

No. 654,949.

Patented July 31, 1900.

A. A. COMMON.
TELESCOPE FOR SIGHTING ORDNANCE.

(Application filed Mar. 16, 1900.)

(No Model.)

Fig: 1

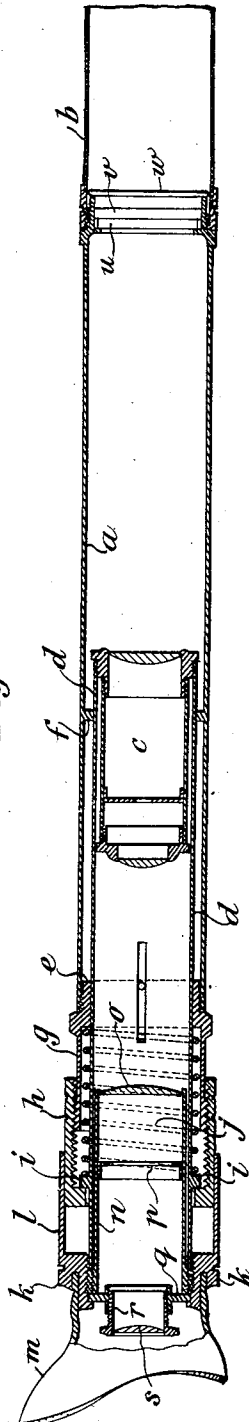


Fig: 2

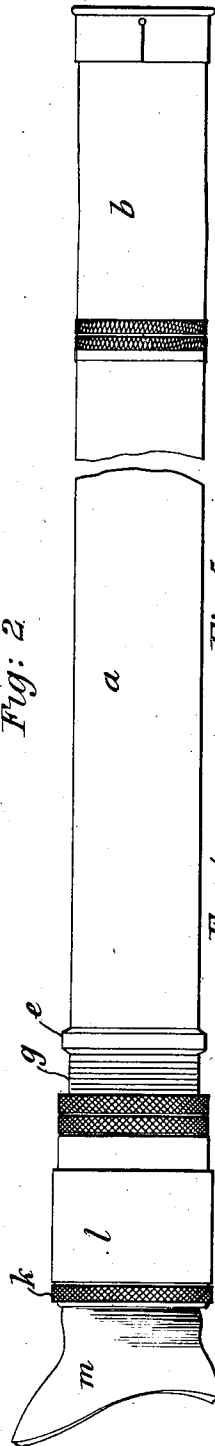


Fig: 5.

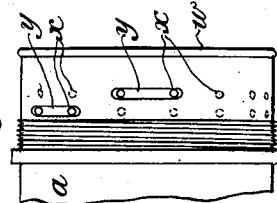


Fig: 4.

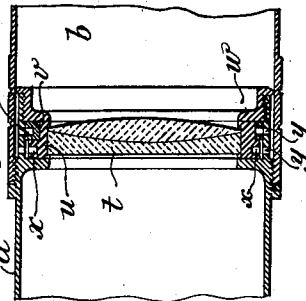
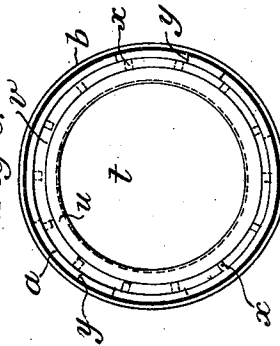


Fig: 3



Fig: 6.



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UNITED STATES PATENT OFFICE.

ANDREW AINSLIE COMMON, OF LONDON, ENGLAND.

TELESCOPE FOR SIGHTING ORDNANCE.

SPECIFICATION forming part of Letters Patent No. 654,949, dated July 31, 1900.

Application filed March 16, 1900. Serial No. 8,868. (No model.)

To all whom it may concern:

Be it known that I, ANDREW AINSLIE COMMON, gentleman, of 63 Eaton Rise, Ealing, London, in the county of Middlesex, England, have invented certain new and useful Improvements in Telescopes for Sighting Ordnance and Similar Purposes, of which the following is a specification.

This invention relates to improvements in telescopes, more especially those which are to be used for sighting ordnance and attached to a gun or its carriage; and it consists more particularly in means for adjusting the telescope so as to overcome error of collimation and to obtain fine adjustment and also in the provision of means for affording protection to the eye of the gun-layer.

In the accompanying drawings, Figure 1 is a longitudinal section of the telescope. Fig. 2 is an outside view. Fig. 3 shows the arrangement of the cross-wires; and Figs. 4, 5, and 6 represent, respectively, a longitudinal section, an outside view with the dew-cap removed, and an end view with the clamping-ring removed, of the collimation device.

a is the body of the telescope, *b* the dew-cap, and *c* is the "erector," as it is termed, and which is common to all telescopes. This erector *c* is inserted in one end of a tube *d*, which is capable of sliding in the body *a*, the body being provided with collars or rings *e f* to guide the tube *d* in its movement. At the other end of this tube *d* is the eyepiece, which will be more particularly referred to herein after.

Attached to the collar *e* is a tubular extension *g*, which is virtually an extension of the body *a*, and screwed onto this extension *g* is a flanged cylinder *h*, which I may term a "focusing-nut."

On the tube *d* is formed or affixed a ring *i*, which comes into contact with the flange of the cylinder *h* and also serves as one abutment for a coiled spring *j*, the other abutment being the collar *e*. The tension of this spring may be regulated according to requirements by screwing in or out the cylinder *h*. At its outer end the tube *d* is screwed to the flanged collar *k*, which is provided with a sleeve *l* to fit outside the cylinder *h* and serve as a dust-shield to prevent dust getting in and imped-

ing the sliding of the tube *d*. The collar *k* also carries the india-rubber eye-shield *m*.

n is the eyepiece-tube, which carries at one end the lens *o* and at a suitable point in its length a ring *p*, with the cross-wires. (See Fig. 3.) This tube *n* is screwed flush into the end of the tube *d*.

q is a flanged ring carrying the eyepiece. The flange of this ring is caught and held between the ends of the tubes *d* and *n* and the flange of the collar *k*. The flanged ring *q* is internally threaded to receive a fitting or tube *r*, carrying the eyepiece-lens *s*. The approximate adjustment is effected by screwing the cylinder *h* in or out, while the fine adjustment is produced by screwing the eyepiece-fitting *r* in or out, as the case may be.

The objects in view in making the tube *d* to slide as described are to prevent shock to the gun-layer by the discharge of the gun and also to provide for the approximate adjustment of the eyepiece by means of the cylinder *h*, which may also be termed the "focusing-nut," as before mentioned.

To correct the error of collimation, I mount the object-glasses *t* in an eccentric ring *u*, which works in a second eccentric ring *v*, placed in a chamber formed in the end of the tube *a*. These rings *u* and *v* are held in the chamber by the clamping-ring *w*, which is screwed into the chamber. The eccentric rings *u v* are each formed with a series of holes *x x* in the periphery for the insertion of a tommy, by which the rings may be rotated more or less, slots *y* being provided in the tube *a* (see Fig. 5) to allow of the passage of the tommy. The slots will be of such a length as to expose two holes in the rings, as shown at Fig. 5. If the optical axis is not central, the clamping-ring *w* is slightly slackened and the rings *u v* are rotated in one direction or the other, so as by reason of their eccentricity to change the position of the lenses in relation to the tube *a*, and thus bring the optical axis into the proper line, and the clamping-ring is again tightened. The eccentricity of the rings *u v* is clearly shown at Fig. 6.

I claim—

1. In a telescope for sighting ordnance, the combination with the telescope-body, of a tube carrying the eyepiece and the erector

and fitted to slide in said body, and a spring applied between the tube and body, substantially as and for the purpose herein described.

2. In a telescope for sighting ordnance, the combination with the telescope-body, of a tube carrying the eyepiece and the erector, a spring applied between said tube and body, and a nut screwed upon said body against an abutment on said tube for adjusting the tension of said spring and the focusing of the telescope, substantially as herein described.

3. In a telescope for ordnance, the means

for correcting the error of collimation consisting in the combination with the telescope-body and the object-glasses, of an outer eccentric ring fitted to turn in the telescope-body and an inner eccentric ring in which said glasses are mounted and which is capable of turning within the first-mentioned ring, substantially as herein described.

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