No. 699,168. Patented May 6, 1902.

F. H. HILL.

PRISMATIC BINOCULAR TELESCOPE.

(Application filed Sept. 30, 1901.)

(No Model.)

Fig. 1.

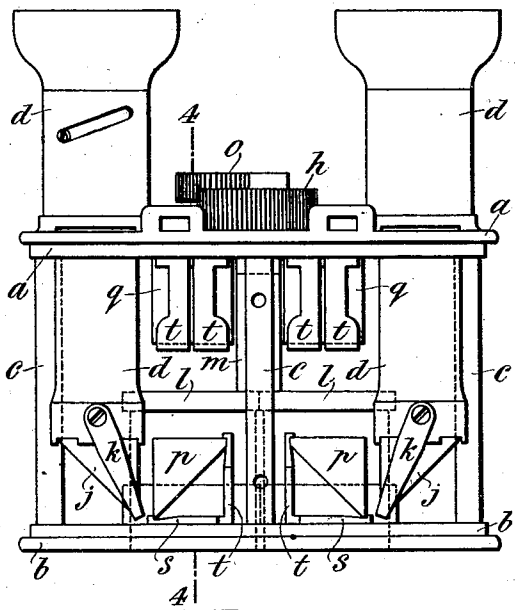


Fig. 4.

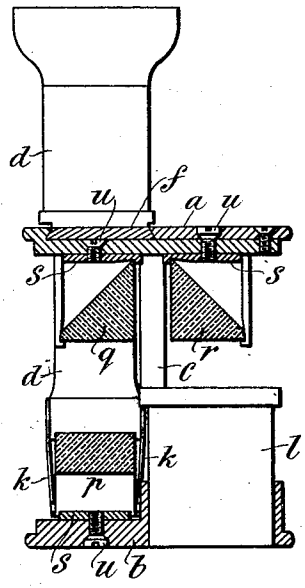


Fig. 2.

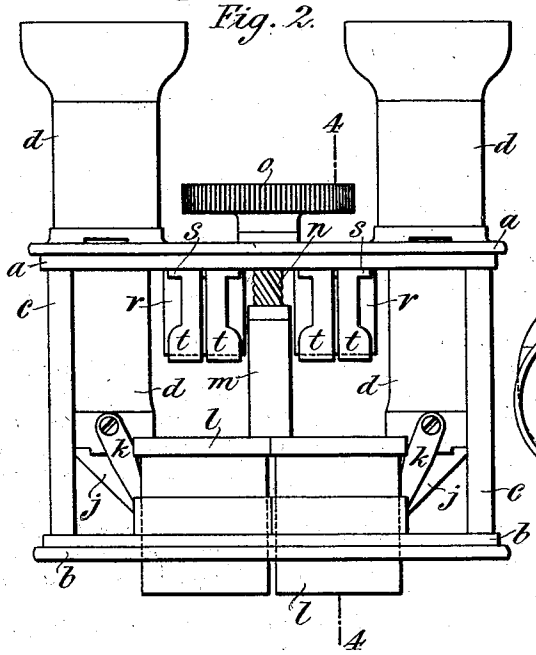
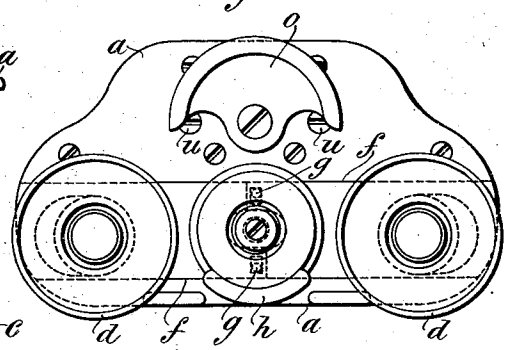


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

FREDERICK HUMPHREY HILL, OF LONDON, ENGLAND, ASSIGNOR TO THOMAS RUDOLPHUS DALLMEYER, OF COUNTY OF MIDDLESEX, ENGLAND.

PRISMATIC BINOCULAR TELESCOPE.

SPECIFICATION forming part of Letters Patent No. 699,168, dated May 6, 1902.

Application filed September 30, 1901. Serial No. 77,068. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK HUMPHREY HILL, electrical engineer, a subject of the King of Great Britain, residing at 298 South Lambeth road, London, England, have invented certain new and useful Prismatic Binocular Telescopes, of which the following is a specification.

This invention relates to binocular telescopes of the well-known class in which each ray is internally reflected in four prisms between the objective and the eyepiece; and its object is to increase the rigidity, to diminish the weight, and to simplify the adjustment of the parts. For this purpose the parts are mounted in the following manner on a framework, which, as has before been suggested, consists of two parallel plates rigidly connected together. The eyepiece-tubes are carried by slides working in guides in one of the plates, so that their distance apart can be varied. The objectives are fixed in tubes which can be moved in and out for focusing in holes or guide-tubes through the other plate, and the prisms are held is specially-formed clips pivoted to the plates.

Figure 1 is a plan, Fig. 2 an under side view, and Fig. 3 an end elevation, of an instrument constructed according to this invention, the casing being removed. Fig. 4 is a section on the line 4 4, Figs. 1 and 2.

a and *b* are two plates rigidly connected by four columns or distance-pieces *c*. (One is omitted from the middle of Fig. 2.)

d d are the eyepiece-tubes, passing through oval slots in the plate *a* and fixed to slides *f*, which work in dovetailed guides on the plate *a*. These slides have on them pins *g*, entering slots in the thumb-wheel *h*, pivoted to the plate *a*, so that the distance apart of the eyepieces can be varied.

j j are prisms fixed to the ends of the eyepiece-tubes *d* by the straps *k*.

l l are the objective-tubes, passing through holes in the plate *b* and fixed to a nut *m*. *n* is a quick-threaded screw working in the nut *m* and fixed to the thumb-wheel *o*, pivoted to the plate *a*.

p p are a pair of prisms fixed to the plate *b*, and *q r* are two pairs of prisms fixed to the plate *a*. Each of these prisms is carried by a holder consisting of a base-plate *s* with a pair of springs *t* fixed to it, the base-plate and springs having hooks at their ends to receive the edges of the prism. A single spring in place of two may be employed, but not advantageously. The base-plates *s* of the holders are each fixed to the plates *a* and *b* by a single screw *u*, passing through its center, so that the prisms may readily be turned about their optical center without in any way altering their inclination.

What I claim is—

1. In a prismatic binocular telescope, the combination of a framework consisting of two parallel plates rigidly connected together and extending from side to side of the instrument, guides on one of the plates, a slide working in the guides, and an eyepiece-tube fixed to the slide.

2. In a prismatic binocular telescope, the combination of a framework consisting of two parallel plates rigidly connected together and extending from side to side of the instrument, two pairs of prisms carried by one plate, a pair of prisms and a pair of objective-tubes carried by the other plate, guides on the first plate, a pair of slides working in the guides, an eyepiece-tube fixed to each slide, and a prism fixed to each eyepiece-tube.

3. In a prismatic binocular telescope, the combination of a framework consisting of two parallel plates rigidly connected together and extending from side to side of the instrument, a pair of objective-tubes passing through holes in one of the plates, and means for moving the objective-tubes in and out in the holes.

4. In a prism-holder for a prismatic binocular telescope, the combination of a base-plate, a spring fixed to the base-plate, means on the base-plate and spring suitable for engaging with the edges of the prism, and a pivot about which the base-plate can turn.

5. In a prismatic binocular telescope, the combination of a framework consisting of two parallel plates rigidly connected together and extending from side to side of the instrument, two pairs of prisms carried by one plate, a pair of prisms carried by the other plate, guides on the first plate, a pair of slides working in the guides, an eyepiece-tube fixed to

each slide, a prism fixed to each eyepiece-tube, a pair of objective-tubes passing through holes in the second plate, and means for moving the objective-tubes in and out in the holes.

6. In a prismatic binocular telescope, the combination of a framework consisting of two parallel plates rigidly connected together and extending from side to side of the instrument, three pairs of prism-holders, each prism-holder consisting of a base-plate, a spring fixed to the base-plate and means on the base-plate and spring for engaging with the edges of the prisms, prisms in the holders, pivots connecting two pairs of the prism-holders to one plate and one pair to the other plate, guides on the first plate, a pair of slides working in the guides, an eyepiece-tube fixed to each slide, a prism fixed to each eyepiece-tube, a pair of objective-tubes passing through holes in the second plate, and means for moving the objective-tubes to and fro in the holes.

7. In a prismatic binocular telescope, the combination of a framework consisting of two parallel plates rigidly connected together and extending from side to side of the instrument, guides on one of the plates, a slide working in the guides, an eyepiece-tube fixed to the slide and a prism fixed to the eyepiece-tube.

FREDERICK HUMPHREY HILL.

Witnesses:
JAMES HILL,
HENRY HILL.