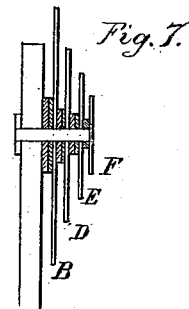
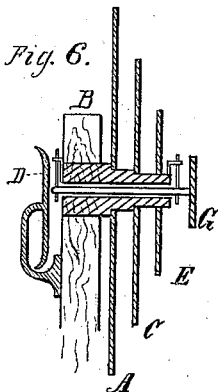
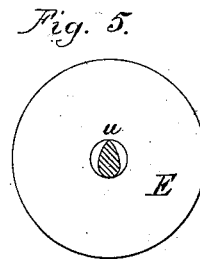
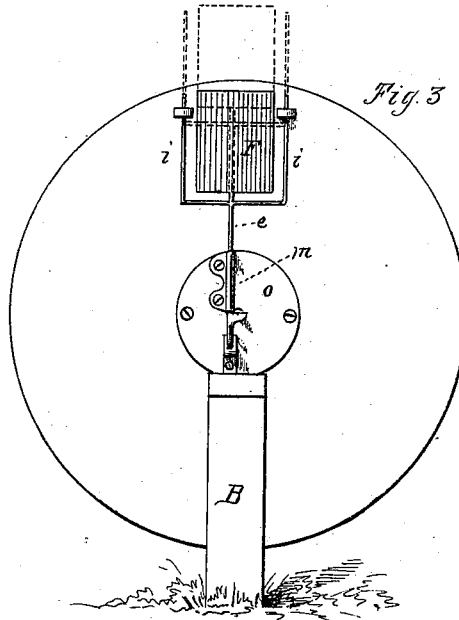
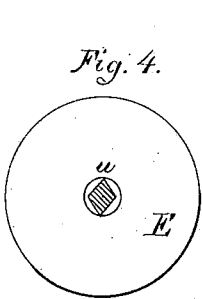
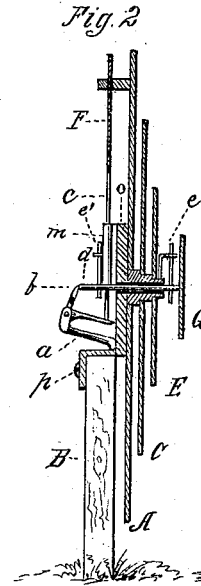
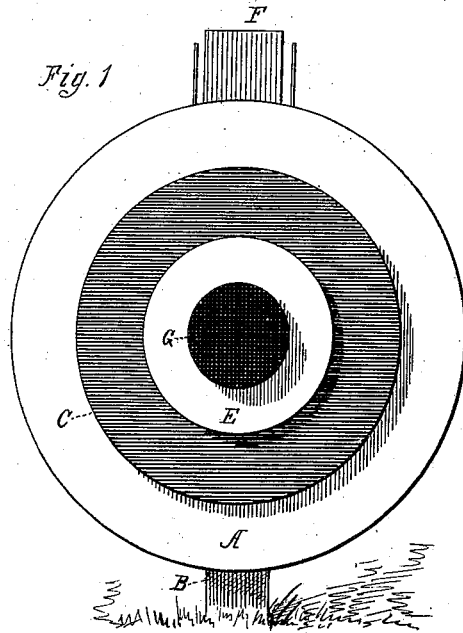


T. H. MEAD.
Target.

No. 169,019.

Patented Oct. 19, 1875.



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UNITED STATES PATENT OFFICE.

THEODORE H. MEAD, OF NEW YORK, N. Y.

IMPROVEMENT IN TARGETS.

Specification forming part of Letters Patent No. **169,019**, dated October 19, 1875; application filed September 16, 1875.

To all whom it may concern:

Be it known that I, THEODORE H. MEAD, of the city, county, and State of New York, have invented an Improvement in Targets, of which the following is a specification:

In the accompanying drawings, in which like letters of reference indicate like parts, Figure 1 is a perspective view; Fig. 2, a sectional view; Fig. 3, a rear view. Figs. 4 and 5 illustrate the mode of hanging the disks upon the mandrel, and Figs. 6 and 7 are sectional views of modifications of the target.

In target practice at long range the difficulty of determining with exactness, even with the aid of a powerful glass, the precise point where the target has been struck has heretofore necessitated the stationing of markers in close proximity to the target, whose duty it is to register the location of each shot hitting the target. Many inconveniences arise from this system. The services of markers are expensive; the length of time required to communicate the result of each shot to the firing-point, where a foot-messenger is depended upon, is annoying; the cost attending the use of telegraphic or mechanical signaling, and the great danger to which the markers are subjected, are serious objections, which preclude the adoption of target practice in private galleries at any range which stations the target beyond the natural vision of the marksman, or at such a distance as to render it impossible to examine the shot-marks from the firing-point.

My invention is designed to overcome these objections, and to provide a target which will instantly communicate an indication of the part struck without depending upon any other medium than that afforded by the target itself. It consists in making the target of a series of sonorous plates or disks, isolated from and overlapping each other, so as to form a series of concentric rings or other-shaped surfaces, constituting the "bull's-eye," "center," "inner," and "outer" portions, which, when struck by the bullets, will emit sounds which so vary from each other as to clearly indicate the portion of the target struck.

Another part of the invention consists in providing the target with a bull's-eye which is comprised in a sliding bolt, which, when

slightly reciprocated by the force of the ball, will throw up and momentarily expose or display a signal above the target, which may be distinguished at the firing-point, said signal being capable of restoring itself to its normal position out of sight, ready to be again raised.

The disks A C E G, which represent, respectively, the outer, inner, center, and bull's-eye, may be constructed from the same or differing metals, which will emit a sufficient sound for the purpose, and they may be tuned as fancy may dictate or experience require. A convenient arrangement is low tones for the plates constituting the outer circles, and higher, and consequently sharper, tones for the plates as the bull's-eye is approached. This will form a scale rising in tone from the outer plate to the bull's-eye, which is found to be most effective in practical use. These plates or disks are represented in Figs. 1 and 2 as seated and held upon a mandrel, turned down to form short sections having as many diameters. The disks, bearing against the shoulders thus formed, are consequently supported the proper distance apart; but it is to be observed that a mandrel having the same diameter throughout may be used, and the seats which separate the disks be formed by washers or thimbles, as in Fig. 7. The sole object to be accomplished is the perfect isolation of one plate from the other, so that the vibrations caused in one by the force of the bullet striking it may not be interrupted or retarded by contact with or interference from another; and in order to effectually provide for perfect vibrations, and consequent full tones, the supporting-mandrel is so shaped in cross-section as to be of smaller diameter than the perforation in the plate, and yet provide a sharp angular rest or seat, as at *u*, Figs. 4 and 5, upon which the disks are hung, and which provides the least obstruction to their perfect vibrations.

If desirable, square, octagonal, or other many-sided plates may be used, particularly where the target is of large dimensions and designed for a very long range. Thus constructed, the target may be supported in an upright position by any means, as its place of use may suggest or require. In the drawings I have shown it, Fig. 2, secured to a plate, *o*,

from which a right-angular foot-piece, *p*, projects to afford a means for fastening it upon the top of a post. Its mandrel may project through the post, as in Figs. 6 and 7, or it may be secured directly to the face of a post or wall, or be supported by legs suitably fastened to it. Since the surface area of the central plate or bull's-eye will, in many cases, be so small as to prevent the use of a plate whose sound will be strong enough to reach the ear at any considerable distance from it, it becomes desirable to indicate the hitting of the bull's-eye by other means than sound. In such case the target is furnished with a hollow or bored mandrel, in which a bolt, *d*, is centrally suspended, so as to freely reciprocate, by means of short straps *e e'*, hung upon small brackets rising from the mandrel and plate *o*, as plainly appears in the drawing. One end of this bolt is a circular head or plate, forming its exposed surface or the bull's-eye, and the other is arranged to bear on one arm of a bell-crank lever, *b*, pivoted to an arm, *a*, at the rear of the target. A vertical rod, *e*, resting loosely in suitable eyes or a sleeve, *m*, is seated upon the other arm of the bell-crank lever, while its upper end branches out into arms *i* and *i'*, which support a signal, *F*. When the bull's-eye thus formed is struck, the bolt *d* is slightly reciprocated by the force of the ball, and raises the signal upward, so as to expose it momentarily at the top of the target, as in Fig. 1. When its momentum is spent it falls by its own gravity until it rests in its normal position, as in Fig. 3, while the bolt *d*, which has been slightly raised as it swung rearward in the plates *e* and *e'*, in like manner, gravitates to its original position, when the target is in condition for a repetition of this movement. This signal will generally be composed of a light frame, over which is stretched a light-colored fabric; but it may be a plate covered with any light-colored composition, or any other device or material answering the purpose which is capable of being raised by the force of the bullet, and which, at the same time, may be distinguished at the firing-point. When it is desired that the striking of the bull's-eye shall be indi-

cated by a sound greater in volume than the plate forming it will emit, I provide a hollow supporting-mandrel, with the bolt of the bull's-eye reciprocating therein, as before explained, but which is adapted to strike against a sounding-plate or bell, *D*, at the rear of the target, as in Fig. 4. This plate or bell, though of large dimensions, is protected from being struck except by the bull's-eye bolt, and, being tuned in a different key from the rest of the plates, will plainly indicate when a bull's-eye is made.

By my invention is provided a target which will indicate its portion struck by a clear and well-defined note or sound, which renders target practice at long range upon private grounds a convenient and desirable pleasure, unaccompanied by the serious objections or expensive adjuncts herein recited.

What I claim, therefore, is—

1. A target composed of a series of isolated sonorous plates, each of a different pitch or tone, combined with a suitable support, substantially as herein described.

2. In combination with the reciprocating bull's-eye bolt, the hollow supporting-mandrel, and a bell at the rear thereof, substantially as described.

3. The combination of the reciprocating bull's-eye bolt, lever *b*, and gravitating-signal *F*, substantially as described.

4. A target provided with a signal arranged to be projected and displayed by means actuated from a reciprocating bull's-eye bolt, which signal gravitates into its operative or normal position, substantially as shown and described.

5. In a target composed of sounding plates or disks, a supporting-mandrel, provided with a bearing for said plates at a single point or angular edge of said mandrel, substantially as shown and described.

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

THEODORE H. MEAD.

Witnesses:

N. WALTER ANTHONY,
ROBERT COCHRAN.