Opticians, London.**



## 'Kodak' Cameras.

Supplied fitted with Ross or Ross-Zeiss Lenses.



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

Ditto, ditto with Ross-Zeiss "Tessar"  
5 $\frac{1}{4}$ -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, ditto, with Multi-speed Shutter. Code Word, Kertemu £14 12 6

Ditto, ditto, with Ross-Zeiss "Tessar" 6-inch Lens, f/6.3, instead of  
"Homocentric," Code Word, Kerez ... .. £10 2 6

Ditto, 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 Spool of "Kodak" N.C. Film. Code Word,  
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  $6\frac{1}{2} \times 4\frac{1}{4}$  on "Kodak"  
N.C. Film; with Ross "Homocentric" Lens, f/8. Code Word,  
Kifaut ... .. £13 7 0

The "Panoram Kodak," fitted with "Homocentric" Lens, 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,  $10\frac{1}{2} \times 4\frac{1}{4} \times 5\frac{1}{2}$ , 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.**

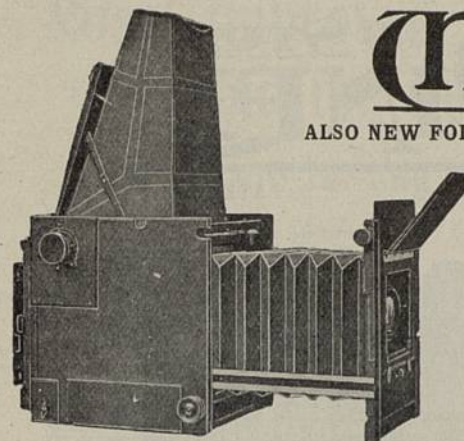
The above Prices are net.

**ROSS, Limited.**

Optical Works—CLAPHAM COMMON, LONDON, S.W.

# THE ADAMS PATENT MINEX

ALSO NEW FOLDING AND STUDIO MODELS.



The British Journal of  
Photography says:

"We are not exceeding the  
facts when we say that no other  
Reflex Camera provides (1)  
an equal range of movement, (2)  
an equal rapidity of manipula-  
tion, and (3) an equal degree of  
reduction to the fewest adjust-  
ments—all within the very  
smallest space."

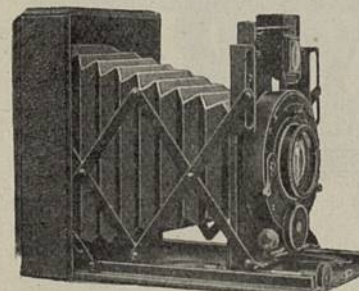
### THE FINEST REFLEX CAMERAS IN THE WORLD.

In their completeness, the accuracy of their adjustments, and the  
beauty and elegance of the form in which they are presented,  
the Adams "MINEX" REFLEX CAMERAS are inimitable.

"Minex" Camera (Model A) complete with three best quality double  
dark slides, Automatic Shutter, speeds from  $\frac{1}{4}$  to 3 seconds and Ross "Com-  
pound Homocentric" Lens, f/6.8.

Size.	with 5 in. lens.	6 in. lens.	7 in. lens.	8 $\frac{1}{2}$ in. lens.
$3\frac{1}{2} \times 2\frac{1}{4}$ or $6\frac{1}{2} \times 9$ cm....	£31 10 0	£32 0 0	—	—
$4\frac{1}{2} \times 3\frac{1}{4}$ .....	—	32 0 0	£33 0 0	£34 10 0
$5 \times 4$ or $9 \times 12$ cm. ....	—	35 0 0	36 0 0	37 10 0
$5\frac{1}{2} \times 3\frac{1}{2}$ Sq. (Post-card) ..	—	38 10 0	39 10 0	41 0 0
$6\frac{1}{2} \times 4\frac{1}{4}$ .....	—	—	—	45 10 0
$6\frac{1}{2} \times 3\frac{1}{4}$ Stereoscopic ..	—	—	Paired Lenses	48 18 0

All the High-class Cameras manufactured by Messrs. Adams & Co.  
are obtainable with LENSES BY ROSS, Ltd.



# THE ADAMS PATENT VESTA

Various Models and Sizes for  
Plates, Premo Film Packs and  
Roll Films.

**NEW STEREO AND ROLL-  
FILM MODELS.**

### THE MOST PERFECT FOLDING CAMERA IN THE WORLD.

Every feature the most fastidious can demand.

Vesta Camera, film pack adapter, hooded focussing screen, carrying  
handle, compound shutter, Adam's Identoscope and Ross' Patent "Xpres,"  
f/4.5 lens.

Size.	
$3\frac{1}{2} \times 2\frac{1}{4}$ (8 x 9 cm.) (4 $\frac{1}{2}$ lens), f/4.5 .....	£14 14 0
$4\frac{1}{2} \times 3\frac{1}{4}$ (5 $\frac{1}{2}$ lens) (6 in. 20/- extra) f/4.5 .....	16 16 0
$5\frac{1}{2} \times 3\frac{1}{4}$ (Post-card) (6 $\frac{1}{2}$ lens), f/4.5 .....	21 0 0

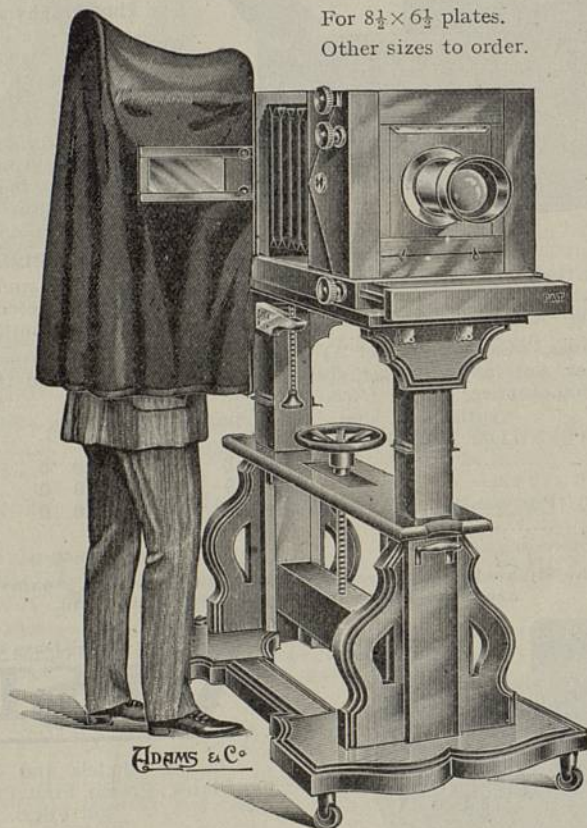
ROSS, Limited, Optical Works, Clapham Common, London, S.W.



# THE ADAMS **STUDIO MINEX**

PATENTED.

For  $8\frac{1}{2} \times 6\frac{1}{2}$  plates.  
Other sizes to order.



## An Entirely New Reflex Portrait Camera.

A Luxurious Piece of Studio Apparatus.

$8\frac{1}{2} \times 6\frac{1}{2}$  Camera and one double dark slide, with patent velvet canopy and secret observation window. Has 32 in. extension, and ample rising and falling front, and two-way swing front. Repeating backs if desired, £35.

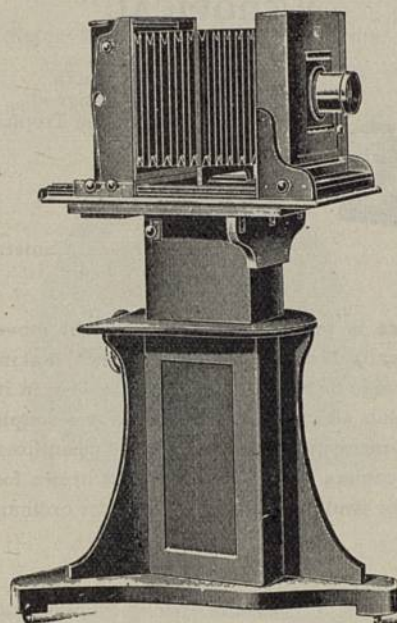
Specially adapted for the use of **Ross Portrait Lens**—16 in. focus,  $\frac{1}{4}$ , £26.

**Minex Studio Stand**, very massive and of great stability, arranged for adjustable movements at side, £12 10s.

Full Particulars upon application.

## Ross' Improved Camera and Stand for the Studio.

For  $12 \times 10$  in. and larger Plates.



**ROSS'** greatly improved form of Studio Cameras for  $12 \times 10$  Plates and upwards 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 is 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 the handwheel 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.	
12 x 12 for plates	12 x 10 and under ...	Studall ...	£29 5 0
15 x 15 "	15 x 12 "	Student ...	32 10 0
20 x 20 "	20 x 18 "	Studio ...	43 0 0

## Cameras and Outfits,

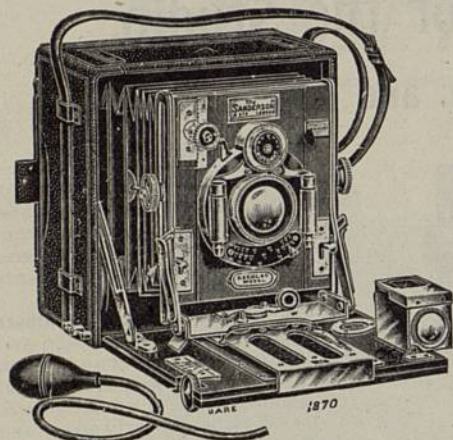
For Line Reproduction, Photo Copying, Enlarging; for Collotype, Photo-gravure, and Photo-Lithography; for Half-Tone, Photo Engraving in Monochrome or Three Colours, and for all Process Work.

**SPECIAL RULED SCREENS, PRISMS, MIRRORS, FILTER CELLS, etc.**

**ROSS, Limited, Optical Works, Clapham Common, S.W.**



# 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.	4½ × 3½ in.	5 × 4 in. or 9 × 12 c/m	6½ × 4½ in.	7 × 5 in. or 13 × 18 c/m
In "Automat" Shutter.					
Camera, complete with Ross "Homocentric" Lens, f/6.3, Shutter, Bright Finder, & 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 Double "Convertible" Lens, f/6.3, Nos. 4, 7, 10, 10 .....	"Regular"	13 15 0	16 6 0	21 19 6	22 19 6
	"Tropical"	15 0 0	17 16 0	23 9 6	24 9 6
	"De Luxe"	17 7 6	20 8 6	29 12 0	30 12 0
Ditto, complete with Bright Finder & 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 ..					
		0 15 0	0 15 0	—	—
Solid Leather Case to hold camera and 3 Slides ..		0 10 6	0 12 6	0 17 6	1 0 0
Ditto, for "De Luxe" Model ..		0 15 0	0 17 6	1 2 6	1 5 0

## A REVOLUTION IN HIGH-SPEED WORK.

# The Multi-Speed Patent

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

Recent improvements in the "Regular" Model have so simplified the working that the manipulation is as easy as in any other between-lens Shutter.

The working of the "Junior" Model (see page 52) can be mastered in five minutes.

## PRICES.

### No. 0 Small Size for—

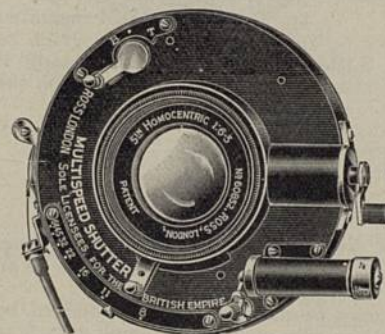
5 in., 6 in., 7 in., f/8	£5 5 0
5 in., 6 in., f/6.8 and f/6.3	
5 in., 6 in., f/5.6	
5 in., 6 in., f/5.6	

### No. 1 Medium Size for—

5 in. and 6 in., f/4.5	£5 15 0
5 in. to 10 in., f/8	
5 in. to 8½ in., f/6.8	
5 in. to 8½ in., f/6.3	
5 in. to 7 in., f/5.6	

These prices include Antinous Release.

Adapting extra ... 7/6 to 10/-



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.

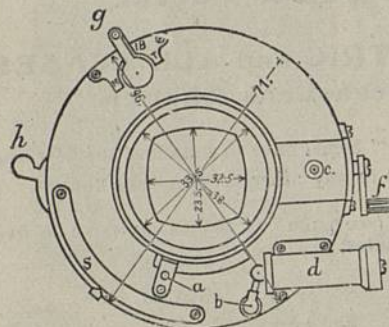
ROSS, Ltd.,

Sole Manufacturing Licensees for the British Empire.



# Multi-Speed Shutter.

## DIMENSIONS AND DIRECTIONS.



No. 1 and No. 0 Shutters.  
Dimension in Millimetres.

Half turn of handle gives	.....1/200 second.
1 " " "	.....1/500 "
1 1/2 " " "	.....1/800 "
2 " " "	.....1/1300 "
2 1/2 " " "	.....1/2000 "

The Spring is held under tension by setting small knob C on spring cover towards the handle of Shutter No. 1 and by automatic catch on F handle on Shutter No. 0.

Further exposure at same speed may be made as often as desired by leaving tension set as in first place, and merely pushing swinging arm A to the right side for each exposure.

If Athletic Games or other Sports are being photographed, it is recommended to set the shutter at highest permissible tension according to light conditions. As light decreases the spring tension should also be decreased.

### Instantaneous Slow Exposures.

Exposures of one second with Shutter No. 1 or 1/2 second with Shutter No. 0 to 1/100 second are obtained by setting the speed as desired on Air-brake D, on end of which all graduations are engraved, then unscrewing the handle B and inserting it in the swing arm A.

For any of these slower exposures it is necessary to have the lowest tension (slightly more than a half-turn) of handle F set.

### Bulb and Time Exposures.

Bulb and time exposures are made by setting lever G with lowest or half-turn tension set. If the handle B is connected to swinging arm A, then bulb and time exposures can be modified by setting the air-brake cap either to 1/100, when exposures will be quick acting or to one or one half second, when exposure will be noiseless and slow, thus enabling the user to make a silent bulb or time exposure.

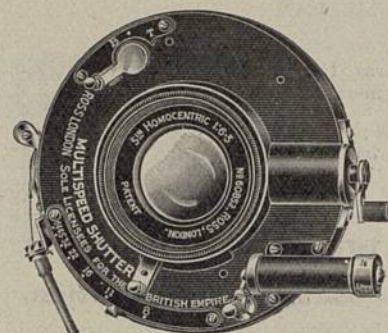
If tension spring should become overstrained by working too much at high speed in successive exposures, it is only necessary to turn handle F in the reverse or opposite direction, being held in this position for only a few seconds, spring will resume normal tension again.

See following pages.

ROSS, Ltd.,

Sole Manufacturing Licensees for the  
British Empire.

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



No. 0 Multi-speed Shutter is for 4 1/4 x 3 1/4 and 7 1/2 x 5 Cameras; Nos. 3, 3a and 4 Kodaks; and similar instruments.

No. 1 Multi-speed Shutter is 7 1/2 x 5 Cameras and larger; for 4a Kodaks and similar instruments.

## SPEEDS.

## SPEED TABLE FOR FAST WORK.

1/200	is sufficiently high for all speed work as met in city streets—such as carriages, autos. Also athletic work, front views.
1/500	is sufficient for jumping and athletics, taken diagonally.
1/800	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.

More rapid Exposures 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 1/2000th will give printable negatives.

Instantaneous speeds from several seconds to 1/2000th 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 1/1000th 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.

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

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.



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

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

$\frac{1}{3500}$  and  $\frac{1}{5000}$  on highest tensions.

Price £3 12 6

Adapting extra ... .. 7/6

This new model of Multi-speed Shutter is particularly designed to enable the user of a Kodak or small hand Camera to obtain pictures on a par with those usually procured with a focal-plane or other similar much more cumbersome outfits.

It 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  $\frac{1}{500}$ 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. The indicator below is placed opposite the desired speed up to  $\frac{1}{3500}$ th second. Set on opposite side after each exposure.

Higher tension can only be had when the pointer is set to the  $\frac{1}{3500}$ th second mark, then the spring can be set to two successive higher tensions or speeds— $\frac{1}{3500}$ th and  $\frac{1}{5000}$ 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.

**ROSS, Limited, Optical Works, Clapham Common, S.W.**

## USE ROSS' LENSES

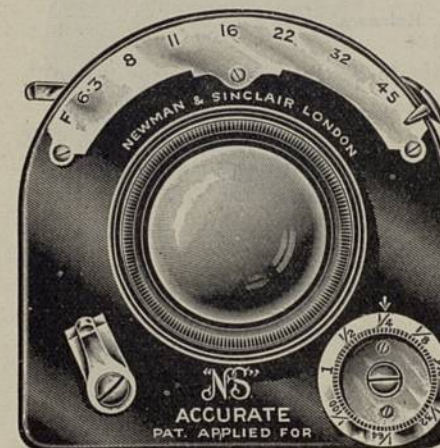
Fitted with the



**'ACCURATE'**  
**SHUTTER.**

(Patent.)

Each Shutter has the speeds engraved by the National Physical Laboratory and is supplied with their Certificate.



The speeds range from  $\frac{1}{2}$  to  $\frac{1}{1000}$ th second.

The only Shutter of which the exact Speeds are accurately known.

No Vibration.

Has great Efficiency.

Simple in Construction.

Smooth in Action.

No light passes through the Shutter during the process of setting.

**The Ideal Shutter for Exact Work.**

Ready—	Iris Aperture.	Tube Diameter for Lenses.	Price, including Kew Certificate.
No. 1 Size ...	... 1 inch	... $1\frac{1}{8}$ inch	... £2 5 0
Ready early in 1914—			
No. 0 Size ...	... $\frac{7}{8}$ inch.	... $1\frac{1}{8}$ inch	... £2 5 0
No. 2 Size ...	... $1\frac{1}{8}$ "	... $1\frac{1}{8}$ "	... £2 12 6

When Lenses are ordered from us fitted to this shutter there is no charge for fitting.

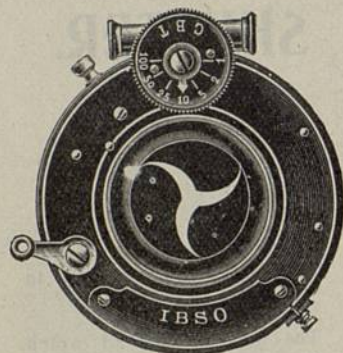


## Between-Lens Shutters.

### The 'Ibso' Diaphragmatic Shutter.

Suitable for Ross' "Homocentric" and Ross "Xpres" Lenses.

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



The three-blade system ensures efficiency, smooth working and freedom from vibration.

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

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.

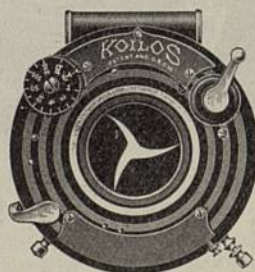
Mounted in Aluminium Case with Nickel Fittings (Dust-proof),

Price 25/0.

Including "Antinous" Release.

### The 'Koilos' Improved Diaphragmatic Sector Shutter with Air Brake.

Suitable for "Homocentric" and Ross "Xpres" Lenses.



	Price	Code Word.
5 in., and 6 in., f/8; 5 in. f/6.3 .. .. .	35/0	Koilos
7 in., f/8; 5½ in. and 6 in. f/6.3; 5 in. f/5.6 .. .. .	40/0	Koilata
8½ in. f/8; 7 in. f/6.3; 6 in. f/5.6; 4½ in. f/4.5 .. .. .	40/0	Koiluter
10 in. f/8; 8½ in. f/6.8; 7 in. f/5.6; 5½ in. and 6½ in. f/4.5 .. .. .	48/0	Koilion
12 in. f/8; 10 in. f/6.3; 8½ in. f/5.6; 6½ in. and 7½ in. f/4.5 .. .. .	60/0	Koilina

"Antinous" Release, extra 2/6.

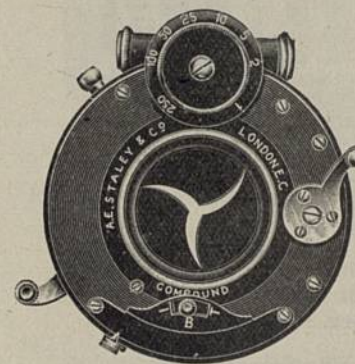
Cost of Fitting to customers' own Lenses, 7/6 each.

## Between-Lens Shutters.

### The 'Compound' Shutter.

With Iris Diaphragm and Distinct Automatic and Spring Actions.

Suitable for "Homocentric" and Ross "Xpres" 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 1/200 second.

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

Larger sizes speed from 1/100 second.

	Price.	Code Word.
No. 0 5 and 6 in. f/8; 5 in. f/6.8; 5 in. f/6.3 .. .. .	35/0	Companil
No. 1 7 in. f/8; 6 in. f/6.8; 6 in., f/6.3; 5 and 5½ in. f/5.6; 4½ in. f/4.5 .. .. .	40/0	Compcar
No. 1a 7 in. f/6.3 and 7 in. f/6.8 .. .. .	40/0	Compexil
No. 2 8½ in. f/8; 6 in. f/5.6; 5½ in. and 6½ in. f/4.5 .. .. .	45/0	Complot
No. 2a 10 in. f/8; 8½ in. f/6.8; 8½ in. f/6.3; 7 in. f/5.6; 6½ in. f/4.5 .. .. .	45/0	Compos
No. 3 12 in. f/8; 10 in. f/6.8; 10 in. f/6.3; 8½ in. f/5.6; 7½ in. and 8½ in. f/4.5 .. .. .	55/0	Comptum
No. 4 12 in. f/6.8; 12 in. f/6.3; 10 in. f/5.6; 10½ in. f/4.5 .. .. .	60/0	Comptura

Cost of Fitting to Customers' own Lenses, 7/6 to 10/0 each.



# Ross' 'Century' Camera.

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

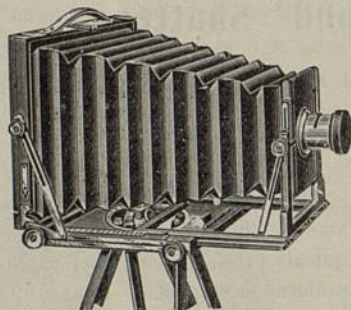


Fig. 1.

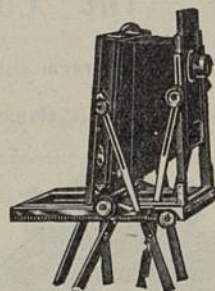


Fig. 2.

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 Focussing.

## PRICES, WITH DOUBLE EXTENSION.

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.
6½ × 4½	£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	Centipo	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 1/6

## PRICES, WITH TRIPLE EXTENSION.

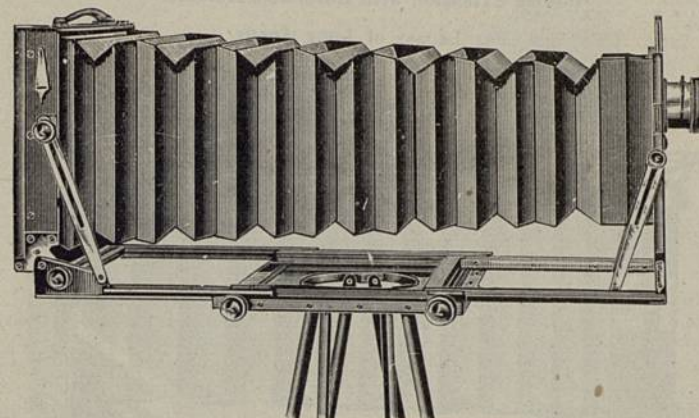
The following prices include camera, three double dark slides, best quality three-fold tripod and revolving turntable, complete.

Size in Inches.	Prices.	Code Word.	Extra Double Dark Slides.	Brass Binding extra.	Size of Camera closed, about
6½ × 4½	£14 0 0	Dastric	£1 2 0	£1 10 0	9½ × 9½ × 2½
8½ × 6½	17 10 0	Deutric	1 5 0	1 15 0	11½ × 11½ × 2½
10 × 8	22 0 0	Diotric	1 12 0	2 0 0	13 × 13 × 3½
12 × 10	26 0 0	Duptric	2 0 0	2 10 0	15½ × 15½ × 3½

The Triple extension of bellows enables Lenses of long focus to be used, such as the single combinations of the Ross "Combinable" and other Lenses. The Half-plate Camera has an extension of fully 22 inches.

## 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 Convertible and other Lenses. The ½-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.

The extensive rising front is a special feature. The ½-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 3½-inch rise can be obtained by raising the Camera front between the fork standards and clamping in position.

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.

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

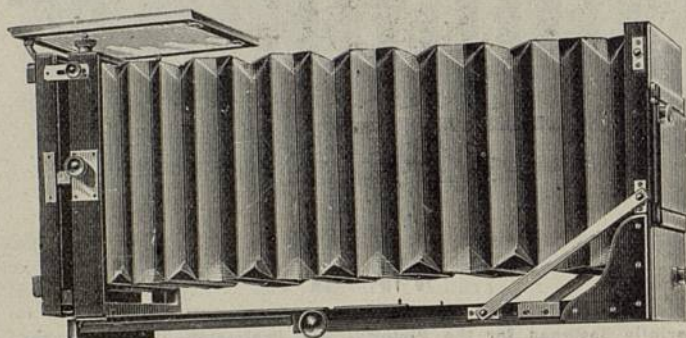


# IMPROVED PORTABLE Square Bellows Cameras.

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.



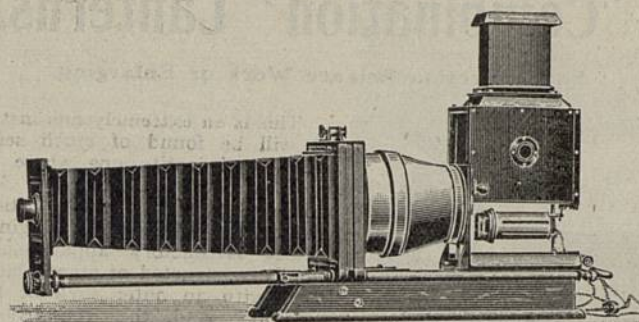
This pattern is a favourite with Professional Photographers and Process Workers, and also for Railway, Shipyard, and Engineering Photographic Work.

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
6½ x 4½ ..	7 5 0 ..	0 15 0 ..	1 2 0 ..	0 5 0 ..	0 10 0	Squamos
7½ x 5 ..	7 10 0 ..	0 15 0 ..	1 2 0 ..	0 5 0 ..	0 10 0	Squande
8½ x 6½ ..	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.

# 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 x 3½	—	£10 0 0	Enactor
1	6½	163	5 x 4	9 x 12	12 0 0	Enchanter
2	7	177	5½ x 4½	—	13 10 0	Endower
3	8	203	6½ x 4½	12 x 16	15 0 0	Engrosser
4	9	228	7 x 5	13 x 18	20 10 0	Enfilade
5	10	253	8 x 5	—	25 10 0	Enigma
6	11	270	8½ x 6½	—	32 0 0	Enroller

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

	Extra.
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 67) .. .. .	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 .. .. .	3 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 67), 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.	s. d.		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.

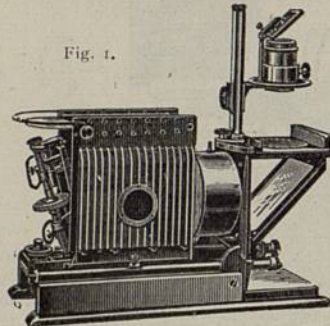


UNIVERSAL

## '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

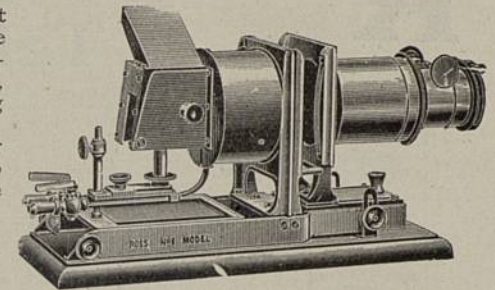
The above Prices are Net. Sold by Leading Dealers everywhere.

## 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 summarized, the leading features of the Lamp are:—

1. Very quick and accurate centring.
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 (7mm. Solid & 10 mm Cored) 1/0
2. " " 10 to 15 " (10 " " 13 " " ) 1/6
3. For Alternating Current 5 to 10 " (10 mm Cored) .. 1/3
4. " " 10 to 15 " (13 " " ) .. 1/9

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



# ROSS' Military, Naval and Sporting Telescopes.



No	Description 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	1½	2	23½	10½	3 0 0	4 10 0
2	Reconnoitring	20	1½	4	21	6½	4 0 0	6 0 0
3	Deer Stalking	20	1½	3	30½	10½	4 10 0	6 15 0
4	Large aperture	20	1½	3	30½	10½	5 0 0	7 10 0
5	Do. Pancratic	20, 25 & 30	1½	3	30½	10½	5 10 0	8 5 0
6	Extra Large Aperture	20	2	3	30½	10½	7 0 0	10 10 0
7	Military Pancratic	30, 40 & 50	2½	4	43	12½	9 10 0	14 10 0

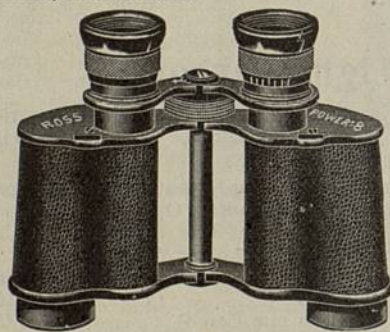
These Prices include a Solid Leather Sling Case with each Telescope.

	NAVAL Telescope	Times	Aperture in ins.	Length		£ s. d.	Signals.	Caps and Slings.
				Open	Closed			
1		15	1½	23½	17½	2 10 0	7/0	10/6
2		15	1½	25	18½	3 10 0	7/0	11/6
3		20	1½	31	25	4 10 0	12/8	12/6
4		20	2	31	25	6 0 0	12/8	12/6
4a		25	2½	36½	30½	7 0 0	12/8	—
5		30, 40 & 50	2½	43	37½	7 10 0	12/6	—
6		40	2½	48	42	12 10 0	—	—
7		50, 60 & 70	3	75	dividg	16 0 0	—	—

## Ross' Stereo Prism Binoculars.

UNEQUALLED for Racing, Sporting, Yachting and Military Purposes.

The power 6 E.L.A. is particularly suited for night work, and has been adopted by the Admiralty and War Office.



With Simultaneous Screw Focussing Adjustment and one adjustable Eyepiece.  
Weight—21 ozs.

	Linear Magnifications.	Effective Diameter of Object Glasses.	Field of View.		Stereoscopic Power.	Price, with Eyepiece Focusing Adjustment.
			Apparent Angular.	Linear per 1,000 yards.		
		mm.				
6		21	52°	152	11½	£8 5 0
8		24	50°	110	15	6 10 0
10		24	50°	87	19	7 10 0
EXTRA LARGE APERTURE.						
		mm.				
6		30	50°	146	12	£7 10 0
12		30	40°	58	24	9 0 0
		mm.				
8		24	50°	110	15	£7 10 0
10		24	50°	87	19	8 10 0

Prices quoted include a Leather Sling Case.

## 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 nett 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: "Rosscasts," London. Telephone: No. 376 Battersea.

Sole Sale Agents for Ross' Lenses and Cameras:

In Austria—ROSS, Ltd., Lerchenfelder Strasse 18, Ecke Plaristen-gasse, Vienna VIII.

In Australia—KODAK, Ltd., Sydney, Melbourne, Adelaide, Brisbane, Townsville, Toowoomba, Broken Hill.

In U. S. America—  
GEO. MURPHY, Inc., 57, East Ninth Street, New York.

In Canada—UNITED PHOTOGRAPHIC STORES, Ltd.,  
100, St. Antoine Street, Montreal; and at Ottawa,  
Quebec, Toronto and Vancouver.

In New Zealand—KODAK, Ltd., 6, Mercer Street, Wellington;  
3, Lorne Street, Auckland.

MUIR & MOODIE, Princes Street, Dunedin.

In South Africa—BAKER & Co., 53, Moseley Buildings, Johannesburg.

In France—WELLINGTON & WARD, 21 & 23, Passage des Princes,  
Boulevard des Italiens, Paris.

In Italy—PIETRO SBISA, Piazza Signoria 4, Florence; and  
Corso Umberto 162 & 163, Rome.

In Spain—M. HUERTAS, S.A., Boters 2, Plaza Cucurulla, Barcelona.

In Greece—CANDREVIOTIS & FITOPOULOS, Nikis Street, Athens.

In Ceylon—PLÂTÉ & 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,

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