

PART III.

(E)

1903

TEN GOLD

ALSO SEVERAL

SILVER & BRONZE

FIRST CLASS DIPLOMAS

MEDALS

& AWARDS

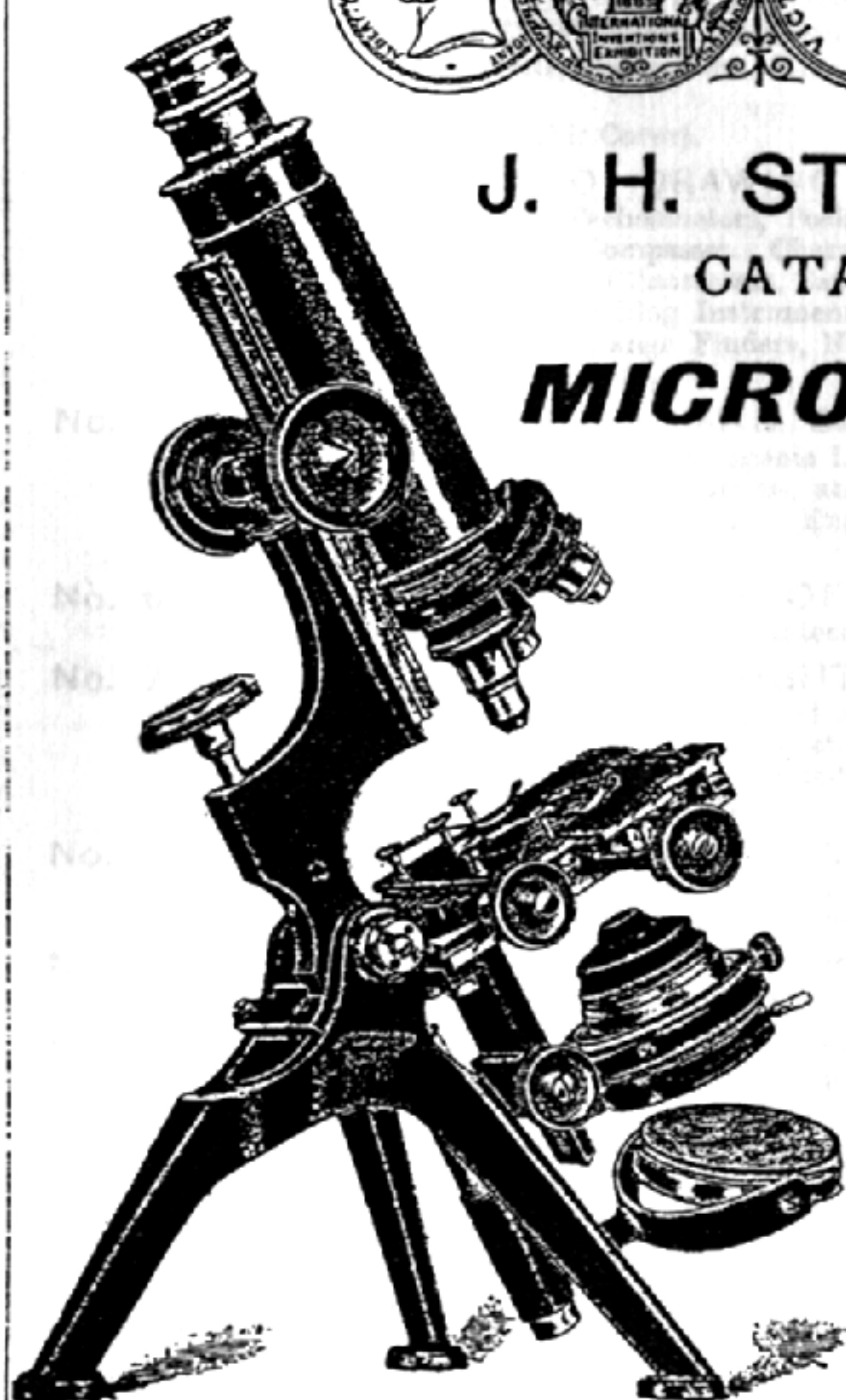


J. H. STEWARD'S CATALOGUE OF **MICROSCOPES**

AND
**APPARATUS,
DISSECTING
INSTRUMENTS,
OBJECTS, Etc.**

OPTICIAN
TO THE
**BRITISH AND FOREIGN
GOVERNMENTS**
AND THE
**NATIONAL RIFLE
ASSOCIATION**
BY APPOINTMENT.

ALSO TO THE
**UNIVERSITIES
AND
COLLEGES.**



LONDON.

406, STRAND; 457, WEST STRAND, W.C.; 7, GRACECHURCH-ST., E.C.

Telegraphic Address:
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7, Gracechurch-St.—AVENUE 920.

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BUSINESS TERMS.

All Instruments are listed at **NET PRICES FOR CASH.**

A Remittance should accompany order, or be forwarded on receipt of invoice before despatch of goods (except when customers have ledger accounts).

Cheques to be made payable to J. H. STEWARD, and crossed "London City and Midland Bank," or a Banker's Draft can be sent, which can be obtained at any bank, payable on demand in London.

Postal Orders or Money Orders to be payable at 369, Strand Post Office to J. H. STEWARD.

ORDERS FROM ABROAD.—To prevent error, customers abroad ordering instruments through an agent are respectfully requested to mention my name and address on the indent, and, if possible, advise me direct, and I will give personal attention to their requirements. If a copy of the portion of indent referring to my instruments can be sent to me, it will facilitate execution of order.

Special Orders to be paid for as follows—Half at time of ordering, and balance on completion.

As every care is taken in packing, J. H. S. cannot hold himself responsible for breakage in transit.

Packing Cases charged for at Cost price, and are not returnable.

Any instrument not specified in this Catalogue can be constructed or obtained for clients, and estimates and descriptions furnished when required.

Microscopes and Scientific Apparatus generally **REPAIRED** by skilled workmen.

Every instrument sold by J. H. STEWARD is **TESTED** and guaranteed.

J. H. STEWARD'S Only Addresses are as follows :—

406, STRAND, on the north side, *between* the Adelphi and Vaudeville Theatres.

457, WEST STRAND, on the north side, near Trafalgar Square, opposite the Grand Hotel, and next door to Charing Cross Post Office (**not** the Telegraph Office).

~~**7, GRACECHURCH STREET, E.C., west side, and south of Cornhill.**~~

In quoting from this Catalogue, please mention the date, 1903, and letter E.

J. H. STEWARD, 406, 457, STRAND, W.C. ; 7, GRACECHURCH STREET, E.C., LONDON.

IMPROVED MODEL STUDENTS' MICROSCOPES.

J. H. STEWARD has introduced a new series of Microscopes suitable for students' use, to answer the requirements of modern science when high power objectives have to be employed in connection with Bacteriology and advanced researches in Biology. The Stands are of improved design, and the workmanship is of the highest class.

STUDENTS' MICROSCOPE.

Height of Stand
when in use,
12 inches.

When closed and
upright,
10½ inches.

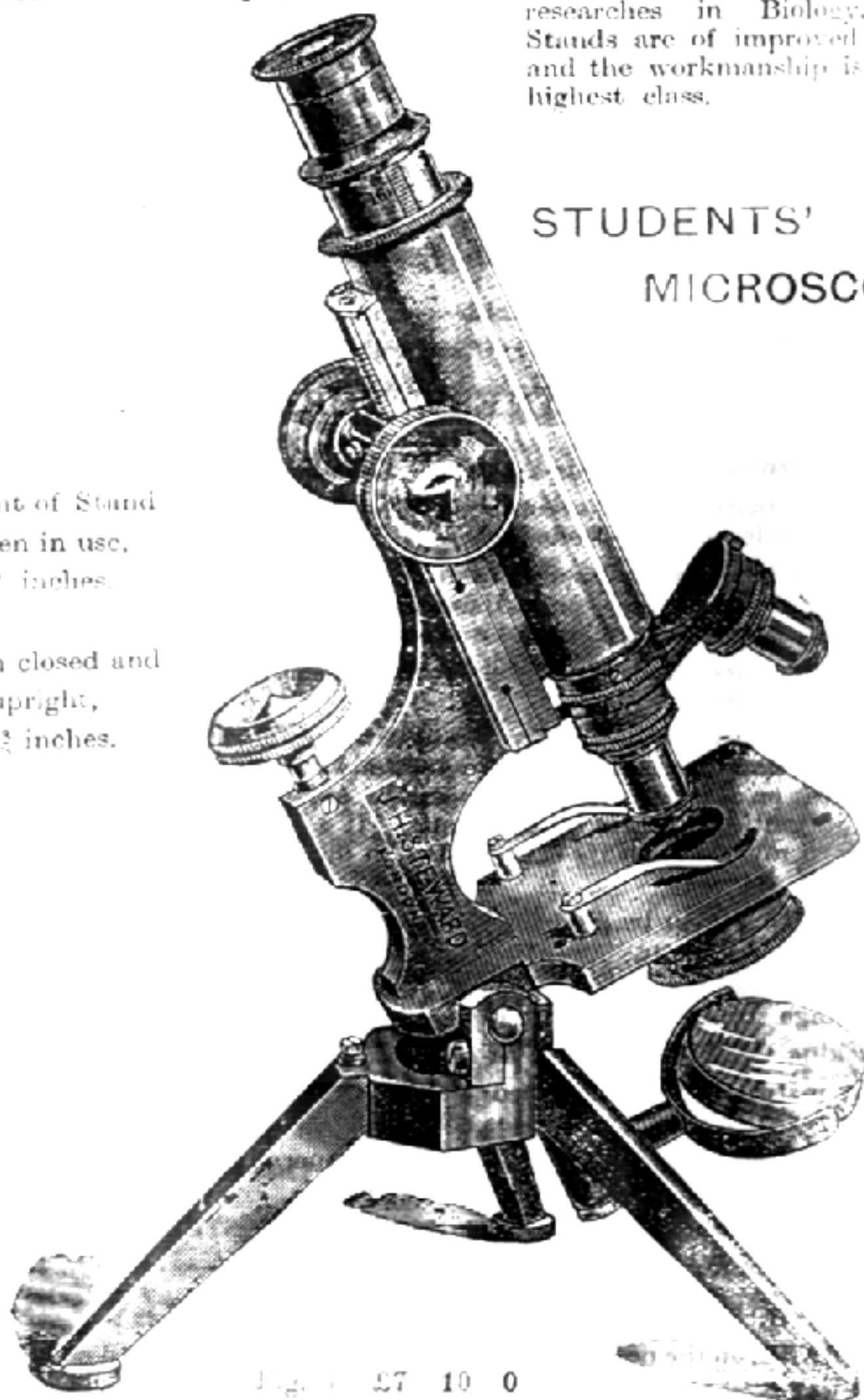


Fig. 1. 27 10 0

Fig. 1. IMPROVED MODEL STUDENTS' MICROSCOPE, with two objectives, 2.3 in. and 1.0 in. focal length, with Diaphragm and double nose piece in Mahogany Cabinet. Price, £7 10 0
Stand only, without eye piece, by post, £4 10 0

J. H. STEWARD, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000, 1050, 1100, 1150, 1200, 1250, 1300, 1350, 1400, 1450, 1500, 1550, 1600, 1650, 1700, 1750, 1800, 1850, 1900, 1950, 2000, 2050, 2100, 2150, 2200, 2250, 2300, 2350, 2400, 2450, 2500, 2550, 2600, 2650, 2700, 2750, 2800, 2850, 2900, 2950, 3000, 3050, 3100, 3150, 3200, 3250, 3300, 3350, 3400, 3450, 3500, 3550, 3600, 3650, 3700, 3750, 3800, 3850, 3900, 3950, 4000, 4050, 4100, 4150, 4200, 4250, 4300, 4350, 4400, 4450, 4500, 4550, 4600, 4650, 4700, 4750, 4800, 4850, 4900, 4950, 5000, 5050, 5100, 5150, 5200, 5250, 5300, 5350, 5400, 5450, 5500, 5550, 5600, 5650, 5700, 5750, 5800, 5850, 5900, 5950, 6000, 6050, 6100, 6150, 6200, 6250, 6300, 6350, 6400, 6450, 6500, 6550, 6600, 6650, 6700, 6750, 6800, 6850, 6900, 6950, 7000, 7050, 7100, 7150, 7200, 7250, 7300, 7350, 7400, 7450, 7500, 7550, 7600, 7650, 7700, 7750, 7800, 7850, 7900, 7950, 8000, 8050, 8100, 8150, 8200, 8250, 8300, 8350, 8400, 8450, 8500, 8550, 8600, 8650, 8700, 8750, 8800, 8850, 8900, 8950, 9000, 9050, 9100, 9150, 9200, 9250, 9300, 9350, 9400, 9450, 9500, 9550, 9600, 9650, 9700, 9750, 9800, 9850, 9900, 9950, 10000, 10050, 10100, 10150, 10200, 10250, 10300, 10350, 10400, 10450, 10500, 10550, 10600, 10650, 10700, 10750, 10800, 10850, 10900, 10950, 11000, 11050, 11100, 11150, 11200, 11250, 11300, 11350, 11400, 11450, 11500, 11550, 11600, 11650, 11700, 11750, 11800, 11850, 11900, 11950, 12000, 12050, 12100, 12150, 12200, 12250, 12300, 12350, 12400, 12450, 12500, 12550, 12600, 12650, 12700, 12750, 12800, 12850, 12900, 12950, 13000, 13050, 13100, 13150, 13200, 13250, 13300, 13350, 13400, 13450, 13500, 13550, 13600, 13650, 13700, 13750, 13800, 13850, 13900, 13950, 14000, 14050, 14100, 14150, 14200, 14250, 14300, 14350, 14400, 14450, 14500, 14550, 14600, 14650, 14700, 14750, 14800, 14850, 14900, 14950, 15000, 15050, 15100, 15150, 15200, 15250, 15300, 15350, 15400, 15450, 15500, 15550, 15600, 15650, 15700, 15750, 15800, 15850, 15900, 15950, 16000, 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E 1. **J. H. Steward's Students' Microscope**, with improved Stand of bronzed brass, with very firm tripod and adjustable axis for inclining the Microscope. The coarse adjustment is by rack and pinion, and the body mount works in dovetailed slides, so as to secure with the diagonal rack work a perfect movement without slake or play.

The fine adjustment is actuated by a milled head screw working on a lever, giving a delicate movement, with perfect steadiness for high powers—one revolution of the milled head representing 1-250th inch.

Large and rigid stage, with springs for objects. Sub-stage tube and Iris Diaphragm working close underneath the object, and graduating from a very small aperture to $1\frac{1}{2}$ inch.

Draw-tube divided into centimetres to lengthen the body so as to suit either English or Continental objectives. The mirror is double, plane and concave, and mounted on a gimbal arm.

Two Objectives are included, a 2-3rds inch of 15 degrees angular aperture, and a 1-6th inch of 90 degrees angular aperture, also a bent double nose-piece. Two eye-pieces Continental size B ($\times 6$) and D ($\times 10$), with nickel-plated tubes and bronzed caps.

Polished Mahogany Cabinet, with packs for apparatus, complete,
fig. 1 £7 10 0

E 2. **J. H. STEWARD'S FIVE-GUINEA STUDENTS' MICROSCOPE**, of similar general design to the above, with same kind of fine adjustment but focussing with sliding tube adjustment. It is fitted with a draw-tube, which is divided into centimetres by rings. Double Mirror, plane and concave, in gimbal mount, Iris Diaphragm and sub-stage tube. Two Objectives are included, a 2-3rds inch of 15 degrees, and a 1-6th inch of 90 degrees, angular aperture. Complete in polished pine case, with lock and key, handle and packs for the apparatus (fig. 2) £5 5 0

PRICES OF EXTRA APPARATUS FOR THE IMPROVED STUDENTS' MICROSCOPES, FIGS. 1 & 2.

E 3.	Abbe Condenser , with Iris Diaphragm, small size	..	£0 15 0
E 4.	Ditto do. do. full size	.. .. .	1 15 0
E 5.	Bull's-eye Stand Condensers	.. .. .	0 8 6
E 6.	Beale's Neutral Tint Reflector, for drawing	.. .. .	0 6 6
E 7.	Mechanical Stage fitted to Microscope, giving $\frac{3}{4}$ inch motion in each direction, new model	.. .. .	2 10 0
E 8.	Ditto, divided in millimetres	.. .. .	2 15 0
E 9.	Centring Sub-stage , with Rack and Pinion Adjustment, to fix perfectly rigid and yet swing aside, for carrying Abbe Condenser and Sub-stage apparatus, fig. 16 (page 20)	2 2 0	

(For other Object Glasses and Accessory Apparatus, see pages 17, 19 & 20.)

J. H. STEWARD'S

STUDENTS' FIVE GUINEA MICROSCOPE.

With
1 inch and 1-8th inch
Object Glasses,
in Cabinet.

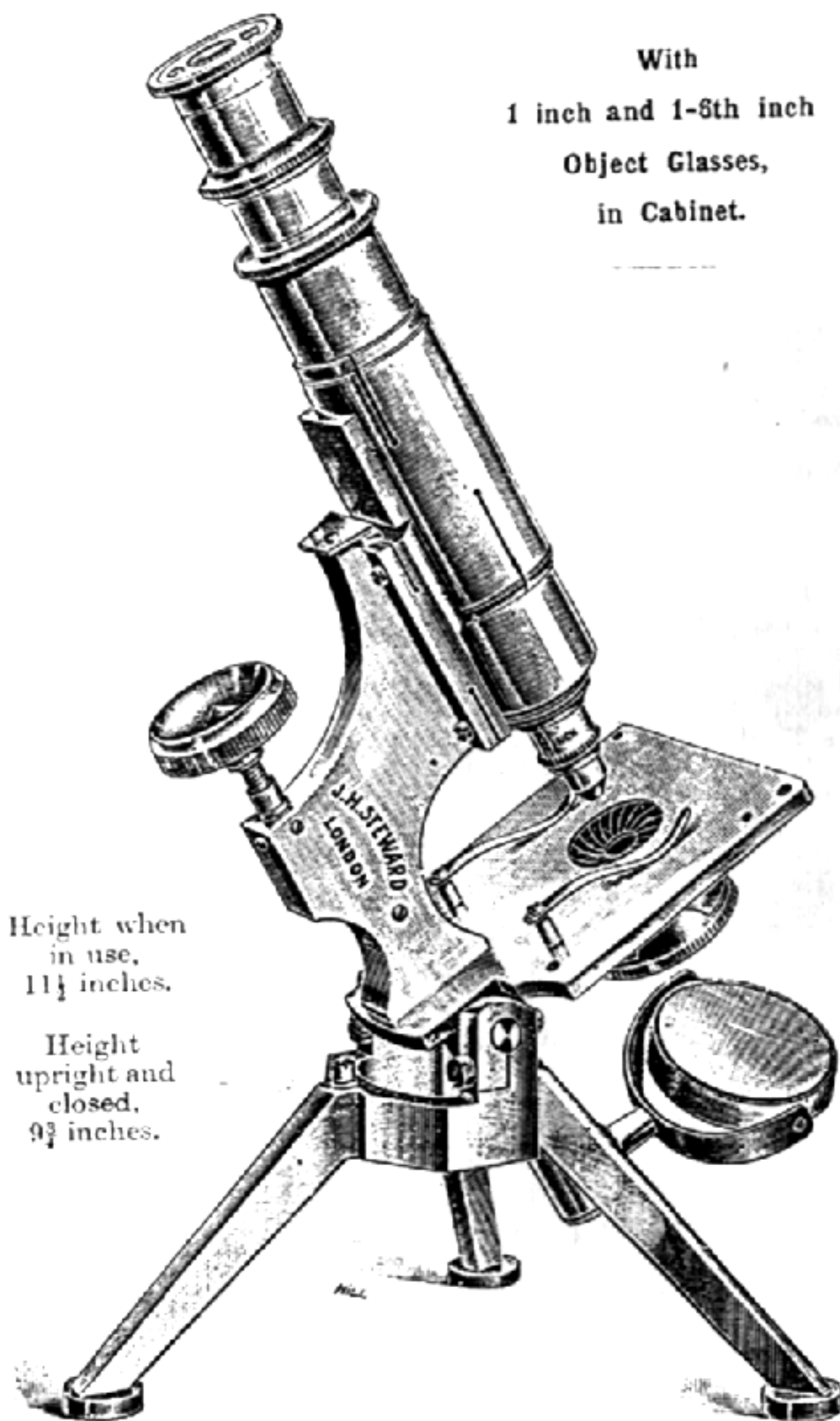


Fig. 2.

E 2. The Students' £5 5 0 Microscope.
(For Description see page 3.)

J. H. STEWARD'S NEW
BACTERIOLOGICAL
MICROSCOPE.

Suitable for
Photo-Micrography,
Scientific Research
and Biology.

This Microscope is
arranged for High
Class Work in the
Study or Labora-
tory, and for Photo-
graphy.

Height when
in use,
inclined,
13 inches.

Height
upright when
closed,
10½ inches.

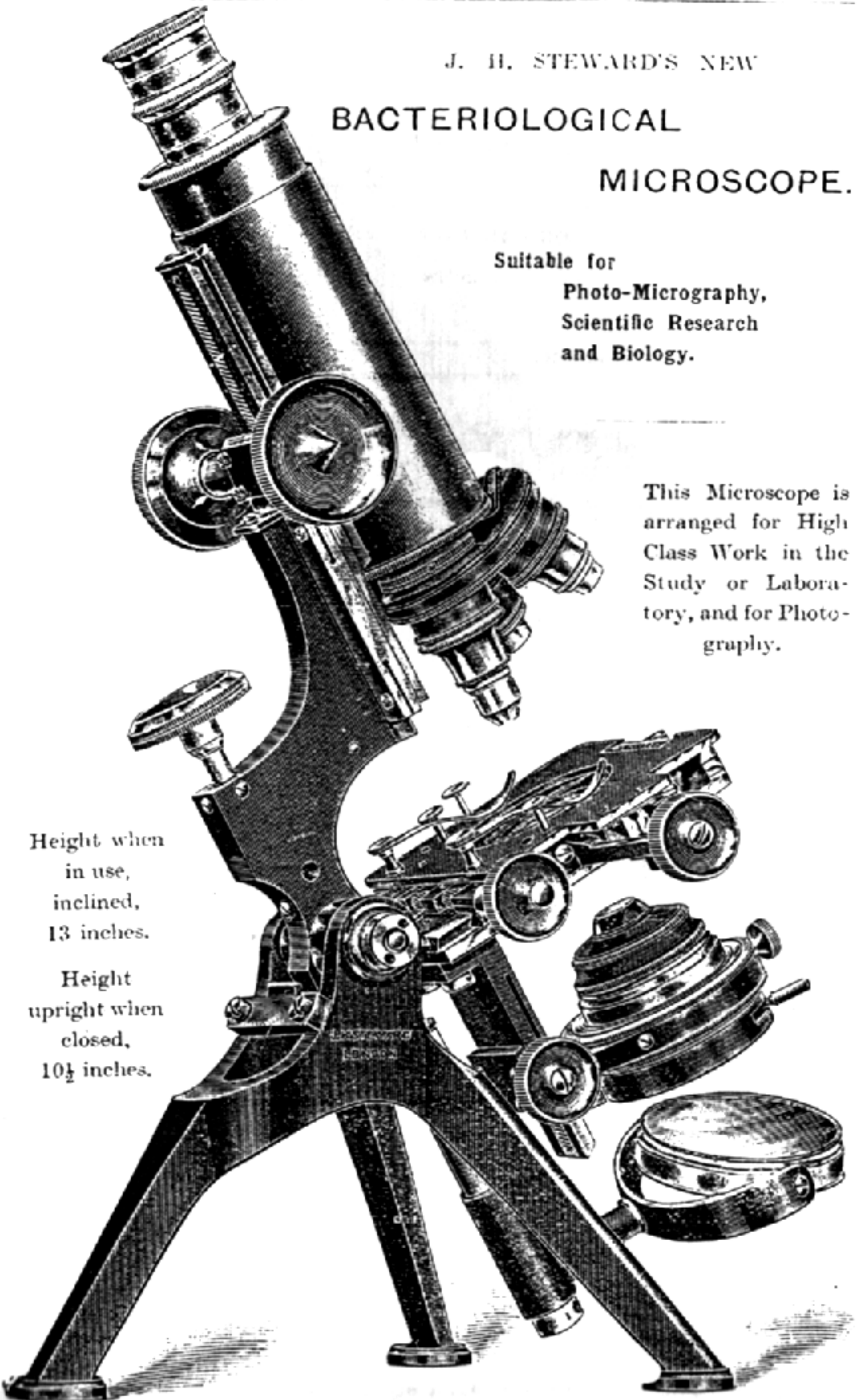


Fig. 3. E 10. Bacteriological Microscope, £22 Complete.
(For Description see page 6.)

THE BACTERIOLOGICAL MICROSCOPE.

E 10. THE BACTERIOLOGICAL MICROSCOPE.—The body is of extra large diameter ($1\frac{1}{2}$ inches) so as to get the best results when used with a Camera.

The draw tube is graduated in centimetres, and carries the Continental size eye-pieces.

Diagonal rack and pinion focussing adjustment, giving very smooth movement.

Fine adjustment of improved lever pattern.

Mechanical stage of special pattern with movement each way of 25 m/m—the lateral by endless screw and milled head, and the vertical by diagonal rack and pinion. The latter is fitted with a removable milled head, so that the whole of the stage is available for laying a plate or trough on.

A scale is engraved on the stage showing half-millimetres from 0 to 25 m/m. for vertical movement, and a similar scale is engraved on the top plate of stage to show lateral movement. Zero arrows for reading the position are provided for both scales. Two milled-head pins form rests for the object slide, and another forms a stop for the end of slide. By means of these and the two scales the position of any object on the slide after once found can be registered, and at any future time can be quickly re-examined. There are also the regular spring clips to hold the object.

Secondary sub-stage with centring adjustment, and rack and pinion focussing adjustment.

Abbé condenser, fitted with Iris Diaphragm.

Plane and Concave Mirrors, with sliding tube to alter distance from stage.

Dust-proof triple nose-piece.

Three Objectives : 2-3rds inch, 1-6th inch, and 1-12th oil immersion.

Two eye-pieces, B \times 6, D \times 10.

Mahogany case with packings, handle, lock and key.

Fig. 3.

Complete, £22.

THE
BACILLI MICROSCOPE,

With
Secondary Stage,
Abbé Condenser, 3 Objectives,
and Apparatus,
£16 16 0



Height when in
use,
14½ inches.
Height closed
upright,
12½ inches.

Fig. 4.—Bacilli Microscope, £16 : 16 . 0.

E 11. THE BACILLI MICROSCOPE.—This has a very firm stand with an extra sensitive and accurate fine adjustment, suitable for using with the high powers required in Bacteriology and for Biology, and general medical work.

The fine adjustment is made by an improved kind of lever working the long slide that contains the secondary slide of arm, the latter having the rack-work attached for the coarse adjustment—by this system additional steadiness is secured. The stage is large and very rigid, and will allow objects of any reasonable size to be placed on it. The stand is a solid claw-foot of improved model with good spread, and the clamp will be found useful in special work. The body is of the short form, six inches long, extending by a draw tube to ten inches.

The secondary stage is fitted with centring adjustment and rack and pinion for focussing, and the Abbé Condenser is fitted with an Iris graduating diaphragm.

The apparatus includes three Objectives, 2-3rds inch, 1-6th inch and 1-12th inch Oil Immersion, dustproof triple nose-piece, and two capped eye-pieces, in mahogany cabinet, fig. 4 £16 16 0

(For extra Object Glasses and Apparatus, see pages 17 and 19).

**E 12. The Bacilli Microscope Stand only, with one eye-piece
and without any apparatus** £7 7 0

STEWARD'S "COLLEGE" MICROSCOPE STAND.

Suitable for Medical Men,
Botanists, and
for General Research.

Height when in
use,
inclined,
11½ inches.

Height closed
upright,
10 inches.

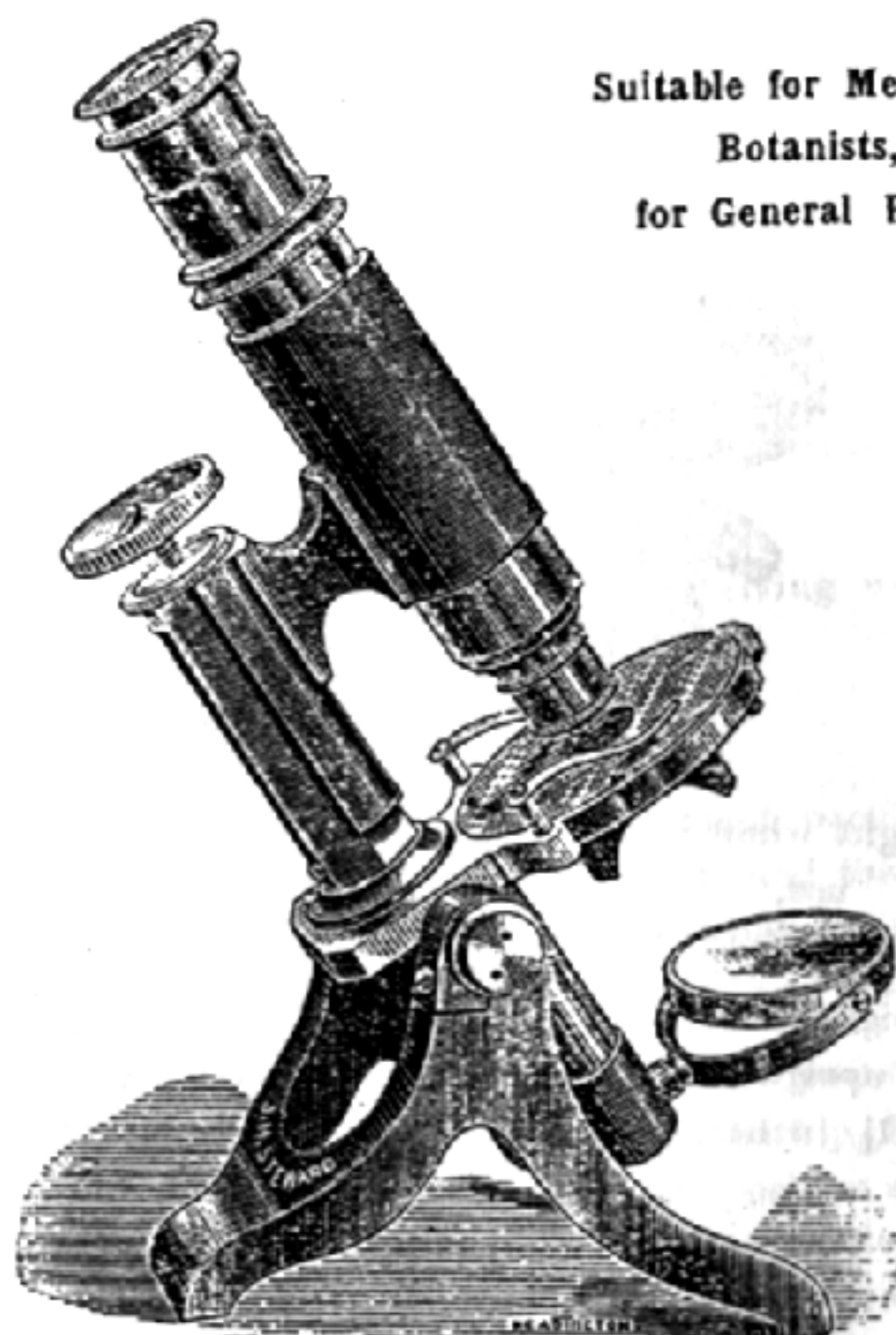


Fig. 5.—"College" Microscope Stand and Eye-piece, £3.
(Without Objective.)

THE "COLLEGE" MICROSCOPE STAND.—A steady and convenient Model for Students' use, and capable of being added to as desired. The motion of the body in passing through the tube, which has a cloth lining, is perfect, and slides with great ease and accuracy. A draw-tube makes the stand suitable for both English and Continental objectives. The stage is circular in form, and has a glass surface which affords an easy sliding motion to the object under examination, and is easily cleaned. Two adjustable spring clips are attached, to hold the object in position; there is a wheel of diaphragms, and plane and concave mirrors. The fine adjustment is controlled by a milled head screw which passes through the entire length of the arm, thus ensuring perfect steadiness of movement.

- | | | |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| E 13. | The "College" Microscope Stand and one Eye-piece only, fig. 5 | £3 0 0 |
| E 14. | ditto ditto with Rack and Pinion | 3 15 0 |
| E 15. | The "College" Microscope complete, having Stand and Eye-piece as figured and described above, also two Objectives, 1-4th inch, and 1 inch and Condensing Lens on Stand, in mahogany cabinet, fig. 5 | £6 0 0 |
| E 16. | Ditto with ½ inch and 1-6th inch Objectives | 7 0 0 |
- If with Rack and Pinion Adjustment, 15/- extra.
For Accessory Apparatus, see pages 17, 19 and 20.

STEWARD'S "THREE GUINEA" MICROSCOPE.

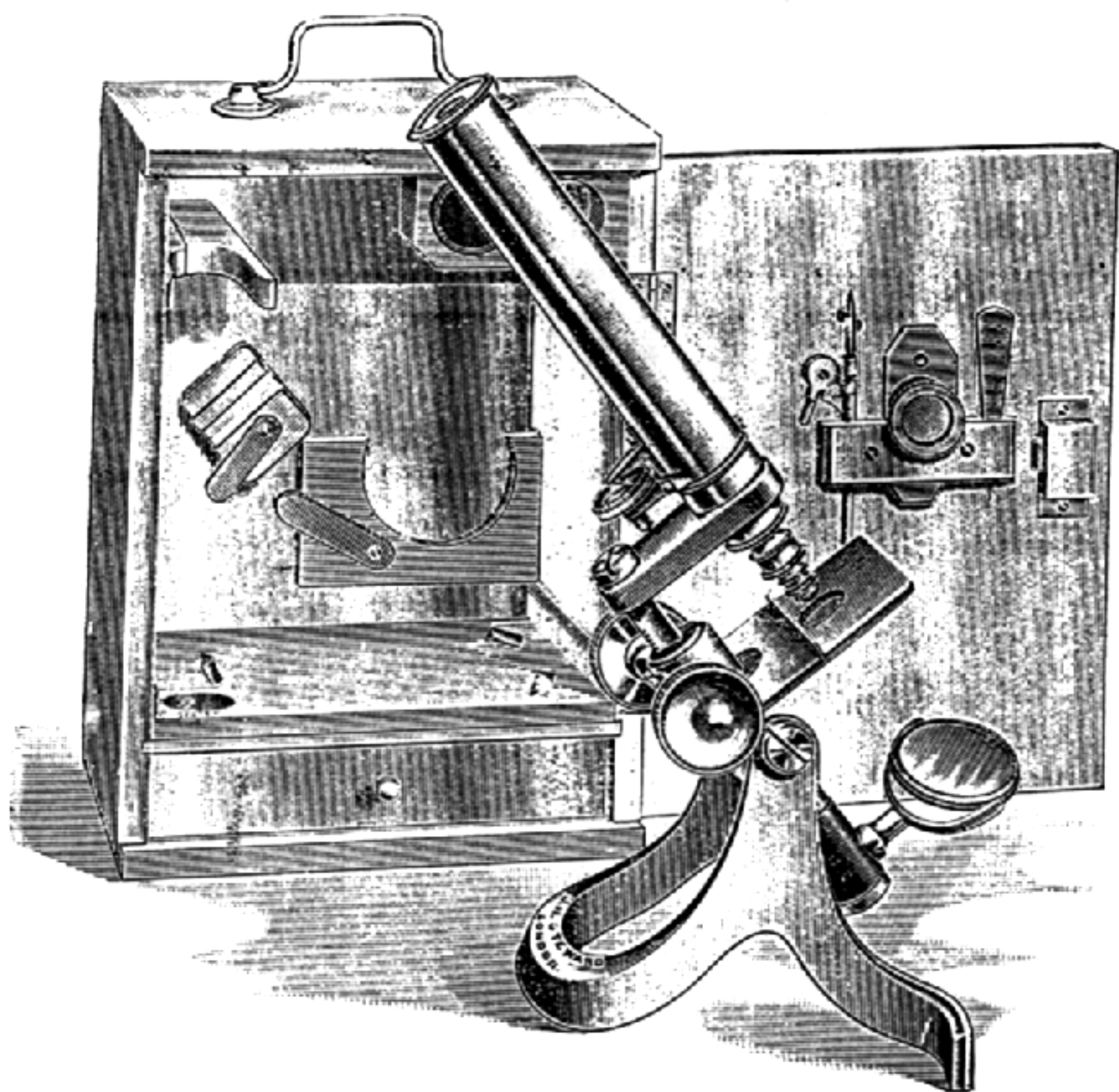


Fig. 6. £3 3 0.

Height when in use, 12 inches.

E 17. J. H. STEWARD'S "Three Guinea" Microscope.—Bronzed brass claw stand with firmly constructed rack and pinion coarse adjustment, and screw fine adjustment, a sliding Object-holder to the stage, one eye-piece, Concave Mirror, a set of English Achromatic Object Glasses, dividing and forming three different powers. Sliding-top Live-cage (with screw cap) for the examination of fluids or live objects, etc.; a pair of stage forceps, a pair of small brass tweezers, and three glass slides, a mahogany cabinet with packings, drawer with rackwork for two dozen objects. A book entitled, "Half-hours with the Microscope," by Edwin Lankester, M.D., is given with the instrument. Each power is mounted separately, and fits one over the other. To obtain the highest power, 1-4th inch, they must all three be used together in the form sent out. The medium, or $\frac{1}{2}$ inch power, is obtained by removing the first lens, and the lowest, about 1 inch, by removing the second lens, and using the back lens by itself. The magnifying power ranges from about 60 to 250 diameters, or 75,000 times superficial. Price, complete, fig. 6 £3 3 0

EXTRA APPARATUS FOR THE THREE-GUINEA MICROSCOPE.

	£	s.	d.
E 18. Condensing Lens on Stand, for illuminating opaque objects	0	8	6
E 19. Diaphragm	0	3	6
E 20. Draw-tube for increasing the power	0	3	6
E 21. Improved movable Stage by means of Spring-Top Plate, giving soft and easy motion in all directions (see Stage of Fig. 7, p. 11)	0	8	6
E 22. Extra eye-pieces A 6/6, C & D	0	8	6
E 23. Camera Lucida Prism and Mount for sketching ..	0	15	6
E 24. Beale's Neutral Tint Reflector, ditto	0	6	6
E 25. Spot Lens	0	8	6
E 26. Polariscope, including Polarising and Analysing Prisms	1	5	0

A low power Object-Glass such as $1\frac{1}{2}$ inch or 2 inch is recommended for botanical work and opaque objects, see list of prices, page 17.

BOOKS.

	£	s.	d.
E 27. "How to work with the Microscope," by Beale. New Edition	1	1	0
E 28. "The Microscope," by Dr. Carpenter, F.R.S., edited by Dr. Dallinger	1	6	0
E 29. "Half-hours with the Microscope," by Dr. Lankester	0	2	6
E 30. "Evenings at the Microscope," by Gosse	0	8	0
E 31. "Davies on Mounting"	0	2	6
E 32. "The Microscope : its history, construction and application," New edition, by Jabez Hogg, M.R.C.S., F.R.M.S.	0	10	0

Height when
in use,
13 inches.

STEWARD'S
FIVE-GUINEA
COMPLETE
MICROSCOPE.

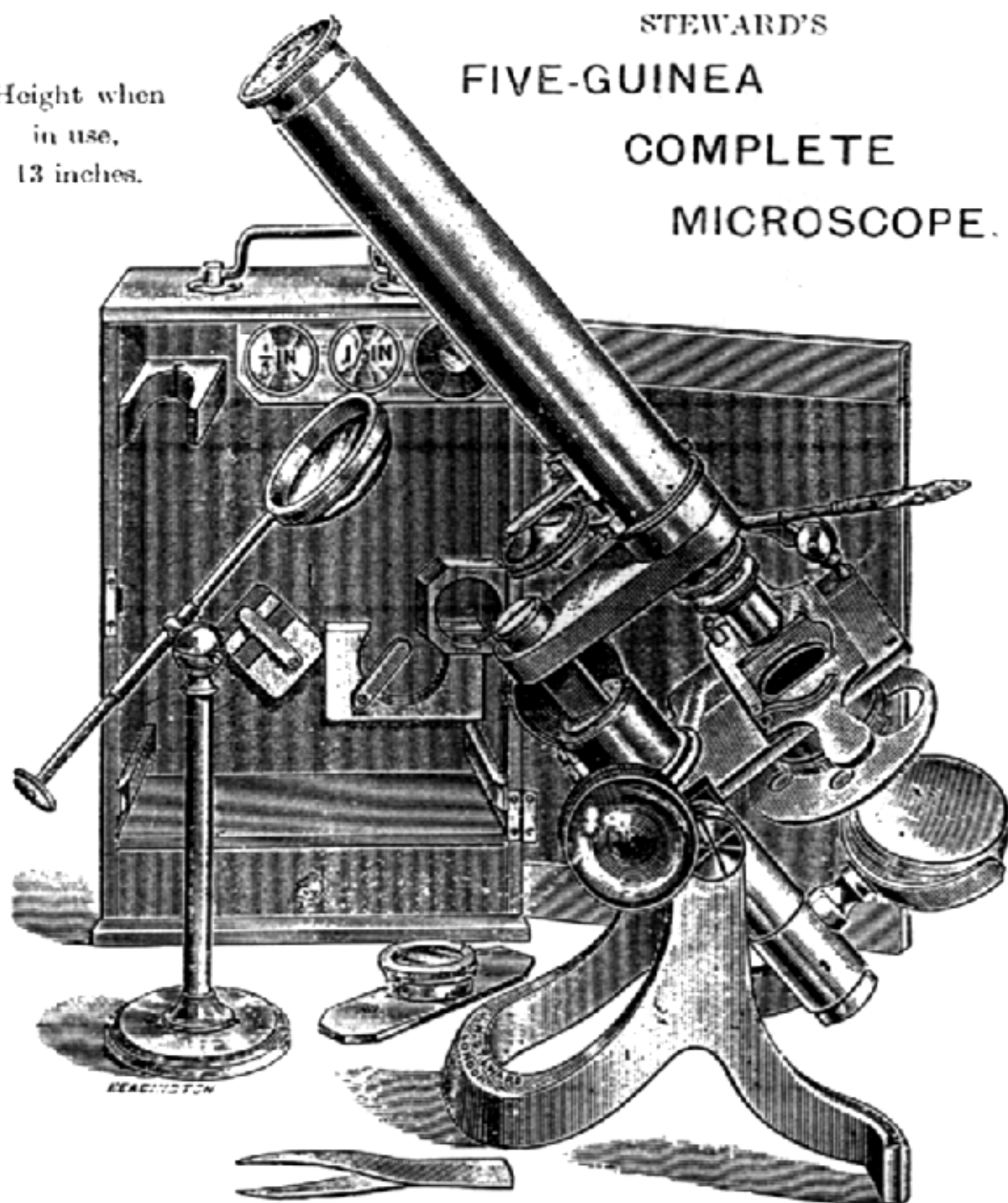


Fig. 7.—Steward's Complete Microscope, £5 5s.

E 33. J. H. STEWARD'S FIVE-GUINEA COMPLETE MICROSCOPE consists of a well finished Brass Stand, with claw foot and rack and pinion coarse adjustment, and screw fine adjustment, large stage fitted with diaphragm, and having a spring-top sliding plate, which permits the object under examination to be moved in nearly every direction with precision and ease. The following apparatus is included: Two English Object-glasses, $1\frac{1}{2}$ inch, of 25 and 40 diameters, and set of $\frac{1}{4}$ inch. dividing and forming three powers—magnifying from 60 to 250 diameters, two eye-pieces, a Condensing lens on stand, a screw-top Live Cage, pair of Stage Forceps and brass Tweezers, polished mahogany cabinet with packings, with drawer for objects (Fig. 7).

Price £5 5 0

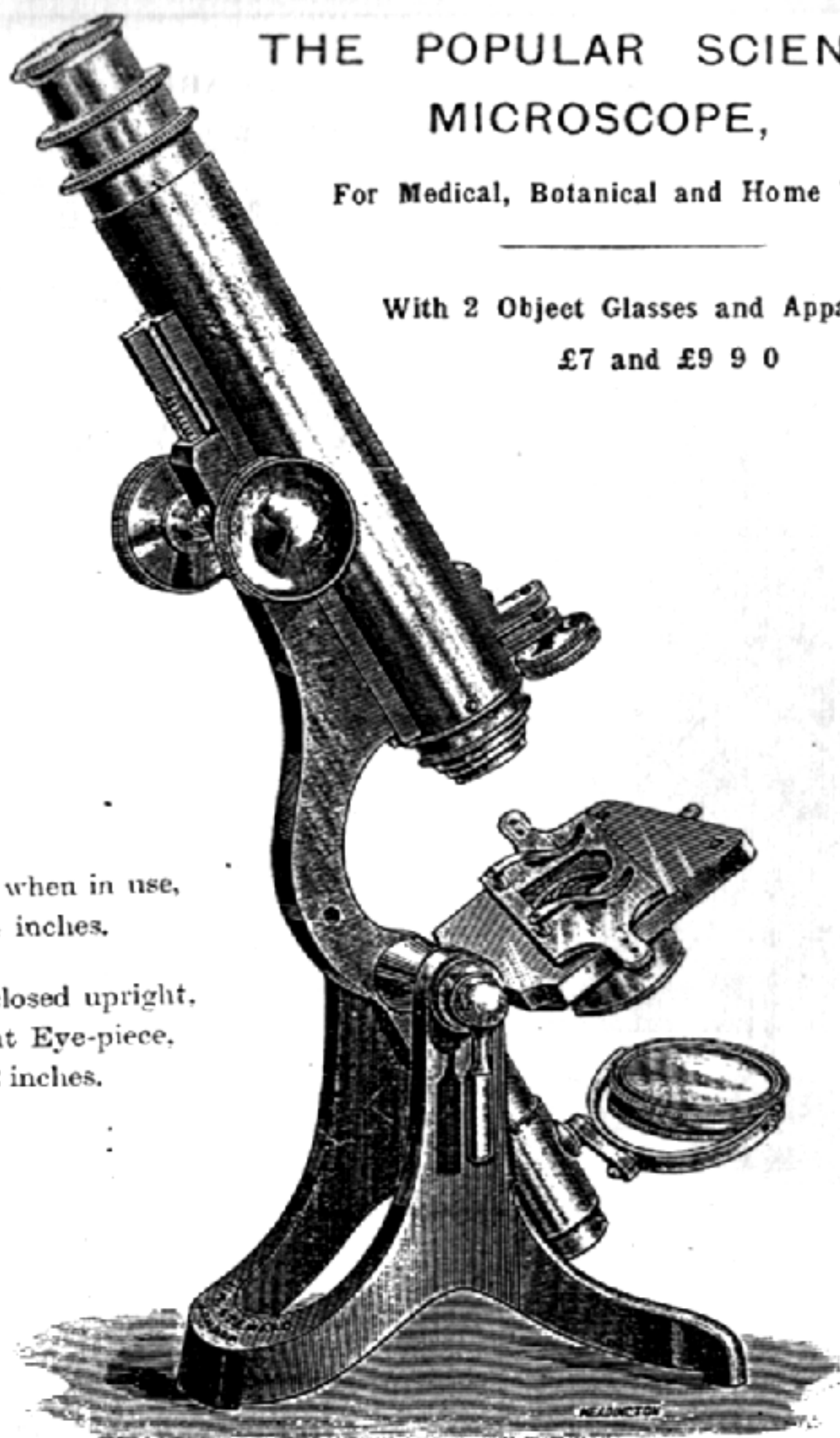
For Accessory Apparatus and other Object-glasses, see pages 10, 17, 19 and 20.

THE POPULAR SCIENCE MICROSCOPE,

For Medical, Botanical and Home Work.

With 2 Object Glasses and Apparatus.

£7 and £9 9 0



Height when in use,
14 inches.

Height closed upright,
without Eye-piece,
12 inches.

Fig. 8.—£7 and £9 9 0 complete.

E 34. THE POPULAR SCIENCE MICROSCOPE.—Superior finished bronzed brass claw Stand, with clamp for fixing at any angle. Diagonal rack and pinion coarse adjustment and lever fine adjustment, spring stage plate with motions in almost every direction, Sub-stage fitting, Plane and Concave Mirrors, gimbal arm, draw-tube, capped eye-piece, two Object-glasses, 1 inch and $\frac{1}{2}$ inch. Complete in mahogany cabinet (Fig. 8) .. Price £7 0 0

E 35. The Popular Science Microscope as described above but with $\frac{1}{2}$ inch and $\frac{1}{4}$ inch Object-glasses. Iris graduating diaphragm, Sub-stage fitting, Plane and Concave Mirrors in gimbal arm, bull's-eye condenser on stand, Live Cage and Tweezers. Complete in mahogany cabinet .. Price £9 9 0

E 36. Stand only and one eye-piece as described (Fig. 8) .. 3 15 0

THE "CLUB" RACK STAGE MONOCULAR MICROSCOPE.

Complete with Apparatus, £20.

Height when in use,
17 inches.

Height upright and
closed,
16 inches.

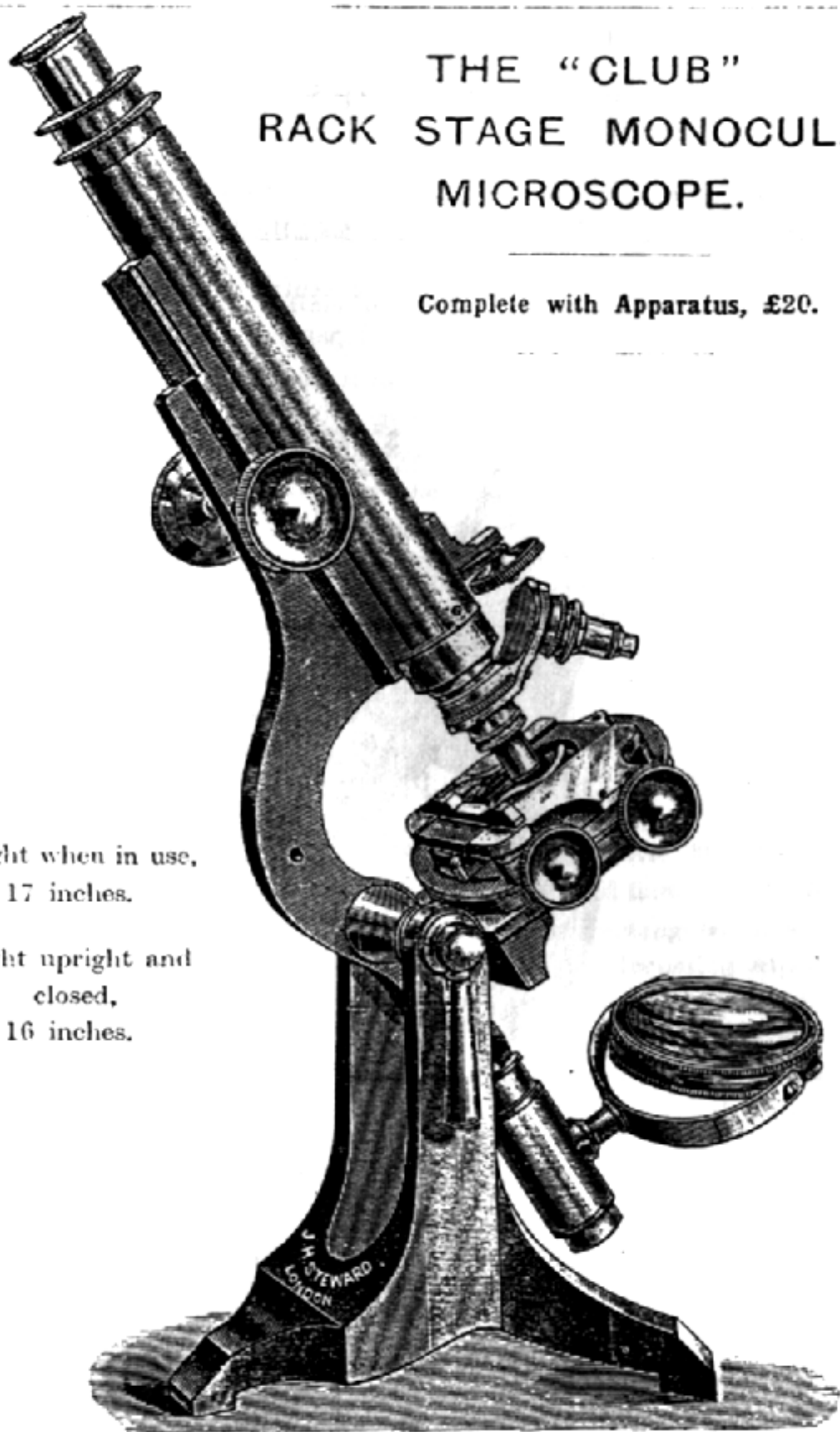


Fig. 9.—The "Club" Monocular Microscope, £20.

E 37. THE "CLUB" RACK STAGE MONOCULAR MICROSCOPE with crane arm and diagonal rack and pinion coarse adjustment and lever fine adjustment, bent double nose-piece, mechanical rack stage having large amount of motion each way and rotating concentrically. Sub-stage fitting and diaphragm, Plane and Concave Mirror on gimbal arm, two capped eye-pieces, three Object-glasses, 2-inch, 1-inch and $\frac{3}{4}$ -inch. Polariscope with analyser and rotating polariser, spot lens, large condensing lens on stand, live-cage and forceps, in handsome mahogany cabinet (Fig. 9) £20 0 0
(The Stand and Eye-piece only, £10 10 0.)

J. H. STEWARD'S BINOCULAR MICROSCOPES.



Height when
in use,
17 inches.

THE "CLUB" BINOCULAR.
With Concentric Mechanical Stage,
2 pairs of Eye-pieces,
and
3 Object-Glasses and Apparatus,
£25.

Fig. 10.—The "Club" Binocular. Price £25.

This instrument is very suitable for use in all popular branches of microscopy, and particularly effective for showing opaque objects with binocular vision to friends, or at clubs, society meetings and soirées.

For detailed description see next page.

THE "CLUB" BINOCULAR MICROSCOPE.

E 38. THE "CLUB" BINOCULAR MICROSCOPE, with solid brass claw stand with clamp to axis. Diagonal rack and pinion coarse adjustment and lever fine adjustment. Mechanical stage, with movement in both directions, and Concentric Rotation. Rack and pinion adjustment to binocular bodies to alter the width between the eye-pieces. The binocular prism slides in and out of the body so as to convert it into a monocular microscope in an instant. Double mirror of large size in gimbal arm. sub-stage tube fitting and diaphragm; two pairs of capped eye-pieces: three Object-glasses, 2 inch, 1 inch, and $\frac{1}{2}$ inch; large bull's-eye condenser on stand; tweezers, polariscope with analyser and rotating polarising prism, double nose-piece, live-cage, in mahogany cabinet. Price complete (Fig. 10, page 14) £25 0 0

PRESENTATION MICROSCOPE.

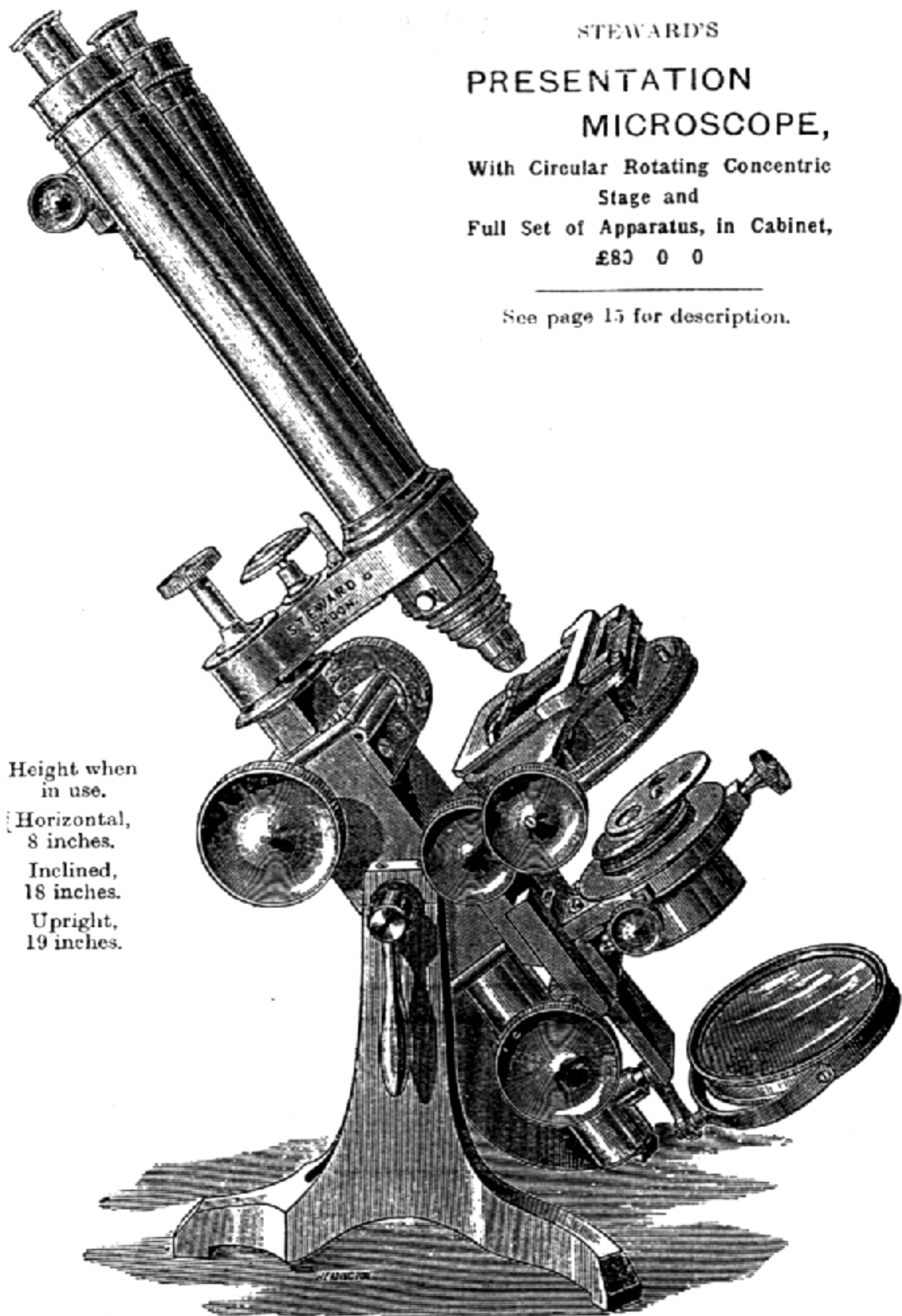
E 39. STEWARD'S PRESENTATION BINOCULAR MICROSCOPE, of superior make and best design, having improved solid foot and clamp to axis, thin concentric rotating stage, with mechanical rectangular motions, and object-clamp. Secondary stage, with centring and focussing adjustments; large double mirror with lengthening arm. Very smooth coarse adjustment and micrometer head fine adjustment, free from vibration. Large body tubes, with rack and pinion for increasing the width, prism box to slide in and out, so as to transform instrument from Binocular to Monocular, with two pairs of best capped eye-pieces. Also a C. Kelner's eye-piece, D eye-piece, micrometer eye-piece, six best objectives, 2 inch, 1 inch, $\frac{1}{2}$ inch, $\frac{1}{4}$ inch, $\frac{1}{8}$ inch, 1-12th inch, oil immersion, Abbé condenser, polariscope with rotating analyser, bevelled wheel adjustment, revolving selenites, spot lens, large lens stand condenser, and best adjustment, parabolic silver side reflector, triple nose-piece, camera lucida and lenses, stage condenser and fittings, stage micrometer in case, stage plates, stage forceps, frog plate, compressorium, two pairs of tweezers, set of dipping tubes in case, 2 live-cages and zoophyte trough, handsome mahogany cabinet with packings for apparatus as above. Price complete (Fig. 11, page 16) £80 0 0

E 40. STEWARD'S £100 PRESENTATION BINOCULAR MICROSCOPE. The instrument as described above, and figured page 16, can be made into a £100 presentation microscope by the addition of a well finished lamp, set of dissecting instruments, handsome microscope object cabinet, and 200 selected objects.

STEWARD'S
PRESENTATION
MICROSCOPE,

With Circular Rotating Concentric
Stage and
Full Set of Apparatus, in Cabinet,
£80 0 0

See page 15 for description.



Height when
in use.

[Horizontal,
8 inches.

Inclined,
18 inches.

Upright,
19 inches.

Fig. 11.—Steward's £80 Presentation Microscope.

E 41. **Dissecting Microscope.**—Brass tripod stand, with focussing adjustment by rack and pinion, three improved dissecting powers, 2 inch, 1 inch, $\frac{1}{2}$ inch; glass plate for stage, mirror and mahogany case ... £1 15 0

E 42. **Superior Dissecting Microscope,** with round stand and three powers, in case ... £2 10 0

D 43. **Improved Large Stage Dissecting Microscope,** with tripod legs, rack and pinion focussing adjustment in one of the legs, which also carries the arm containing powers; glass stage, 4 inches diameter, firmly secured on metal base, $5\frac{1}{2}$ inches diameter, double mirror, 2 inch, 1 inch, $\frac{1}{2}$ inch powers, in mahogany case, with drawer for dissecting instruments and apparatus £2 10 0

D 44. **Botanical, Tank or Dissecting Microscope.**—An instrument constructed specially for the quick and easy examination of flowers, plants, etc. Complete with best 4 inch object-glass ... £3 10 0

D 45. If fitted with erecting eye-piece for dissecting, extra 15/—.

The stand consists of two uprights fixed to a mahogany slab—to which is pivoted a cross-bar, carrying the body and adjusting tube, which can be inclined to any angle.

ACHROMATIC OBJECT-GLASSES.

Series A.

GOOD PRACTICAL OBJECT-GLASSES.

	Equivalent Focus.				Angular Aperture.				Price. £ s. d.
D 46.	2 inch	..	..	..	7 degs.	..	..	..	0 12 0
D 47.	1 "	..	..	..	12 "	..	..	..	0 12 0
D 48.	$\frac{3}{4}$ "	..	..	..	18 "	..	..	..	0 12 0
D 49.	$\frac{1}{2}$ "	..	..	..	60 "	..	..	..	1 1 0
D 50.	$\frac{1}{4}$ "	..	..	..	60 "	..	..	..	1 1 0

The above objectives, although so moderate in price, will be found thoroughly practical, and equal, if not superior, to many of the Continental make of Students' Microscope Objectives.

The magnifying powers of the above are about the same as those enumerated under the respective eye-pieces in the table below (Series B).

Series B.

FIRST CLASS MICROSCOPE OBJECT-GLASSES.

Equivalent Focus.	Numerical Aperture.	Angular Aperture. Degrees.	Approximate Magnifying Power with 8 inch body and Eye-pieces.				Price. £ s. d.
			A	B	C	D	
E 51. 3 inch	0.11	12	13	20	35	56	1 5 0
E 52. 2 "	0.17	20	20	32	55	90	1 5 0
E 53. $1\frac{1}{2}$ "	0.19	22	25	40	70	112	1 5 0
E 54. 1 "	0.21	25	37	60	105	170	1 5 0
E 55. $2/3$ "	0.28	32	60	100	145	270	1 5 0
E 56. $1/2$ "	0.34	40	95	150	265	420	1 5 0
E 57. $1/4$ "	0.71	90	195	310	540	850	1 10 0
E 58. $1/6$ "	0.71	90	320	510	700	1010	1 10 0
E 59. $1/8$ "	0.88	120	420	670	900	1200	2 0 0
E 60. $1/12$ oil	1.25	—	600	870	1200	2000	5 0 0

MICROSCOPE LAMPS.

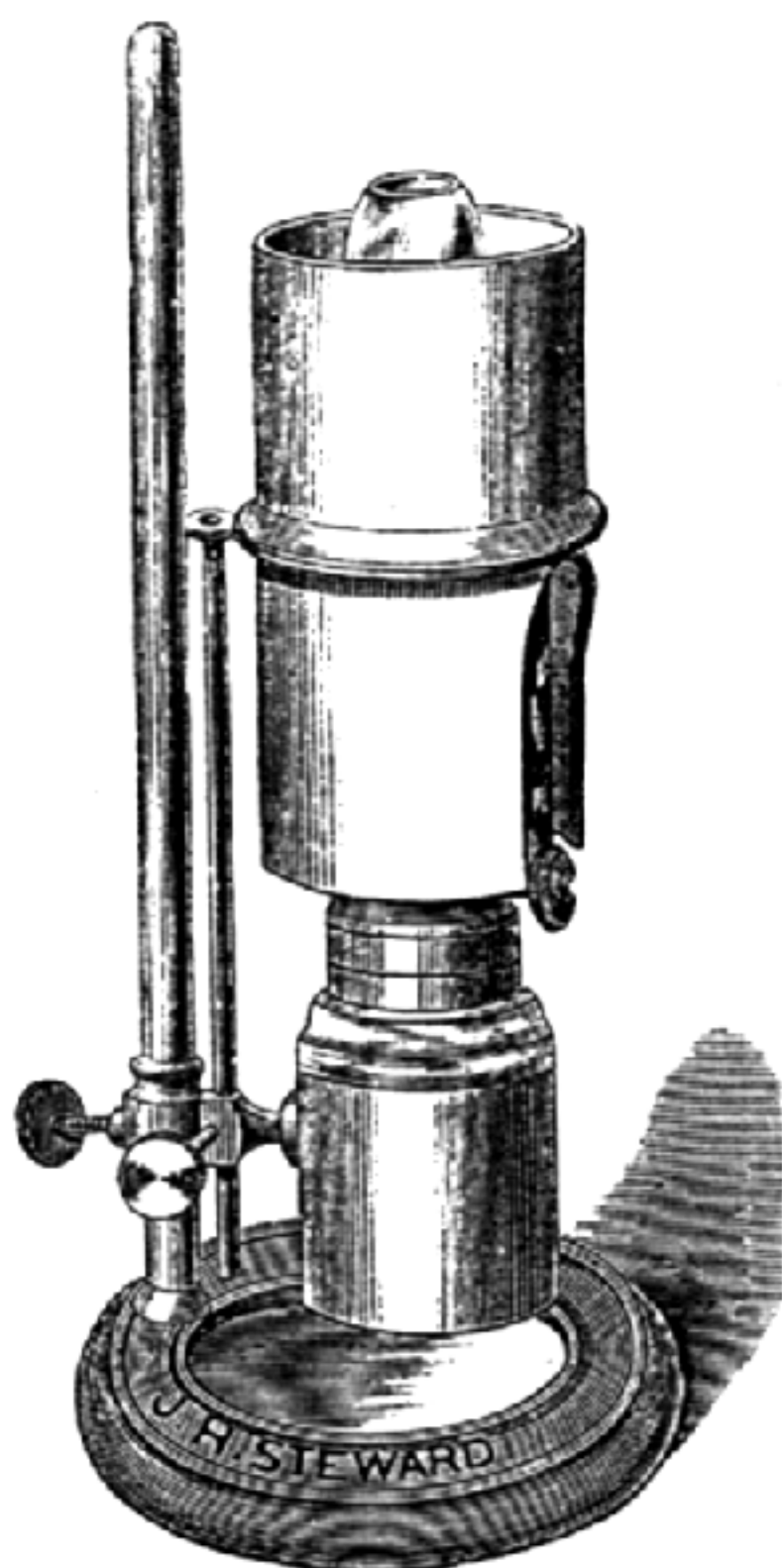


Fig. 12.—11s. 6d. Superior finished, 15s.

E 61. **Portable Microscope Lamp**, with porcelain shade with coned top for excluding strong light from the eye, turn-up burner and glass-stoppered reservoir for mineral oil, glass chimney (Fig. 12) £0 11 6

E 62. Pine case for same 0 3 6

The lamp can be raised up and down the adjusting tube and clamped at the most convenient height.

E 63. **Superior Finished Lamp**.—Brass stand and large oil reservoir, with stopper for re-filling; white porcelain shade with cone top, the whole adjusting on a tube fitting that allows it to be set at a suitable height 0 15 0

E 64. In pine case 0 18 6

This is strongly recommended as a convenient and well made practical lamp.

E 65. Extra glass chimneys, blue or white, each 0 0 6

APPARATUS FOR COMPOUND MICROSCOPES.

		£	s.	d.
E 66.	Eye-pieces, Capped, A, B, and C	0	8	6
E 67.	Ditto D	0	10	6
E 68.	Micrometer ditto	1	0	0
E 69.	Dr. Kelner's Orthoscopic ditto	1	1	0
E 70.	Silver Side Reflector, for illuminating Opaque Objects ..	1	3	6
E 71.	Improved Parabolic Reflector, Silvered Surface, Ball and Socket Joint	1	3	6
E 72.	Camera Lucida Prism, for drawing the magnified image, plain mount	0	18	6
E 73.	Ditto ditto with two metal frames, in which are fitted two glasses, concave and convex	1	15	0
E 74.	Plate for fixing Fish, Frogs, etc., for viewing the circulation of the blood	0	10	6
E 75.	Animalcule Cage, with Screwed Cap and Thin Glass 3/6 and	0	6	6
E 76.	Polarising Apparatus, consisting of Analyser to fit above the Object-glass, and rotating Polariser	1	5	0
E 77.	Best Polarising Apparatus for Students' and Monocular Microscopes	1	15	0
E 78.	Ditto ditto for Binocular Microscopes ..	2	10	0
E 79.	Darker's Revolving Selenite Stage, with set of three Revolv- ing Selenites, in Brass Box	2	0	0
E 80.	Plain Brass Selenite Stage, with one tint	0	6	6
E 81.	Selenites on Glass Plates, Red and Green, Blue and Yellow, each	0	1	9
E 82.	Ditto ditto and various .. the set of 3	0	5	0
E 83.	Spot Lens, for dark ground illumination	0	8	6
E 84.	Ditto larger size	0	14	6
E 85.	Stage Forceps, for Students' Microscopes	0	3	6
E 86.	Ditto ditto superior .. 5/6 and	0	8	6
E 87.	Mineral Forceps, large size	0	15	0
E 88.	Glass Zoophyte Troughs	0	4	6
E 89.	Glass Stage Plates each	0	1	0
E 90.	Set of Four Dipping Tubes, in round case	0	2	0
E 91.	Ditto Six in Morocco Case	0	4	6
E 92.	Stage Micrometer 5/-, in case	0	6	6
E 93.	Ditto ditto differential, English and French ..	0	7	6
E 94.	Wenham's Prism, for fixing to under-side of object ..	0	5	0
E 95.	Metal Clip for ditto	0	0	9
E 96.	Micro Spectroscopes, to show double Spectrum .. from	5	5	0
E 97.	Compressorium, for high powers 8/6 and	0	15	0
E 98.	Lever Compressorium	1	7	6
E 99.	Cedar Oil, in glass bottle, with dropping stopper	0	2	6

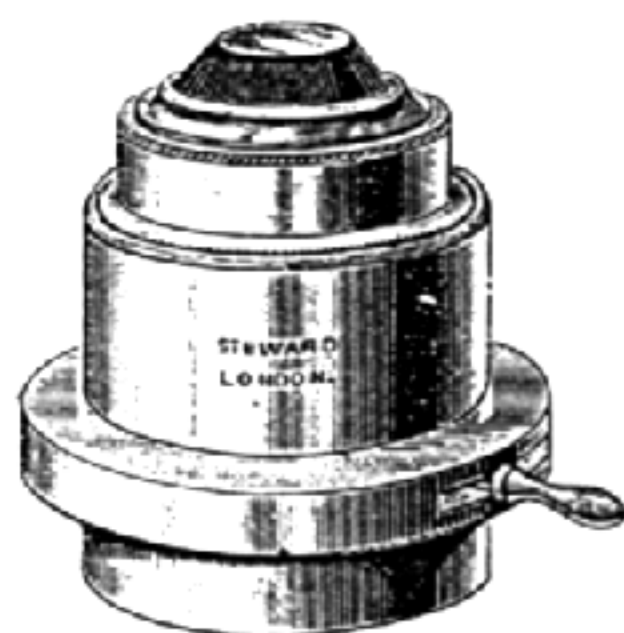
ACCESSORY APPARATUS—*continued.*

Fig. 13.
Abbé Condenser
(about 2/3rd size).

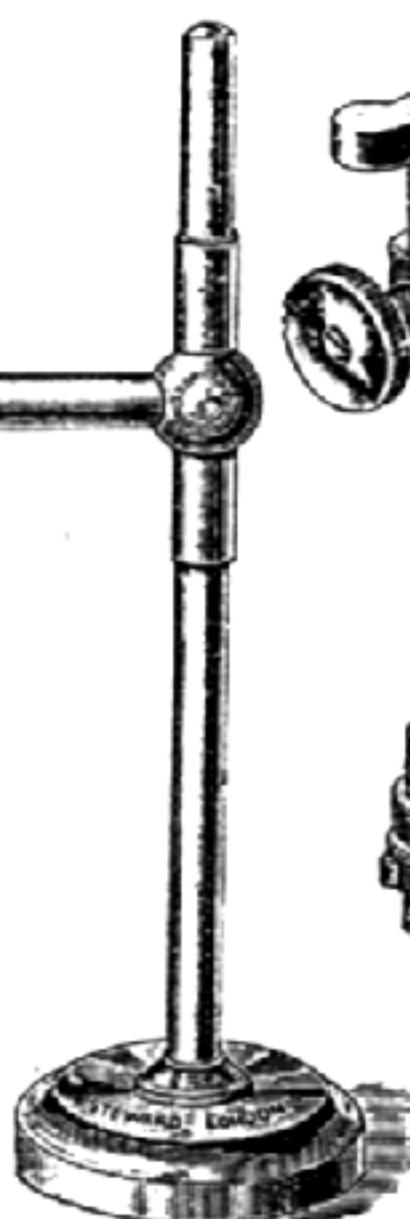


Fig. 14.
Bull's-Eye Condenser
(about 1/4th size).



Fig. 15.
Secondary Stage.—£2 2 0

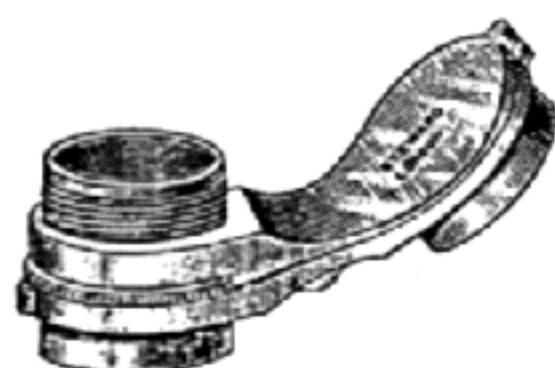


Fig. 16.
Double Nose-piece.—
12/6

					£	s.	d.
E 100.	Abbé Condenser,	to fit into Sub-stage or Secondary Stage			1	10	0
E 101.	Ditto	ditto	with Iris Graduating Diaphragm,				
			Fig. 13	.. .. .	1	15	0
E 102.	Set of Stops for ditto,	in brass box, and lever arm and					
		ring	.. .. .		0	15	6
E 103.	Abbé Condenser,*	small size	.. .. .		0	18	6
E 104.	Set of Stops, in box	.. .. .			0	5	6
E 105.	Bull's-Eye Condensing	Lens, large size, on Stand	.. .. .		1	10	0
E 106.	Ditto	ditto	ditto	Fig. 14	0	18	6
E 107.	Ditto	ditto	ditto	with Ball and Socket	0	10	6
E 108.	Smaller	ditto	ditto	with Double Joints	0	8	6
E 109.	Ditto	ditto	ditto	for Stage	0	14	0
E 110.	Secondary Stage,	to fit to under-side of Stage of Microscope,					
		and swing on one side, rack and pinion focussing					
		arrangement, and centring adjustment, to carry					
		sub-stage apparatus, Fig. 15	.. .. .		2	2	0
E 111.	Bent Double Nose-piece,	with Screw Collar, Fig. 16	.. .. .		0	12	6
E 112.	Triple Nose-piece, Dustproof	.. .. .			1	5	0

COLLECTING STICK.

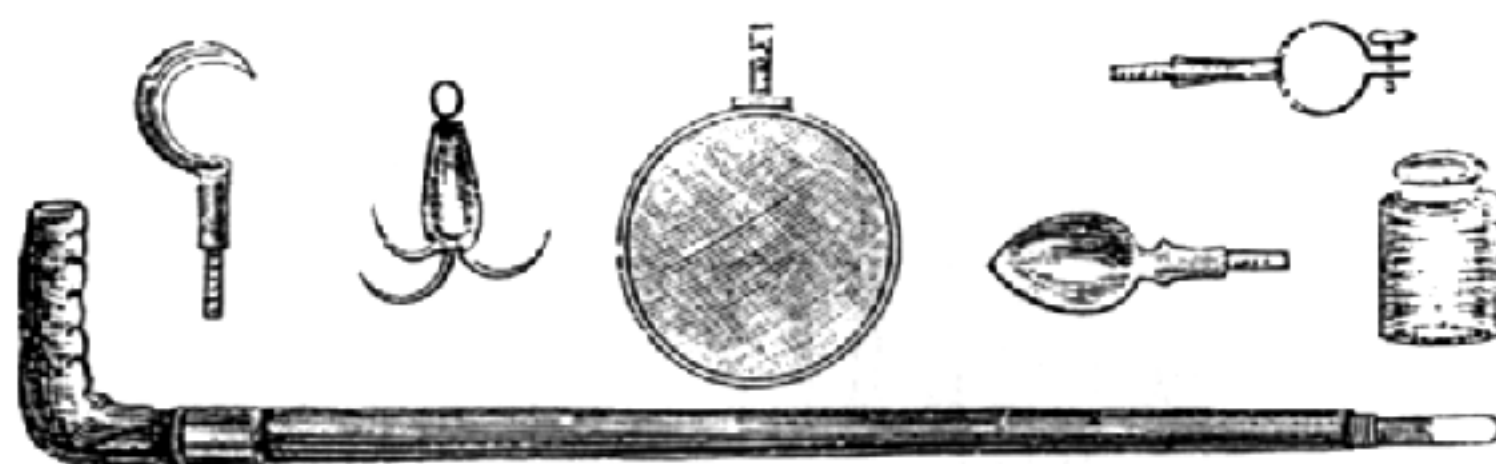


Fig. 17.

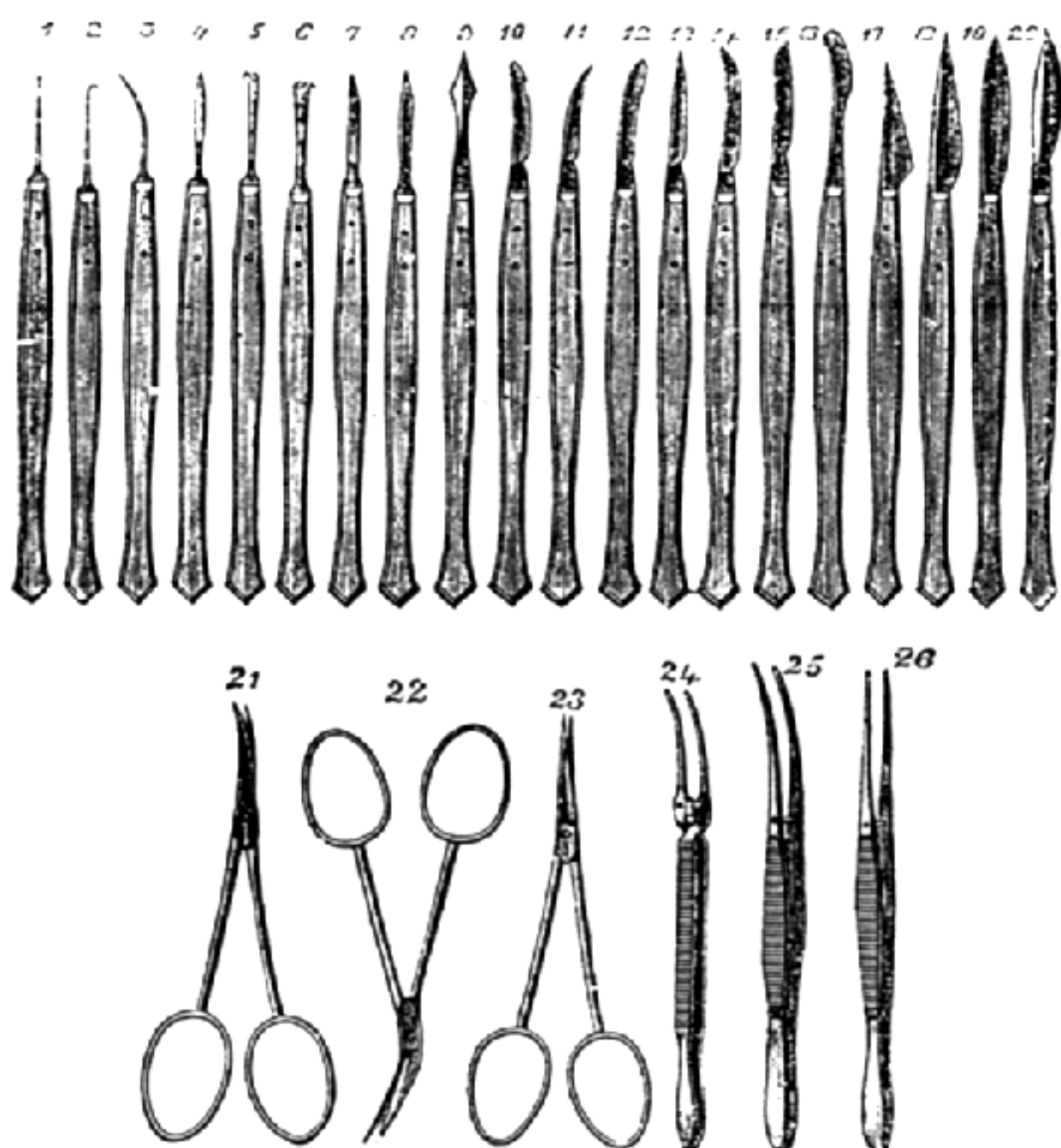
E 113.	Collecting Stick, Telescopic Sliding-out Joint, with Screw Ferrule and Fittings as illustrated, Fig. 17	£	s.	d.
		1	5	0
E 114.	Collecting Bottles, 1 in. diameter, 3 in. long	0	3	0
E 115.	Japanned Tin Case, containing 5 of same corked	0	3	6

INSTRUMENTS AND MATERIALS

Used for Mounting Objects.

		£	s.	d.
E 116.	Section Cutter, with fine Screw Adjustment and Brass Plate	0	5	0
E 117.	Microtome, with Glass Top and fine Screw, having Head, arranged to indicate $\frac{1}{100}$ m/m.	0	10	0
E 118.	Ditto, with Ice Receptacle and Pipe and Stop Cock	0	18	6
E 119.	Diamonds, for writing on glass	0	7	6
E 120.	Turntable, for making cells of Gold Size or other Fluids, Brass Wheel with Spring Clips, on Mahogany Mount	0	7	6
E 121.	Small Brass Table with folding legs, for heating objects on while mounting	0	4	6
E 122.	Spirit Lamp for ditto	0	2	6
E 123.	Glass Slides, with polished edges	0	0	6
E 124.	Ditto, with Excavated Cells for Fluids, each 3d.; with Glass Cells, each	0	0	4
E 125.	Ditto, Enamelled for Opaque Objects	0	0	3
E 126.	Thin Glass, in Squares	0	3	6
E 127.	Ditto, Circles	0	5	0
E 128.	Cells, of various forms, for Injections and Objects required to be mounted in Fluids	0	1	3
E 129.	Canada Balsam	0	1	0
E 130.	Gold Size	0	1	0
E 131.	Asphalte or Brunswick Black	0	1	0
E 132.	Glycerine Jelly or Gelatine Medium	0	1	0
E 133.	Marine Glue	0	1	0
E 134.	Bell's Cement	0	1	0
E 135.	Glass Bottle, with Glass Cap, for Balsam	0	1	6
E 136.	Section Lifter	0	0	6
E 137.	Staining Solutions	0	1	0
E 138.	Stains for Bacteria	0	1	6
E 139.	Spring Mounting Clips, Brass	0	1	6
E 140.	Collecting Bottle, with Strainer, complete	0	5	0
E 141.	Dissecting Troughs	0	2	6
E 142.	Zoophyte	0	4	6
E 143.	Stage Plates	0	1	0
E 144.	Camel Hair Pencils	0	1	0
E 145.	Labels for Slides	0	0	6
E 146.	Watchmakers' Glasses, powerful magnifiers, in Horn	0	1	3
E 147.	Watch Glasses, for dissecting	0	0	4
E 148.	Air-pump, for use in mounting objects, with receiver	1	1	0

DISSECTING INSTRUMENTS.



E 149.	Dissecting Knives, Scalpels, Needles and Tearing Hooks, in Black Handles, Figs. 1 to 20	.. .. . each	£	s.	d.
E 150.	Dissecting Needles, straight and curved, in Wooden Handles	.. .. . 4d. each ; per doz.	0	1	6
E 151.	Scissors, straight, Fig. 23	.. .. . per pair	0	2	6
E 152.	Ditto curved	.. .. . per pair, Fig. 22, 4/6 ; Fig. 21	0	3	9
E 153.	Steel Forceps, straight	.. .. . Fig. 26	0	2	6
E 154.	Ditto curved	.. .. . Fig. 25	0	3	6
E 155.	Ditto cross action	.. .. . Fig. 24	0	5	6
E 156.	Spring Scissors, Forcep Pattern	.. .. . from	0	5	6
E 157.	Valentine's Knife, for making sections of soft substances, complete in Case	.. .. .	0	16	6
E 158.	Pocket Set of Dissecting Instruments, consisting of 2 Knives, 1 Scalpel, 1 Tearing Hook, pair of Scissors and Steel Forceps, in Snap Leather Case	.. .. .	0	14	6
E 159.	Ditto, with 6 Knives, Needles, etc., pair of Curved, pair of Straight Scissors, Steel Forceps, in Snap Leather Case	.. .. .	1	1	0
E 160.	Set of 12 best Dissecting Needles, Knives and Scalpels, in Ivory Handles, 3 pairs Scissors, 3 pairs of Forceps, in Morocco Leather Snap Case	.. .. .	2	10	0
E 161.	Biological Dissecting Case, as used at the Science School, South Kensington, containing 2 Scalpels, 2 pairs of Forceps, 2 pairs of Scissors, 1 Razor, Needles, Seeker and Blow-pipe	.. .. .	0	16	6

HAND MAGNIFIERS, POCKET MICROSCOPES, &c.

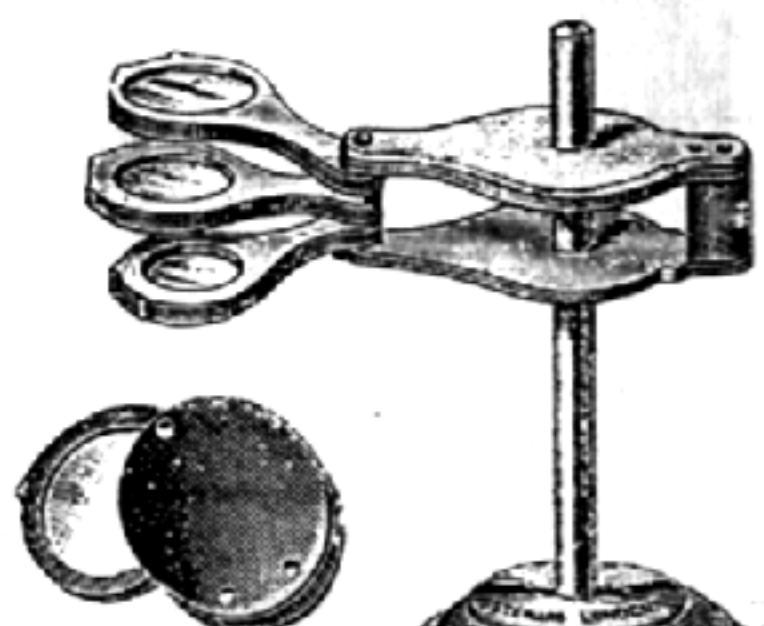


Fig. 18.
Pocket

Magnifier, 1/-

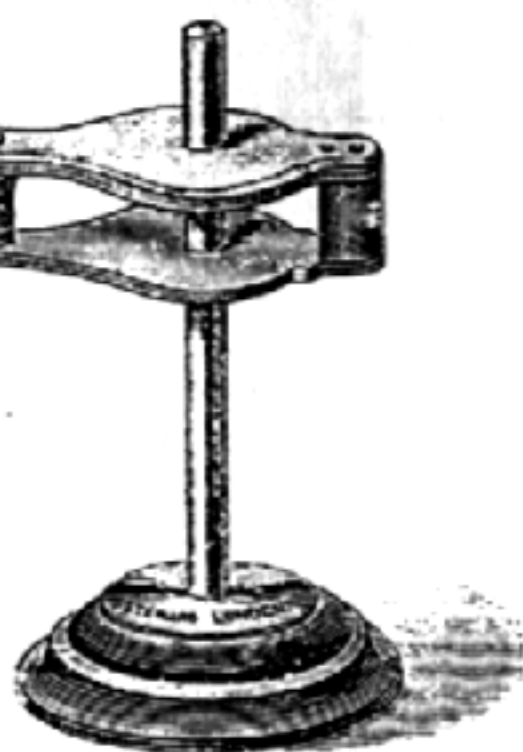


Fig. 19.

Lens on Stand, 7/6

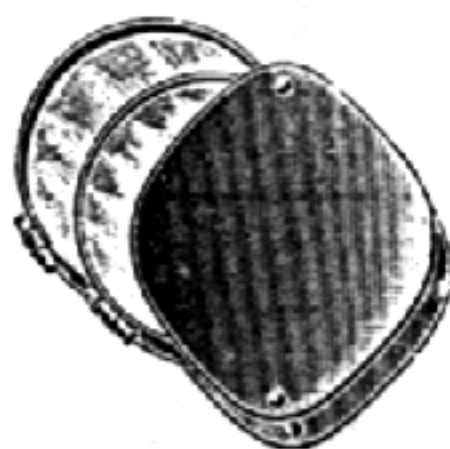


Fig. 20. Pocket Magnifier, 5/-

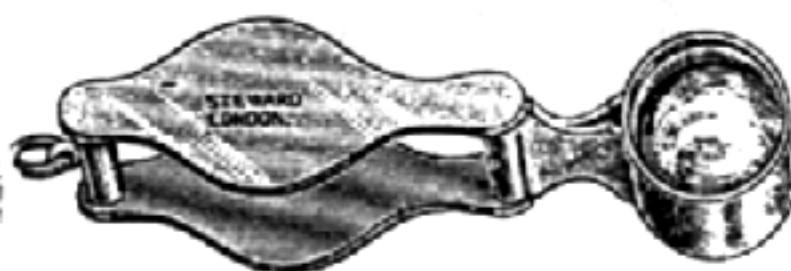


Fig. 21. Aplanatic Magnifier, 15/-

E 162.	Pocket	Magnifier, mounted in Horn Frame, Fig. 18.			
		1 Lens $\frac{1}{2}$ in. diameter, 1/- ; 1 in. diameter	0	1	6
E 163.	Ditto	$1\frac{1}{8}$ in. diameter	0	1	6
E 164.	Ditto	$1\frac{1}{4}$ in.	0	2	0
E 165.	Ditto	$1\frac{3}{4}$ in. diameter	0	4	0
E 166.	Ditto	2 Lenses, $1\frac{1}{4}$ in.	0	3	6
E 167.	Ditto	3 ditto, giving 6 different powers (fig. 19 without stand)...	0	3	6
E 168.	Pocket	Magnifier, mounted in Tortoise-shell Frame,			
		1 Lens 1 in.	0	3	6
E 169.	Ditto	2 Lenses 1 in.	0	4	6
E 170.	Ditto	3 ditto $1\frac{1}{4}$ in.	0	6	6
E 171.	Magnifier,	in White Metal Case, with Lens $1\frac{1}{4}$ in. diameter...	0	3	6
E 172.	Ditto	ditto two lenses (Fig. 20)	0	5	0
<i>These are suitable for hot climates.</i>					
E 173.	Pocket	Magnifier in Tortoise-shell frame, with three Lenses and Diaphragm at one end, and powerful Coddington Lens at the other, making a most complete Pocket Microscope, giving seven powers	0	16	6
E 174.	Ditto,	two Lenses, and Coddington, giving four different powers	0	10	6
E 175.	Aplanatic	Achromatic Pocket Lens, having long working distance with great power and good light, very valuable to Medical men, Botanists, Explorers, Geologists, etc. In Tortoise-shell Case (Fig. 21)...	0	15	0
E 176.	Ditto	ditto in White Metal Case (Fig. 21)	0	17	6
<i>These consist of three Lenses cemented together, and mounted in a Fiddle-shaped Frame. They are a great improvement on the Coddington Lens, being equal to the latter in power with much larger field and more light, and have greater working distance. They are made in three sizes and three powers—viz., 8, 12 and 18. The medium size is recommended for general use, and the large for objects having considerable depth, and the smallest for flat objects, such as diatoms, etc.</i>					
E 177.	Triple	Magnifier, on a Stand, to slide up and down a Pillar, for Dissecting purposes, Fig. 19	0	7	6
E 178.	Simple	Dissecting Microscope, on Adjusting Stand, with 3 powers	0	15	0
For other Dissecting Microscopes, see page 17.					

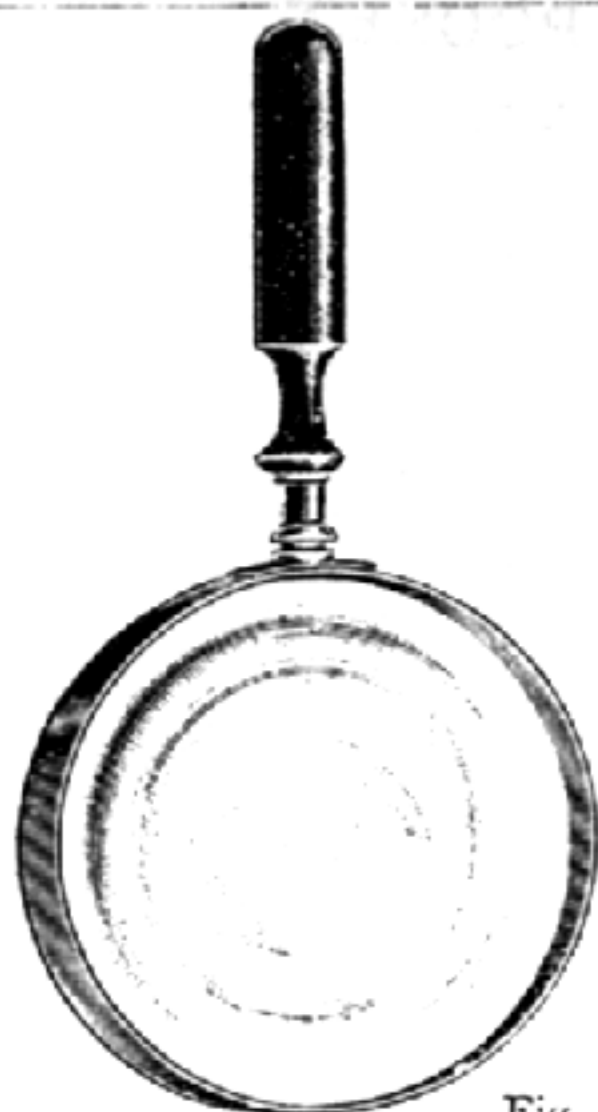


Fig. 22.

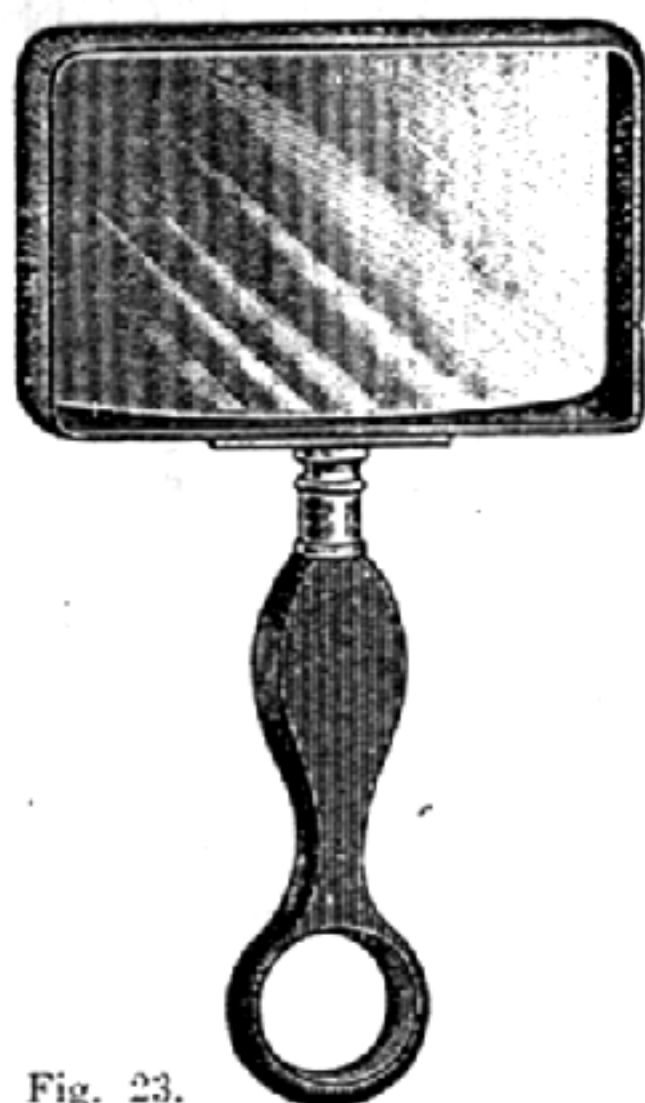


Fig. 23.

MAGNIFYING GLASSES.

WITH CIRCULAR DOUBLE CONVEX LENSES.

For examining Photographs, Cartes de Visite, Maps, Pictures, etc., mounted in Nickel-plated Rims, with Black Handle. The size is the diameter of the Lens in inches.

			£	s.	d.				£	s.	d.
E 179.	1st size Lens	1½ ins.	0	1	6	E 187.	9th size Lens	4 ins.	0	9	6
E 180.	2nd ..	1¾ ..	0	2	6	E 188.	10th ..	4½ ..	0	10	6
E 181.	3rd ..	2 ..	0	3	6	E 189.	11th ..	4¾ ..	0	12	6
E 182.	4th ..	2½ ..	0	4	6	E 190.	12th ..	5 ..	0	14	6
E 183.	5th ..	2¾ ..	0	5	6	E 191.	13th ..	6 ..	0	16	6
E 184.	6th ..	3 ..	0	6	6	E 192.	14th ..	6 ..	1	1	0
E 185.	7th ..	3½ ..	0	7	6	E 193.	15th ..	6½ ..	1	7	6
E 186.	8th ..	3¾ Fig. 22	0	8	6						
E 194.	Magnifying Lens on Stand, with adjustments, suitable for Artists, Invalids, etc., universal joints, best quality, Lens 4 inches diameter £1 10 0										

These are best quality Lenses and strong Mounts.

The 11th to 15th sizes are suitable for pictures.

MAGNIFYING GLASSES.

WITH OBLONG LENSES.

Magnifier with Oblong Double Convex Lenses in White Metal Mounts and Black Handles.

			£	s.	d.
E 195.	1st size	2½ × 1½ ins.	0	5	6
E 196.	2nd ..	3¼ × 2¼ ..	0	7	6
E 197.	3rd ..	3¾ × 2½ ..	0	8	6

CYLINDRICAL MAGNIFYING LENSES.

FOR READING, etc. See Fig. 23. In Strong Oblong Vulcanite Frames, with German Silver Mounts and Vulcanite Handles.

Specially recommended, as the Lenses give a flat field and do not strain the eyes.

E 198.	1st size, in Mount	3½ by 2½ inches	0	10	6
E 199.	2nd ..	do. 3½ by 2½ ..	0	12	6
E 200.	3rd ..	do. 3½ by 2½ ..	0	14	6
E 201.	4th ..	do. 4 by 2½ ..	0	16	6
E 202.	5th ..	do. 4½ by 3½ ..	1	2	6
E 203.	6th ..	do. 4½ by 3½ ..	1	7	6
E 204.	7th ..	do. 5½ by 3½ ..	1	12	6

STEWARD'S NEW FOLDING POCKET ACHROMATIC MICROSCOPE.

E 205. **New Folding Pocket Achromatic Microscope**, for Naturalists, Medical Men, Diatom collecting, etc. The stand is very firm when in use, and the folding is performed by one movement, the support being hinged to the bottom of case and stage.

The achromatic objective gives three powers, from 50 to 200 diameters of good definition, and there is a live cage and pair of tweezers packed in the mahogany case.

Size, when closed. $5\frac{1}{2} \times 2\frac{1}{2} \times 2\frac{1}{2}$ ins. £2 2 0

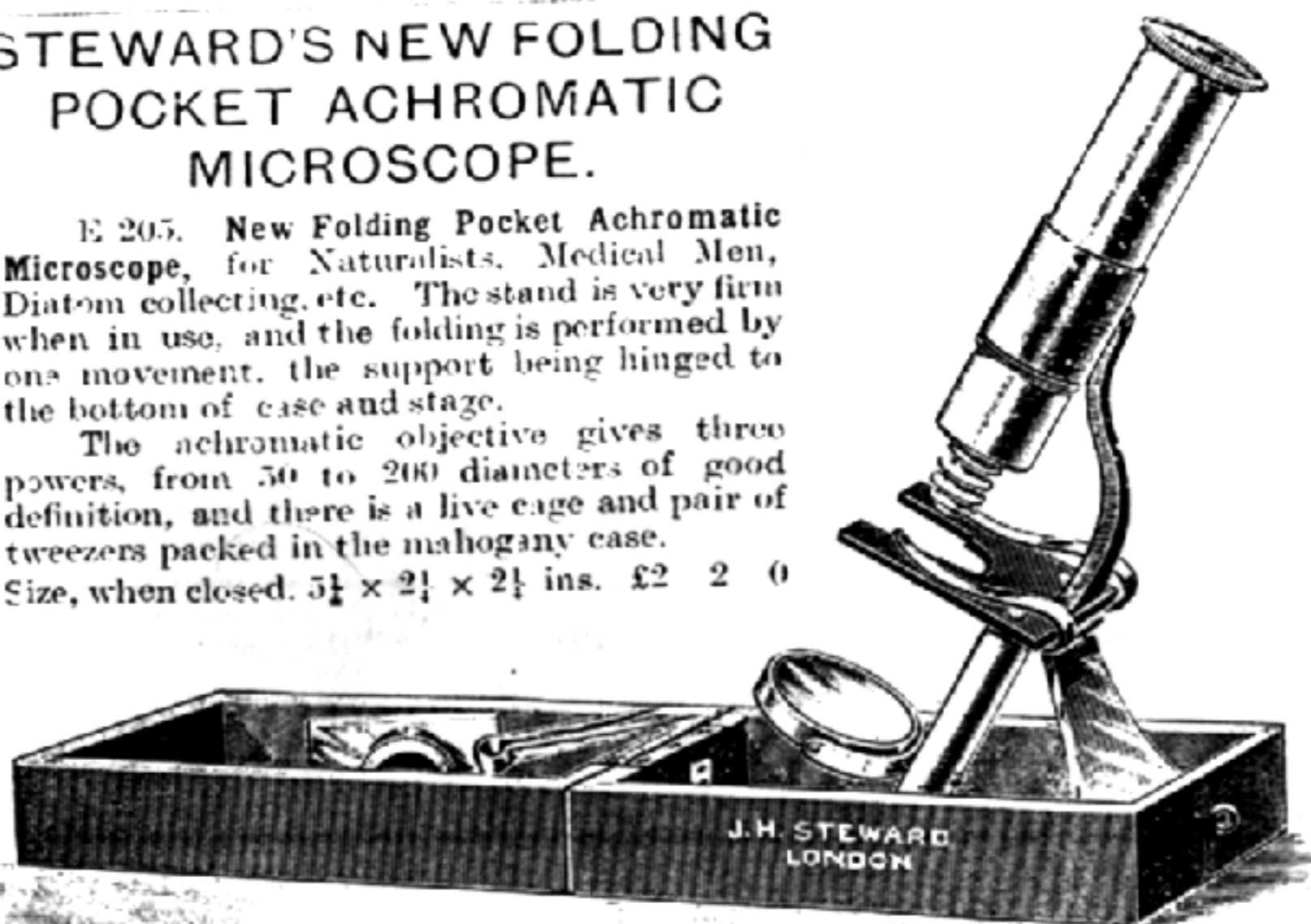


Fig. 24—Price £2 2 0.

YOUTHS' OR SCHOOL MICROSCOPES.

E 203. **Compound Microscope**. Brass Tubular form, with one object-glass and eye-piece, magnifying 300 times, in polished case, complete

£0 7 0

E 207. Ditto, ditto, dividing object-glass giving 3 powers, magnifying from 300 to 800 times, in case complete

0 10 6

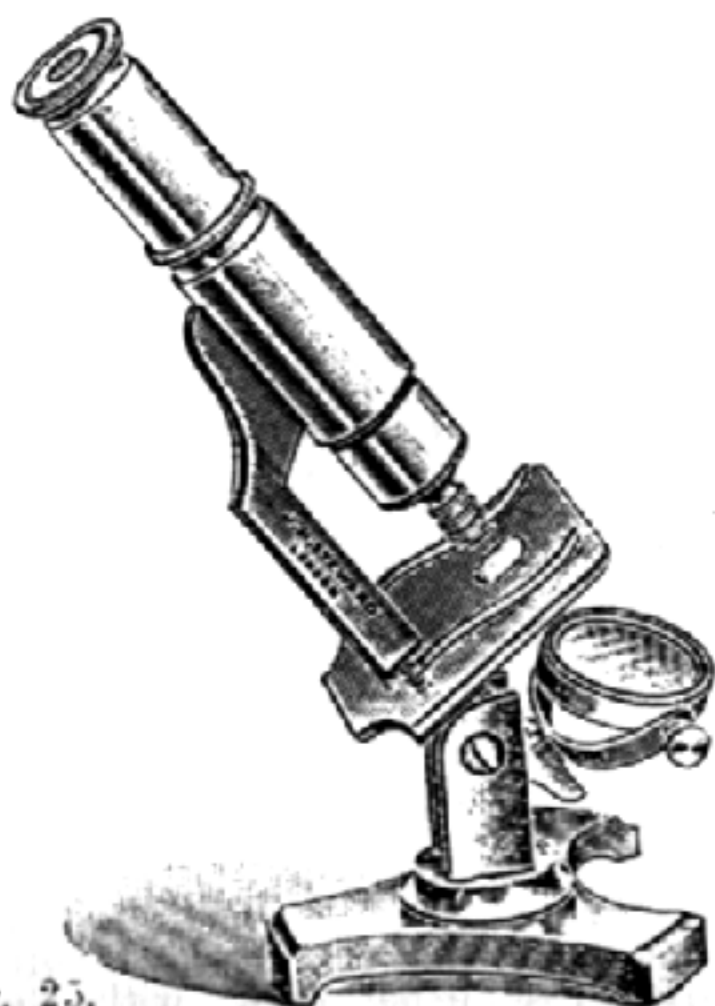


Fig. 25.

THE ONE GUINEA COMPOUND MICROSCOPE.

With 2 powers and
Cabinet.

E 208. **Achromatic Compound Microscope**, with body to incline, 2 powers, magnifying from 10 to 100 diameters, or 10,000 times, mirror in gimbal mount, spring to stage; in polished case.

£1 1 0

Fig. 25 J. H. STEWARD, 406, 437, STRAND, W.C. ; 7, GRACECHURCH STREET, E.C., LONDON.

PORTABLE ACHROMATIC MICROSCOPE

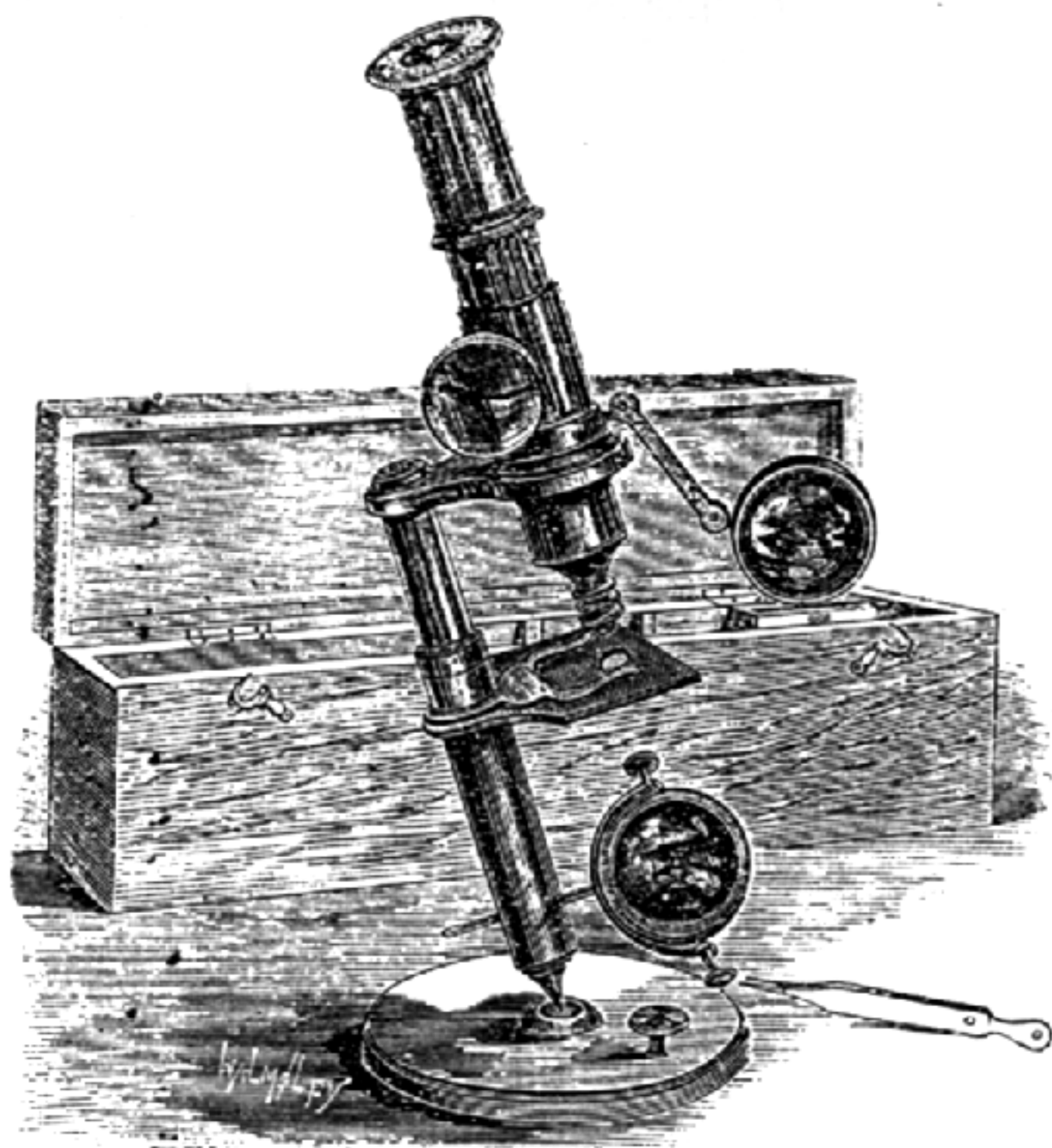


Fig. 26.—Portable Achromatic Microscope, £1 15s.

E 209. Portable Achromatic Microscope, with rack and pinion to focussing tube, spring object-holder to stage, and condensing lens for the examination of opaque objects; three achromatic powers, magnifying from about 30 to 100 diameters, or 10,000 times superficial, two glass slides, and pair of brass tweezers. Price, complete in Mahogany case. Fig. 26

£1 15 0

BOXES, CABINETS, &c., FOR MICROSCOPIC OBJECTS.

								£	s.	d.
E 210.	Cloth Box,	with Rackwork,	to hold 6 Objects	..	..	..	..	0	0	6
E 211.	Ditto	ditto	do. 12	do.	..	..	..	0	0	8
E 212.	Ditto	ditto	do. 24	do.	..	..	..	0	1	0
E 213.	Polished Pine Object-boxes,	with 6 Trays,	to hold 36 Objects in a horizontal position	..	..	..	..	0	3	0
E 214.	Ditto,	with 12 Trays,	to hold 72 Objects in a horizontal position	..	..	..	..	0	4	0
E 215.	Ditto,	with 12 Trays,	to hold 144 Objects in a horizontal position	..	..	..	..	0	10	6
E 216.	Mahogany Cabinet,	with front to fall down,	with Trays for 72 Objects, with Lock and Key	..	..	..	..	0	12	6
E 217.	Ditto	ditto	144 do. do.	..	..	..	..	1	5	0
E 218.	Mahogany Cabinet,	of superior finish,	with Moulded Top and Bottom, and Glass Panel Door, with 19 Drawers, to hold 300 Objects	..	..	..	..	4	4	0
E 219.	Mahogany Cabinet,	with Moulded Top,	and 21 Drawers, to hold 500 Objects	..	..	..	..	5	5	0
E 220.	Ditto	ditto	ditto 28 do. do. 750 do.	..	..	..	..	6	15	0
E 221.	Ditto	ditto	ditto 28 do. do. 1000 do.	..	..	..	..	7	17	6

LIST OF MICROSCOPIC OBJECTS.

By the Best Mounters.

PRICE FROM ONE SHILLING EACH.

TEST OBJECTS, 1s. and 1s. 6d. each.

Amphipleura Pellucida	Pleurosigma Quadratum	Scales of Pontia Brassica
Navicula Crassinervia	" Spencerii	" Morphomenela-
" Rhomboides	" Strigilis	sis
Nitzschia Sigmoidea	Suriella Gemma	" Papilio Paris
Pleurosigma Angulatum	Scales of Meadow Brown	" Lepisma sacch-
" Attenuatum	Butterfly	arina
" Formosum	Scales of Azure Blue	Hair of Dermestes
" Hippocampus	Butterfly	" Indian Bat
		Section of Spine of Echinus

OPAQUE OBJECTS, 1s. each.

Except where marked otherwise.

Foraminifera, Mediter-	Spicules of Xenia	Foraminifera, grouped
ranean	" Calcareous	Foraminifera, River Nene,
Foraminifera, Atlantic	" Synapta	Cambridge
Ocean	" Sponge	Foraminifera, North Sea
Foraminifera, Selected	Young Star Fish	Ocean Telegraph Sound-
Shells	Young Oysters	ings, Valencia
Polycystina, from West	Zoophyte Australia	Diatomacea, from Nott-
Indies	Spines of Spatangus	ingham, U.S.A.
Polycystina, Selected	Palate of Patella	Diatomaceæ, Toome
" Barbados,	Wing Case of Diamond	Bridge, Ireland
Native Gold (Nuggets)	Beetle	Pure Gold electro deposit
Quartz with Gold	Leg of Ditto	Magnetyte, Magnetic Iron
Gold Dust	Sections of Hair of Pe-	Ore
Bi-sulphuret of Tin	carry	Ferruginous Mica
Ruby Sand	Foraminifera, Mediter-	Flower Seeds (selected)
Ruby Copper Ore	ranean	Scales of Azure Blue
Needle Antimony	Foraminifera, Atlantic	Butterfly
Peacock Copper	2000 fathoms	Wing of Butterfly
Seeds of Poppy	Foraminifera, north of	Wing of Whiteplume Moth
" Digitalis Fenig-	Azores, 170 fathoms	Embryo Wing of Moth
inea	Foraminifera, south-west	Eggs of Magpie Moth
" Antirrhinum Ma-	of Guiana, 1800 fathoms,	Eggs of Parasite of Horse
jus	large shells	Eggs of Golden Pheasant
" Maryland Tobacco	Foraminifera, east of	Asparagus Beetle, whole
" Orchid	Azores, 1650 fathoms	British Diamond Beetle,
Leg and Foot of Dytiscus	Foraminifera, from March,	whole
Young Oysters	Cambridgeshire	Diamond Beetles, several
Leg and Foot of Ermine	Foraminifera, from Chalk	species, various parts of
Moth	Foraminifera, coast of Aus-	South American
Wing of Ermine Moth	tralia	Palate of Haliotis
Wing of Butterfly	Foraminifera, Caribbean	Group of Pedicellana of
Polyommatus Alescis	Sea, 1500 fathoms, large	Star Fish, 1/6
Vanessa Atlanta	shells	Group of Spines of Star
Emperor Moth	Ditto, ditto, small shells	Fish, 1/6
Spicules of Gorgonia, vari-	Foraminifera, near Caro-	Dental Plates of Star Fish,
ous	line Islands, 1800 fath-	fairy slippers
" Aleyonium	oms	Skin of Spotted Dog Fish
(white)	Foraminifera, Great Bar-	Seeds of Nemesia
" Ditto (red)	rier Reef, 150 fathoms	Hair of Sea Mouse

POLARISING OBJECTS, 1s. each.

Palate of Whelk	Oxalurate of Ammonia	Young Oysters
" Snail	Oxalate of "	Scales from a Fern
" Limpet	Bi-chromate of Potash	Section of Hoof of Pig
Quill	Carbonate "	" Beard of Turkey
Scale of Nethobolus Lingua	Hippuric Acid	Grey Human Hair
" Ferns	Bi-tartrate of Ammonia	Hairs of Sea Buckthorn
" Pupeltis Pumatipda	Boracic Acid	Comet Hairs of Leaf
Horse Hair	Oxalate of Lime	Lambs' Wool, 3 Colours
Scale of Perch	Ferrieyanide of Potassium	Sulphate of Lime
" Sole	Gallie Acid	Silk, Two Colours
" Eel	Epsom Salts	Hair of Indian Cow
Ox Horn	Platina Cyanide of Magnesia	" Monkey
Ram Horn	Berberine	Quill of Porcupine
Stellate Hairs, Deutzia	Seed of Ecremocarpos	Swim-bladder of Sturgeon
Chlorate of Potash	Rolling Stones	Palate of Trochus
Salicine (very fine)	Rhinoceros Horn	" Haliotus
Sulphate of Copper	Buffalo Horn	Leaf of Deutzia, with Hairs
Carbonate of Lime	Antelope Horn	Cocoon of Moth
Citric Acid	Section of Hoof of Horse	Quinidine
Tartrate of Lime	Hair, Human	Section of Tongue of Cat
Sulphate of Cadmium	" Brahmin Bull	" Dorsal Fin of Shark
Saliginin	" Rhinoceros	Raw Silk
Cinconodine	" Elephant	Starch of Calabar Bean
Santonin	Whiskers of Walrus	Cuticle of Equisetum
Iodine of Potass of Mercury	Skin of Alligator	Beard of Mussel
Borax	Berlin Wool	Alpaca Fibre
Tartaric Acid	Satin Spar	Toe of White Mouse 1/6
	Starch—Arrowroot	
	" Tous les Mois	

OBJECTS MOVING IN FLUID.

Crushed Brazillian Pebble	Young Oysters, double moisture	Carbonate of Lime
Sulphate of Lime	Raphides of Turkey	Specules of Gorgonia
Quartz Sand, from Mediterranean	Rhubarb	

POLARISCOPIC OBJECTS.

Exuxium of Prawn	Bryozoa Plumosa	Hard Acid from Human Fat
Toe Nail, transverse sections	Crystallisation of Fatty Acids	Mixed hard Acids from Cod Liver Oil
Whalebone sections	These preparations require to be warmed until the substance melts. Its crystallisation may then be observed as it cools on the stage.	Margaric Acid from Olive Oil
Elytron of Dyticus marginalis	Fatty Acid from Sheep Tallow	Palmitic from Palm Oil
Bryozoa Bicellaria tuba Ciliata		Hard Acid from Cotton Seed Oil
Bryozoa Bugula Flabellata		Stearic Acid from Cocoa Butter
Australian Algu Ballia Callitricha		Spermaceti, from Fish Oil

HARD SECTIONS, 1s. 6d. each.

New Red Sandstone	Polycestina in Situ	Australian Quartz
Siberian Granite	Bracia Labrador	Granite
Agate	Lapis Lazuli	Actynolite
Scotch Pebble	Carrara Marble	Avanturine
Barbados Rock		Tremolite

SELENITES, red and green, blue and yellow, and various. 5s. the set of 3, or 1s. 9d. each.

GEOLOGICAL SPECIMENS, 1s. 6d. each.

Augite Basalt, from Edinburgh	Gabbro (Hornblende and Diallage), Lizard	Pumice Stone, Vesuvius
Diorite, Corsotophine Hills	Granite, various	Serpentine, Cornwall
Dolerite, Salisbury Crag	Ditto, Aberdeen	Slate, Bangor
Diabase, Malvern Hills	Lava, from Cotapaxa	Sunstone, Norway
Diallage, Lizard, Cornwall	Obsidian, Ascension	Syenite, Buttermere
Felstone (Porphyry), Gow-rock	Oligoclase, Sweden	Ditto, Malvern
	Orthoclase ..	Volcanic Ash, Antrim
	Pitchstone, Arran	Volcanic Dust, Martinique
		Quartz Rock, Brazil
Chert, from Godstone	Limestones, various	Old Red Sandstone, Scotland
Clay Slate, Bangor	Encrinural Limestone, Dudley	New Red Sandstone, Cumberland
Hard Chalk, various	Forest Marble, from Italy	Portland Oolite
Carboniferous Limestone, various	Carrara .. Italy	Ragstone, Maidstone
Silicious Limestone, Yorkshire	Bristol Oolite	Zeolite
	Quartzite, various	

COAL, FOSSIL WOOD, 1s. 6d. each.

Coal, Turbane Hill	Fossil formation in limestone	Fossil Moss, from Burnt-island
Coal, long. and transverse sections	Fossil Coal	Endogenites Crossi, Carboniferous formation
Section of Jet, Whitby	Fossil Nummulite	Palm, from West Indies
	Fossil Ferns from Coal	

FORAMINIFERA, TRANSPARENT.

From Mediterranean	From Atlantic, south-west of Guiana, 1800 fathoms	From Chalk
.. Coast of Australia	.. Atlantic, 2000 fathoms (2 miles)	.. March, Cambridgeshire
.. Atlantic, East of Azores, 1650 fathoms		Globigerina Ooze

ENTOMOLOGICAL OBJECTS, 1s. each.*Except where otherwise stated.*

Proboscis of Blow Fly	Leg of Queen Bee	Hair of Larva of Dermestes
.. Drone ..	Spinneret of Spider	Antenna of Gnat
.. Empis ..	.. Silkworm	Wing of Earwig
.. Moth	Tongue of Bee	.. Crane Fly
Leg and Foot of Fly	Eye of Fly	Head of ..
.. Bee	.. Beetle (to show the Image)	Leg and Foot of Hornet
.. Wasp	Wing of Bee	.. Hairy Bee
.. Dyticus	.. Moth	Wing of Grasshopper
Antenna of Cockchafer	Wing of Butterfly	Head of Scorpion Fly
.. Honey Bee	Poiser of Blow Fly	.. Butterfly, 2s.
.. Dyticus	Jaws of Spider	.. Bee, 1s. 6d.
.. Blow Fly	Skin of Caterpillar	.. Field Ant
.. Cockroach	Trachea of Silkworm	.. Wasp, 2s.
.. Bufftip Moth	Spiracles of Silkworm	.. Plumed Gnat
.. Emperor	.. Cockchafer	(male and female)
.. Moth	.. Blow Fly	The following prepared without pressure:—
.. Silk Moth	.. Bee	Proboscis of Blow Fly, 1/6
Leg and Foot of Spider	.. Dytiscus	Head of Burnet Moth, 1/6
.. Scatophagh	Ovipositor of Drone Fly	Heads of various Bees and Wasps for Spot Lens, 2/- each
.. Moth	.. Crane Fly	
.. Boat Fly	.. Spider	
.. Beetle	Antenna of Drone Fly	
1st leg of Hairy Bee	.. Moth	
2nd ..	Hair of Caterpillar	
3rd ..		

MEDICAL AND INJECTED OBJECTS.

1s. 6d. each.

Except where otherwise stated.

Human Lung	Human Eye (Pigment cells)	Large and small Intestine and stomach of Python
Malphigian Gland of Human Kidney	.. Rib (cartilage)	Large and small intestines of Emu
Vein of Human Kidney	.. Sweat Glands	Tongue of Cat
Large Intestine	.. Finger (section)	Bladder of Frog
Small ..	.. Bladder	Large Intestine of Toad
Human Skin	.. Kidney (Bright's)	Section of Lip of Cat
.. Adipose Tissue	.. .. (fœtal)	Section of Tongue of Rabbit
.. Muscle, Voluntary	.. Stomach (section)	Trichine Spiralis in Human Muscles, 2s.
.. .. Involuntary	Intestine of Dog	Spermatozoa, Human
.. Tongue	Ditto, of Sheep	.. Elephant
.. Mesentery	Skin of Toad	Crystals of Human Blood
.. Liver	Lung of Frog	
.. Muscle	Ova of Frog	
.. Placenta		

TRANSPARENT INJECTIONS AND STAINED TISSUES,

1s. 6d. each.

Human Lung	Trans-section of Human Muscle	Frog, Large Intestine
Fœtal Lung	Human Cartilage, Adult	.. Muscle
Kidney	Human Cartilage, Fœtal	Cat, Section of Nose
Liver	Trans-section of a Tape-worm	.. .. Brain
Skin, Finger Stained	White Mouse, Toe	.. .. Intestine
Scalp ..	White Mouse, Section of Kidney	.. .. Liver
Scalp, Hair Follicles ..	Frog, Tongue	.. .. Kidney
Sciatic Nerve ..	.. Skin	.. .. Tongue
Spinal Cord ..	.. Web of Foot	.. .. Pad of Foot
Cerebellum ..	.. Section of Stomach	.. .. Muscle
Human Corn ..	.. .. Kidney	Skin of Sheep
Medulla Oblongata ..	.. .. Testicle	Section of Pad of Foot, Dog
White Fibrous Tissue		.. Lip of Rat
Yellow Elastic Tissue		.. .. Cat
Voluntary Muscle		
Involuntary Muscle		

BLOOD DISCS, 1s. each.

Human	Fish	Triton
Sheep	Reptile	Toad
Birds	Serpent	Frog

URINARY SERIES.

1. Carbonate of Lime—Human	8. Oxalate of Lime (dumb-bell)	15. Urate of Ammonia
2. Carbonate of Lime—Horse	9. Oxalate of Lime (octahedral)	16. „ Lime
3. Cholesterin	10. Pus globules	17. „ Magnesia
4. Creatin	11. Spermatozoa—Human	18. „ Soda
5. Cystin	12. Taurin	19. Urea
6. Hippuric Acid	13. Triple Phosphate	20. Urea, Nitrate
7. Leucin	14. Tyrosin	21. Phosphate of Lime
		22. Uric Acid, No. 1
		23. „ „ No. 2
		24. „ „ No. 3

Single Specimens, 1/6 ; per dozen, 17/0.

The Set, as above, in polished whitewood case (Fig. 89) £1 15 0

24 PHYSIOLOGICAL PREPARATIONS.

£1 15s. per set of 24 in case, or 1s. 6d. each.

SERIES No. 1.	SERIES No. 2.	SERIES No. 3.
1. Blood, Mammalian	1. Aorta, Trans-section	1. Skin, Vertical Section
2. „ Amphibian	2. Artery „ „	2. Scalp „ „
3. Epithelium Dsnamous	3. Vein „ „	3. „ Horizontal „
4. „ Columnar	4. Trachea, Long-section	4. Penis
5. „ Ciliated	5. Lung and Bronchus	5. Testicle
6. „ Transitional	6. Ditto, Injected	6. Vas Deferens
7. Endothelium	7. Tongue, Filiform	7. Prostate
8. White Fibrous Tissue	8. Do., Fungiform Papillæ	8. Ovary
9. Yellow Elastic Tissue	9. Do., Circumvallate do	9. Uterus
10. Tendon, Trans-section	10. Salivary Gland	10. Fallopian Tube
11. „ Long-section	11. Œsophagus, Trans-sec.	11. Mammary Gland
12. Adipose Tissue	12. Stomach, Cardiac	12. Spleen
13. Cartilage Hyaline	13. Stomach, Pyloric	13. Suprarenal Gland
14. „ Elastic	14. Duodenum	14. Thyroid Gland
15. „ Fibre	15. Small Intestine	14. Tonsil
16. „ Ossifying	16. „ „ Injected	16. Lymphatic Gland
17. Bone, Decalcified	17. Large Intestine	17. Spinal Cord
18. „ Hard Section	18. Liver	18. Cerebellum
19. Muscle, Involuntary	19. „ Injected	19. Cerebrum
20. „ Voluntary	20. Pancreas	20. Eyelid
21. Nerve, Medullated	21. Kidney	21. Cornea
22. „ Non-Medullated	22. „ Injected	22. Retina
23. „ Trans-section	23. Bladder	23. Choroid
24. Heart Muscle	24. Ureter	24. Optic Nerve

STARCHES.

SET OF STARCHES AND FIBRES, consisting of twelve specimens as follows:—

6 Starches, Arrowroot, Rice, Ginger, Potato, Tous-les-mois, Wheat. 6 Fibres—Cotton, Flax, Hemp, Jute, Silk, Wool.

Single specimens, 1/3. The set in case, 14/—.

Series of 24 Starch Granules, and Starch-Bearing Roots.

1s. each, or the Set of 24 in case, £1 4s.

1. Potato	10. Tous-les-mois	19. Horse Chestnut
2. Yam	11. Rice	20. Acorn
3. Calabar Bean	12. Rye	21. Sarsaparilla Root,
4. Haricot „	13. Lentil	Starch in do.
5. Green Pea	14. Sago	22. Liquorice,
6. Wheat	15. Tapioca	Starch in do.
7. Maize	16. Arrowroot	23. Sweet Flag Root,
8. Ginger	17. Arum	Starch in do.
9. Indian Shot	18. Oat	24. Peony „ „

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Rose	Pine	Poplar
Sycamore	Maple	Lime
Elm	Cedar	Passion Flower
Beech	Cherry	Birch
Rush, American Reed	Chestnut	Dragon Cane
Geranium	Turkey Rhubarb	Rattan ..
Clematis	Willow	Sugar ..
Bramble	Aspen	Wanghii
Pepper	Oak	Sarsaparilla

VEGETABLE PREPARATIONS, 1s. each.

Scalariform Tissue	Raphides of Squill	Stellate Tissue (stained)
Section of Potato	" " Onion	Cuticle of Aloe
Raphides of Rhubarb	Stellate Cells in Nymphae alba	

BOTANICAL, 1s. each.

Except where otherwise stated.

Ovary of Poppy	Silicious Cuticle of Deutzia	Wing of Pine Seed
Seed of Dandelion	Stellate Cells in Section of	Leaf of Eleagnus
Cuspidatum	Rush	Polypodium Vulgaris
Moss Minium Cuspidatum	Leaf of Deutzia	Stings of Nettle
Bog Moss	Leaf of Carnivorous plant	Fern showing Fructifica-
Sphagnum Acutifolium	with captured insect,	tion
Section of Root of Tapioca	2s.	Muzzed Seed of Nemesia
" " Ginger	Diosera water media	Fresh Water Alga
Pollen of Hollyhock	Ditto, rotundifolia, 2s.	Marine Alga

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From 1s. each.

Aulacodiscus Africanus	Diatom, from Inverness	Arachnoidiscus Japonicus
Gomphonema Geminatum	Diatom, from Peterhead,	Biddulphia
Isthmia Enerves	Aberdeen	Eupodiscus
Isthmia Navooso	Diatom, from Mourne	Conconema
Orthoscia Arenaria	Mountains	Cocconeis
Odontidium Hasrionii.	Diatom, from Toomb	Triceratium
U.S.A.	Bridge, Ireland	Actinocyclus
Diatom, from Sing Sing,	Diatom, from Yarra	Heliopelta
Hudson River	Yarra, Melbourne	
Diatom, from New Hamp-	Arachnoidiscus Ehren-	
shire, U.S.A.	bergii	

LANTERN MICROSCOPE.

E 222. Lantern Projection Microscope, with any well made lantern having Condensers of 2 or 3 inch larger diameter. It is mounted on a spring stage to carry the microscope objects, or a glass trough for thin objects, and will clamp thin or thin or thick object. Rack and pinion adjustment for focusing. 1 inch achromatic object-glass. Fig. 27. Price, £4 15 0.

E 223. Mahogany Case for ditto, and fittings. Price, 0 10 0.

Object-glasses with universal screw can be used with this.

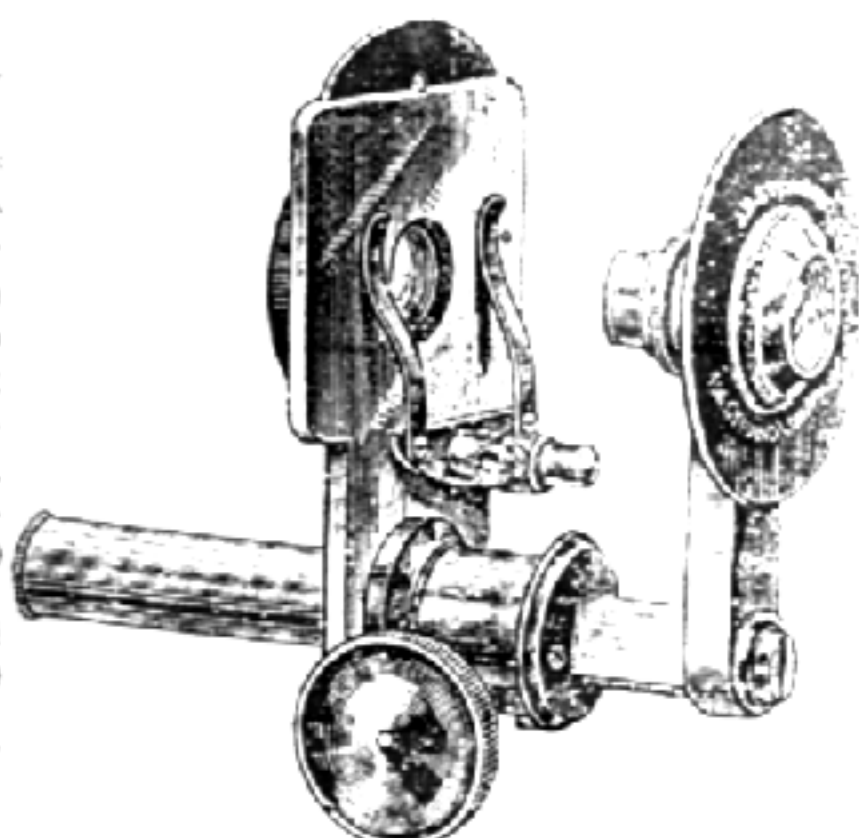


Fig. 27.—£4 15s.

STEWARD'S IMPROVED PROJECTION MICROSCOPE.

For Lime-light or Electric
Lanterns.

As supplied to St. George's
Hospital Medical School.

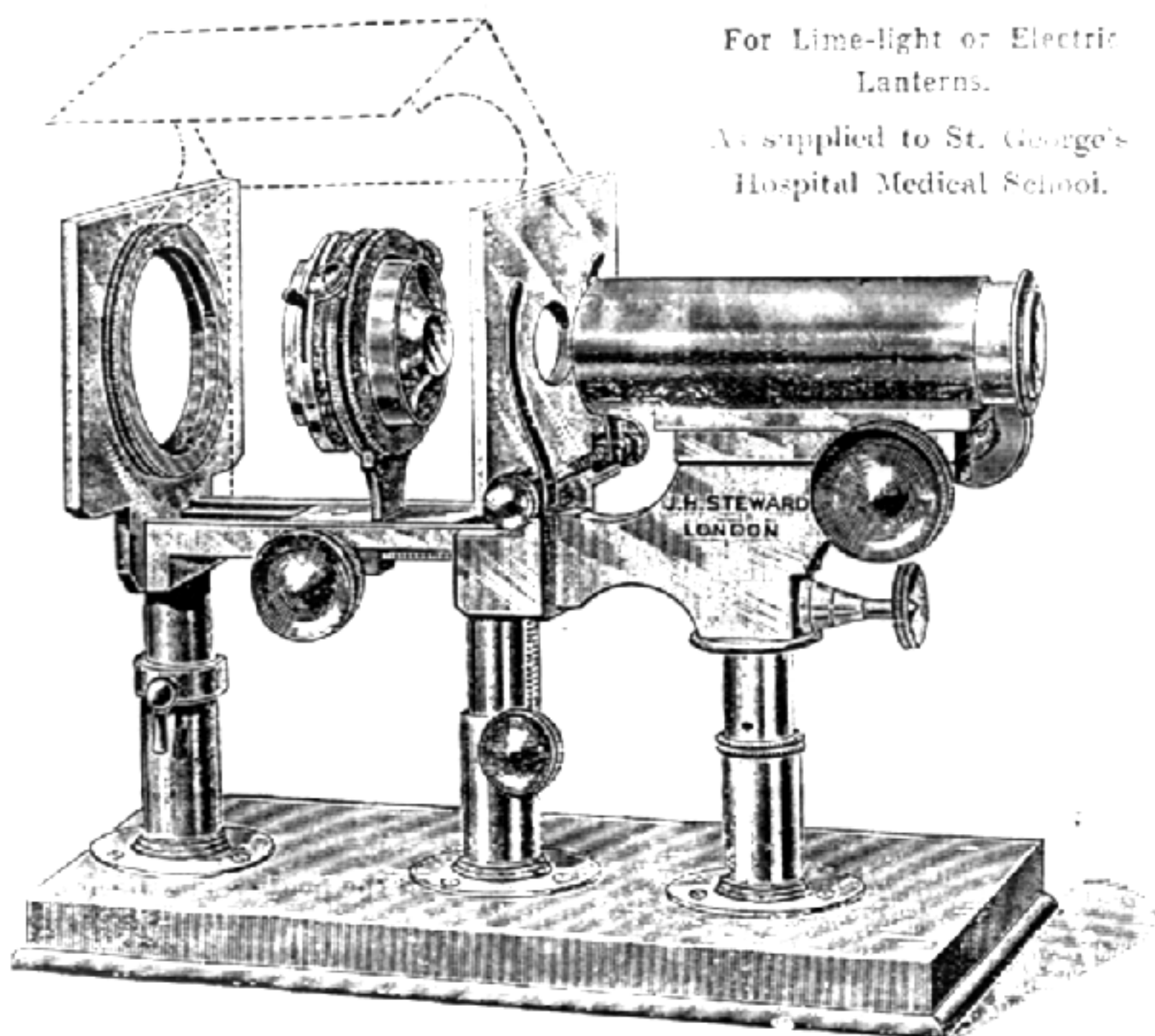


Fig. 28. Price, £15 15 0.

E 224. J. H. Steward's New Projection Microscope, specially designed to give steadiness and secure perfect centring. Will carry any object-glass or eyepiece suitable for projection. Three uprights are provided, two bearing guiding or steadying pillars with clamps, and the centre one rack and pinion. Rack and pinion focusing adjustment, sliding tube and superior fine adjustment. Lamp up to 1000 candles. Quickly getting at all tube and fittings. Aided by a large, clear, and accurate diagram of the microscope.

SURGEONS' LIME-LIGHT LAMP.

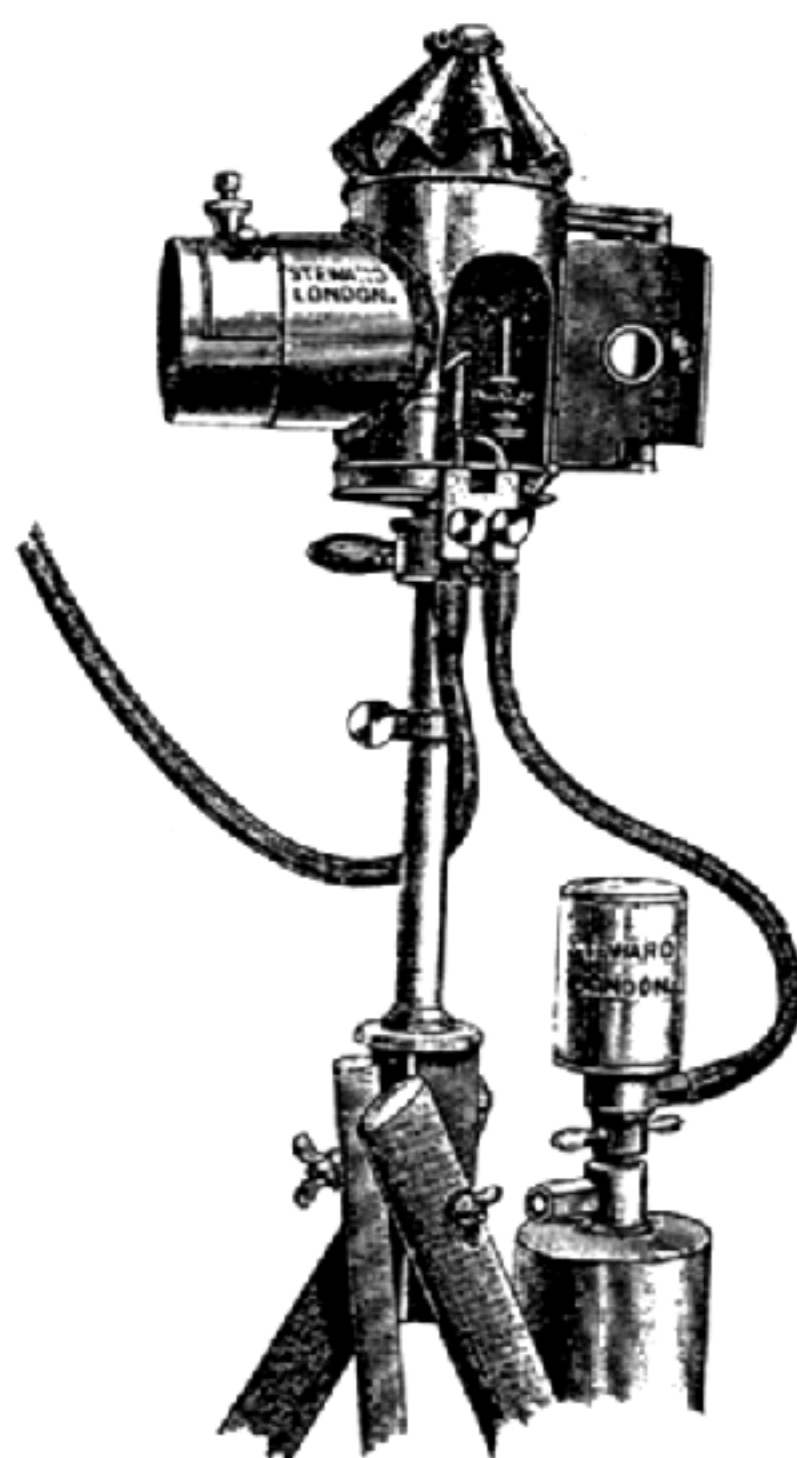


Fig. 29. £5 5s. (without Cylinder).

E 225. **Surgeons' or Illuminating Lamp.** This was first designed by J. H. STEWARD for the City of London Hospital for Diseases of the Chest, and is so arranged that it can be used as a Stand Lamp, or held by a nurse or assistant over the patient's bed. The beam of light is such that at the ordinary distance from the patient the surgeon has a fair latitude for moving without getting the mirror out of the rays. The Condenser is compound, 3 inches diameter, and a water trough is attached to check the heat. The Jet is of the blow-through form, but has special facilities for exact adjustment of light by screw-down valve taps, and a "cut-off" that enables the light to be re-established at what it was set to, or turned down to a bead. The Stand clamps at required height, and the Lamp adjusts on the top of the Stand, and can be clamped at any suitable position. Handles for holding the Lamp and moving it laterally are provided of non-conducting heat material, fig. 29 £5 5 0

E 226. 10 ft. Gas Cylinder and Automatic Regulator, with 10 ft. Oxygen Gas, Box of Limes, 11ft. of tubing, and Rope Cover for Cylinder £3 11 6

THE DAVENPORT-STEWARD UNIVERSAL ARC LAMP.

For Direct or Alternating
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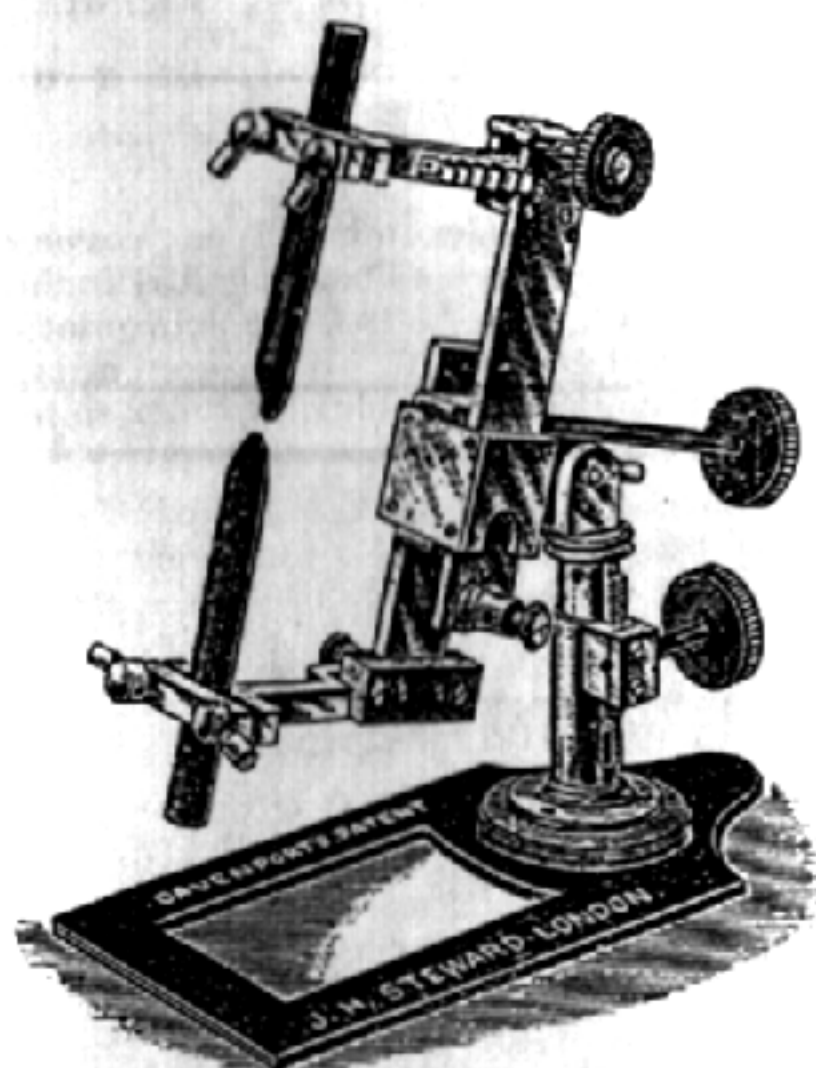


Fig. 30. £5 5 0

E 227. **The Davenport Arc Lamp.**
This has been supplied for Optical
Lanterns and Projecting Micro-
scope to the University College,
Nottingham, Trinity College, Dublin,
St. Paul's School, and the Medical
School, St. George's Hospital.

The centring adjustments are
very perfect and suitable for high
class work.

£5 5 0

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E 228.	American Model Stereoscope, Prismatic Lenses	0	3	6
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NATURALISTS' AND FIELD TELESCOPE.

1 inch
Object Glass.



Fig. 31.

£2 2 0

E 234 The Naturalists' Pocket Telescope in German Silver, covered with morocco leather, closing up into $4\frac{1}{2}$ inches and measuring $15\frac{1}{2}$ inches when drawn out; object glass, 1 inch diameter. The Lenses are achromatic, and have great power with sharp definition and good light. Will show a flag-staff, spire of church, etc., at 15 miles; irregularities of cliff, etc., 22 miles. It is also good as a Telescope for Ornithologists.

Magnifying
power.
15 diameters.

Angular
field.
 $1\cdot4$ degrees.

Lateral field
at 1000 yards.
24·4 yards.

Relative
luminosity.
66.

POCKET HUNTER CASE COMPASSES AND GEOLOGISTS' CLINOMETERS.

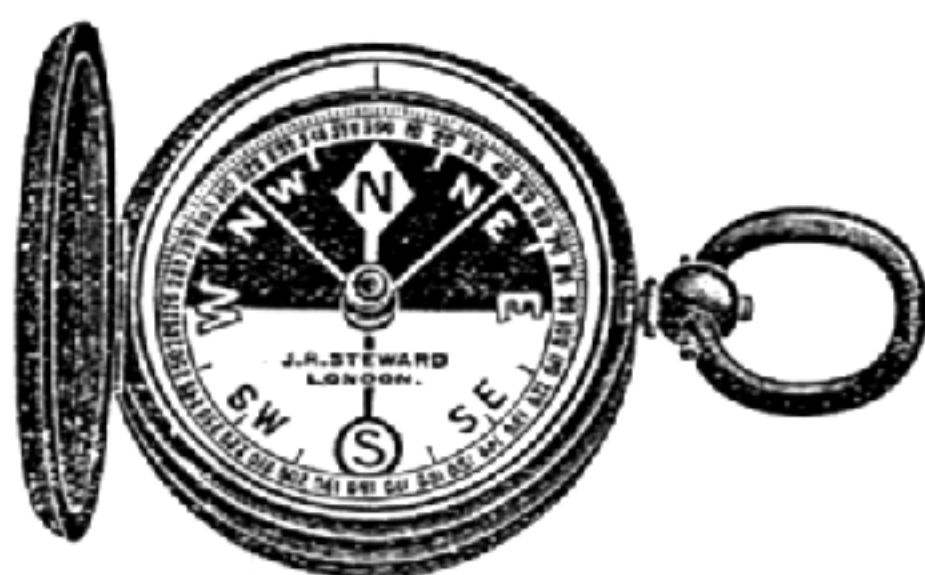


Fig. 32.

E 235. Spring Case Com-
pass, with card dial and stop,
bronzed mounts .. 10/6

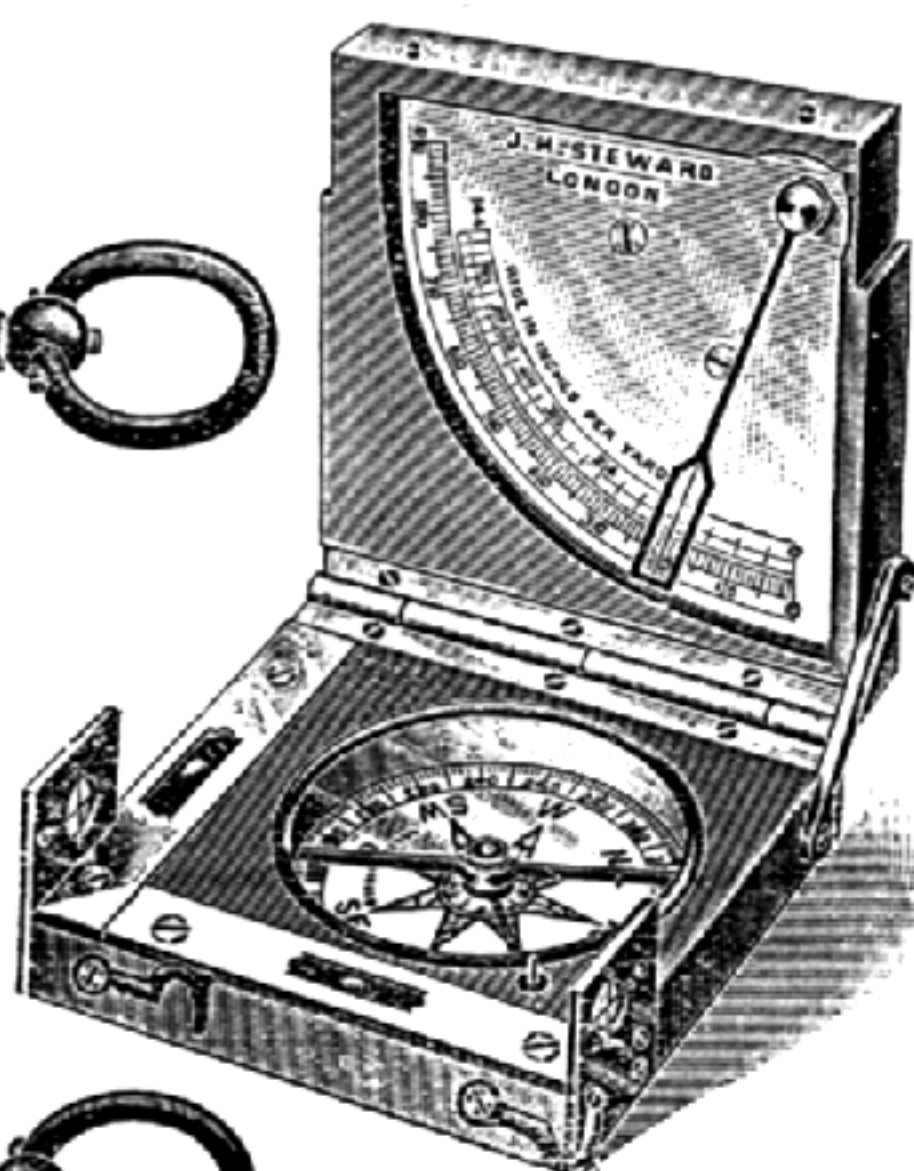


Fig. 34.

E 237. Combined Clinometer
and Sight Compass .. £1 15 0
(As supplied to the Professors of
the Royal School of Mines.)

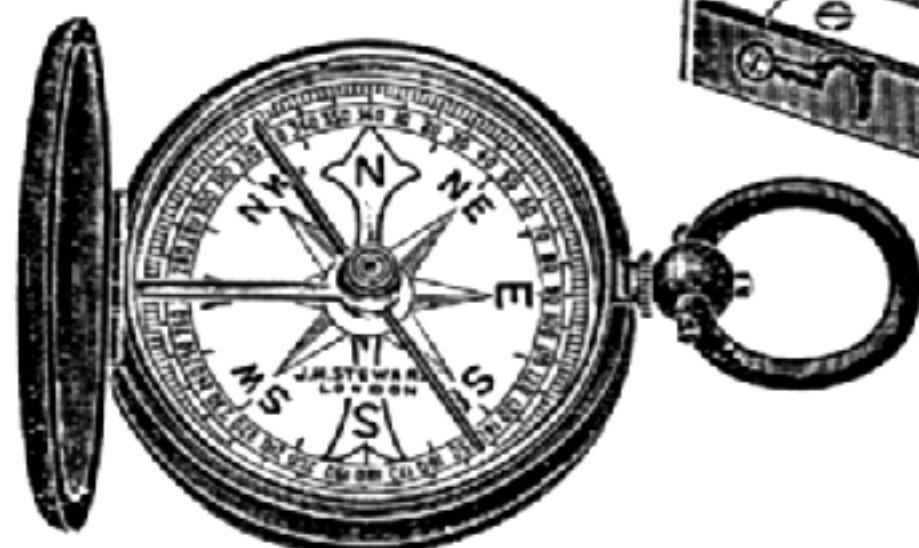


Fig. 33.

E 236. Bronzed Spring Case Compass,
with bar needle and stop .. 10/6

J. H. Steward's Improved
Abney Level, with large arc and
long Vernier £2 17 6

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For showing Altitudes and use as Weather Glasses.



E 238. STEWARD'S SURVEYING ANEROID.

This Pocket Aneroid Barometer is compensated for temperature, and is so sensitive that it shows every 10 feet of altitude.

£3 10 0.

Fig. 35. Surveying Aneroid, £3 10s.

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A strongly made Keyless Lever, as supplied for Official use by the National Rifle Association.

£1 0 0.

Every Watch well regulated and guaranteed.

Sent post free on receipt of remittance.



Fig. 36. The "Bisley" Watch, £1.

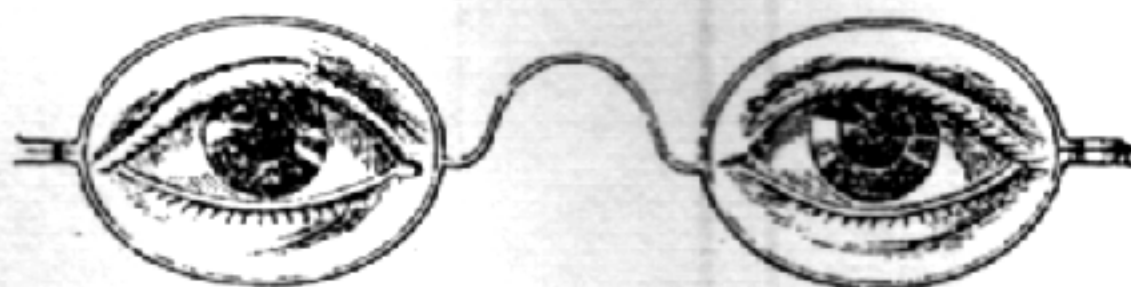
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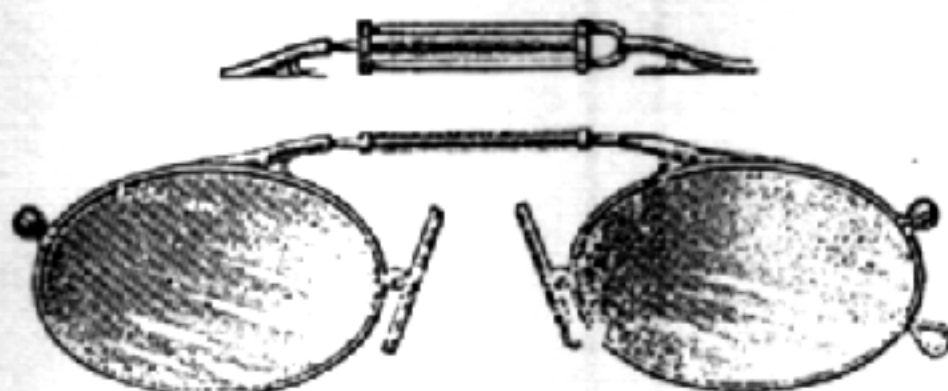
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