M. ULLMAN.

Electric Annunciating Target.

No. 232,424. Patented Sept. 21, 1880.

Fig. 1.

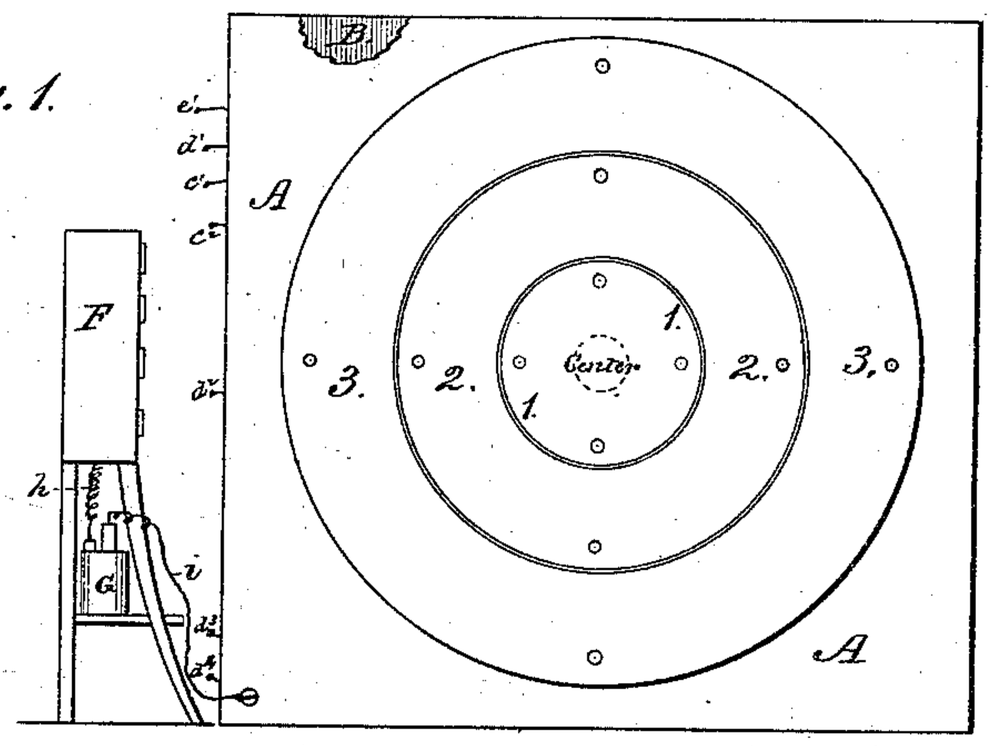


Fig. 2.

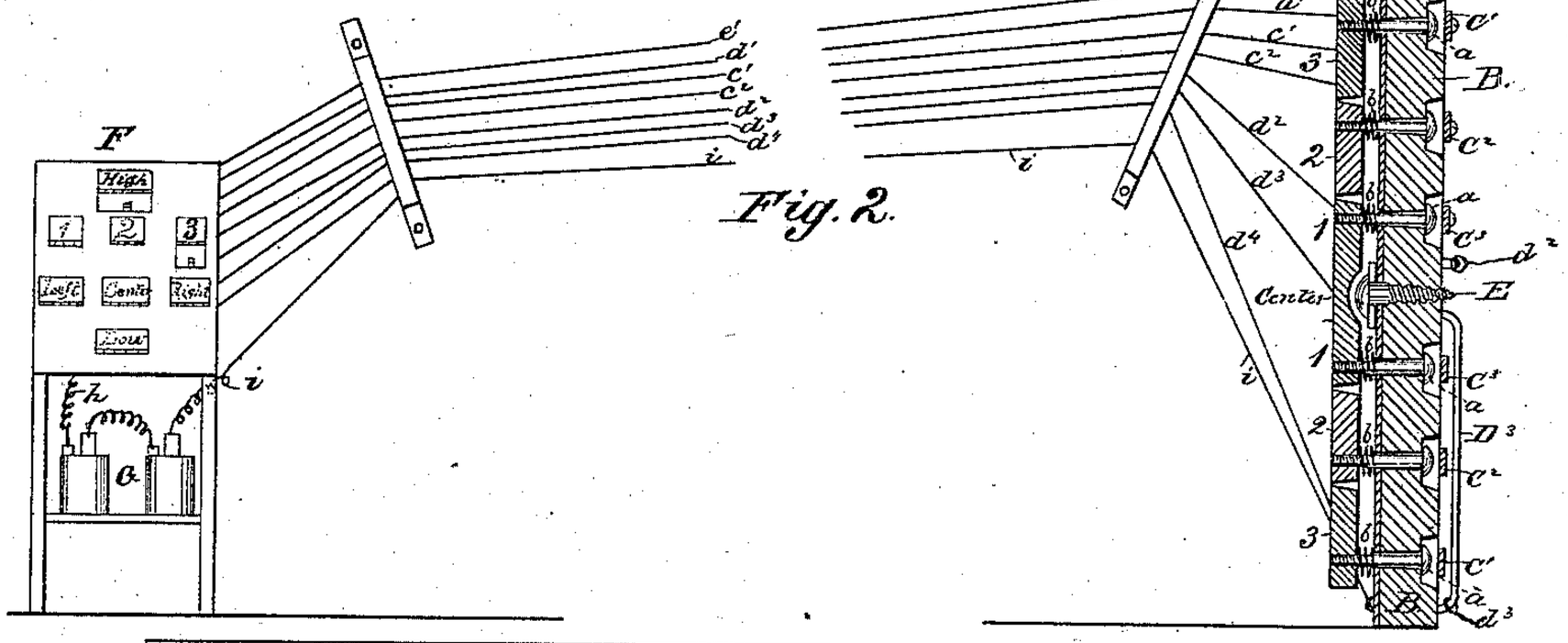


Fig. 3.

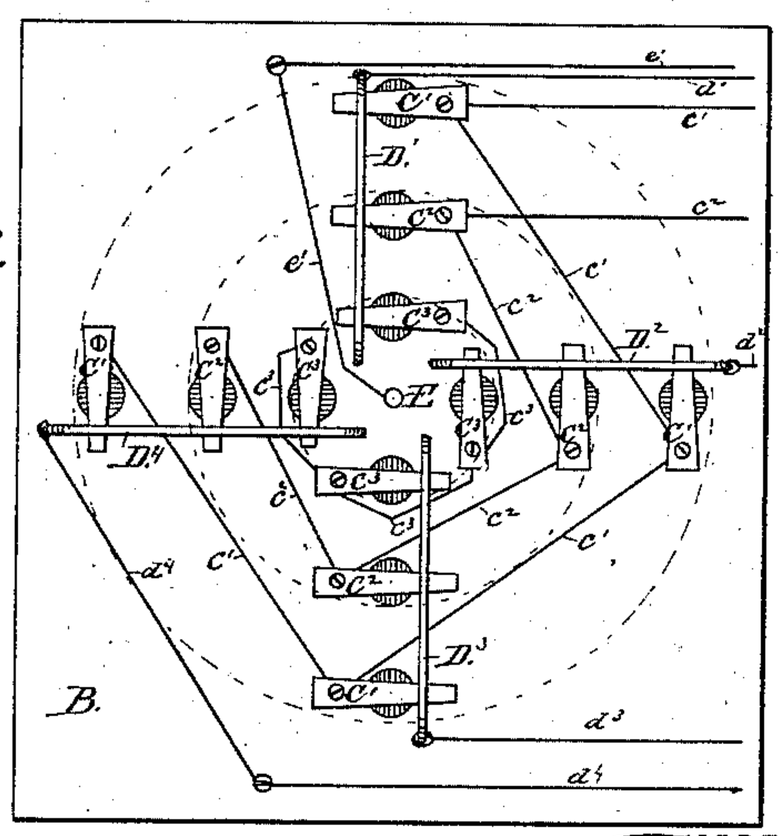


Fig. 4.

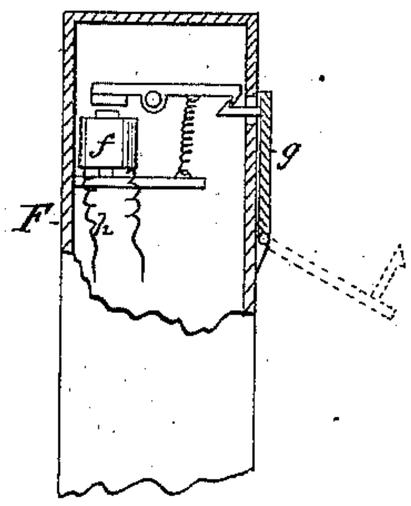
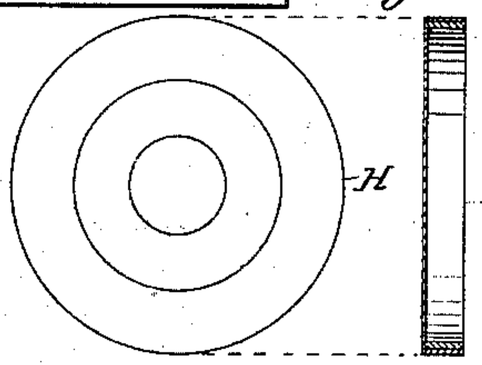


Fig. 5.



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UNITED STATES PATENT OFFICE.

MORRIS ULLMAN, OF ALEXANDRIA, VIRGINIA, ASSIGNOR TO HIMSELF AND WILLIAM FISCHER, OF WASHINGTON, DISTRICT OF COLUMBIA.

ELECTRIC ANNUNCIATING TARGET.

SPECIFICATION forming part of Letters Patent No. 232,424, dated September 21, 1880.

Application filed January 23, 1880.

To all whom it may concern:

Be it known that I, MORRIS ULLMAN, of the city and county of Alexandria, and State of Virginia, have invented a new and Improved Electric Annunciating-Target; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improvement in the class of targets which are constructed of movable parts and connected in an electrical circuit with an instrument which is located at or near the place where the shots are fired, and is adapted to indicate the portions of the target struck by balls or bullets.

The invention consists in the construction of the target and a detachable face-plate therefor, as hereinafter described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a front view of the target and end view of the annunciator. Fig. 2 is a vertical central section of the target and front view of the annunciator, showing two of its shields open. Fig. 3 is a rear elevation of the target-backing. Fig. 4 is a detail, showing the arrangement of a magnet and sign-cover or shield. Fig. 5 is a face view and section of the detachable face-plate of the target.

The target consists of a metallic center-piece or bull's-eye, 1, and two concentric metallic rings, 2 3. These parts are supported in vertical position on a metallic armor-plate, A, by means of headed pins *a*, that project through holes in the latter and into holes in its backing B, which is made of wood or other non-conducting material. The pins *a* are attached, respectively, to the top, lower side, and right and left sides of the center-piece 1 and rings 2 3 in quadrilateral relation, and are encircled by spiral springs *b*, which serve to hold the target away from or out of mechanical contact with the armor-plate A.

To the rear side of the backing B are attached metallic springs C' C^2 C^3 C^4 and fixed bars D' D^2 D^3 D^4. There are four sets or series of springs, C', &c., three in each series, and four bars, D', &c. The bars are arranged radially to a common center, which is the screw E, and the springs lie flat on the backing B, with their free ends projecting beneath the bars D', &c., and across the holes in which the target-pins *a* are placed. The outer springs, C', of each set are all connected by a wire, c', the next set of springs, C^2, by wire c^2, and the inner ones, C^3, by wire c^3. These several wires c' c^2 c^3 and also a wire, e', attached to the center screw, E, extend to the annunciator F, and connect with different magnets *f*, that act upon movable shields *g*, covering the signs "1," "2," "3," and "Center," which refer to the different parts of the target.

The internal mechanism of the annunciator may be such as is in use and well known in ordinary hotel-annunciators.

I illustrate in Fig. 4 the main parts of a mechanism suitable for the purpose. The bars D' D^2 D^3 D^4 are also connected by wires d' d^2 d^3 d^4, respectively, with other magnets which act upon armatures that control the positions of shields covering the signs "High," "Right," "Low," "Left," and from all the magnets a wire, *h*, runs to the battery G, and another wire, *i*, thence to the armor-plate A.

From the construction and arrangement of parts above described it results that when the outer ring, 3, of the target is struck by a bullet at the top, that portion of it will be suddenly forced back, overcoming the stress of the adjacent spring *b* and bringing the upper pin, *a*, in contact with the upper spring, C', which is in turn pressed outward against the rod D', so that an electrical circuit is formed, through wires c' d' *i*, between said target-ring 3 and the annunciator-magnets which control the shields of signs "3" and "High." The annunciator F thereby indicates that the shot has struck the upper part of ring No. 3.

If a bullet strikes the right-hand portion of ring 3 another circuit will be made through wires connected with that portion, and the signs "3" and "Right" exposed on the face of the annunciator F. If the bullet strikes the lower portion of the ring 3, then the annunciator will read "3" and "Low," and when the ring 3 is struck on the left side the signs "3" and "Left" will be exposed.

Precisely the same operation results and corresponding signs will be given if the target-ring 2 or center-piece 1 be struck at top or on the right, lower side, or left; but in the case of the center-piece or bull's-eye 1, when hit in the center, it will be forced back into

contact with the head of screw E, and thus completes a circuit through wires *e' i* and uncover the sign "Center" on the annunciator. If the bull's-eye 1 be hit near the edge such contact will not take place, but sign "1" will be given.

If a bullet strikes a target-ring equidistant, or nearly so, between any two of the four points where pins *a* are attached to it, the result will be that both the adjacent pins will make electrical connection with the annunciator F, and two signs will be given. For example, if a bullet strikes ring 3 equidistant between the top and right side the signs "3," "High," "Right" will be given, thus indicating the location of the shot. If a bullet strikes the joint between the rings, then both rings will make electrical connections, and the signs "3" and "2" will be exposed on the annunciator F. In this way the annunciator instantly indicates either exactly or approximately the point of contact of a bullet with the target, so that the danger, delay, &c., incident to the ordinary vocal announcement of the location of the shot are avoided.

I show in Fig. 5 a detachable face-plate, H, for the target. It is made of a sheet of paper attached to a hoop or band which fits sufficiently close to the rim of the target to retain it in place when applied to the latter. The face-plate is inscribed with circles and numbers to represent the target proper, and its use is to furnish a proof, when required, of the number and location of the shots that have struck the target. It obviously does not interfere with the operation of the target, as before described.

What I claim as new is—

1. The target composed of independent movable parts having pins that project rearward, springs encircling them, a fixed bar attached to back of target, and springs which come in contact with said pins and bar when the target is struck by a shot, an armor-plate or conducting-surface, an electrical annunciator, and wires connecting the latter with the target, all combined as shown and described.

2. The combination, with a target, of a detachable face-plate composed of a band or hoop and paper attached thereto, as shown and described.

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