F. W. FREUND.

Sights for Fire-Arms.

No. 160,819 Patented March 16, 1875.

Fig. 1

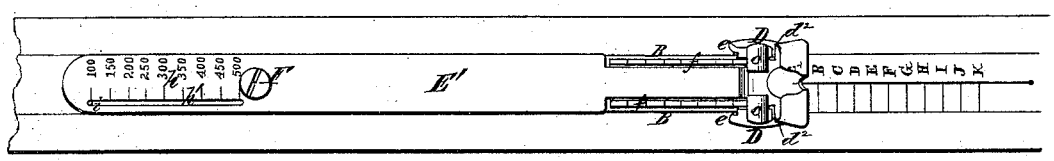


Fig. 2

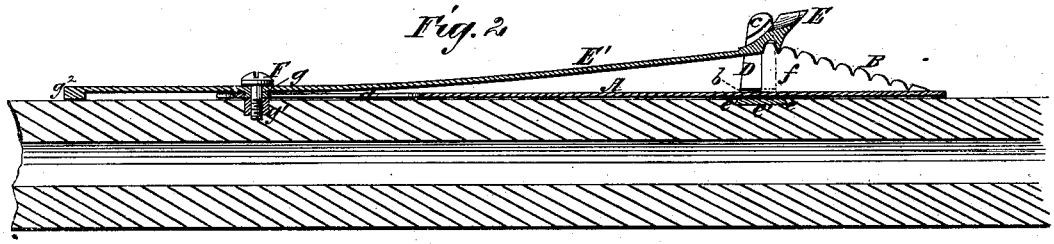


Fig. 3

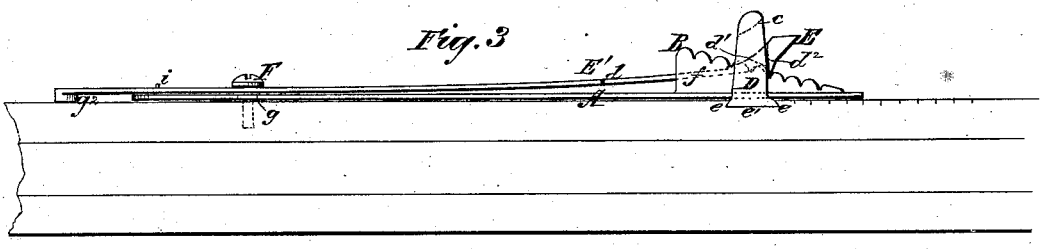


Fig. 4

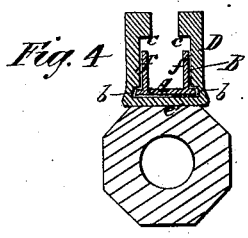


Fig. 5

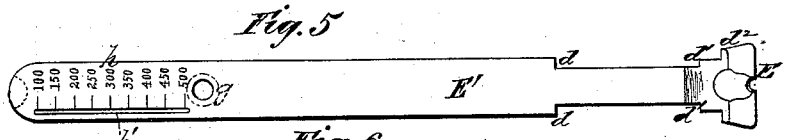
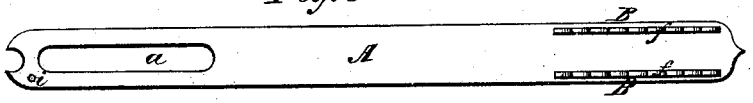


Fig. 6



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FRANK W. FREUND, OF DENVER, COLORADO TERRITORY.

IMPROVEMENT IN SIGHTS FOR FIRE-ARMS.

Specification forming part of Letters Patent No. **160,819**, dated March 16, 1875; application filed October 19, 1874.

To all whom it may concern:

Be it known that I, FRANK W. FREUND, of Denver, county of Arapahoe and Territory of Colorado, have invented a new and useful Improvement in Sights for Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making part of this specification, in which—

Figure 1 is a top view of my improved sight as applied to a rifle. Fig. 2 is a longitudinal section of the same. Fig. 3 is a side view. Fig. 4 is a cross-section in the line *x x* of Fig. 3, the sight being removed. Figs. 5 and 6 are details of the sight.

My invention relates to certain improvements in adjustable sights; and the object of my improvements is to prevent casual change in the sight after it has been adjusted, hold the parts firmly together, and insure and facilitate accurate and nice adjustments.

A, in the accompanying drawings, is a broad tail attached to the stepped sight-support B. This tail is formed with a slot, *a*, between its rear end and the stepped support. The notches of the stepped support are very nearly of the shape of the letter **V**, and the partitions between the notches are rounded off at top. D is a guide, with grooves *b b* on its inner edge just above the upper surface of its base, and with beveled shoulders *c c* extending inward from its uprights a short distance. E is the sight, made with a long spring-tail, E′, which is reduced in width between the sight and its rear end, so as to form shoulders *d* d^1 d^2.

The parts described are united together and applied to the barrel as follows: The guide has the front and rear edges of its base portion beveled off, as at *e e*, so as to form a dovetail, and transversely through the upper part of the barrel an open dovetailed groove or channel, *e*, is cut, and into this dovetailed groove the guide is inserted, as shown.

The stepped sight-support, which is constructed with two inclined stepped side pieces, *f f*, into the upper edge of which the **V**-notches with rounded partitions are formed, is passed with its tail longitudinally through the guide D, so as to fit in the groove *b b*, and rest upon the top of the barrel. The tail of the sight is then passed through the guide, and between the stepped side pieces, over the tail of the support far enough to bring its shoulders d^2 up to the front of the uprights of the guide. The sight and sight-support being thus adjusted, a screw, F, (which may be a set or thumb screw,) is inserted through the thickened portion *g* of the tail of the sight, and passed down through the slot in the tail of the stepped support into a socket, g^1, in the barrel. With the parts thus connected the stepped support can be moved longitudinally through the guide, for the purpose of raising or lowering the sight from step to step, by simply lifting the spring-sight and pulling the stepped support in or outward, according to the adjustment required.

The tail of the sight is formed with the projecting offsets *g* g^2 on its under side, to prevent its bearing on the spring beneath it. The offset *g* passes through the slot and bears upon the nut-block g^1, and the offset g^2 bears upon the barrel. These offsets or projections are deep enough to hold the tail of the sight in relief from the tail of the stepped support.

The upper shoulders of the side grooves *b b* prevent the sight-support from rising when the support is moved longitudinally through the guide D, and the guide and screw F prevent the support from moving laterally or shifting in any manner. The shoulders *c c* prevent the sight from being raised too high and from being strained or injured, and the screw F, guide, and the side stepped supports keep it from casual displacement, after being set as desired.

In order to assist the user of the arm in adjusting the sight, a scale, *h*, may be marked on it, and a long slot, *h′*, cut through it, for a small pointer, *i*, of the tail of the support to pass through, as shown in the drawings. Or, instead of this, the stepped support may have at its front end a central pointer, and a scale with alphabetical letters or characters, or marks expressive of certain adjustments, understood by the marksman, may be placed upon the barrel or on a plate attached thereto. Or both these plans may be provided and used in conjunction with one another, as judgment

dictates or circumstances require. The scale may be placed on the edge of one of the tails, and the pointer on the other.

The great objection to the stepped spring-sights now in use lies in the liability of their being displaced or casually moved under a shock or jar, and, as a movement in even the slightest degree destroys the utility of the sight, all movement must be prevented.

Another objection is the falling off and losing of the sight-support, there being nothing to hold it in its position but the spring of the sight, and this is not sufficient for that purpose; and another objection is that the notches or steps are flat, and, being in the center, cannot be raised high enough for longer distances, or on an ascending and descending scale of incline planes the sight is easily displaced; the ordinary recoil from firing, or ordinary handling, or a fall or a jerk, displaces it. These objections I have overcome by shaping the notches of the step-support to hold in two directions, providing the stepped support with a long tail, and fitting its edges into the groove of the guide, and, in connection therewith, making the step with a long spring-tail, and fitting the sight under shoulders of the guide, and fastening the tails of the sight and support together and to the barrel in such a manner that the sight and support cannot casually move upon one another, and yet the support can be moved, when it is necessary to raise or lower the sight, to any extent desired.

The shoulders *c c* may be formed by simply inserting pins through the uprights of the guide, and the stop-notches may have one straight and one beveled side, or they may be rectangular; or they might be formed by inserting pins at a proper distance apart into the upper edges of the inclined side supports.

The stepped support may be formed of one stepped piece passed through a slot in the spring-tail of the sight; but I prefer to have it made of two pieces, as by that construction the support is out of range of the sight, and thus can be raised to any desirable height, and when lowered for shorter range it is not in the way of a perfect range with the front sight, as would be the case on other sights now in use.

In operating the stepped support for adjusting the sight, the shoulders d^2 give a bearing to the sight upon the front of the uprights of the guide, while the projecting metal forward of the shoulders d^1 bear laterally against the inner sides of these uprights, and thus as it is being adjusted, and after it has been adjusted, is kept firm and true in position.

What I claim as my invention is—

1. The sight for a fire-arm, having a spring-tail, in combination with a stepped support having a tail, and with a guide, the sight and support being united together by a suitable fastening, F, and the supports being constructed and arranged to move in and out under the sight, and in its movement caused to adjust the sight to a higher or lower position with respect to the top of the barrel, substantially as and for the purpose described.

2. The guide D, constructed with stop-shoulders at *b* for the sliding stepped support, and with stop projections at *c* for the spring-sight, substantially in the manner and for the purpose described.

3. The spring-tail of the sight, constructed with the offsets $g\ g^2$, in combination with the slotted tail of the stepped supports, substantially in the manner described.

4. The tail E′ of sight E, having an index thereon, and slotted at *h′*, in combination with the indicator *i* on tail A of support B, substantially as and for the purpose described.

5. The gun-sight arranged to rise and fall in a guide which has stops *c c*, and constructed with a holding-tooth on its under side, in combination with a stepped support, the notches in which prevent the slide from moving back or forward unless the sight is raised high enough to clear the tooth from the highest parts of the partitions forming the notches, as and for the purpose herein described.

FRANK W. FREUND.

Witnesses:

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