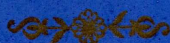


Established 1825.

Catalogue of —
Telescopes,
Marine, Field & Opera
Glasses.

MB



Thomas Armstrong & Brother,

BY APPOINTMENT TO

The Lord Commissioners of the Admiralty, War Office,

— The Board of Trade, India Office, &c., &c. —

88 & 90, Deansgate,
Manchester.




112, Bold Street,
Liverpool.

Cable and Telegraphic Addresses { "SPECULAR, MANCHESTER."
"SPECULAR, LIVERPOOL."
Telephone Nos. { 643 Manchester.
1625, Royal, Liverpool.

All Previous Editions Cancelled.

INTRODUCTION.



IN publishing a new Edition of our Telescope, Field, and Opera Glass Catalogue, we have much pleasure in thanking our friends for their patronage for so many years, and to respectfully ask for its continuance.

Every glass having been under personal supervision, we guarantee them to be precisely as represented (all are Achromatic), and none but the very best lenses used in their manufacture.

We especially desire to call attention to our New Pattern the Prism Binoculars, the "CYCLIST," the "EMPRESS," and our "SPECIALITÉ" Glasses, all being exceptionally good in quality and low in price.

We also beg particularly to specially point out the "JOINTED BAR" Field and Opera Glasses as the most generally useful, they being capable of adjustment to all pupillary distances, thus avoiding the discomfort of distortion and cross circles.

Thomas Armstrong & Brother.



December 1st, 1905.

Armstrong's
Prism Binoculars.



ARMSTRONG'S PRISM BINOCULARS are constructed on the formula of Porro, the principle of which is the use of reflecting prisms so placed in the body that they serve the two-fold purpose of re-inverting the image formed by the object Lens, and reducing the length of the instrument to about one-third that of the usual form of Binocular Telescopes.

The effect of the Prisms is shown in the illustration on page 4, where it is seen that the rays of light entering the object glass are, by reflection and deflection, carried through the upper prism to the lower one, and up again, passing out through the eye-piece, thus travelling the length of the body of the Prism three times.

The great advantage of the **ARMSTRONG Prism Binocular** is that they give an **exceptionally large field of view** well and uniformly illuminated, and a flat image sharply defined right up to the extreme margin. As compared with the ordinary forms of Binocular Field Glasses, the field of view is **two or three times greater**. The bodies are made of a **solid casting** of a special alloy of Aluminium, thus securing the greatest possible solidity with the least possible weight.

ARMSTRONG'S Prism Binoculars are the lightest, most portable and durable Binoculars on the market.

The adjustment for pupillary distance is accomplished in a simple and commodious way by bending the hinged bars to the necessary width of the user's eyes.

The Binoculars are made in four sizes, having respectively, 4, 6, 9, and 12 times power, and are fitted with a central focussing adjustment similar to that of ordinary opera or field glasses.

The right eye-piece can be adjusted separately, to rectify any difference in the power of the eyes of user.

Armstrong's

Prism Binoculars.

IN SOLID LEATHER SLING CASES.

No.	Magnification.	Field of View at 1000 yards.	Weight without Case.	Price.	Telegraphic Code Word.
1	4 times.	180 yards.	12 ozs.	£5 10s.	Bin
2	6 „	125 „	14 „	£6 0s.	Binom
3	9 „	80 „	16 „	£7 5s.	Binomos
4	12 „	60 „	16 „	£9 5s.	Binomoso

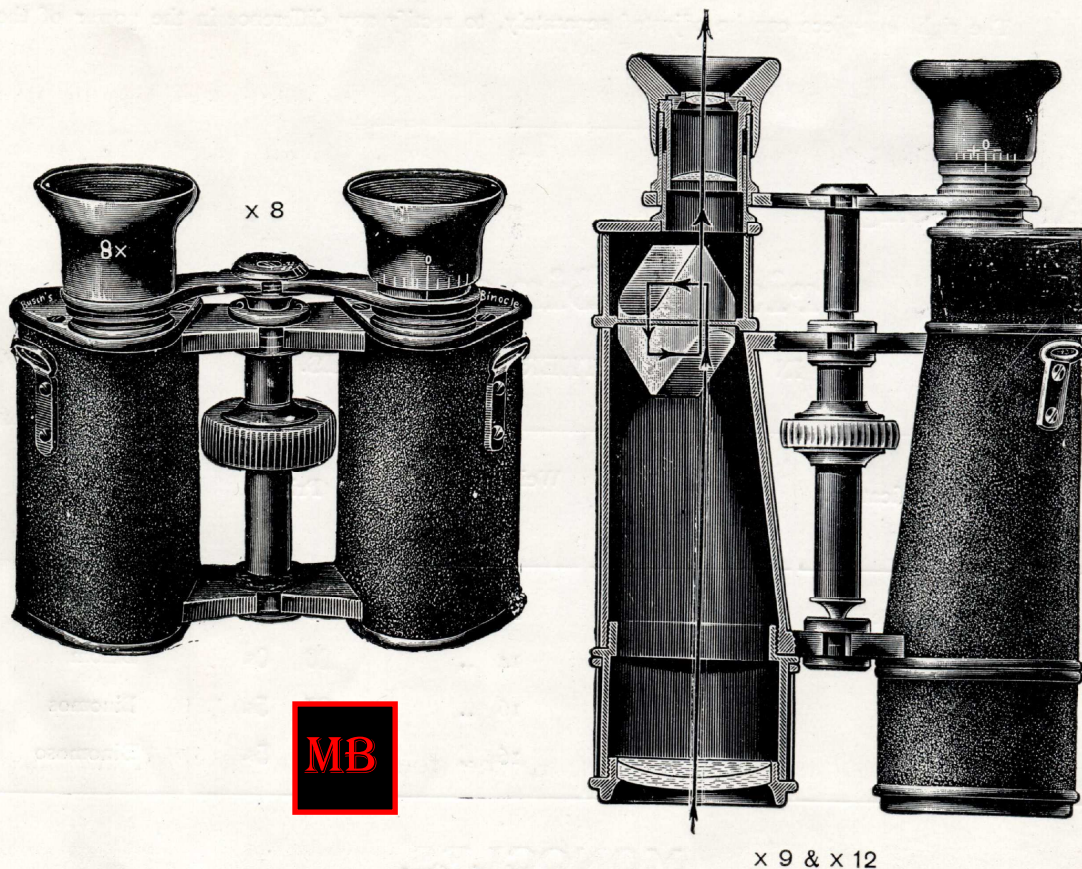
MONOCLES.

FOR USE WITH ONE EYE ONLY.

MB

No.	Magnification.	Price, including Solid Leather Sling Case.	Telegraphic Code Word.
11	4 times	£2 10s.	Mon
12	6 „	£3 0s.	Mono
13	9 „	£3 5s.	Monos
14	12 „	£4 0s.	Monoso

The "Armstrong" New Pattern Prism Binocular.



SINCE the introduction of our PRISM BINOCULARS we have sought to produce a glass with greater illumination and higher magnification. As a result, we now submit our New Pattern.

In all optical systems the increase of power entails loss of light and field of view, and in the Prism Binocular of the ordinary pattern the higher powers could only be satisfactorily used on bright, clear days, because of the small illumination.

The "Armstrong"

New Pattern Prism Binocular.—*Continued.*

In our New Pattern we have overcome these difficulties by the use of **larger object glasses** than hitherto; the definition is therefore of greater brilliancy and perfection and about three times that given by ordinary patterns.

To Military and Naval Officers when a high-power glass has to be used under unfavourable atmospheric conditions, these glasses are the only kind that can give satisfaction.

The body is of Solid Aluminum casting, and is very light in weight, yet durable.

It is fitted with ordinary adjustments for focussing as well as an adjustment to enable any difference in the focus in the eyes of the user to be rectified.

Power.	Field of view at a distance of 1,000 yards.	Weight without Case.	Price.
6 x	80 yds.	16½ ozs.	£ s. d. 8 8 0
8 x	80 „	18¼ ozs.	8 15 0
9 x	80 „	20½ ozs.	10 10 0
12 x	60 „	20½ ozs.	11 11 0

Prices include a Solid Leather Case, either Black or Khaki color.



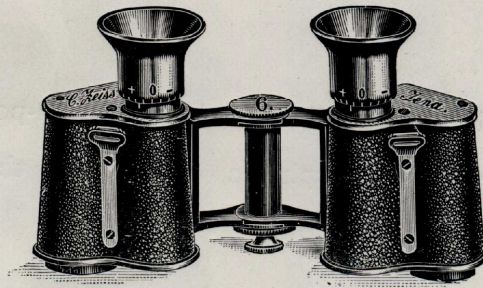
Zeiss _____

Prism Binoculars.

The special feature of this glass is the marked stereoscopic effect that is produced.

These glasses are provided with jointed base and adjustable eye-pieces.

The focussing is effected by adjusting each eye-piece separately to the vision of each eye, and a graduated scale is provided for recording the exact position.



Fitted into a Solid Leather Sling Case.

Prices:—

× 4	Times, suitable for Theatre or Field	£5 10 0
× 6	„ „ Tourist or Military purposes	6 0 0
× 8	„ „ „ „	6 10 0
× 10	„ Marine, etc.	9 5 0
× 12	„ „	9 5 0

Monocular.

× 4	Times	£2 10 0
× 6	„	2 15 0
× 8	„	3 0 0
× 12	„	4 5 0

Goerz Binocular.

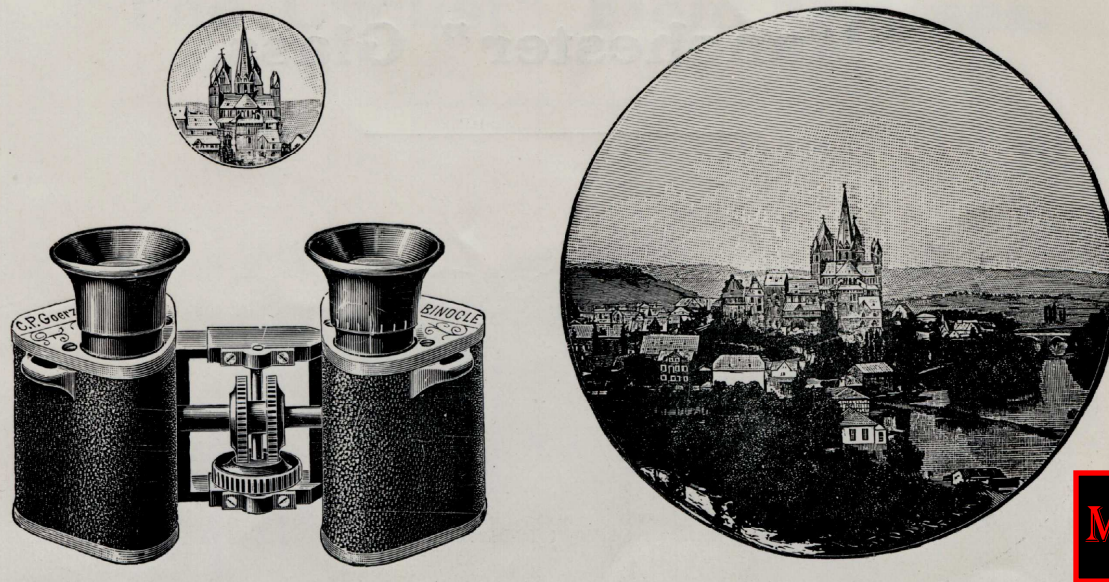


Fig 4.—No. 30 BINOCULAR. Half actual size.

No. 10.—This Glass is especially recommended for the Theatre, Picture Gallery, or Cricket Field, and on occasions when great brightness of image and an extensive field of view are required.

No. 20.—This Binocular is useful for general purposes and suitable for the Theatre, Hunting Field, Races, and Regattas of all kinds.

No. 30.—In consequence of its high power is specially adapted for the use of Naval and Military Officers and Sportsmen.

No. 40.—Being of extra high power is recommended for Deer-stalking, Shooting, Reconnoitring, and in all cases where it is necessary to examine objects at a great distance.

PRICES, INCLUDING LEATHER SLING CASES.

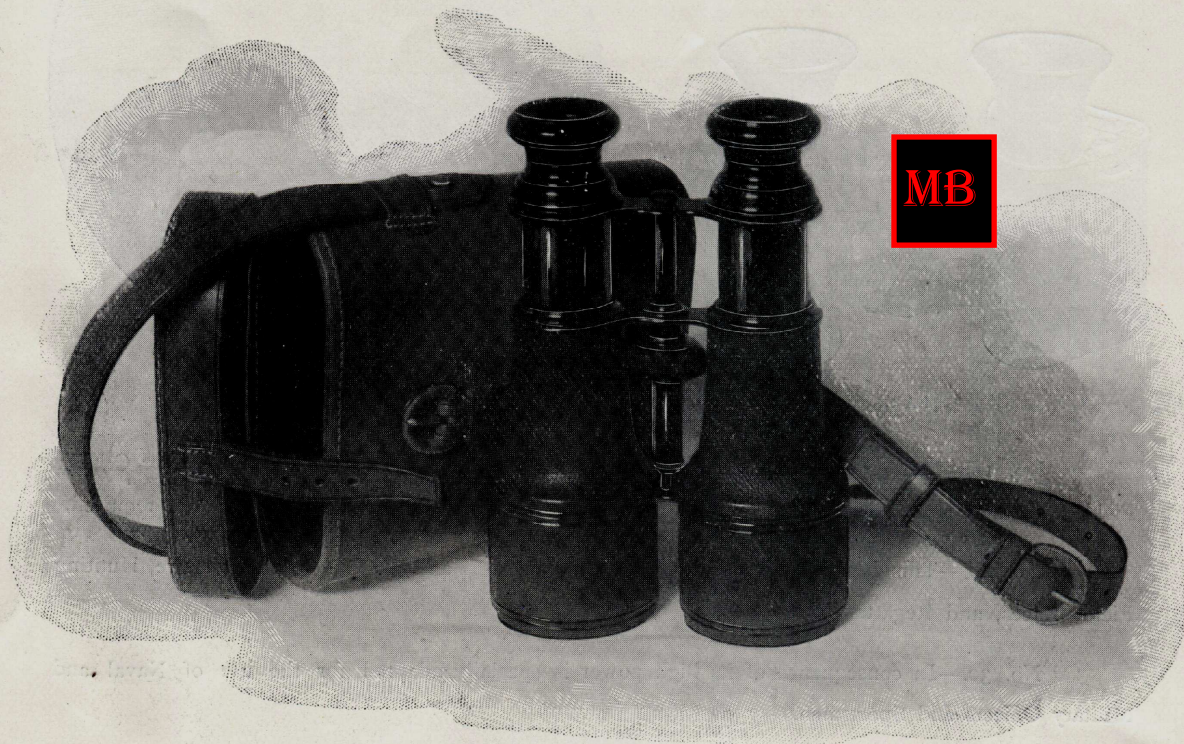
No.	Magnifying Power.	PRICE.	Weight with case.		Weight without case.	
			£	s. d.	lb.	oz.
10	3 times	5 15 0	1	3	1	12
20	6 „	6 10 0	1	5	1	13
30	9 „	7 5 0	1	10	1	16
40	12 „	9 10 0	1	13	1	18

THE ABOVE PRICES ARE FOR NET PROMPT CASH.

MANCHESTER AND LIVERPOOL.

Armstrong's

"Manchester" Glass.



The above Glass is very powerful, with good definition suitable for land or sea, Achromatic Lenses, Spray and Sunshades, Leather-covered, including Solid Leather Sling Case.

£1 1s. 0d.

£1 5s. 0d.

Where economy of price is desired, we strongly recommend the
"MANCHESTER" Glass, it gives universal satisfaction.

MANCHESTER AND LIVERPOOL.

"The Cyclist" Field Glasses.



ONE of the most portable and economical Glasses ever manufactured. Originally introduced to meet the requirements of Cyclists to whom size and weight is a desideratum. It is a suitable Glass for every other purpose, double achromatic lenses of high-class quality, covered with Russia Leather.



Complete with Leather Case and Sling Straps,

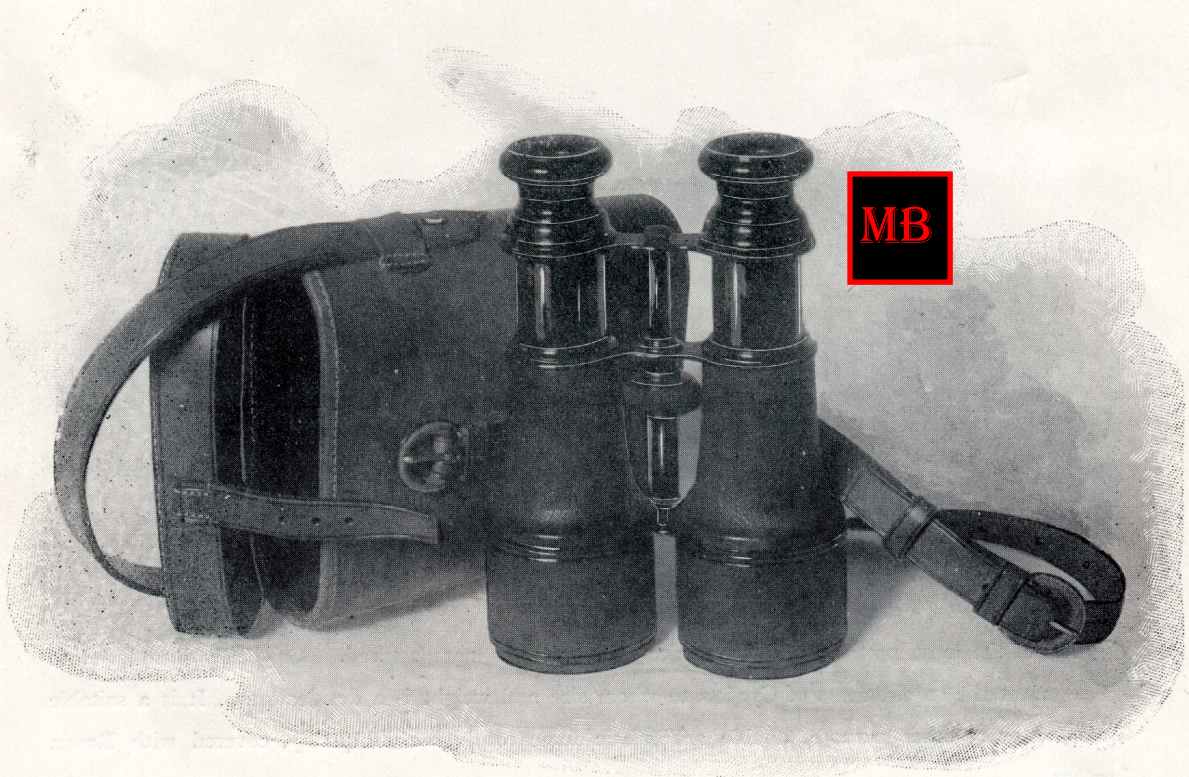
Price - - £2 0s. 0d.

MANCHESTER AND LIVERPOOL.

Armstrong's

"Militaire" Glass.

Suitable for Military, Naval, and other purposes, high magnifying power, therefore will define objects at long distances, has fine definition; strongly made to bear constant and hard use. In Solid Leather Sling Case. Made in two sizes.



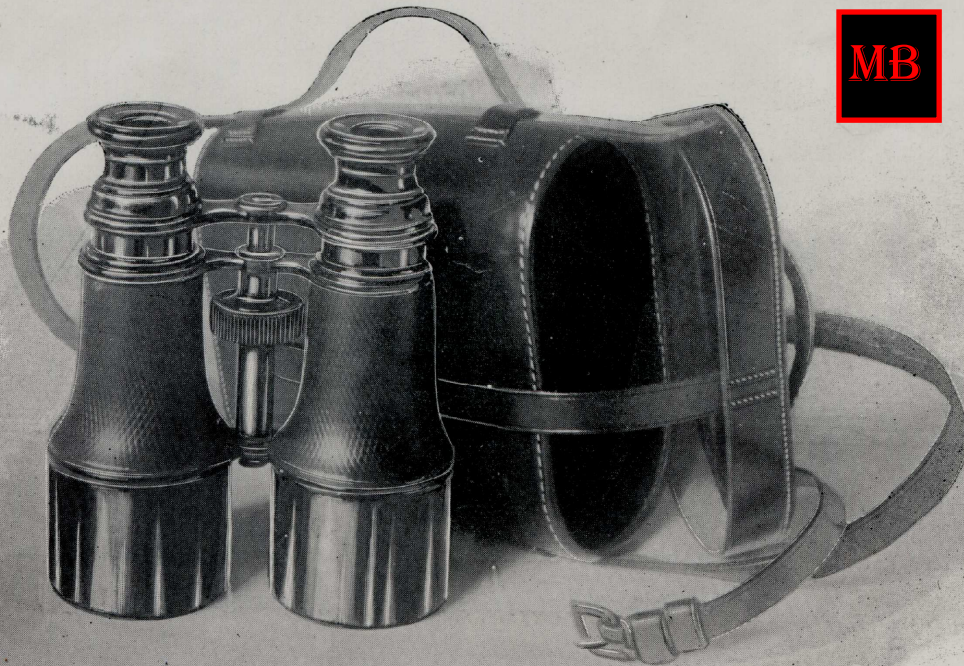
	£	s.	d.
No. 1.—Height when closed, $5\frac{1}{8}$ -in. Object Glass, $1\frac{1}{8}$ -in. diam.	3	3	0
No. 2.—Higher Power, height when closed, $5\frac{3}{8}$ -in. Object Glass, $1\frac{3}{8}$ -in. diam.	3	13	6

MANCHESTER AND LIVERPOOL.

Armstrong's

"Empress" Field Glass.

This Binocular Glass is the finest and best possible, combined with high power. It has splendid definition, large field of view and great clearness of vision: in every respect of the highest class. Jointed Bars to suit every width of face (lady's or gentleman's). Fitted with extra best Solid Leather Sling Case. Made in four sizes.



	£	s.	d.
No. 1.—Height when closed, $4\frac{1}{16}$ -in. Object Glass, $1\frac{1}{8}$ -in. diam.	4	4	0
No. 2.—Higher Power, height when closed, $4\frac{7}{16}$ -in. Object Glass, $1\frac{1}{8}$ -in. diam.	4	15	0
No. 3.—Height when closed, $4\frac{1}{2}$ -in. Object Glass, 2-in. diam.	5	5	0
No. 4.—Highest Power, height when closed, $5\frac{3}{16}$ -in. Object Glass, $2\frac{3}{16}$ -in. diam.	5	15	0

MANCHESTER AND LIVERPOOL.

The "Yeomanry" Field Glass.



This Glass is suitable for Volunteer and Military purposes on account of its compactness and high range.

It focuses by means of sliding draw tubes and a final adjustment by the usual milled head. When a distant object has been focussed the rapid draw is pushed in. On again bringing the glass into use it is only necessary to pull out the rapid draw—the glass is already focussed for object at a distance. The body is covered with black morocco leather.

Prices from £2 15s. 0d. to £4 4s. 0d.

Fitted into Solid Leather Sling Case.

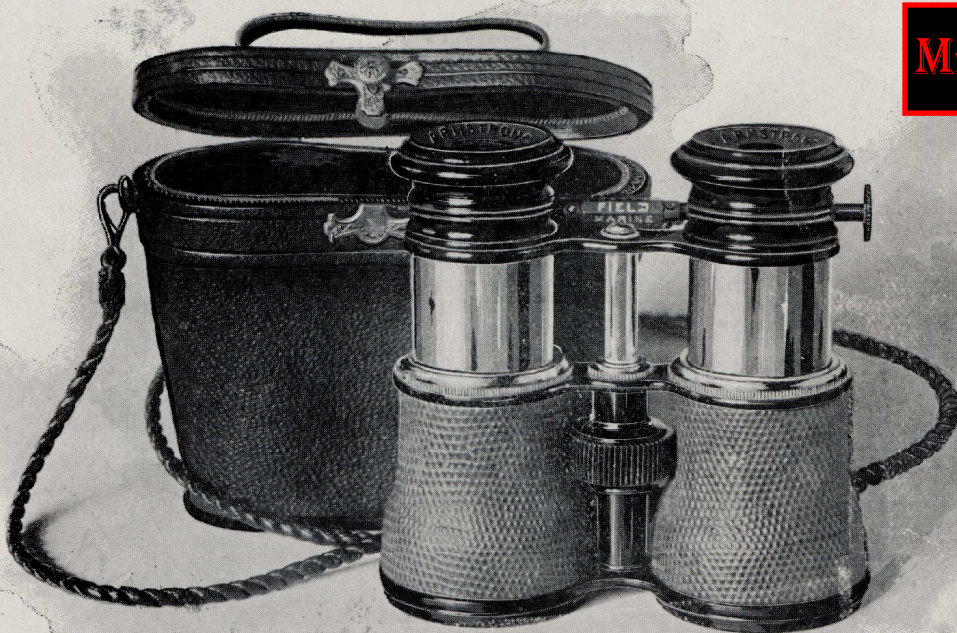
MANCHESTER AND LIVERPOOL.

Armstrong's

"SPECIALITÉ."

SUITABLE FOR FIELD, THEATRE, OR YACHT.

A THREE-POWER GLASS OF GREAT POWER
AND FINE DEFINITION.



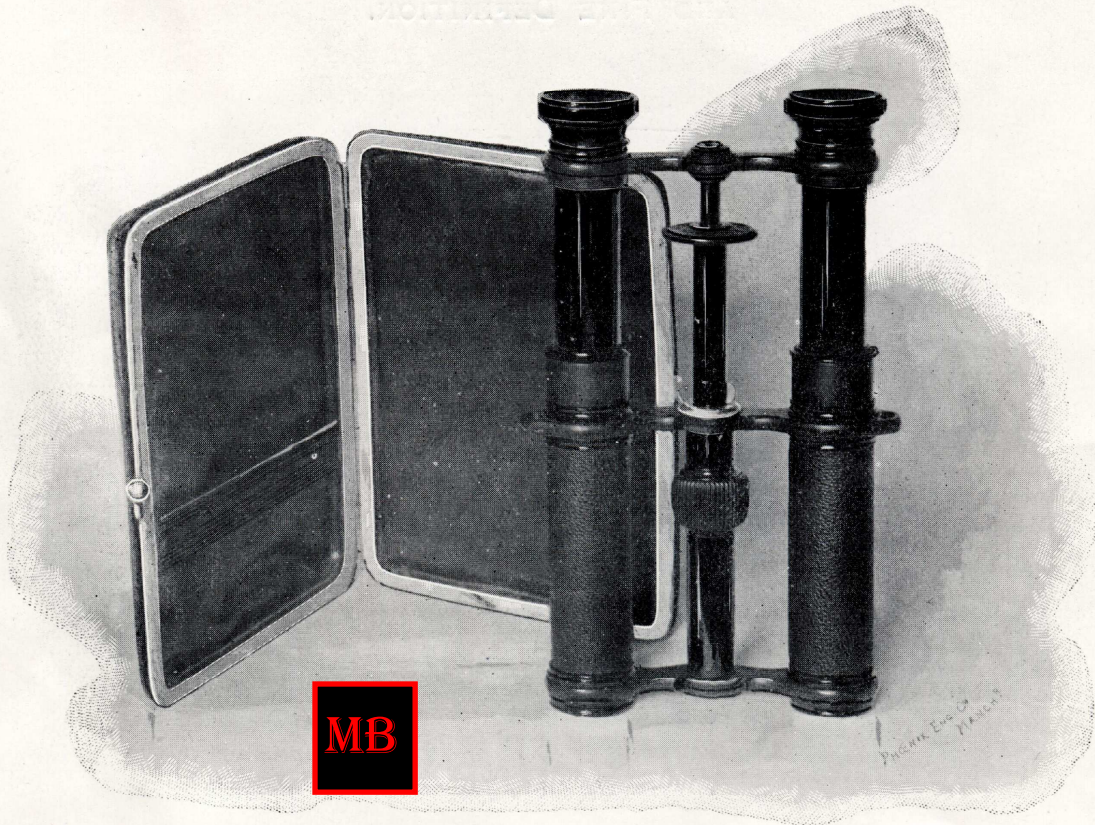
Bodies covered in Black Morocco Leather	£3 5 0
Ivory, Pearl, or Tortoiseshell	6 6 0
Aluminium covered with Russia Leather, the lightest glass in the trade ...	7 7 0

All Fitted with Morocco Crush Cases, Satin Lined, and Corded Slings, or Extra Best Solid Brown Leather Cases.

MANCHESTER AND LIVERPOOL.

Armstrong's

Pocket Binocular Telescopes.



This Glass is highly recommended on account of its compactness and high magnification. It is made Jointed Bars and Rapid Draw, which has a great advantage over the ordinary adjustment.

PRICE, complete in Case for the Pocket,

£5 5s. 0d.

MANCHESTER AND LIVERPOOL.

Armstrong's

"Deerstalker."



A HIGH-POWER BINOCULAR TELESCOPE, Achromatic Lenses, suitable for Deerstalking and for all purposes where clear vision at long distance is required. The body is of Aluminium covered with Morocco and Russia Leather, Rapid Draw and Jointed Bars.

PRICE, including a Solid Leather Sling Case, from

£10 0s. 0d.

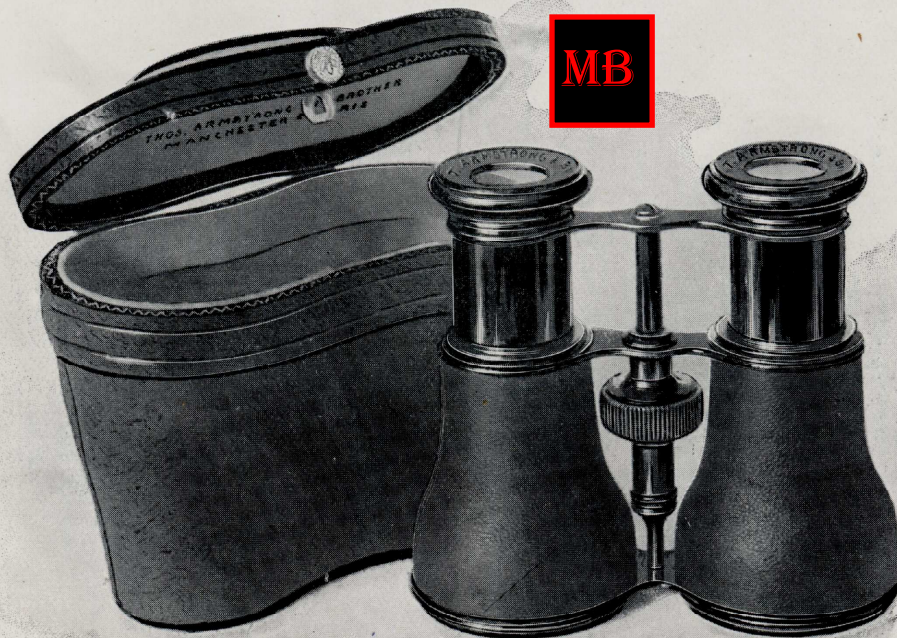
MANCHESTER AND LIVERPOOL.

Armstrong's

"Duchess" Opera Glass.

The cheapest and best glass ever offered. Achromatic Lenses of fine quality, Black Leather Body, Black Enamelled Tubes and Mounts.

Prices from 12/6 to 30/-.



SIZES RECOMMENDED.		£	s.	d.
Height of Opera Glass when closed, $2\frac{3}{4}$ -in.	Object Glass $1\frac{5}{16}$ -in. diam.	1	1	0
" " " $3\frac{1}{8}$ -in.	" $1\frac{1}{2}$ -in. diam.... ..	1	4	0
" " " $2\frac{3}{8}$ -in.	" $1\frac{9}{16}$ -in. diam.	1	7	0
Larger Opera Glass, with Higher Power...	1	10	0

These Glasses are strongly recommended where economy of price is a desideratum.

MANCHESTER AND LIVERPOOL.

Armstrong's

"Marquis" Opera Glasses.

THIS GLASS, for its size, is the most powerful in the trade, especially suited for the CONCERT ROOM, PICTURE GALLERY, and THEATRE. They combine high power with splendid definition, and an unusually large field of view. The body is covered with Best Morocco Leather and Enamelled Tubes.



Prices complete in Morocco Leather Case.

Height of Opera Glass when Closed,	1 $\frac{5}{8}$ -in.	With 1 $\frac{1}{8}$ -in. Object Glass	25/-
"	1 $\frac{7}{8}$ -in.	" 1 $\frac{3}{8}$ -in.	"	27/-
"	2 $\frac{1}{8}$ -in.	" 1 $\frac{1}{2}$ -in.	"	30/-
"	2 $\frac{3}{8}$ -in.	" 1 $\frac{5}{8}$ -in.	"	35/-
"	2 $\frac{5}{8}$ -in.	" 2 $\frac{1}{8}$ -in.	" with jointed bars	63/-

COMPLETED BY BEST MOROCCO LEATHER

MANCHESTER AND LIVERPOOL.

Armstrong's
Ivory, Pearl, and Tortoiseshell
"Marquis" Opera Glasses.

These are elegant in design, and of the very best construction, quality, and definition. In Ivory, White Oriental or Black Pearl, and Tortoiseshell, with Gilt Mounts.



	£	s.	d.
No. 1—Opera Glass, $1\frac{5}{8}$ -in. high (closed), Object Glass $1\frac{1}{2}$ -in. diam.	2	10	0
No. 2— $1\frac{7}{8}$ -in. high, Object Glass $1\frac{5}{16}$ -in. diam.	2	15	0
No. 3— $2\frac{1}{8}$ -in. high, Object Glass $1\frac{1}{2}$ -in. diam.	3	3	0
No. 4—(High Power) $2\frac{3}{16}$ -in. high, Object Glass $1\frac{5}{8}$ -in. diam.	3	15	0

COMPLETE IN BEST CRUSH CASES.

MANCHESTER AND LIVERPOOL.

Armstrong's

"Empress" Opera Glass.



			£	s.	d.
The same class of Lenses as the "EMPRESS" FIELD GLASS, but for Theatre or Concert Room is in every way superior. Mounted in Black Leather and fitted with a best Case, height 3½-in					
		Object Glass, 1½-in. diam.	2	10	0
Do.,	do.,	with Jointed Bars	3	3	0
Do.,	do.,	Mounted in Aluminium (half the weight)...	£3	15	0 and 4 10 0

Armstrong's

"Princess" Opera Glass.

WITH DETACHABLE HANDLE.

HIGH POWER, PORTABLE, and CONVENIENT.
FINE DEFINITION; ELEGANT APPEARANCE.



HIGHEST CLASS QUALITY. THE LARGEST STOCK.

THOMAS ARMSTRONG & BROTHER, Opticians to the Royal Eye Hospital, have pleasure in introducing the NEW PRINCESS OPERA GLASS.

The Lenses are the finest and best manufactured; mounted in Leather, Ivory, Tortoiseshell; White, Oriental, and Black Pearl; Gilt, and Aluminium.

Prices from £3 10s. 0d. to £7 7s. 0d.

MANCHESTER AND LIVERPOOL.

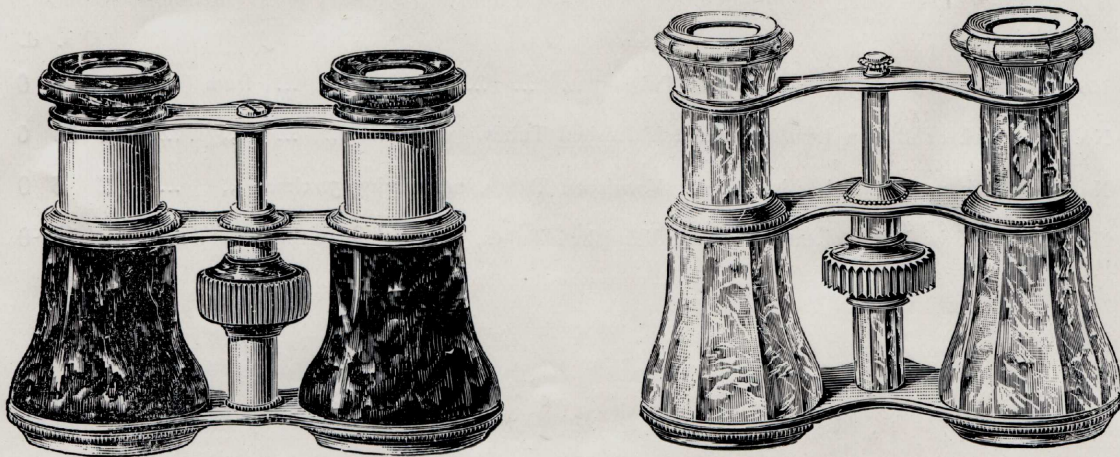
Fancy Opera Glasses.



Prices from
£2 10s. 0d.
TO
£12 12s. 0d.

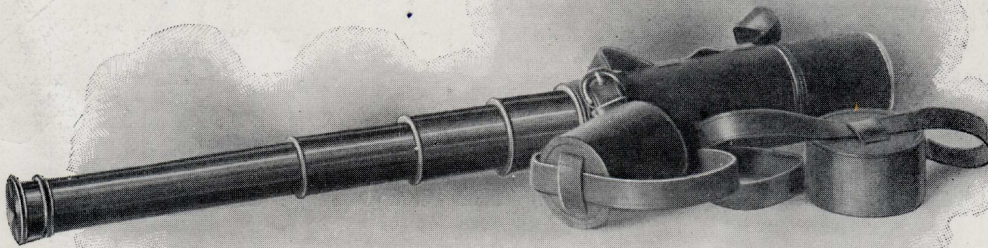
In Great Variety.

With Loose Handle and
Plush Bag.



Armstrong's Tourist Telescopes.

Covered with Black Hard-grained or Brown Leather with Sunshade Caps and Slings, two or three Draw Tubes, and magnifying from 10 to 40 times.

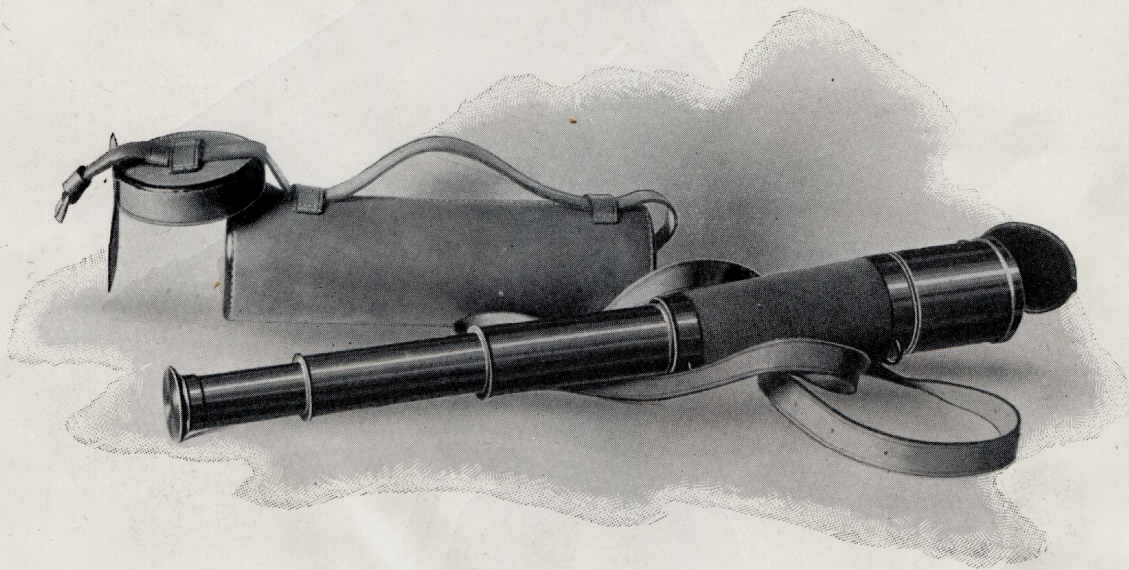


	£ s. d.
No. 1.—Black Leather, Polished Brass Tubes from ...	0 18 6
No. 2.—Black or Brown Leather, Black Varnished Tubes ,, ...	1 10 0
No. 3.—Black or Brown Leather, Black Varnished Tubes, magnifying 30 times ,, ...	2 5 0
No. 4.—Black or Brown Leather, Black Varnished Tubes, magnifying 40 times ,, ...	2 15 0

Armstrong's

Deerstalking Telescope.

The finest and best Telescope in the trade. Achromatic, of very high power, with brilliant definition, large object glass, taper body sunshade. Fitted with extra quality Solid Leather Sling Case, suitable for Land or Sea.



	£	s.	d.
The total length when open, 2ft. 8-ins. ; the total length when closed, 10¼-ins. Object			
Glass 2¼-ins. diameter	6	0	0
With German Silver Tubes (Bronzed), combining lightness and durability	7	7	0

The above can be had with Pancratic Eye-piece if required,
7/6 and 14/- each extra.

Every other description of Telescope kept in Stock.
Guaranteed Quality at Moderate Prices.

MANCHESTER AND LIVERPOOL.

**Armstrong's
Education Equatorial
Telescope.**



MANCHESTER AND LIVERPOOL.

ASTRONOMICAL TELESCOPE, with 3-in. Object Glass, of 42-in. focus, Mounted in Brass Body, with Star Finder, Two Celestial Eye-pieces, with Sun Caps, of 60 and 100 diameters respectively; One Terrestrial Eye-piece of 40 diameters, Rack Adjustment to Eye End; Mounted on Equatorial Head and Stout Oak Stand, with Brass Divided Declination and Hour Circles, with Verniers Reading 5-in. and $\frac{1}{2}$ -in. respectively; Screw Motion in Right Ascension by Hook's Joint Driving Rod, which enables the observer to follow any star in right ascension without clamping and unclamping.

The Declination Axis is secure by a Strong Clamp, readily accessible from the Eye End.

Slight variations of latitude may be corrected by moving the north leg to stand in or out, as may be required, and has an adjustment of a few degrees in azimuth.

The Telescope is packed in Polished Pine Cabinet, and is a very suitable Instrument

for Astronomical Students £16 16 0

Portable Equatorial Stand, as above, adapted to Customers' Own Telescopes of

3-in. or $3\frac{1}{2}$ -in. diameter Object Glass... .. £10 10 0

Astronomical Telescope, with $3\frac{1}{4}$ -in. Object Glass, in Brass Body, with Star Finder, Rack

Adjustment to Eye End, Steadying Rod with Rack-work Motion; Mounted upon

all Brass Table Claw Stand and Pillar; Two Celestial and One Day Eye-piece,

and Sun Caps. Packed in Mahogany Cabinet (Fig. 1) £20 0 0

Tall Tripod Garden Stand, for above £1 15 0

Astronomical Telescope, with $2\frac{1}{4}$ -in. Object Glass, One Celestial, One Day Eye-piece in

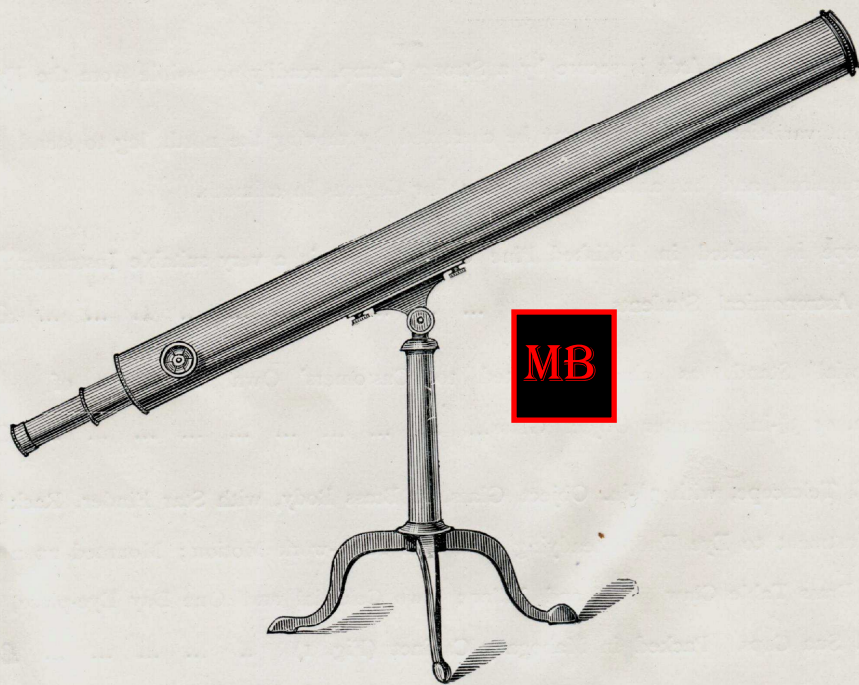
Cabinet £5 5 0

*Estimates given for any size Astronomical Telescopes, with full or other
Equatorial Mounting.*



Telescopes Cleaned, Repaired, Altered, or Mounted.

Astronomical Telescopes.



	£	s.	d.
Astronomical Telescope, with 3-in. Object Glass, in Lacquered Brass Body with Rack Adjustment, Mounted on Brass Pillar upon Iron Claw Table Stand, Two Celestial Eye-pieces with Sun Caps and One Day Eye-piece. Packed in Pine Cabinet ...	6	10	0
Astronomical Telescope as above, with Starfinder and Steadying Rod with Rack Work Motion. Complete in Pine Cabinet ...	10	15	0
Tall Tripod Garden Stand for above ...	1	2	6

Armstrong's

Rifle Telescopes.

For RIFLE RANGES,
BATTERIES, &c.



Will show Bullet
marks
distinctly at 1000
yards.

Mounted on Tripod Stand with universal motion, rack and pinion motion, complete in neat portable case.

No.	Aperture in inches.	Extreme Length.	Price.
1	1 3/4	30	£8 5 0
2	2 1/8	32	12 5 0
3	2 1/8	43	17 5 0
4	2 3/4	44	22 5 0

Armstrong's

Naval Telescopes.



Naval Cadet Regulation Telescope, in German Silver, covered with Brown Leather ... £3 3 0

Naval Cadet Regulation Telescope, in Aluminium, covered with Crocodile Leather ... £4 10 0

Armstrong Pilot Telescope.

The Telescope is made extremely strong for rough use of German Silver, covered with Black Leather. The body is tapered with large Object Glass of high magnification.

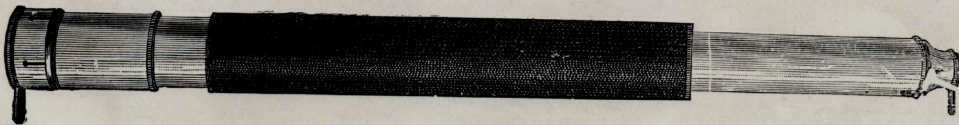


Price £4 10s. 0d.



Ships' Telescope.

This Glass can be thoroughly recommended as thoroughly serviceable for Marine Purposes. The body is of Lacquered Brass covered with Morocco Leather.

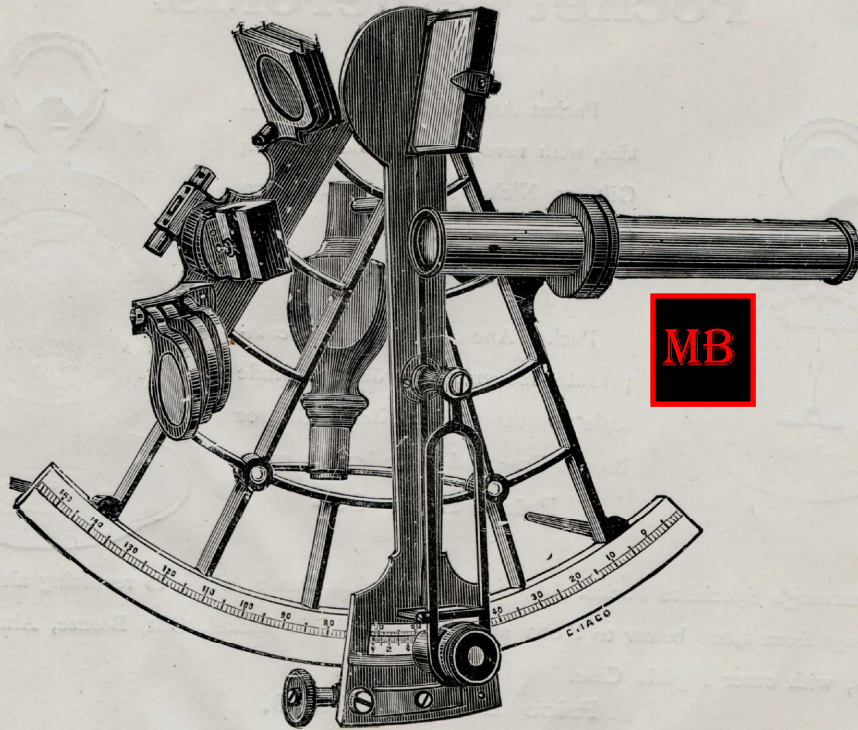


Prices from 30s. to £4.

POCKET TELESCOPES from 7/6.

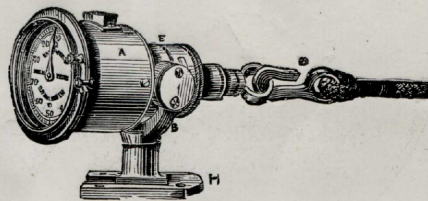
Armstrong's

Sextants.



- The 6½ inch Regulation Pattern Britannia Cadet Sextant, with Silver Arc and Vernier reading to 10 seconds. With Kew Certificate, in Mahogany CasePrice £12 12 0
- The 8 inch Triangular Pattern Britannia Sextant, with Platina Arc and Vernier reading to 10 seconds, with Kew A Certificate, in Mahogany CasePrice £16 0 0
- Binocular Telescopes for Star ObservationPrice £1 5 0
- Single Star Telescopes, with CollarFrom £0 9 6

Ships'



Logs.

Walker's Patent Cherub Ship Log,

AS USED IN THE BRITISH AND FOREIGN NAVIES.

This is a very accurate and serviceable Log, being exceptionally strong, the working parts being of hardened steel and bronze.

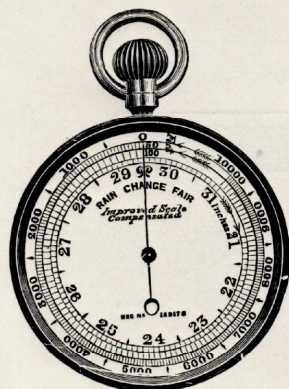
Complete in Box, comprising Register, 2 Shoes, 2 Rotators and Shells, and 1 Hook...Price £4 12 6

BLISS LOG Price £4 10 0

Agents for Nautical Maps, Charts, etc.

MANCHESTER AND LIVERPOOL.

Armstrong's Pocket Aneroids.

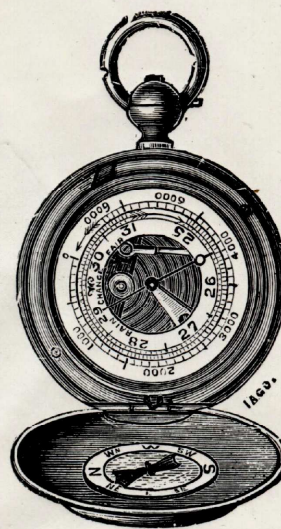


Pocket Aneroid Barometer, watch size, with revolving altitude scale, in Gilt or Nickel Case, with Morocco Leather outer case.

Price from 25/-

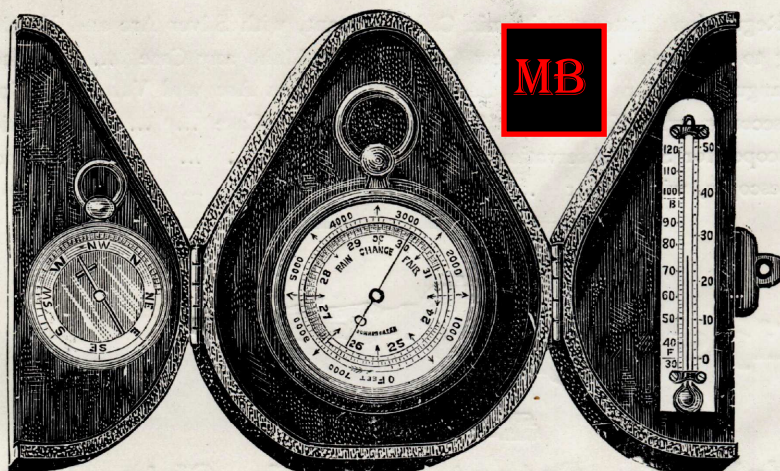
Pocket Aneroid Barometer, compensated movement, revolving altitude scale to 8,000 feet, in Nickel, Gilt, or Bronze Case and outer leather case.

Price from 35/-



Armstrong's Spécialité Pocket Aneroid, with Keyless Pump Action to revolving altitude scale giving readings from 1,000 below to 8,000 above sea level; in Nickel, Gilt, Bronze, Aluminum, or Silver Cases, with outer Pigskin Case.

Price from £3 15 0.



Travellers' Sets of Instruments, comprising Best Compensated Pocket Aneroid, Thermometer, and Compass, in Folding Morocco or Pigskin Cases.

Price from £4 4 0.

Travellers' Set, consisting of Compensated Pocket Aneroid having on the reverse side a Singer Pearl Dial Compass and Spiral Thermometer fitted into a Morocco Leather Case.

Price from £3 15 0.