

JAMES SWIFT,

MANUFACTURER OF

MICROSCOPES,

AND OTHER

Optical Instruments,

(Many Years with the late A. ROSS,)

15, KINGSLAND ROAD,

LONDON, N.E.,

NEAR SHOREDITCH CHURCH.

London :

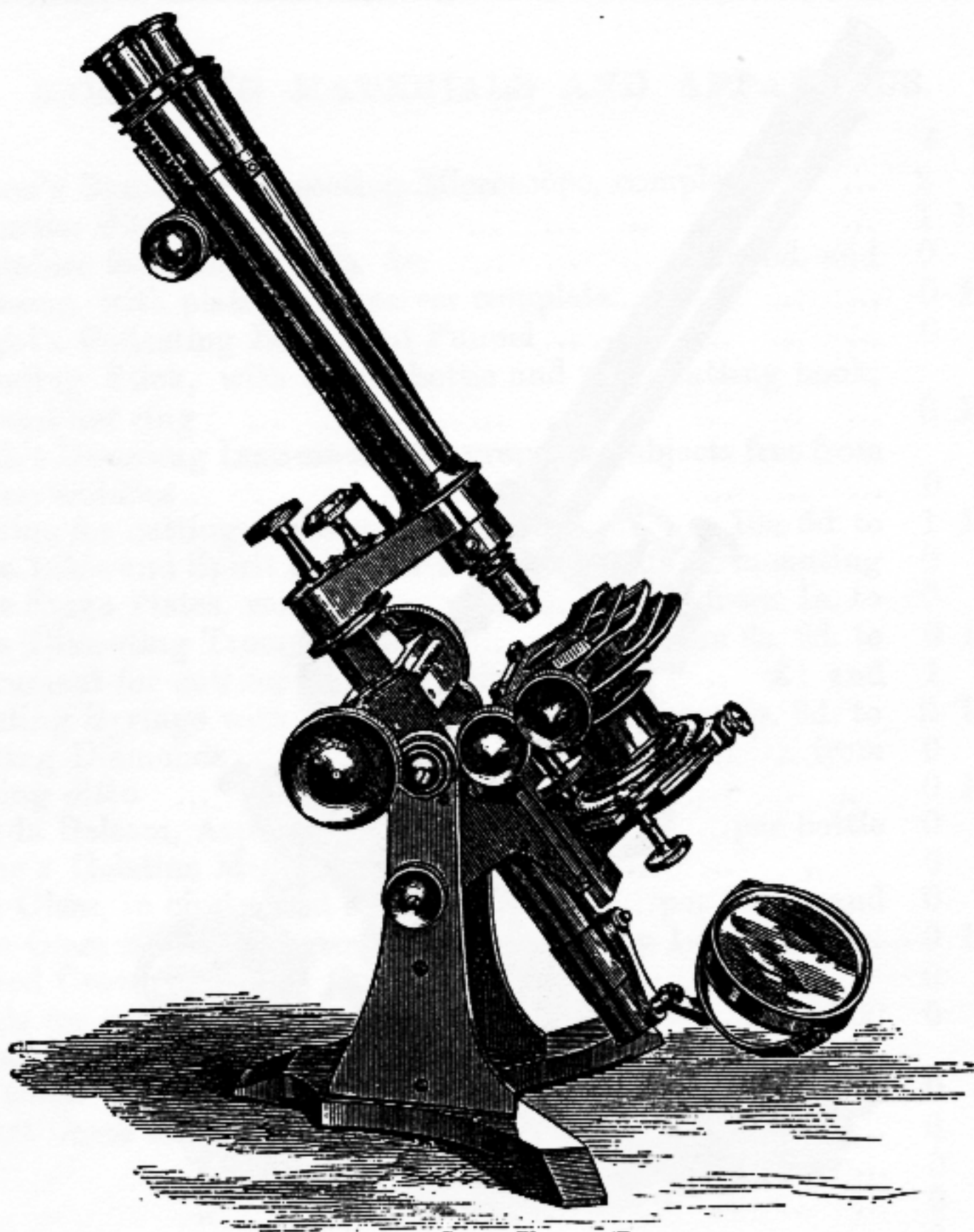
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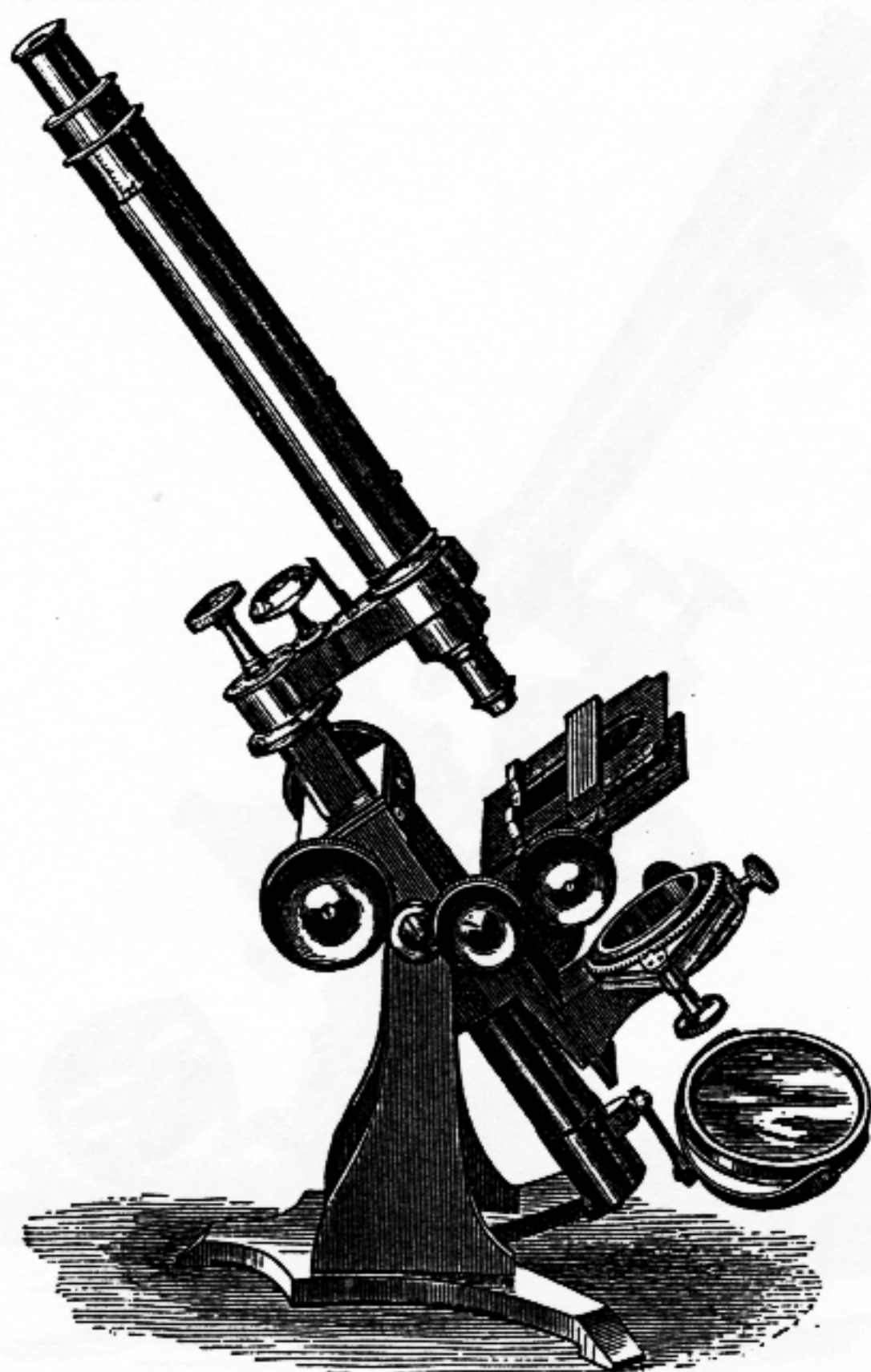


BEST COMPOUND MICROSCOPES.—No. 1 A.

Large Microscope Stand, with sufficient range of bar motion to work with the 4-in. objective, goniometer stage, divided to 360 degrees, on a silvered ring, having 1-in. of motion in rectangular directions, improved top plate, and object clamp. (J. S. has given great attention to the construction of this stage, that the thickness generally so objectionable with the compound stage is reduced to a minimum.) The fine adjustment is of the best construction, and provided with divided milled head, for correcting objective to thickness of covering-glass of object. The sub-stage has rectangular adjustments, and rotary motion divided to 360 degrees, and so adapted that the illuminating apparatus can be most accurately centred. This instrument has plane and concave mirrors, mounted on a double-jointed arm for oblique illumination. Swift's eccentric clamp for fixing the instrument at any inclination, diaphragm, and 2 Hugenian eye-pieces A and B.

Price £25.

Wenham's Binocular arrangement, adapted to the above stand, with 2-in. rack and pinion motions to draw tubes, and 2 extra eye-pieces A and B £5 15s.



No. 1 B.

Large Microscope Stand, with ordinary compound stage, having 1-in. of motion in rectangular directions, rotating plate and object holder, best lever fine adjustment (similar to the preceding), sub-stage with rotating wheel divided to 360 degrees, and complete adjustments for centring illuminating apparatus, plane and concave mirrors mounted on jointed arm for oblique illumination, diaphragm, and 2 eye-pieces A and B.—**Price £20.**

Wenham's Binocular arrangement (similar to the preceding), with 1 extra eye-piece £5 5s.

No. 2.

A similar stand to the preceding, but of smaller size, with $\frac{3}{4}$ -in. motions to stage, rotating plate, top stage and object clamp, best lever fine adjustment, and complete sub-stage, jointed arm to mirrors, diaphragm, and 2 eye-pieces A and B.—**Price £15 15s.**

Wenham's Binocular arrangement adapted to the above, with $1\frac{1}{2}$ -in. rack and pinion motion to draw tubes, and 1 extra eye-piece ... £4 4s.

No. 2 B.

The above, without sub-stage, Binocular,—**Price £16 4s.**

No. 3.

Similar in construction to the preceding, but of smaller size, with $\frac{1}{2}$ -in. motions to stage, diaphragm, and sliding plate, with fitting for apparatus, best lever fine adjustment, Wenham's Binocular arrangement, jointed arm to mirrors, and pair of eye-pieces A or B.

Price £12 15s.

The above, without Binocular arrangement £9 10 0

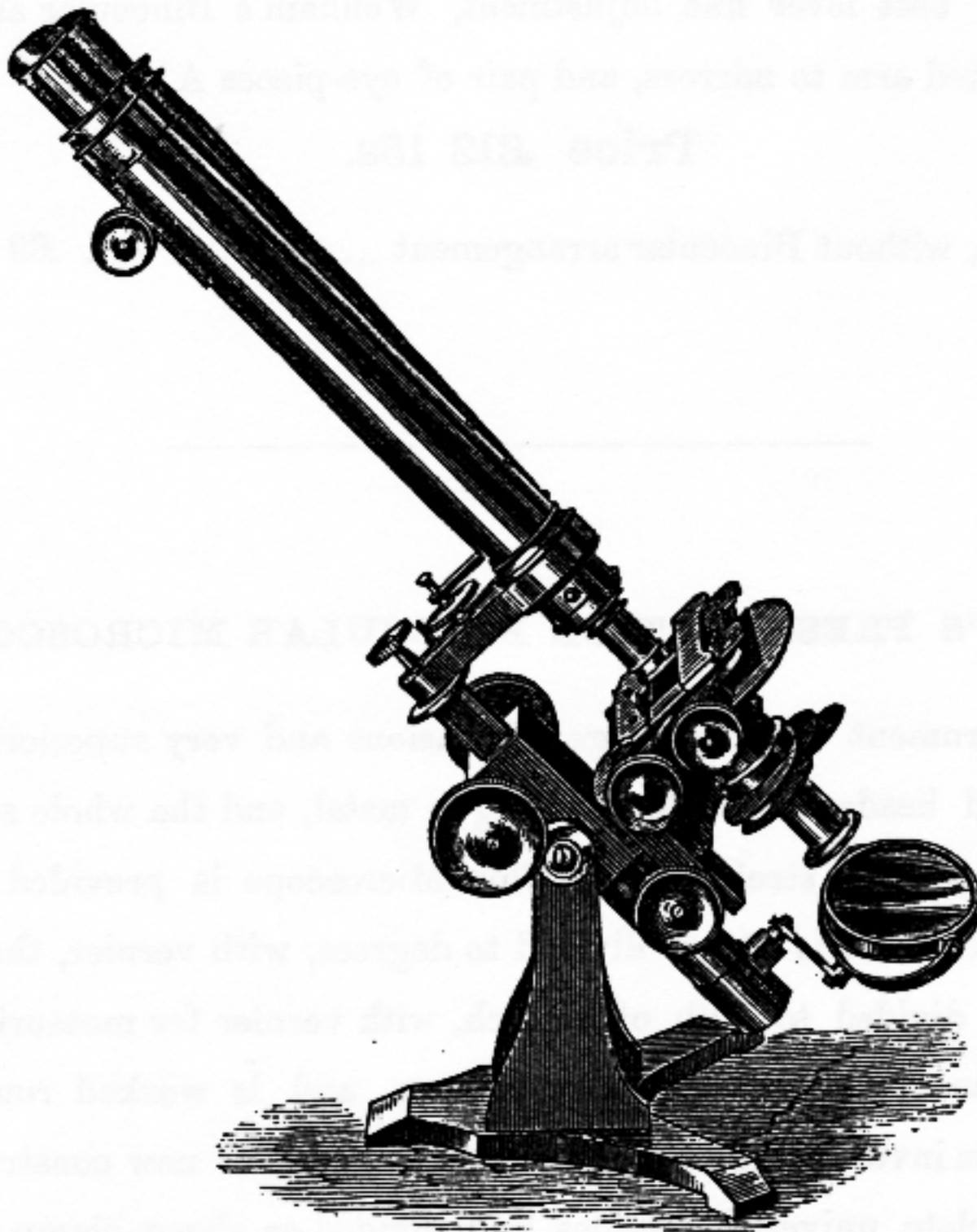
SWIFT'S PRESENTATION BINOCULAR MICROSCOPE.

An instrument of extra large dimensions and very superior finish. The milled heads are made of rich gun metal, and the whole stand is mounted with blue steel screws. This Microscope is provided with a large thin concentric stage, divided to degrees, with vernier, the stage plates are divided to 50th of an inch, with vernier for measuring the natural size of object under examination, and is worked round by means of an inverted crown rack; the sub-stage is of new construction, with complete universal motions and divided as above, clamp to axis of stand, for fixing the instrument at any inclination, best lever fine adjustment, double jointed arm to mirror with clamp milled head. The bodies are of large diameter, and fitted with elliptic silver inscription plate, diaphragm, stage and bottle forceps, pliers, extra large condenser on stand, with 3-in. condensing lens, polarising apparatus with extra large prisms, and complete set of eye-pieces, viz., two A, two B, one C, and one D, complete.

Price £50.

SECOND SERIES.

J. S. begs to call particular attention to this series of Microscopes, and to state, that, notwithstanding the smaller cost, they are in every respect equal to the first series for quality and workmanship, the simplicity of the mechanism, and advantageous use of machinery in the construction, enabling him to supply them at a cost which for first-class work will be found unequalled.



SWIFT'S £15 15s. BINOCULAR.

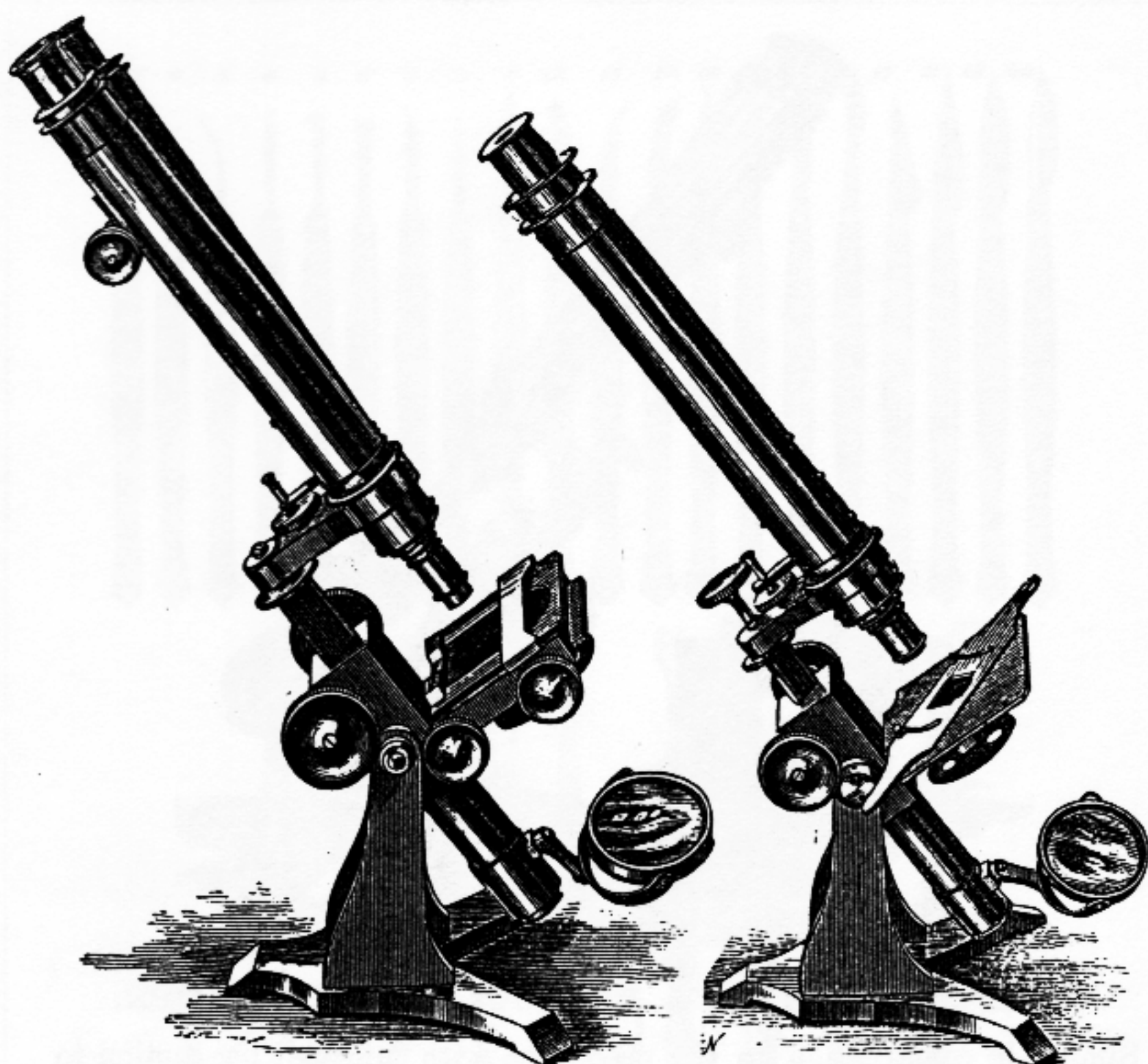
First-class Binocular Stand, with goniometer stage divided to 360 degrees, on a silvered ring, $\frac{3}{4}$ -in. rack and screw motions to stage, improved object plate and clamp, lever fine adjustment, 2-in. rack and pinion motion to draw tubes, simple sub-stage with vertical motion, jointed arm to mirrors, and 1 pair of eye-pieces A or B.

Price £15 15s.

When fitted with Swift's Popular Condenser, and his adaptation of the analysing prism (as shown in the above woodcut), the above Microscope is the most complete and useful instrument extant.

Swift's adaptation of analysing prism to the above stand (see note), £1 1s.

Swift's Adaptation of the Analysing Prism to the Binocular Microscope.—The advantages of this adaptation, are effectual illumination in both bodies, and (the analyser being placed above the binocular prism) the transmission of a greater amount of light, and less distortion consequent upon the lessening of the distance between the objective and binocular prism. (For description of Popular Condenser see page 12.)



SWIFT'S BINOCULAR MICROSCOPE,

As made for the Royal Microscopical Society of London. The stand of this instrument is of first-class construction, with sufficient bar motion to work the 4-in. objective; best mechanical stage with $\frac{3}{4}$ -in. motions in rectangular directions, rotating plate and object holder, lever fine adjustment, Wenham's Binocular arrangement with $1\frac{1}{4}$ -in. rack and pinion motions to draw tubes, jointed arm to mirrors, and pair of eye-pieces A or B.

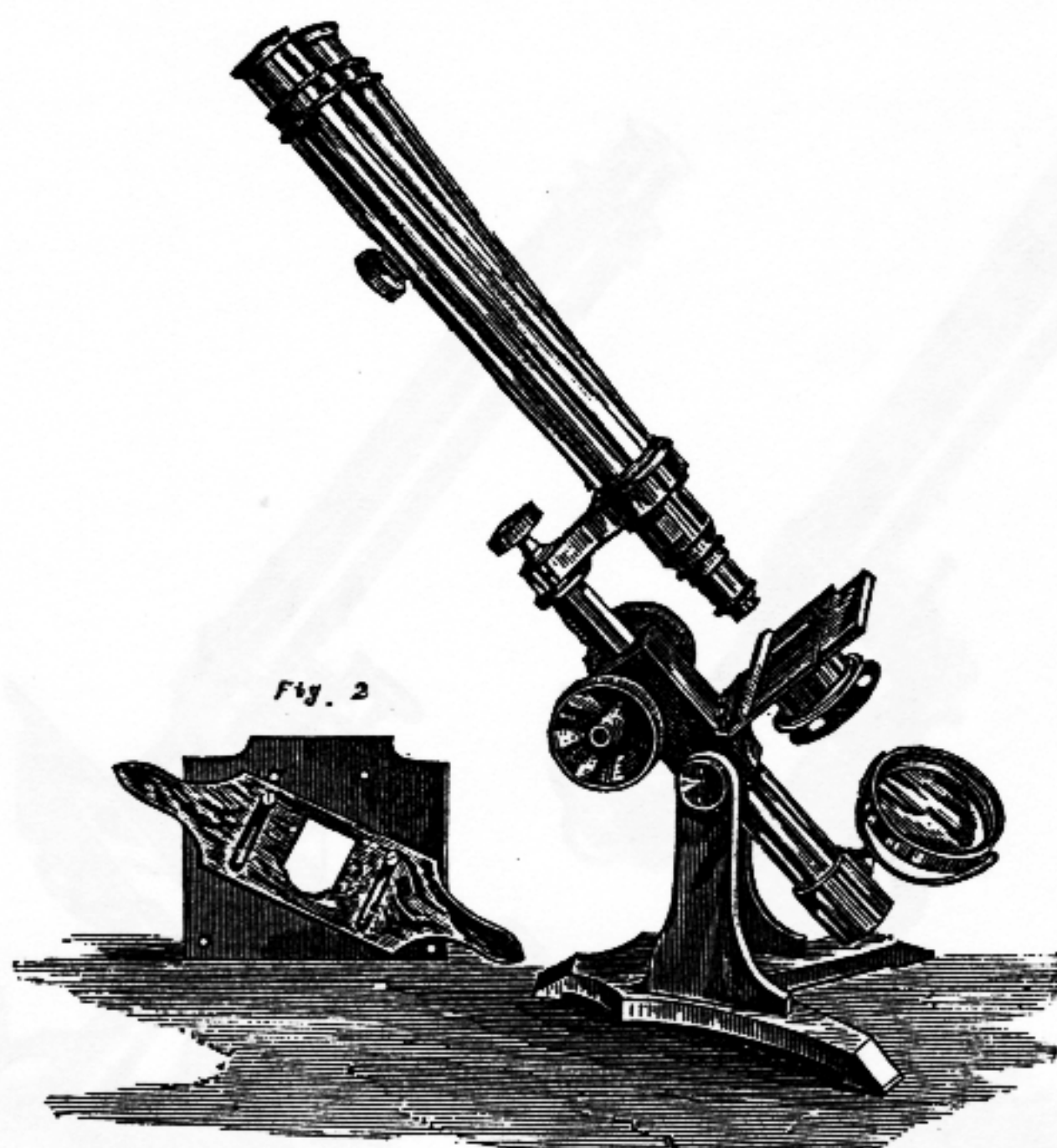
Price £10 10s.

The above instrument, without Wenham's Binocular arrangement, with mirrors and 2 eye-pieces, £8 8s.

Wenham's Binocular arrangement can be adapted to this stand on payment of the additional £2 2s.

FIVE-GUINEA MONOCULAR.

A large stand of best construction, sufficient bar motion to work the 4-in. objective, best lever fine adjustment, sliding or spring stage, plane and concave mirrors on jointed arm, and 1 eye-piece A or B.



SWIFT'S STUDENT'S BINOCULAR MICROSCOPE,

Similar in construction to the preceding, with sufficient bar motion to work the 4-in. objective, fine adjustment for high powers, Swift's lifter motion to draw tubes for adjusting to width of eyes, sliding stage, mirrors, and pair of eye-pieces A or B. If preferred, the spring stage (fig. 2) can be adapted; extra, 5s.

Price £5 5s.

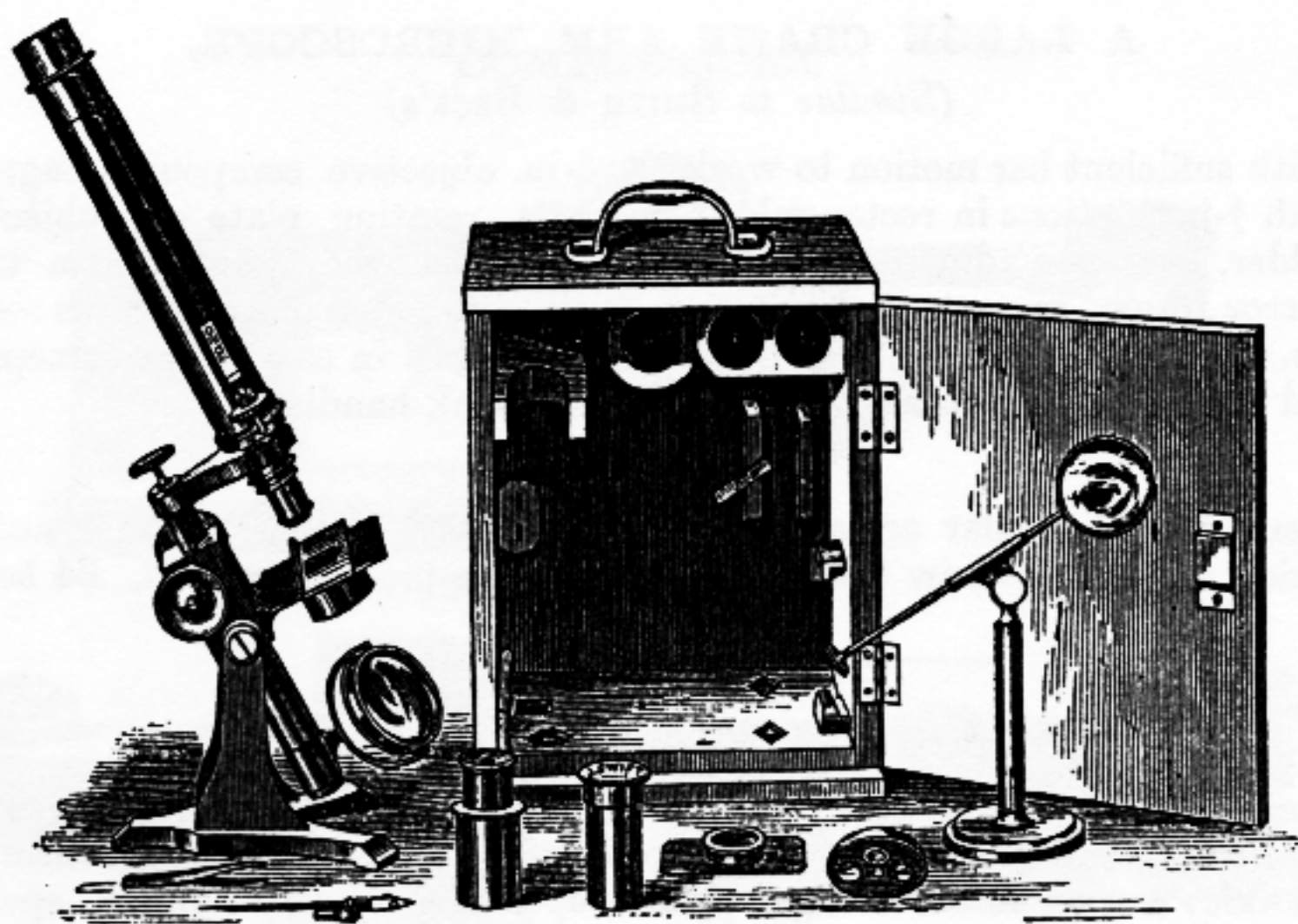
This instrument forms the basis of a compound stand. Swift's lever, or the ordinary compound stage, can at any time be adapted to this stand; it is also provided with tube fitting to stage to receive all accessory apparatus.

The following apparatus is suitable for this instrument:—

	£	s.	d.
Polarizing apparatus	1	5	0
Parabola	0	16	0
Spot lens	0	7	6
Stage forceps	0	4	6
Live cage	0	4	6
Double nose-piece	0	12	6
Stand condenser	0	12	6
Wenham's white cloud illuminator...	0	12	6
Frog plate	0	5	0
Mahogany cabinet, with packings for all the above apparatus	1	1	0

The stand, and all the above apparatus, if taken in one order,

Price £11.



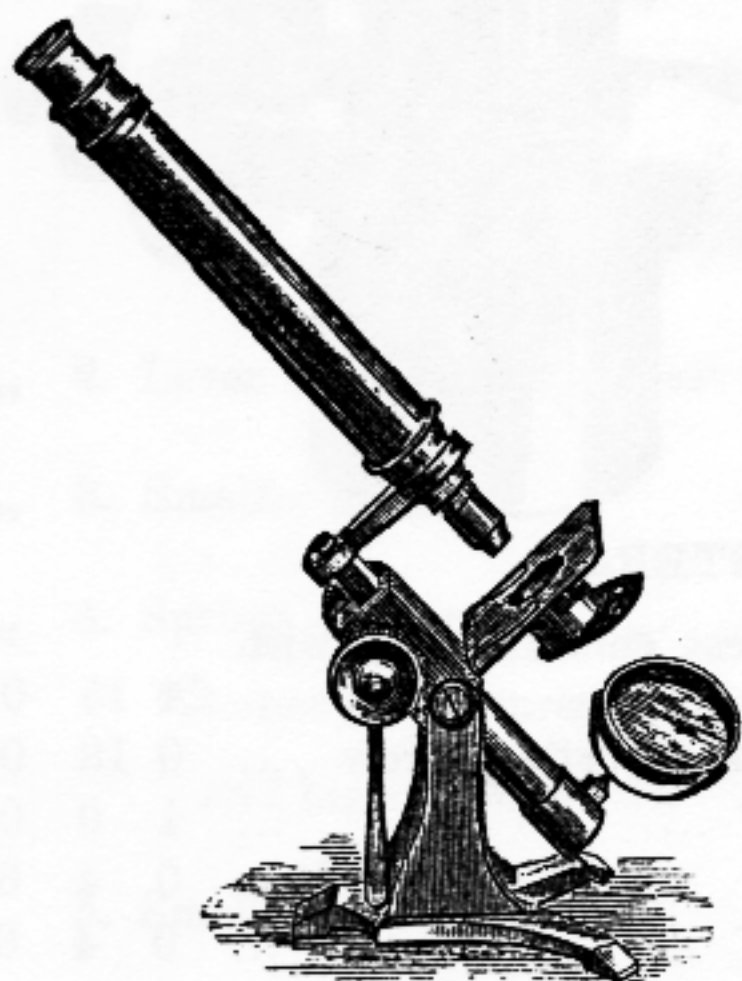
SWIFT'S Complete STUDENT'S MICROSCOPE,—Monocular.

This stand has rack motion for coarse adjustment, lever, fine adjustment for high powers, sliding stage, plane and concave mirrors, draw tube, one eye-piece A or B, and the following apparatus:—Stand condenser, live box, stage forceps, pliers, and English achromatic objective, forming 1-in., $\frac{1}{2}$ -in., and $\frac{1}{4}$ -in. Packed in polished mahogany case.

Price £5 5s.

Binocular arrangement to above, with extra eye-piece A or B	£2	10	0
Or with Swift's lifter motion to draw tubes	2	15	0
Polarizing apparatus to this instrument	1	0	0
Swift's lever stage to the above stand	1	10	0

This stage has $\frac{1}{4}$ -inch motions in rectangular directions by levers, and having no milled heads, it can be advantageously used with the largest Zoophyte trough or stage plate.



SWIFT'S EDUCATIONAL MICROSCOPE.

A good and useful Microscope for educational purposes. It has coarse adjustments for low and fine ditto for high powers, tube fitting to stage for apparatus, large diaphragm, one eye-piece A or B, and English achromatic objective, forming 1-in., $\frac{1}{2}$ -in., and $\frac{1}{4}$ -in., of 40 degrees angular aperture.

Price £3 3s.

A LARGE CRANE ARM MICROSCOPE,

(Similar to SMITH & BECK'S)

With sufficient bar motion to work the 4-in. objective compound stage, with $\frac{3}{4}$ -in. motions in rectangular directions, rotating plate and object holder, lever fine adjustment with divided milled head, jointed arm to mirror frame, two eye-pieces A and B, and the following apparatus:—No. 4 stand condenser, live box, dipping tubes in case, stage forceps and pliers: packed in mahogany case with sunk handle.

Price £16.

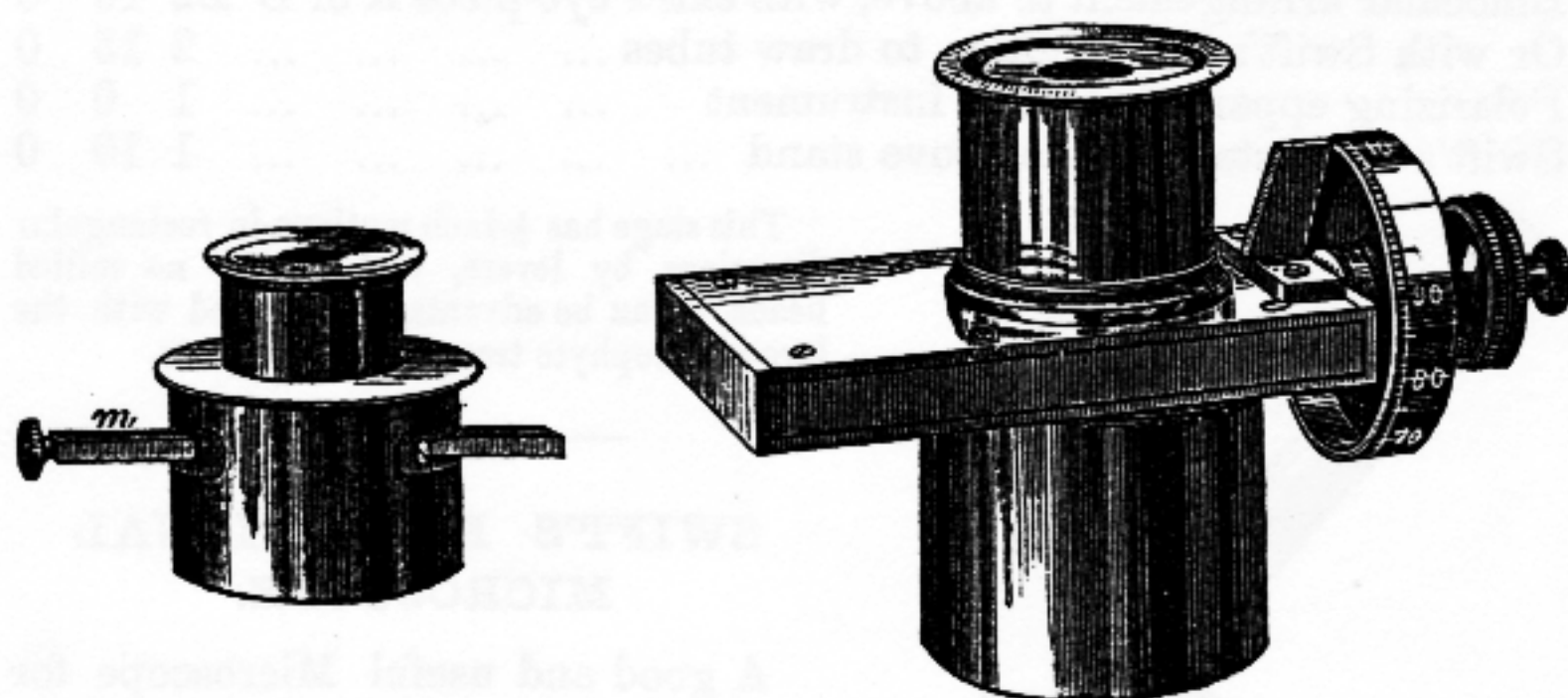
Wenham's Binocular arrangement to this stand, with $1\frac{1}{2}$ -in. rack and pinion motions to draw tubes, and 2 extra eye-pieces A and B, £4 5s.

MONOCULAR MICROSCOPE STAND,

Same size as the Five Guinea Binocular, with similar advantages; 1-in. of 18, and $\frac{1}{4}$ -in. of 75 degrees, objectives, No. 5 stand condenser, Blankley's reversible live cage, polariscope, stage forceps, pliers, spot lens, and 2 eye-pieces A and B: packed in mahogany case.

Price £10 10s.

In addition to the Microscopes enumerated in this Catalogue, J. S. would here beg to state, he makes upwards of 40 different descriptions, including the forms of all the best makers.



MICROMETERS.

100-thread Screw Micrometer, of best construction, with drum divided to 100	...	...	...	...	...	...	£4	15	0
Jackson's Eye-piece Micrometer, with adjusting screw	...	...	...	...	...	...	0	18	0
Eye-piece for ditto	...	...	...	...	...	...	1	0	0
Micrometer (Circle) to fit eye-piece	...	...	...	...	...	from	0	4	6
Do., on 3×1 glass slides	...	...	...	...	...	...	0	4	6

ACHROMATIC OBJECT GLASSES FOR MICROSCOPES.

J. S., having given his special attention to the construction of the first series of these objectives, he can specially recommend them for good definition and penetrating power; great care having also been given to the reduction of the secondary spectrum.

Those marked * have an adjustment for covered and uncovered objects.

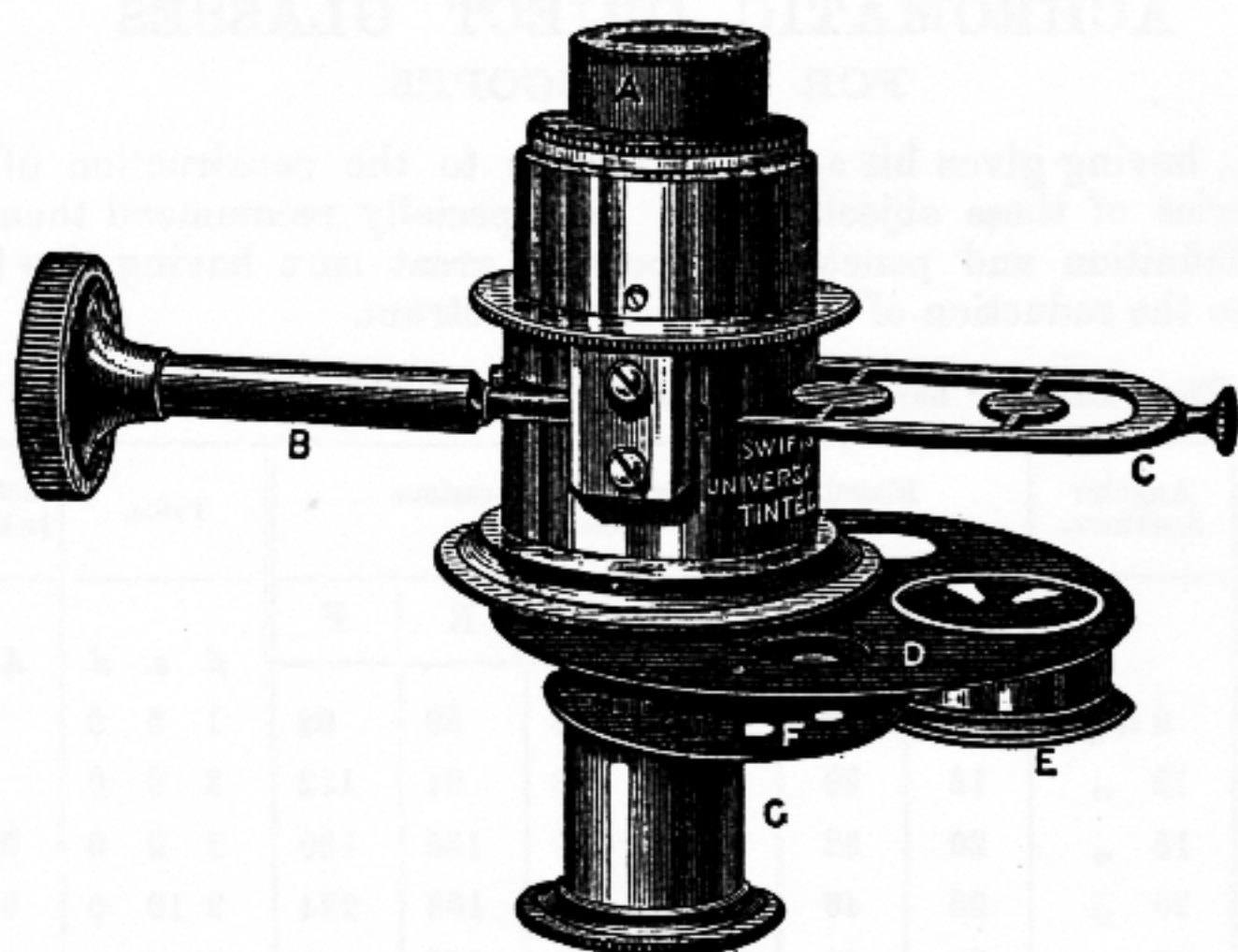
Object Glasses.	Angular Aperture.	Magnifying Powers with the various Eye-Pieces.						Price.			Lieberkuhns, In brass box.		
		A	B	C	D	E	F	£	s.	d.	£	s.	d.
4-inch	9 degs.	9	16	25	38	59	82	1	5	0			
3 "	12 "	13	20	35	56	84	112	2	0	0			
2 "	15 "	20	32	55	90	135	180	2	0	0	0	15	0
1½ "	20 "	25	40	70	112	168	224	2	10	0	0	15	0
1 "	25 "	37	60	105	170	255	340	2	0	0	0	10	0
1 "	22 "	37	60	105	170	255	340	1	10	0	0	10	0
⅔ "	52 "	60	100	145	270	405	540	3	0	0	0	10	0
⅔ "	35 "	60	100	145	270	405	540	2	10	0	0	10	0
½ * "	90 "	95	153	265	420	630	840	4	4	0	0	10	0
½ "	55 "	95	153	265	420	630	840	3	0	0	for Binocular.		
⅔ * "	110 "	140	220	370	650	975	1300	5	5	0			
¼ * "	120 "	195	310	540	850	1275	1700	4	15	0			
¼ "	100 "	195	310	540	850	1275	1700	3	0	0			
⅕ * "	135 "	225	400	612	860	1040	1460	5	5	0			
⅙ * "	140 "	320	510	700	910	1360	1820	5	15	0			
⅛ * "	150 "	420	670	900	1200	1800	2400	7	0	0			

SECOND SERIES.

3-inch	10 degs.	..	..	..	..	..	..	..	..	1	5	0	
2 "	13 "	..	..	..	..	..	..	..	..	1	5	0	
1 "	18 "	..	..	..	..	..	..	..	..	1	5	0	
½ "	40 "	for Binocular								2	2	0	
¼ "	85 "	..	..	..	..	..	..	..	..	2	10	0	
¼ "	75 "	..	..	..	..	..	..	..	..	2	5	0	
¼ "	60 "	..	..	..	..	..	..	..	..	1	15	0	

THIRD SERIES.—Separating Glasses.

Forming													
4 & 2-inch	.. ..	..	..	..	..	..	..	..	..	1	10	0	
3 & 1½ "	.. ..	..	..	..	..	..	..	..	..	1	10	0	
2 & 1 "	.. ..	..	..	..	..	..	..	..	..	1	10	0	
¼ "	40 degs.	forming three powers								1	1	0	



SWIFT'S POPULAR ACHROMATIC AND TINTED CONDENSER.

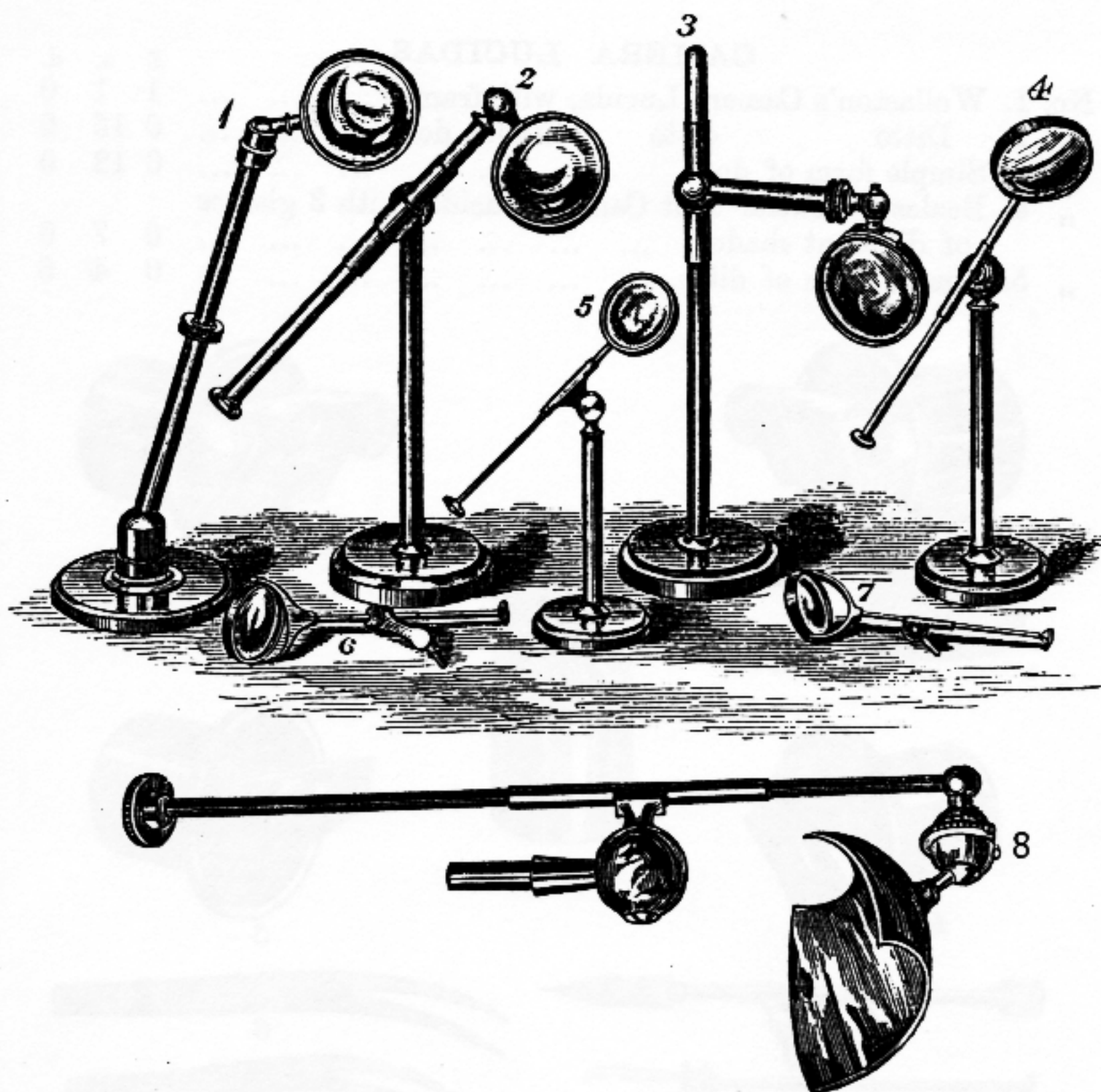
This Condenser is constructed to supply a perfect substitute (at a moderate price) for a large portion of the many separate pieces of illuminating apparatus (also a sub-stage) so essential to the Compound Microscope; and as a combination of accessories, it is applicable to all microscopes, having sufficient depth beneath the stage. It comprises Achromatic Condenser of 90 degrees angular aperture, (this is suitable for all objectives from the 2-in. to one-fifth), tinted ditto for correcting the yellow rays of artificial light, Rack and Pinion Motion for focussing, a most effective Spot Lens, Parabola, large Diaphragm, carrying rotating cap,—into this cap are fitted three disks for test stops,—small Diaphragm of Apertures, Polarizing Prism, Selenite Diaphragm with two Selenite Films and Clear Aperture, and Oblique Light Shutter for illumination with low powers.

For further particulars, see "Transactions of Royal Microscopical Society," New Series, July, 1868, p. 110, or Circular supplied by Mr. Swift.

Price £4. With Parabola, £4 12s.

An extra Combination of 135 degrees Angular Aperture can be adapted for use with powers from 1-in. upwards, price £1 10s.

Swift's Achromatic Condenser, with diaphragm for dark ground and oblique illumination, £2 5s.



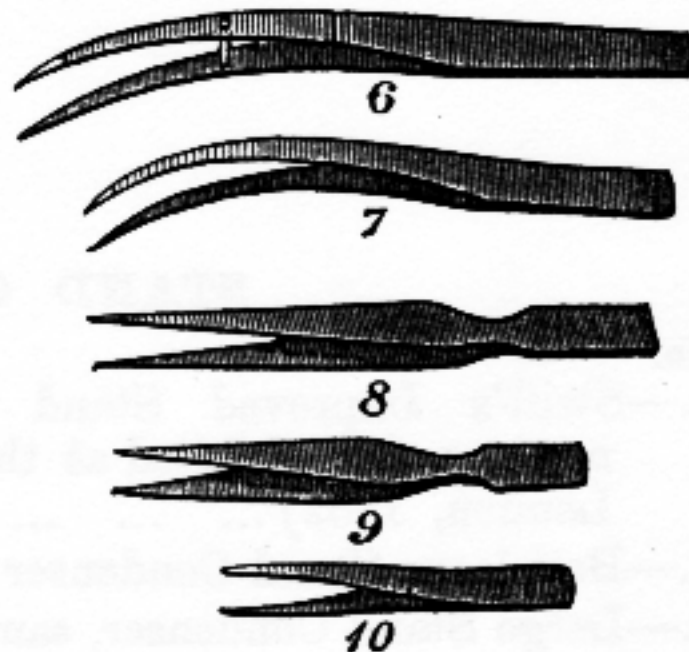
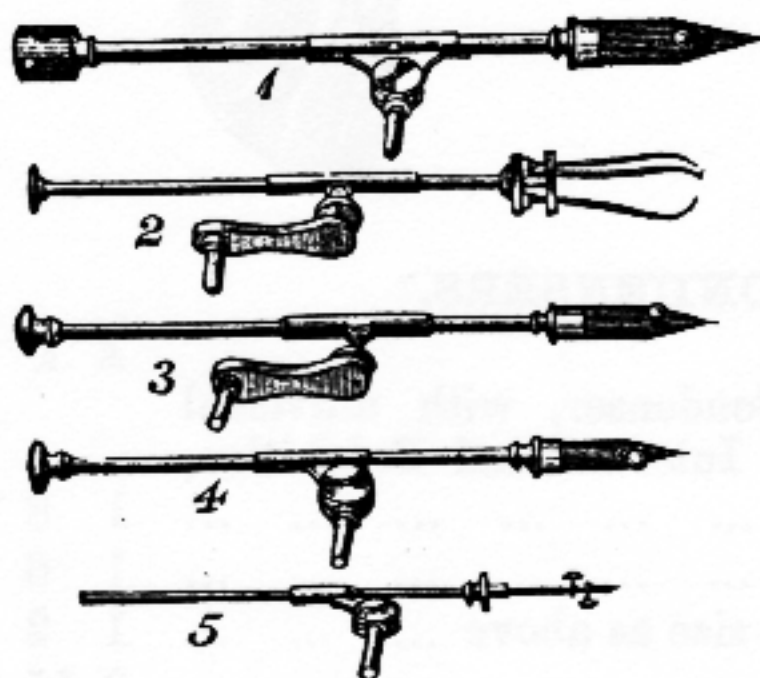
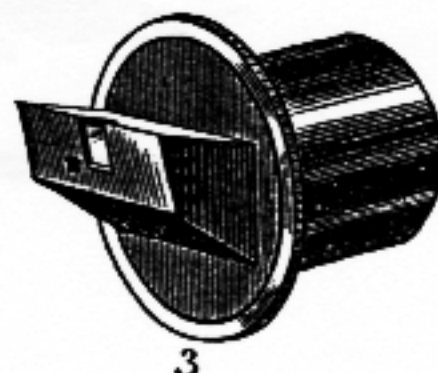
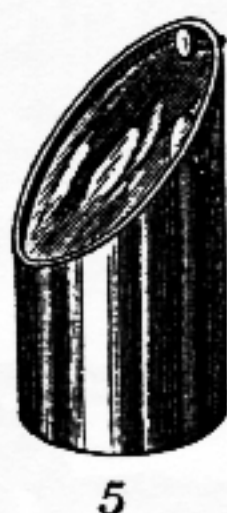
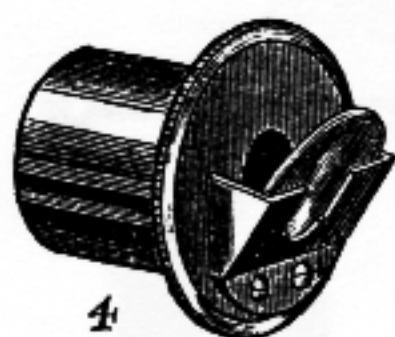
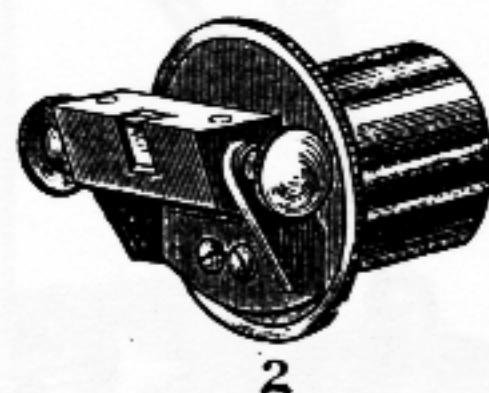
STAND CONDENSERS.

No.	£	s.	d.
1.—Swift's Improved Stand Condenser, with universal motions, (as exhibited at the International Exhibition, London, 1862)	1	8	0
2.—Best large Stand Condenser	1	6	0
3.—Large Stand Condenser, same size as above	1	2	0
4.—Medium size ditto	0	15	0
5.—Small ditto	0	10	0
6.—Swift's Improved Stage Condenser, with complete universal motions	0	15	0
7.—Stage Condenser	0	12	0
<i>Speciality.</i> —An extra large and improved Condenser, similar to No. 2, with 3-in. condensing lens			
	1	15	0
8.—Parabolic Reflector (on stem), in case	1	1	0

The advantage of this adaptation of the Parabolic Reflector is readily understood, as the objective in use can be removed, and another substituted, without removing or altering the adjustment of reflector; it is also applicable to all powers from the 4-in. upwards.

CAMERA LUCIDAS.

							£	s.	d.
No. 1.	Wollaston's Camera Lucida, with frames	...	...	...	...	...	1	1	0
" 2.	Ditto ditto without do.	...	...	...	...	...	0	16	0
" 3.	Simple form of do. do.	...	...	...	...	...	0	12	0
" 4.	Beales's Neutral Tint Camera Lucida, with 3 glasses	...	...	...	...	...	0	7	6
"	of different shades	...	...	...	...	...	0	4	6
" 5.	Simple form of ditto,	...	...	...	...	...	0	4	6



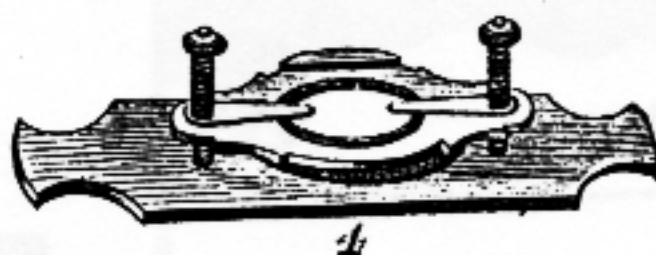
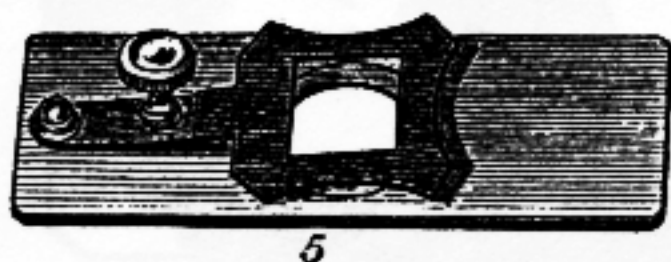
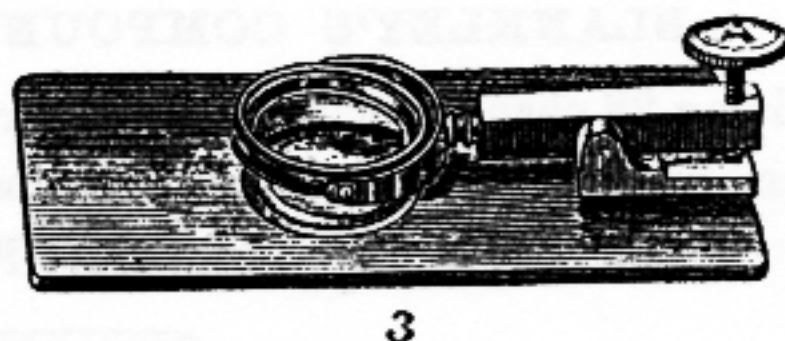
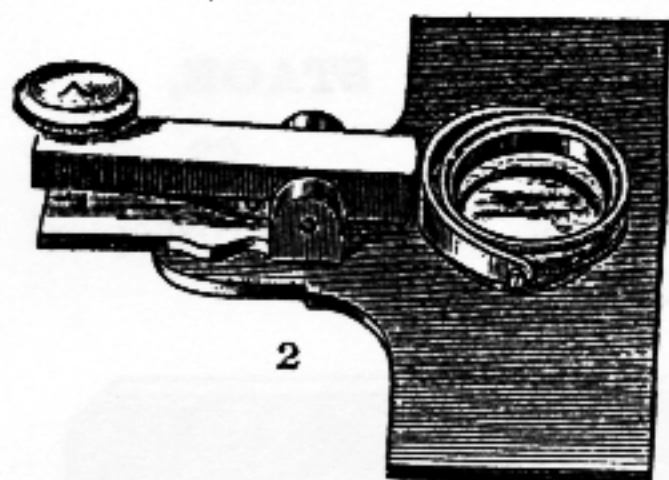
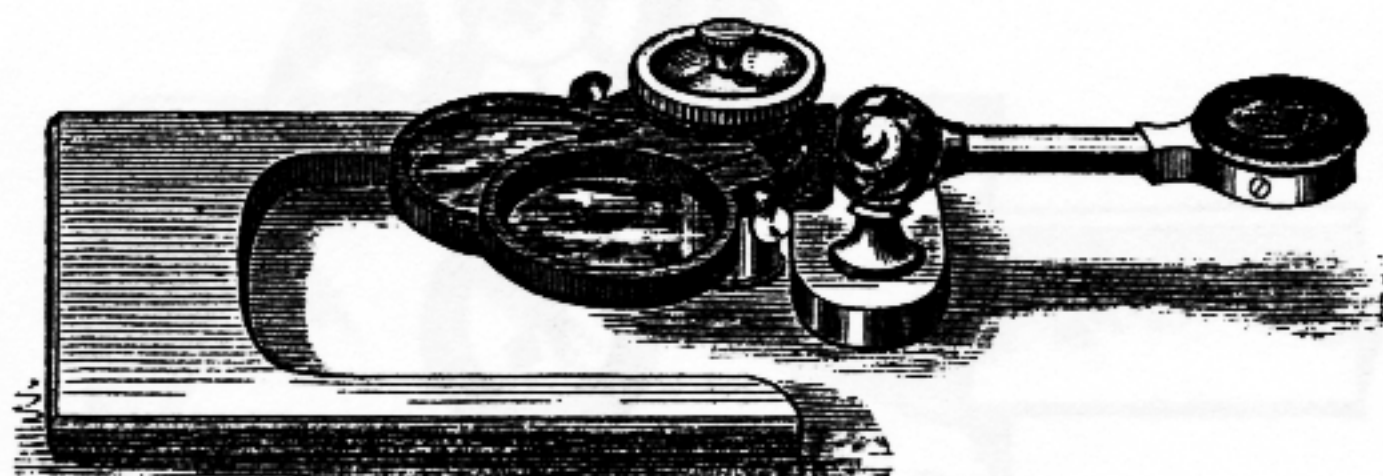
STAGE FORCEPS.

							£	s.	d.
No. 1.	Large size—Best Stage Forceps,	...	...	...	...	...	0	7	6
" 2.	Mineral Forceps	...	...	...	...	...	0	14	0
" 3.	Forceps with arm and universal joint	...	...	...	...	...	0	10	0
" 4.	Second quality, large Stage Forceps	...	...	...	...	...	0	4	6
" 5.	Ditto small ditto	...	...	...	...	...	0	3	0

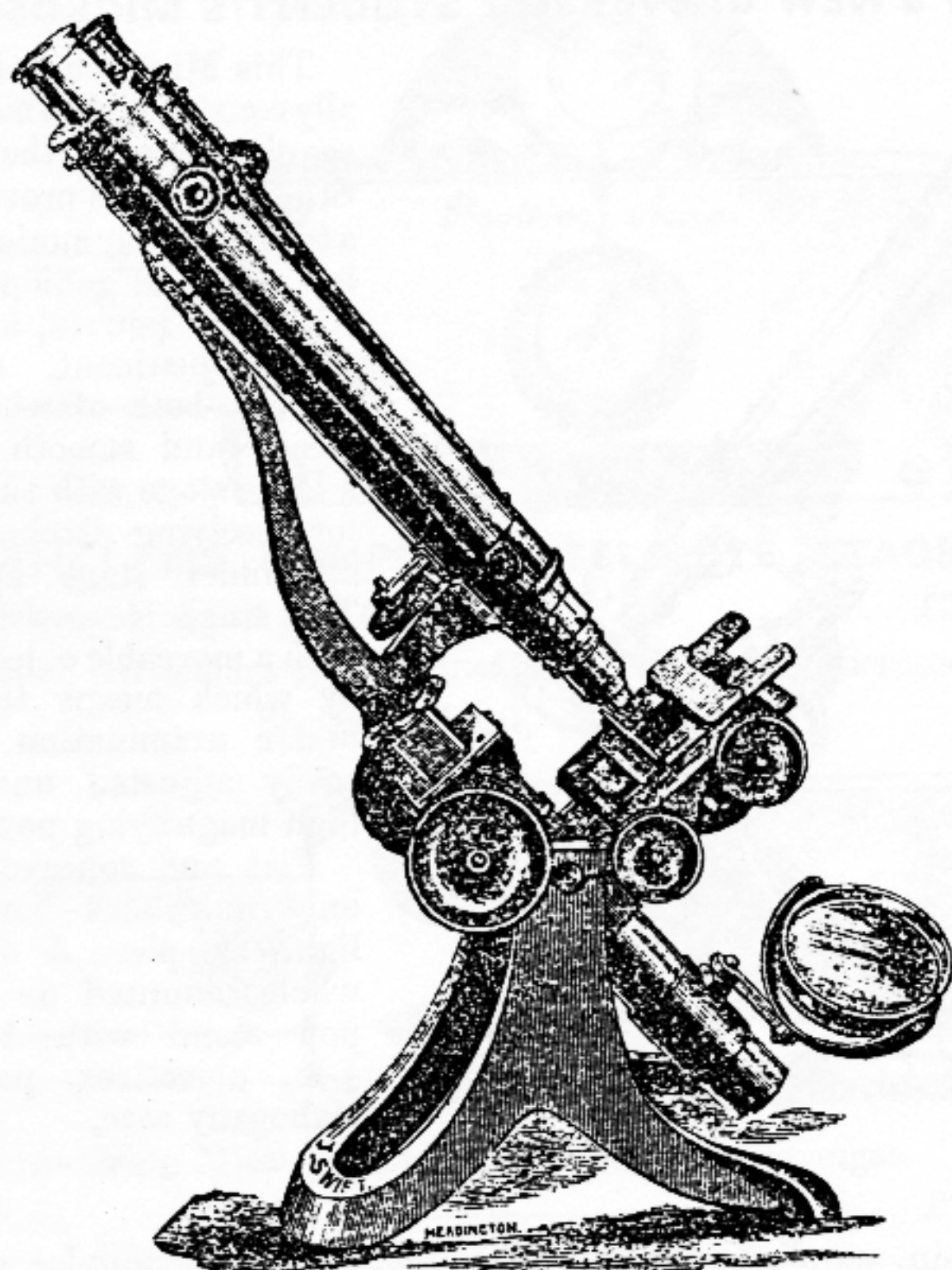
PLIERS.

							£	s.	d.
No. 6.	Large best Bottle Pliers	...	...	...	...	...	0	5	0
" 7.	Second size ditto	...	...	...	...	...	0	4	0
" 8.	Large best Stage Pliers	...	...	...	...	...	0	3	0
" 9.	Second size ditto	...	...	...	...	...	0	2	0
" 10.	Common ditto	...	...	...	...	...	0	1	0

COMPRESSORS.



						£	s.	d.
No. 1.	Piper's Reversible Compressor, for high and low powers, and rotating disk	...	...	...	...	1	1	0
For full description see "Transactions of the Royal Microscopical Society," (part 31, July, 1868) or Circular published by J. SWIFT.								
„ 2.	Lever Compressor, of best construction	...	...	...	...	1	2	0
„ 3.	Smaller ditto	ditto	...	...	...	0	18	6
„ 4.	Spring Compressor	...	...	...	...	0	14	6
Wenham's Compressor, for use with the parabola and high powers								
		...	...	...	...	0	7	6
„ 5.	Small Compressor	...	...	...	...	0	10	0



CAPTAIN PERRY'S NEW FORM OF ARM OF MICROSCOPE,

Adapted to Swift's Tripod Microscope Stand, giving additional support to the upper part of the bodies of the instrument.

This Microscope has ordinary mechanical compound stage with $\frac{3}{4}$ -in. of motion in rectangular directions, revolving object plate and holder, flat and concave mirrors mounted on crank arm, diaphragm of apertures and two eye-pieces A and B,

Price £13.

Or, with binocular, as shown in wood cut,

Price £18.

This Microscope has fixed to it an improved form of Swift's method of adapting the analysing prism to the body of the Microscope, whereby rotation is given to the prism by the small milled head as shown in wood cut on the optical tube of the instrument, with large polarizing prism adapted to stage of Microscope. extra £3 10s.

The above Microscope, with substage and goniometer main stage, as in preceding Microscope (page 10), in place of ordinary compound stage,

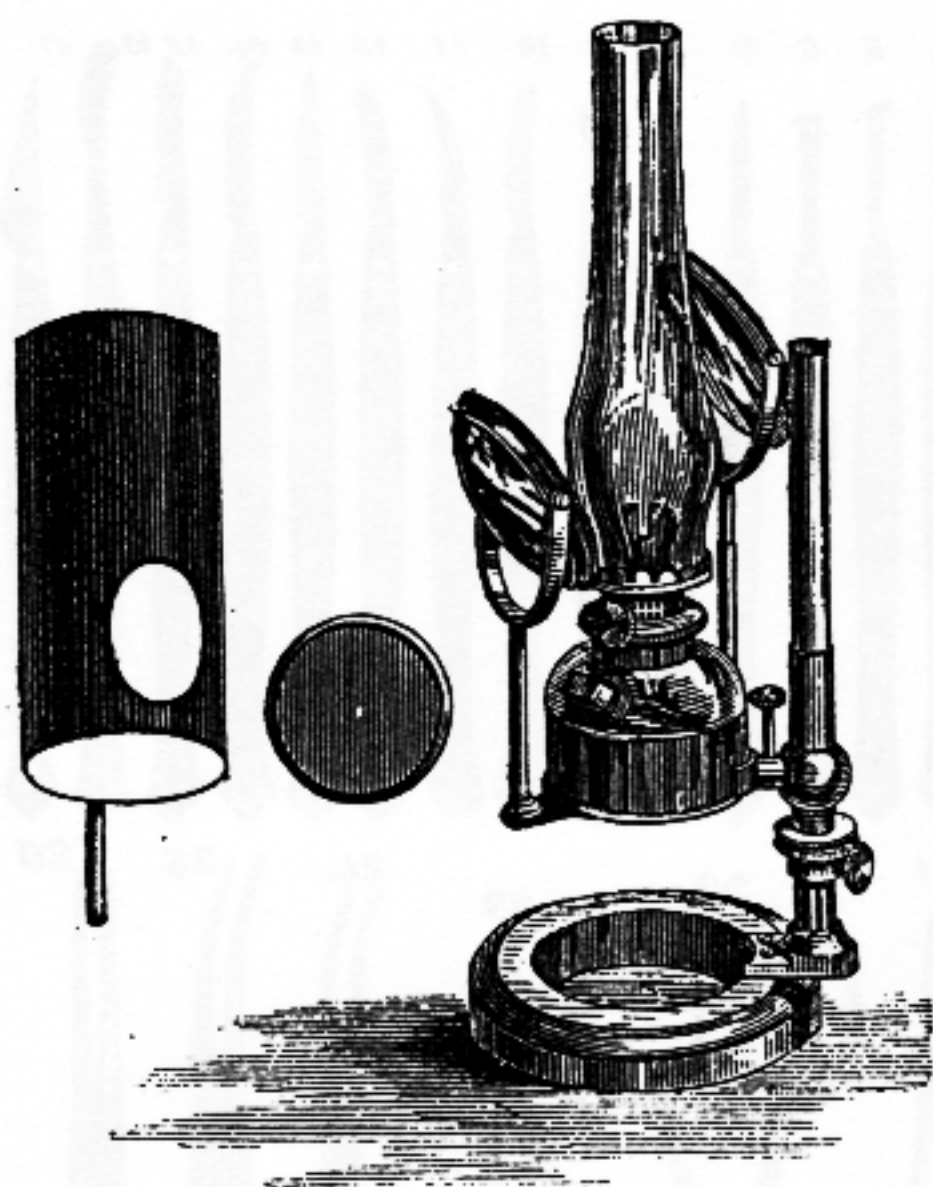
Extra £22 10s.



DISSECTING INSTRUMENTS.

FINE STEEL AND WHITE IVORY HANDLES.

No.	s.	d.	No.	s.	d.
1 each	1	0	23 and 24 each	2	3
2 and 3... .. „	1	2	25 and 26 „	2	0
4, 5, 6, 7, and 8 „	1	6	27 „	4	6
9 to 20 inclusive „	1	9	28 „	12	0
21 and 22 „	3	6	Case for ditto	2	0
No. 29	8s. 0d.				



SWIFT'S MICROSCOPIST'S LAMP.

J. S. has endeavoured to construct this Lamp that it may form a perfect auxiliary for illuminating power. The lamp will contain sufficient paraffin to burn from 3 to 4 hours, and is provided with glass stopper for the ready introduction of a further supply when necessary: this can be accomplished without removing the lamp from the holder. The base is a metal ring, to which is attached an arm to carry the rod or pillar, (by this arrangement, the size of the case is reduced 1-in.) ; the lamp holder will adjust on the rod from 8-in. to 16-in. in height, and has a clamp for fixing in the position required. The condensing lens and reflector are each mounted on adjusting rods attached to the lamp holder. This (the holder) has lateral motion, and is also constructed to rotate. The great advantage of this arrangement will be readily understood, as the rays of light can be thrown in the direction required by one adjustment, and without altering reflector or condensing lens. A circle of blue glass (of sufficient colour to neutralise the yellow rays of paraffin) mounted in brass ring, is supplied to screw in the cell of condensing lens, thus obviating the necessity of the blue glass chimney ; silvered glass reflector for condenser illumination, and porcelain lamp shade. This shade has the advantage of being a non-conductor of heat, and if by accident or long usage they become discoloured, can be readily cleaned by rubbing with a piece of glass paper.

Price in Case £1 15s. Without Case £1 10s.

Papier Maché Shade to ditto 3s. 0d.

APPARATUS FOR COMPOUND MICROSCOPES.

	£	s.	d.
Large sized A and B Eye-pieces, engraved each	0	12	0
" C " " "	0	14	0
" D " " "	0	15	0
" E " " "	0	17	0
" F " " "	0	19	0
Smaller sizes from 6s. to	0	9	6
Kelner's Orthoscopic Achromatic Eye-pieces, A and B ...	1	0	0
" C ...	1	1	0
" D ...	1	2	0
Slack's adjustable Diaphragm, adapted to A or B Eye-piece	0	14	0
Pointer adapted to A or B Eye-piece	0	5	0
Centering Glass	0	10	0
Erecting Glass	0	15	0
Harley Shades to Eye-pieces, extra ... ..each	0	1	6
Double Nose-pieces 10s., 12s. 6d., £1, £1 5s.,	1	10	0
Gillett's Achromatic Condenser, with diaphragm and spots	4	15	0
Webster's Achromatic Condenser, with diaphragm for dark ground and oblique illumination	2	2	0
Ditto do. do. with Swift's graduating diaphragm	3	3	0
Rack and Pinion Adjustment to above, if required	0	10	6
Swift's Graduating Diaphragm to Microscope	1	1	0
Kingsley's Condenser, with diaphragm	2	15	0
Wenham's White Cloud Illuminator for Binoculars, from 12/6 to 1	1	15	0
Reade's Hemispherical Condenser, with adjusting diaphragm and shutter	1	10	0
Spot Lens from 5s. to	0	15	0
Paraboloid, for dark ground illumination, with high powers from 12s. to	1	10	0
Amicis Prism, mounted on stand, from £1 14s. to	2	2	0
" " mounted to sub-stage, £1 10s. to	2	0	0

APPARATUS FOR COMPOUND MICROSCOPES.

(Continued.)

	£	s.	d.
Abraham's Achromatic Prism, with all adjustments, fitted to tail-piece of microscope from £2 5s. to	2	18	0
Rectangular Prism, mounted as above, from £1 2s. to	2	0	0
Nachet's Prism for oblique light, mounted to substage ...	1	1	0
Reade's Diatom Prism from 12s. 6d. to	1	10	0
Lister's Dark Wells (set of three) and Holder	0	10	6
Rainey's Light Modifier from 4s. to	0	6	0
Maltwood's Finder	0	6	0
Frog Plates from 5s. to	0	10	6
Sets of Dipping Tubes, in case from 1s. 6d. to	0	5	0
Glass Troughs from 4s. 6d. to	0	7	6
Morris's Universal Stage Plate 5s. and	0	7	6
Goniometer, for measuring the angles of crystals	3	0	0
Pair of double image Prisms, and Selenite Film, with fittings to Eye-piece, and Brass Plate with Holes	2	2	0
Polarizing Apparatus to Microscope from £1 1s. to	3	3	0
Selenite Films, various from 1s. 6d. to	0	7	6
„ „ in brass slides from 2s. 6d. to	0	10	0
Crystals cut to show the optic axis... .. from	0	5	0
Tourmalines mounted from 5s. to	10	0	0
Nachet's Concentric Stage from	1	1	0
Micro-Spectroscope, adapted to any Microscope, will show two spectra in the field of view at the same time... ..	5	5	0
Pocket Spectroscope, will show Fraunhofer's lines, and the bright lines of the metals, &c., price £1; with adjust- able slit	1	8	0
Ditto do. with Achromatic Lenses, &c.... ..	1	18	0
Adapting ditto to the Microscope, extra... ..	0	10	0

OPHTHALMASCOPIES OF EVERY DESCRIPTION.

MOUNTING MATERIALS AND APPARATUS.

	£	s.	d.
Lawson's Binocular Dissecting Microscope, complete	2	2	0
Monocular ditto	1	15	0
Turntables for making cells, &c. 6s. 6d. and	0	8	6
Air-pump, with plate and receiver complete	0	17	6
Wright's Collecting Bottle and Funnel	0	5	0
Collecting Stick, with screw bottle and ring, cutting hook, and net ring	0	12	6
Smith's Mounting Instrument, for preparing objects free from air bubbles... ..	0	8	6
Machine for cutting sections of wood, &c. 10s. 6d. to	1	15	0
Brass Table and Spirit Lamp for heating objects in mounting	0	6	0
Glass Stage Plates, various from 1s. to	0	3	6
Glass Dissecting Troughs, various... .. from 4s. 6d. to	0	10	6
Instrument for cutting thin glass circles £1 and	1	5	0
Injecting Syringe with stopcocks from 8s. 6d. to	0	10	6
Writing Diamonds from	0	5	6
Cutting ditto	0	12	6
Canada Balsam, Asphalt, Gold Size per bottle	0	1	0
Deane's Gelatine Medium, Glycerine, &c.	0	2	0
Thin Glass, in circles and squares per oz. 6s. and	0	4	0
Plate Glass Slips, with ground edges, 3-in. by 1-in., per gro.	0	10	0
Flatted Crown ditto	0	7	0
Labels for covering objects per 100	0	2	0
Glass Cells, square, round, oblong, and with solid bot- toms per doz. 2s. to	0	6	0
Object Cases to hold 3 dozen	0	1	4
" " 2 " 	0	1	0
" " 1 " 	0	0	8
" " $\frac{1}{2}$ " 	0	0	6

Every description of Object Cabinet to hold from 3 doz. to 1000 to order.

Any description of Mounting Apparatus made to order.

Microscope Objects of every description supplied.

HAND MAGNIFIERS, &c., FOR DISSECTING.

	£	s.	d.
Pocket Magnifier, with one lens from	0	1	0
" two ditto	0	2	6
" ditto	0	3	6
" one ditto (tortoiseshell mount) ...	0	3	6
" two ditto ditto	0	4	6
" three ditto	0	6	0
Pocket Magnifier, with diaphragms from 6s. to	1	1	0
Stanhope Lens	0	2	6
Coddington ditto from	0	5	0

ASTRONOMICAL TELESCOPES.

30-inch Astronomical Telescope, 2 $\frac{1}{4}$ -inch object glass, terrestrial and astronomical eye-pieces, pillar and claw stand, having vertical and horizontal movements, in mahogany case complete	9	9	0
3-feet ditto	13	13	0
3 $\frac{1}{2}$ -feet ditto	20	0	0

Larger Telescopes made to Order.

TELESCOPES.

WITH MAHOGANY BODIES, BRIGHT DRAWS, IN MOROCCO CASE.

1-foot	£1 10 0	30-inch	£3 3 0
20-inch	2 0 0	3-feet	5 15 0

Sun or Spray-shades, extra 4s. Leather bodies, extra 3s. 6d.

PORTABLE TELESCOPES, WITH WHALEBONE BODIES, BRIGHT DRAWS, IN MOROCCO CASE.

1-foot (6 draws)	£2 0 0	2-feet (7 draws)	£3 10 0
20-inch (7 draws)	2 15 0	3-feet (9 draws)	6 0 0

TOURISTS' OR DEER-STALKING TELESCOPES, WITH BRONZED TUBES, LEATHER BODY, AND CAP TO EACH END, STRAP, AND SUN OR SPRAY SHADE.

1-foot	£2 5 0	2-feet (with Pancreatic Eye-piece)	£3 10 0
20-inch	2 15 0	30-inch ditto ditto	5 5 0
The "Tourist" Telescope, three draws (bright) and Sling			0 10 6

TELESCOPE OBJECT GLASSES,

Warranted of First Quality, and including Brass Cell.

Clear Aperture.		Focus.		Price.
2 $\frac{1}{4}$ -in.		30-in.		£2
2 $\frac{3}{4}$ -in.		42-in.		£5
3 $\frac{1}{4}$ -in.		42-in.		£7
3 $\frac{3}{4}$ -in.		48-in.		£12
4-in.		60-in.		£15
4 $\frac{1}{2}$ -in.		66-in.		£20
5-in.		75-in.		£30
6-in.		102-in.		£50
7-in.		110-in.		£75
8-in.		120-in.		£100
9-in.		144-in. :		£150

ACHROMATIC OPERA, RACE & FIELD GLASSES.

Combining all the latest Improvements in Construction, with Perfect Definition.

Binocular Race, Marine, or Tourist Glasses, of best Construction, the Bodies covered in Leather, Bronzed or Enamelled Tubes and Bars, Sun or Spray Shades, in best Leather Cases, with Sling Straps.

No. 1	6 glasses	£4 7 6	.....	12 glasses	£5 15 0
No. 2	ditto	3 17 6	.....	ditto	5 5 0
No. 3	ditto	3 5 6	.....	ditto	4 7 6
No. 4	ditto	2 18 0	.....	ditto	3 17 6
No. 5	ditto	2 12 6	.....	ditto	3 10 0

New Best Triple-power Glass, combining Opera, Race, and Field, giving three powers, in case complete. A splendid Glass. £4 10s., £5 5s., and £6.

BINOCULAR OPERA GLASSES.

(Of the best Construction.)

BODIES COVERED WITH RUSSIA LEATHER, AND ENAMELLED BARS, IN BEST CRUSH CASES.

No. 1	6 glasses	£3 0 0	.....	12 glasses	£4 15 0
No. 2	ditto	2 10 0	.....	ditto	3 15 0
No. 3	ditto	2 2 0	.....	ditto	3 3 0
No. 4	ditto	1 15 0	.....	ditto	2 15 0
No. 5	ditto		.....	ditto	2 7 6

BINOCULAR OPERA GLASSES.

(Of the best Construction.)

IN ELEGANT IVORY BODIES, TREBLE-GILT TUBES AND BARS, IN BEST CRUSH CASES.

No. 1	6 glasses	£6 10 0	.....	12 glasses	£7 15 0
No. 2	ditto	5 10 0	.....	ditto	6 10 0
No. 3	ditto	4 10 0	.....	ditto	5 5 0
No. 4	ditto	3 12 6	.....	ditto	4 5 0
No. 5	ditto	2 15 0	.....	ditto	3 3 0
No. 6	ditto	2 5 0	.....	ditto	2 18 0

BINOCULAR OPERA GLASSES.

(Of the best Construction.)

THE BODIES COVERED WITH LEATHER, ENAMELLED TUBES AND BARS, IN CRUSH CASES.

No. 1	6 glasses	£2 17 6	.....	12 glasses	£4 10 0
No. 2	ditto	2 10 0	.....	ditto	3 10 0
No. 3	ditto	2 2 0	.....	ditto	3 0 0
No. 4	ditto	1 10 0	.....	ditto	2 10 0
No. 5	ditto	1 1 0	.....	ditto	2 2 0
No. 6	ditto	0 15 0	.....	ditto	

The "Tourist" Glass, having a range of Three Miles, and well adapted for the Theatre, or as a Field or Marine Glass, in sling case complete 1 1 0

BAROMETERS AND THERMOMETERS.

	£	s.	d.
Pediment Barometer in Rosewood or Walnut, exposed Tube, Ivory Scale, and Sliding Vernier	1	1	0
Handsomely Carved ditto	1	5	0
Ditto, with large Column of Mercury, Adjusting Rack Vernier, in Oak, Rosewood, or Mahogany	2	5	0
Extra large ditto, with double Rack Verniers	3	3	0
Ditto, in very handsome Carved Frames.....from	4	4	0
Wheel Barometers, in plain Rosewood, or Walnut Case	1	5	0
Improved Metallic Barometer, with Case and Stand complete.....	2	2	0
Ditto, with Thermometer.....	2	7	6
Pocket Aneroid Barometers	3	3	0
<i>(These Barometers are compensated for temperature.)</i>			
Sixes and other Self-registering Thermometers	0	12	6
Single Registering Thermometers	0	3	6
Plain Boxwood ditto	0	3	6
Bath or Brewers' ditto	0	4	6

HYDROMETERS, SACCHAROMETERS, &c.

SPECTACLES AND EYE-GLASSES.

Strong Steel Spectacles in Case	0	2	6
Superior ditto.....	0	3	6
Best ditto	0	5	6
Ditto, with Pebbles	0	15	0
Silver Spectacles	0	15	0
Double-jointed ditto (or Turnpin)	0	17	6
Best Pebbles in place of Glasses, extra	0	5	6
Gold Spectacles	2	15	0
Double-jointed ditto (or Turnpin).....	3	0	0
Best Pebbles in place of Glasses, extra	0	5	6
Double Eye-glass, Steel	0	6	6
Ditto Tortoiseshell	0	10	6
Ditto Buffalo	0	5	6
New Double Eye-glass (Spring Folders), the axis of lens being concentric with pupil, and more comfortable in use than those of ordinary construction, with steel frames and glasses	0	10	6
Tortoiseshell ditto ditto	0	14	0
Silver ditto ditto	0	15	0
Gold ditto ditto	1	10	0
Single Eye-glass	0	1	0
Ditto in tortoiseshell.....	0	2	6
Ditto in gold	0	10	6
Tortoiseshell and Silver Hand Frames	0	15	0
Gold ditto	3	3	0

DISSOLVING AND PHANTASMAGORIA LANTERNS AND SLIDES,
(PHOTOGRAPHS, &c.), ELECTRICAL AND MAGNETIC MACHINES,
DRAWING INSTRUMENTS OF EVERY DESCRIPTION.