

E. M. HEWLETT.
TELESCOPIC SIGHT.

APPLICATION FILED JAN. 27, 1902.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 10.

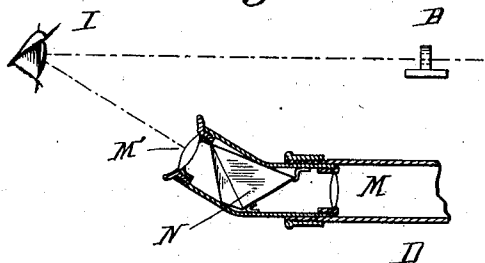


Fig. 11.

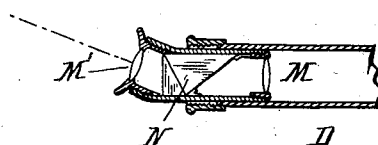


Fig. 12.

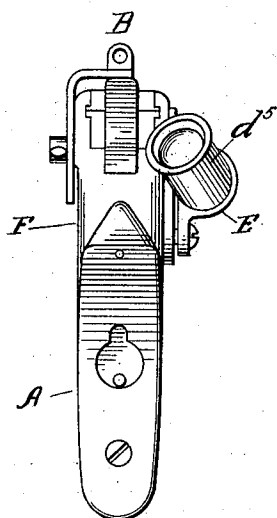


Fig. 13.

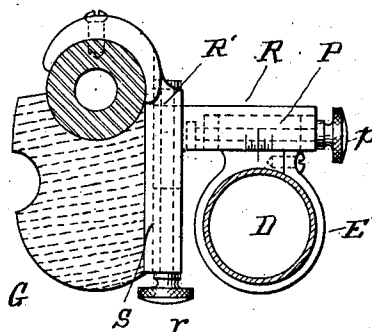


Fig. 14.

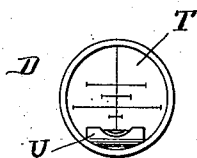
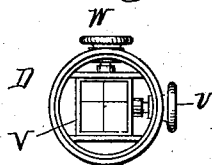


Fig. 15.



Witnesses.

Alex. F. Macdonald.
Robt. C. Chapman

Inventor.

Edward M. Hewlett.

E. M. HEWLETT.
TELESCOPIC SIGHT.

APPLICATION FILED JAN. 27, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

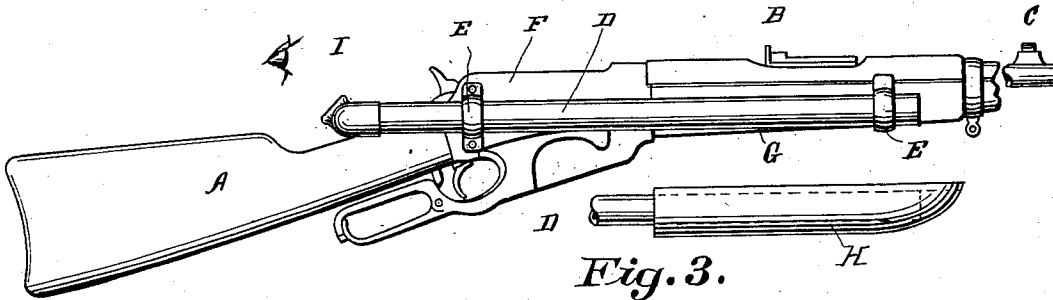


Fig. 2.

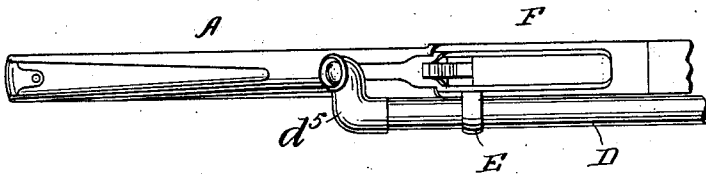


Fig. 5.

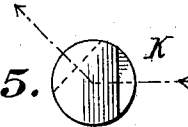


Fig. 6.

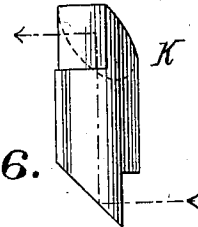


Fig. 4.

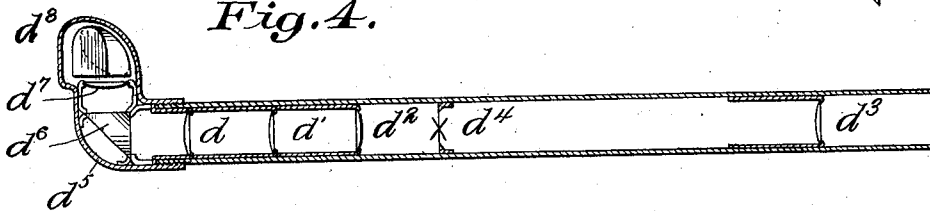


Fig. 7.

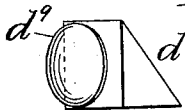


Fig. 8.

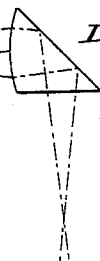


Fig. 9.



Witnesses.

Alex. F. Macdonald.
R. C. Chapman

Inventor.

Edward M. Hewlett.

UNITED STATES PATENT OFFICE.

EDWARD M. HEWLETT, OF SCHENECTADY, NEW YORK.

TELESCOPIC SIGHT.

SPECIFICATION forming part of Letters Patent No. 753,574, dated March 1, 1904.

Application filed January 27, 1902. Serial No. 91,520. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. HEWLETT, a citizen of the United States, residing at Schenectady, in the county of Schenectady and State of New York, have invented certain new and useful Improvements in Telescopic Sights; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to firearms; and its object is to provide a telescopic sight for rifles and other arms which is out of the line of the ordinary sights and yet available for use without requiring the marksman to move his head from the usual sighting position. He is thus at liberty to use either the ordinary sights or the telescopic sight and can change from one to the other simply by turning his eye. I accomplish this by placing the telescopic sight at one side of the gun out of the ordinary line of sight and providing a reflecting or refracting eyepiece for diverting the light-rays coming through the telescope to the point where the eye of the marksman is usually located in sighting. This enables me to rigidly connect the telescope to the gun at one side, where it is in less danger of injury than if on top or up above at one side, as is now the practice.

The invention also comprises certain other details of improvement, hereinafter set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a rifle equipped with my improved reflecting telescopic sight. Fig. 2 is a top plan view of the same. Fig. 3 is a top plan view of a wooden shield for the telescope. Fig. 4 is a horizontal longitudinal section of the telescope. Fig. 5 is an end view of a compound reflecting-prism. Fig. 6 is a plan view of the same. Fig. 7 is a perspective view of another arrangement of prism and lens. Fig. 8 is a view of a further modification. Fig. 9 is a side view of a prism and lens forming with that shown in Fig. 7 the diverting device of the eyepiece of the tele-

scope. Fig. 10 is a longitudinal section of a portion of a refracting telescopic sight. Fig. 11 shows a slight modification of the same. Fig. 12 is a rear end elevation of a rifle equipped with the refracting telescopic sight. Fig. 13 shows a modified construction in which the telescope is adjustable laterally and vertically. Fig. 14 is a view of a level and cross-hairs for use in my telescopic sight. Fig. 15 shows a set of laterally and vertically adjustable cross-bars.

The rifle or other gun A is provided with the usual rear and front sights B C. My improved telescopic sight is arranged at one side, preferably the right-hand side, of the gun and consists of a telescope D of peculiar construction carried rigidly in clips or hangers E, fastened to the gun, preferably to the breech F and to the barrel, near the forward end of the forearm G. The forward portion of the telescope-tube is preferably protected by a wooden shield or cover H, grooved to receive it and adapted to be secured to the side of the forearm G. The telescope has the usual lenses d^1 d^2 d^3 and cross-hairs d^4 . It is provided, further, with an eyepiece contained in a bent tube d^5 and comprising a reflector d^6 , preferably a total-reflecting right-angled prism, as shown, a lens d^7 , and a second reflector d^8 , also preferably a right-angled prism. The lens is preferably located between the prisms. The two reflecting-surfaces are not parallel, so that the light-rays are diverted not only laterally, but upwardly, and thus intersect the ordinary line of sight, reaching the eye of the marksman when it is located at I in the position for sighting along the sights B C. It is therefore only necessary for him to turn his eye in its socket in order to look into the telescope and get a distinct vision of the object which is in line with the sights. With all other telescopic sights it is necessary to change the position of the head in order to look through the telescope. This involves a loss of time and the danger of altering the aim when the head is moved back to the usual position for firing.

Instead of using two separate reflecting-prisms I may combine both in one, as shown in Figs. 5 and 6, in which a block of glass K

has both ends beveled to form reflectors, one being cut on a different angle from the other to deflect the light upward.

The eyepiece may have any number of
5 lenses arranged in any suitable manner. Thus one may be in front of the first reflector and one in the rear of the second reflector, as shown at d^9 in Figs. 9 and 7, respectively, or the prism itself may be ground to serve as
10 a lens as well as a reflector, as shown in Fig. 8, where the prism L has a convex side l operating as a lens.

Instead of using reflecting prisms or surfaces I may employ refracting-prisms. Figs.
15 10 and 11 show the rear portion of the telescope provided with eyepieces composed of lenses M M', set at an angle, with an achromatic refracting-prism N between them to bend the light-rays sidewise and upward to the eye of
20 the marksman. The prism shown in Fig. 11 has a smaller angle of divergence and shows that this angle may vary, depending upon the size of the gun and the consequent difference in distance between the two lines of sight.

25 If desired, one of the hangers may be adjustable, so that the telescope can be moved to compensate for wind and distance. In Fig. 13 the hanger E' depends from a carrier P, mounted to slide transversely to the line of
30 sight in an arm R, projecting from a block R', adapted to slide vertically in a guide S, attached to the gun. Screws pr enable the carrier and block to be moved as required to allow for wind and elevation. If the telescope
35 is not thus adjustable, but is rigidly fastened to the gun, it may be provided with cross-hairs or the like, such as a thin plate of glass or rock crystal T, on which are ruled fine lines, as shown, the vertical line for alinement
40 and the horizontal lines for elevation, it being the plan to space these lines so that they will be equal to given elevations. The horizontal lines terminate at different distances
45 at their ends, the lengths of said horizontal lines being calculated to allow for different variations in wind-pressure at one side or the other. Adjacent to this gage is a small level
50 U to enable one to hold the gun true, the level being inside the tube of the telescope, so as to

be visible to the marksman as he looks through said tube.

Instead of fixed lines I may use adjustable cross-hairs, as shown in Fig. 15, the upright one being mounted in a frame V, capable of
55 lateral adjustment by means of a micrometer-screw v , and the horizontal one being mounted in another frame capable of vertical adjustment by a micrometer-screw W, the former being set to allow for the wind and the latter
60 for elevation.

Having thus described my invention, what I claim is—

1. The combination with a rifle or other small-arm provided with ordinary sights, of
65 a telescopic sight attached to said arm out of the way of said ordinary sights and parallel therewith, and an eyepiece for said telescope out of line with the ordinary sights and causing the light-rays passing through said tele-
70 scope to intersect the ordinary line of sight at the point where the marksman places his eye.

2. The combination with a rifle or other small-arm, provided with ordinary sights, of a telescopic sight parallel with the line of the
75 ordinary sights, and an eyepiece for said telescopic sight comprising means for deflecting the light-rays passing through said telescope both laterally and upwardly to the point where the marksman places his eye for sighting
80 along the ordinary sights.

3. The combination with a rifle or other small-arm, of a telescopic sight therefor, cross-hairs in the telescope, and a level arranged inside the telescope-tube so as to be
85 visible to the marksman when he looks through the sight.

4. A prismatic sighting-telescope for rifles and other small-arms having the eyepiece-axis and the object-glass axis in such a way inclined to each other, that they are more distant from each other behind the eyepiece than before the object-glass, essentially as described.

In testimony whereof I affix my signature in
95 presence of two witnesses.

EDWARD M. HEWLETT.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.