E. B. BADCOCK.

TARGET.

APPLICATION FILED JULY 11, 1914.

1,165,487.

Patented Dec. 28, 1915.

2 SHEETS—SHEET 1.

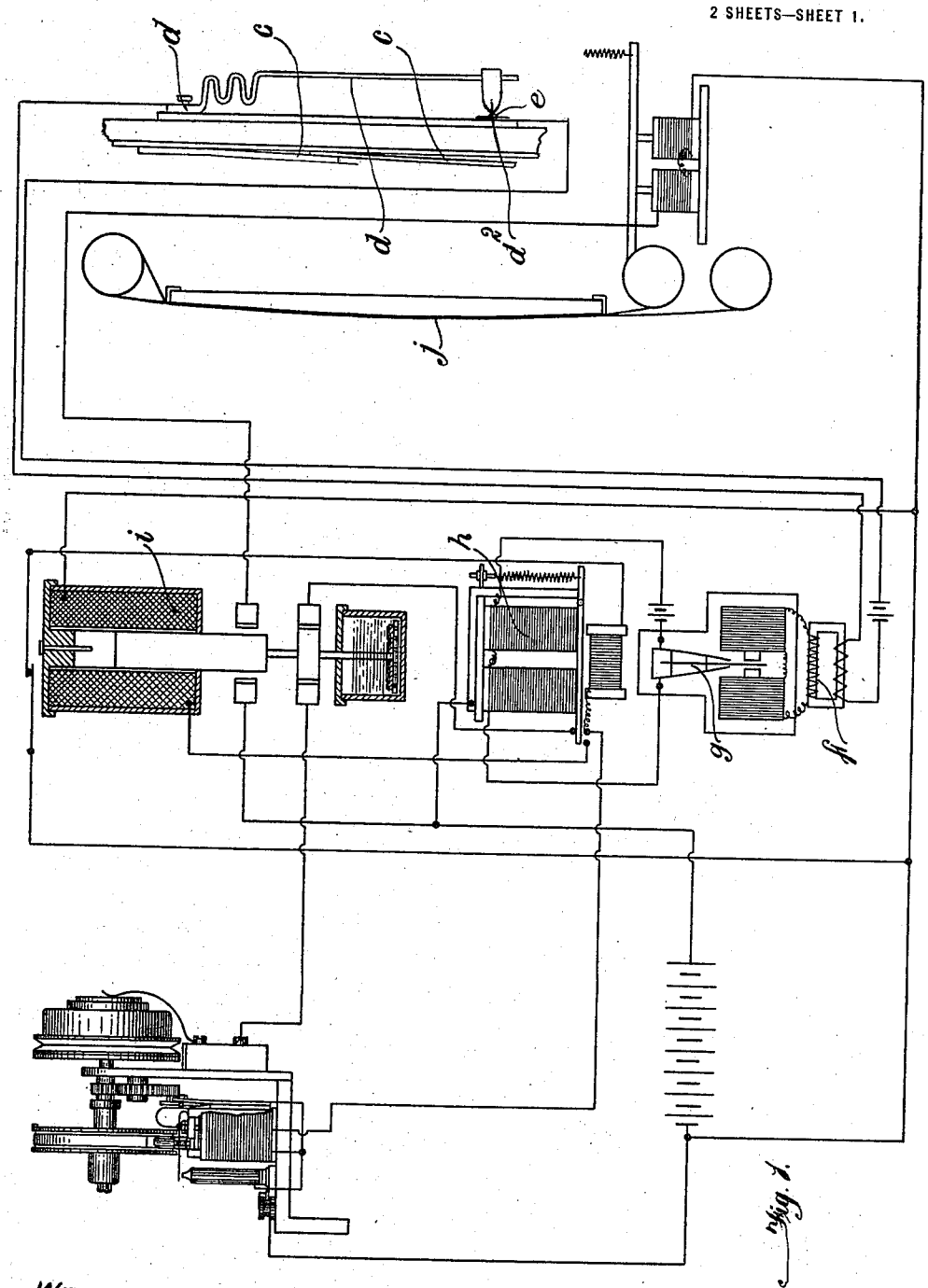


Fig. 1.

WITNESSES

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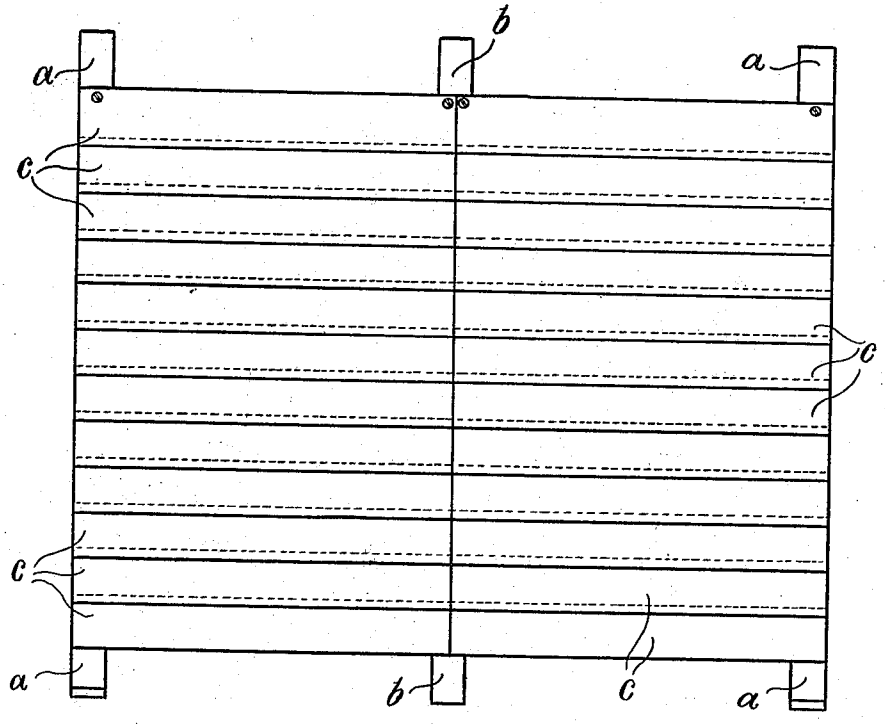
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2 SHEETS—SHEET 2.

Fig. 2.



WITNESSES

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To all whom it may concern:

Be it known that I, EDWARD BAYNES BADCOCK, subject of the King of Great Britain, residing at 7 Pembridge Crescent, London, England, have invented a new and useful Improvement in Targets; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention comprises improvements in and relating to targets, and refers to that class of such which are adapted for use with a cinematograph or other picture projecting device, and in which mechanism is provided whereby when a shot is fired the motion of the cinematograph film is arrested leaving the picture stationary upon the target screen to enable the result of the shot to be ascertained; the object of the present invention being to provide a simpler and more effective means for arresting the movement of the cinematograph.

Prior to this invention it has been proposed to employ a suspended or sliding plate located behind the screen, the plate moving bodily to complete contacts when struck by a bullet, the completion of the circuit energizing an electromagnetic device which arrests the movement of the cinematograph, but these prior constructions have entailed movements of the plate other than vibratory, being therefore, inapplicable to targets of any substantial size, whereas the present invention permits of construction wherein plates are fixed to a framework.

According to this invention the movement of the cinematograph is arrested through the intermediary of vibrations set up by the impact of the bullet on any suitable part of the target apparatus, these vibrations being adapted to break, make or influence a circuit controlling the movement of the cinematograph.

Referring to the drawings:—Figure 1 of the drawings shows a portion of the vibrator and the contact device in side elevation, and the screen and electric connections for stopping the picture projecting machine more or less diagrammatically. Fig. 2 shows the vibrator frame in front elevation.

In one form of this invention, as illustrated upon the accompanying drawings, behind the perforable screen I provide an unperforable vibrator, as distinguished from a bodily movable member, which is vibrated when struck by the bullet, being adapted to make, break or influence a circuit controlling the movement of the picture projecting device, and preferably also controlling other apparatus such as the movement of the screen for obliterating the shot holes through mechanism such as described in the prior Patent No. 1,075,894.

The screen is preferably according to the prior Patent No. 1,027,371 and controlled according to the prior Patent No. 1,075,894. The vibrator is preferably of substantially the same size as the screen, and it may conveniently consist of a metallic framework *a* having a bar or member *b* dividing it into two parts, this bar being say of T section and of such rigidity that it will vibrate when influenced by the impact of the bullet. Metal strips *c*, preferably flat, are secured between the frame and the vibrating bar, the edges of these strips preferably overlapping, there being a sufficient number of strips to entirely fill the frame, and thus provide a vibrator of a size substantially corresponding with that of the screen. It will be seen from this that when a shot strikes any one of the metal strips a vibration will be transmitted to the central bar or member *b*, which influences the contact controlling device.

The mechanism is preferably so arranged as to break a circuit when a shot strikes the plate behind the target, and the contact device may conveniently consist of a spring controlled hammer *d*, the one extremity d^1 of the stalk of the hammer being anchored while the head d^2 normally engages with an insulated contact *e* which is rigidly fixed to the back of the target. The stalk of the hammer is preferably in the form of a light spring having a part bent to a zig-zag form to give increased sensitivity, this form of spring also causing the hammer to make a movable or wipe contact with the fixed contact member thus avoiding risk of pitting at the point of contact. When the shot strikes the vibrator the hammer is caused to vibrate, thus opening the circuit which may directly arrest the movement of the cinematograph or may do so through the intermediary of other circuits.

As shown the anchor end of the hammer contact and the insulated contact *e* are connected to the primary of a transformer *f* the secondary of which controls a relay device *g*, of similar form to that described in the prior specification No. 1,075,894, the relay normally maintaining a circuit for energiz-

ing the magnet *h;* but as soon as the circuit is broken the solenoid *i* is energized and lifting the plunger restarts the cinematograph and actuates the screen *j* in similar manner to that described in the former specification No. 1,075,894.

Or the hammer contact might be pivotally mounted, or it might influence other intermediate members to open the circuit. Or instead of a contact breaking device a contact making device might be employed, or there might be a permanent contact constructed after the manner of a microphone and arranged to vary the current in the circuit in order to control the cinematograph.

What I claim then is:—

1. In target apparatus for use with cinematographs and like picture projecting devices, the combination of a picture projecting device; a screen; a vibrator comprising a series of unperforatable strips; a contact device carried by said vibrator normally maintaining a circuit but adapted to vibrate and open the circuit under the influence of vibrations set up by the impact of a bullet upon the vibrator; means for arresting the movement of the picture projecting device responsive to the movements of the contact device; and means controlled by said contact device for actuating the screen for the purpose of obliterating the shot holes, for the purpose set forth.

2. In target apparatus for use with cinematographs and like picture projecting devices, the combination of a picture projecting device; a screen; a vibrator comprising a series of unperforatable strips disposed across the frame; a contact device carried by said vibrator normally maintaining a contact but adapted to vibrate and open the circuit under the influence of vibrations set up by the impact of a bullet upon the vibrator; and means for arresting the movement of the picture projecting device responsive to the vibrations of the contact device; for the purpose set forth.

3. In target apparatus for use with cinematographs and like picture projecting devices, the combination of a picture projecting device; a screen; a vibrator frame located behind the screen; a central bar forming part of said frame; a series of partially overlapping flat unperforatable strips disposed across the frame; a contact device carried by said vibrator frame normally maintaining a circuit but adapted to vibrate and open the circuit under the influence of vibrations set up by the impact of a bullet upon the vibrator; means for arresting the movement of the picture projecting device responsive to the movements of the contact device; and means controlled by said contact device for actuating the screen for the purpose of obliterating the shot holes; for the purpose set forth.

4. In target apparatus for use with cinematographs and like picture projecting devices, the combination of a picture projecting device; a screen; a vibrator frame located behind the screen; a central bar forming part of said frame; a series of partially overlapping flat unperforatable strips disposed across the frame; a contact device carried by said vibrator frame normally maintaining a contact but adapted to vibrate and open the circuit under the influence of vibrations set up by the impact of a bullet upon the vibrator; and means for arresting the movement of the picture projecting device responsive to the vibrations of the contact device; for the purpose set forth.

5. In target apparatus for use with cinematograph and like picture projecting devices, the combination of a picture projecting device; a screen; a vibrator frame located behind the screen; a central bar forming part of said frame; a series of partially overlapping flat unperforatable strips disposed across the frame; a spring supported contact device carried by said vibrator frame normally maintaining a circuit but adapted to vibrate and open the circuit under the influence of vibrations set up by the impact of a bullet upon the vibrator; means for arresting the movement of the picture projecting device responsive to the vibrations of the contact device; and means controlled by said contact device for actuating the screen for the purpose of obliterating the shot holes; for the purpose set forth.

6. In target apparatus for use with cinematograph and like picture projecting devices, the combination of a picture projecting device; a screen; a vibrator frame located behind the screen; a central bar forming part of said frame; a series of partially overlapping flat unperforatable strips disposed across the frame; a spring supported contact device carried by said vibrator frame normally maintaining a contact but adapted to vibrate and open the circuit under the influence of vibrations set up by the impact of a bullet upon the vibrator; and means for arresting the movement of the picture projecting device responsive to the vibrations of the contact device; for the purpose set forth.

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

EDWARD BAYNES BADCOCK.

Witnesses:

EDWARD JOHN GEORGE HEGHAM,

REGINALD GWYTHER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."