

No. 836,835.

PATENTED NOV. 27, 1906.

F. A. SCHANZ.  
SIGHT FOR FIREARMS.  
APPLICATION FILED SEPT. 9, 1903.

Fig. 1.

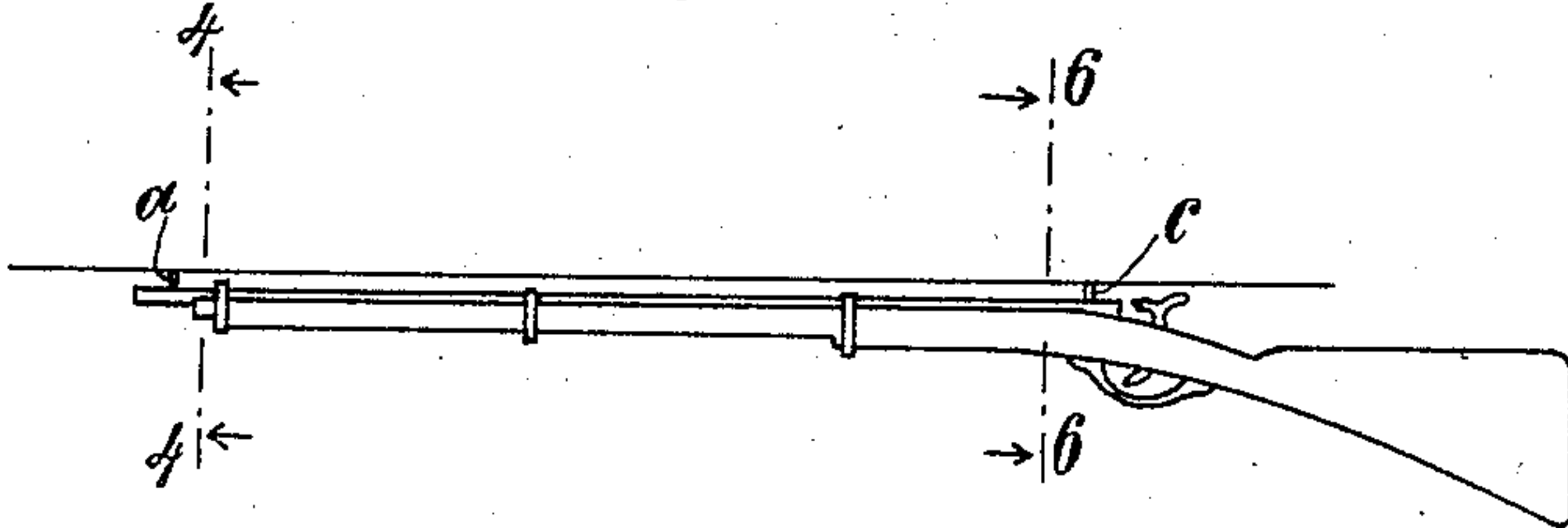


Fig. 2.

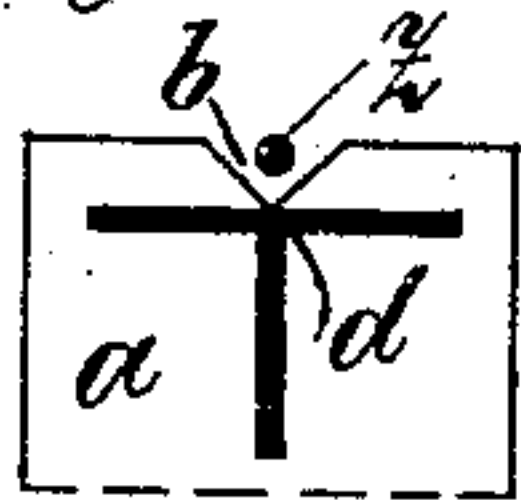


Fig. 3.

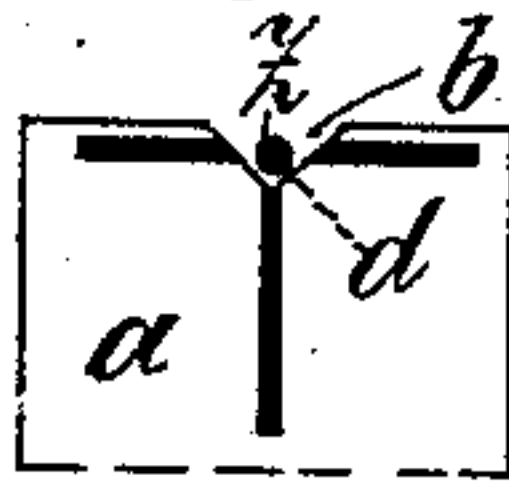


Fig. 4.

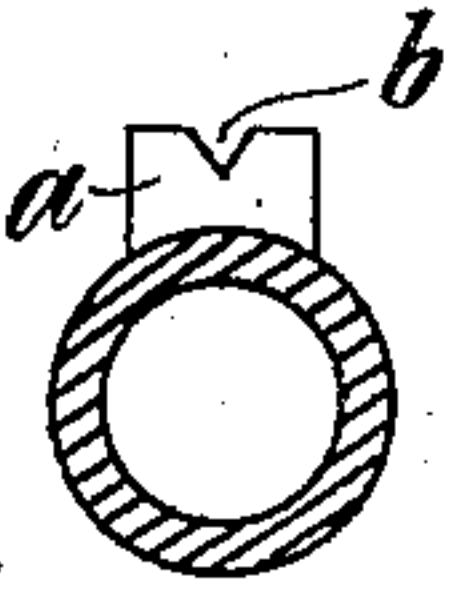


Fig. 5.

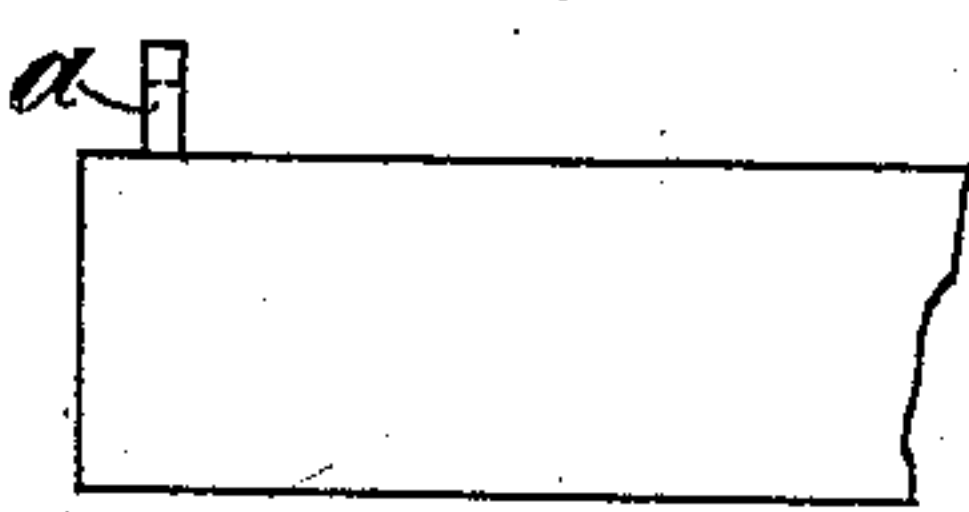


Fig. 6.

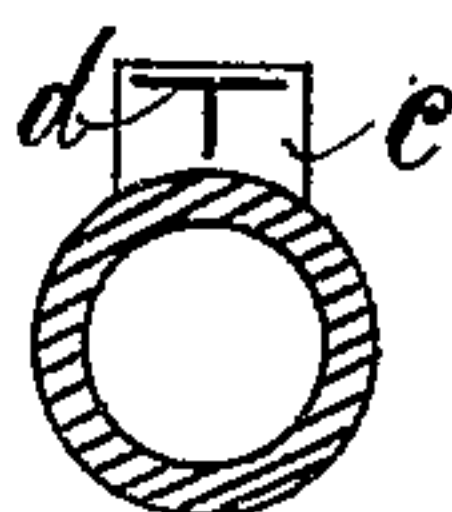


Fig. 7.

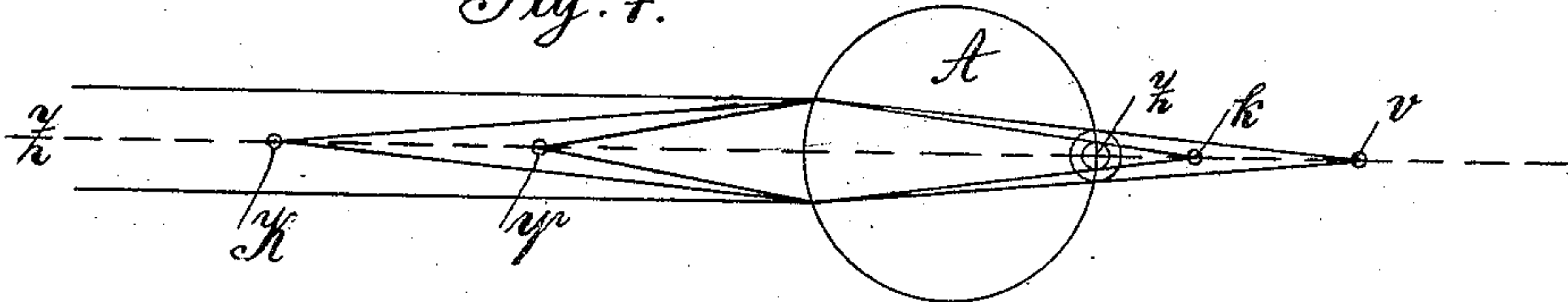
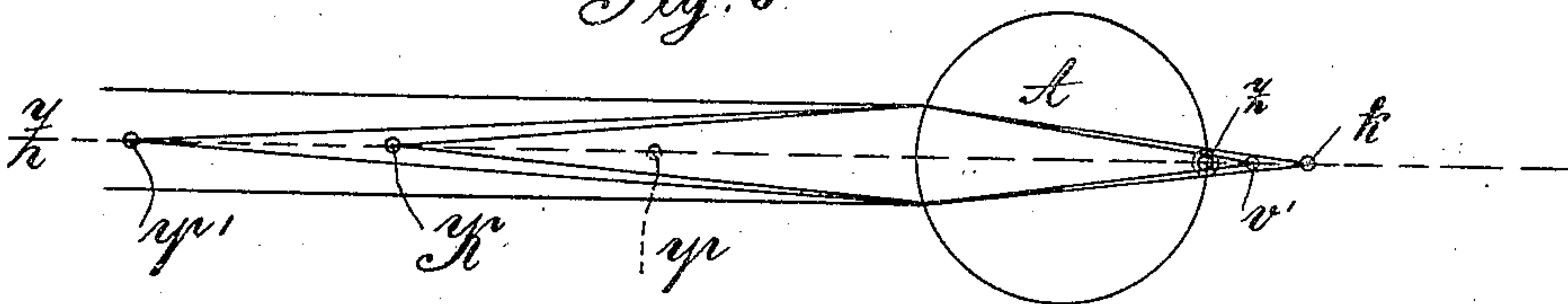


Fig. 8.



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# UNITED STATES PATENT OFFICE.

FRIEDRICH ALBIN SCHANZ, OF DRESDEN, GERMANY.

## SIGHT FOR FIREARMS.

No. 836,835.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed September 9, 1903. Serial No. 172,524.

*To all whom it may concern:*

Be it known that I, FRIEDRICH ALBIN SCHANZ, a subject of the King of Saxony, residing at Dresden, in the Empire of Germany, have invented certain new and useful Improvements in or Relating to Sights for Guns, Firearms, and other Instruments, of which the following is a specification.

This invention relates to a sighting device intended to replace the hitherto used sighting devices consisting of a pointed or pin-shaped front sight and a back sighting-frame provided with a notch.

In the accompanying drawings, Figure 1 is a side elevation of a rifle having sights constructed according to the present invention applied thereto. Fig. 2 is a detail view of the front sight with the T-shaped figure of the rear sight in correct position thereon. Fig. 3 is a similar view with the T-shaped image in incorrect position. Fig. 4 is an enlarged sectional view on the line 4 4, Fig. 1. Fig. 5 is a side elevation of the front portion of the rifle-barrel with the front sight thereon. Fig. 6 is an enlarged sectional view on line 6 6, Fig. 1. Fig. 7 is a diagrammatic view showing the optical effect when the ordinary sights are employed. Fig. 8 is a similar view showing the optical effect when the sights of the present invention are employed.

With the old sights only an indistinct or blurred impression of the points of the sighting-line, determined by the top of the front sight and the notch of the rear sight, could be obtained on the retina of the eye looking at the target. This will be understood by examining Fig. 7, in which A represents the eye focused on the target; V, the rear sight; K, the front sight, and Z the target. The optical apparatus of the eye focused on the target projects an image of Z at  $z$ , of K at  $k$ , and of V at  $v$ . A very sharp image of Z is therefore produced on the retina, while K and V only give diffused circles which are the larger the nearer those points are to the eye. In military rifles K is about fifty centimeters in front of the eye. The diffused circle is therefore so large that under the same circumstances ordinary print could not be read. In order to do away with this indistinctness of the rear-sight image on the retina, several attempts have been made, among others the diopter device was used. This device gives, it is true, more clearly defined images to the retina; but owing to the reduction of the area of the pupil they become very dim. The

new sighting device according to this invention is intended to render the image of the rear sight on the retina more clearly defined without affecting the intensity of its light.

According to the present invention the usual front sight is replaced by a small metal mirror  $a$ , provided with a sighting-notch  $b$ . In the place generally occupied by the rear sighting-frame is placed a plate  $c$ . On this plate there is seen a T-shaped figure, black on white background, or vice versa. The mirror is placed so that the figure in question is reflected in it. The person aiming has only to make the target, the notch of the mirror, and the point of intersection  $d$  of the T-shaped figure to coincide in order to take correct aim.

It is preferred that the T-shaped figure shall show complete, as in Fig. 2, when the sight is correct—that is to say, the target should appear in the notch immediately above the intersection of the horizontal and vertical lines of the T-shaped figure, although the sights may be set or the elevation made such that the target will appear in the notch directly at the point where said horizontal and vertical lines would intersect, as shown in Fig. 3. In the latter event, however, the T-shaped figure would not be so distinct and the liability of error would be increased. In any event it will be noted that with the present arrangement a single clear line of vision takes in both the sighting-points and the target. In other words, there are three points brought into coincidence—i. e., the target, the notch of the mirror, and the intersection of the horizontal and vertical lines of the reflected T-shaped figure.

The new sighting device has the advantage over those hitherto in use of rendering the image of the sighting device in the eye considerably more clearly defined, as exemplified in Fig. 8. In this figure A, Z, and K remain the same, but V is altered. In place of V there is now its reflection  $V'$ . This image is as far behind the mirror as V is in front of it. The image which the optical apparatus of the eye makes of  $V'$  is at  $v'$ . The diffusion circle produced by  $V'$  on the retina is considerably smaller than the diffusion circle that would have been produced by the point V. This point gives therefore a much clearer image of the sight on the retina of the eye.

This sighting device can be used in place



not only of the well-known sighting devices mentioned, but also, generally, for instruments in which a distant object is to be sighted by means of a sight situated near the  
5 eye.

I do not claim as my invention the use of a front sight, a rear sight, and a mirror to aline the image of the rear sight and the front sight, as such an arrangement is shown  
10 in the patent to Hubbard, No. 722,844; nor do I claim the use of a mirror and rear sight having parts of a geometrical design therein arranged to be completed when the reflected image of the rear sight is juxtaposed to the  
15 design on the mirror, as such an arrangement is also shown in said Hubbard patent.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A sight for firearms comprising a rear  
20 sight having a sighting-mark thereon, a front mirror provided with a sighting-opening partially surrounded by the mirror and through

which the target may be seen, said mirror, mark and opening being so positioned that the reflection of the mark, the opening and  
25 the target will be brought into a single line of vision when the firearm is properly sighted; substantially as described.

2. A sight for firearms comprising a rear plate provided with a T-shaped sighting-  
30 mark on its forward side and a rearwardly-facing front mirror provided with a central sighting-notch, said mirror and plate being so located that the reflection of the mark, the notch and the target will be brought into a  
35 single line of vision when the firearm is properly sighted; substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRIEDRICH ALBIN SCHANZ.

Witnesses:

CARL GRAIARF,  
MARTIN HÄLERER.