No. 837,670. PATENTED DEC. 4, 1906.

H. W. EDEN.

ELECTRIC SIGNAL.

APPLICATION FILED FEB. 5, 1906.

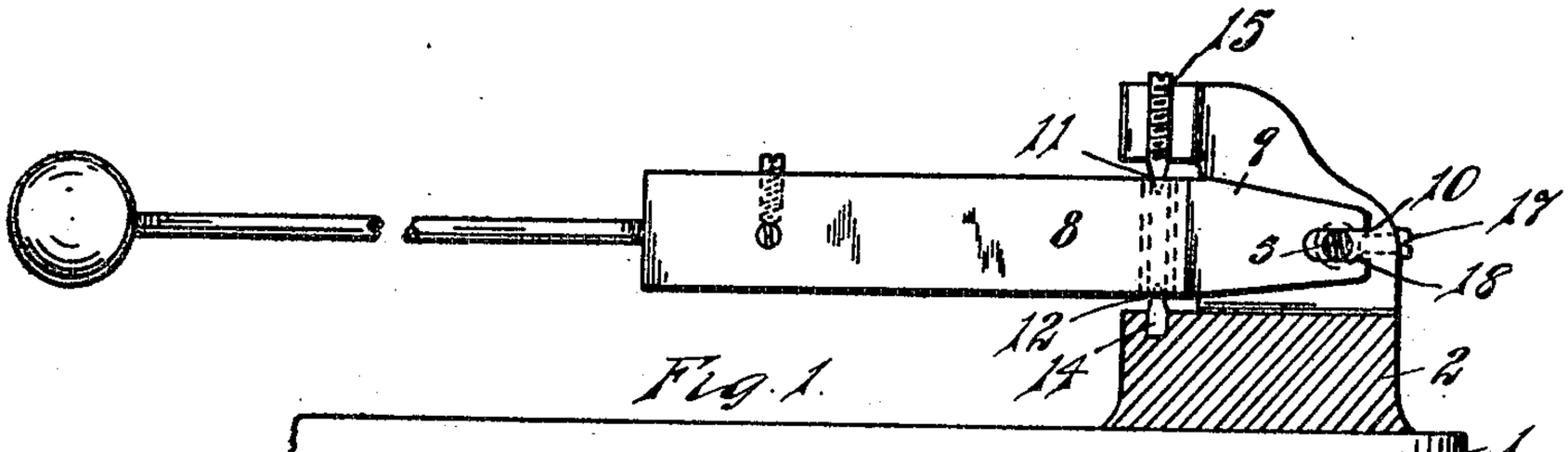

Fig. 1.

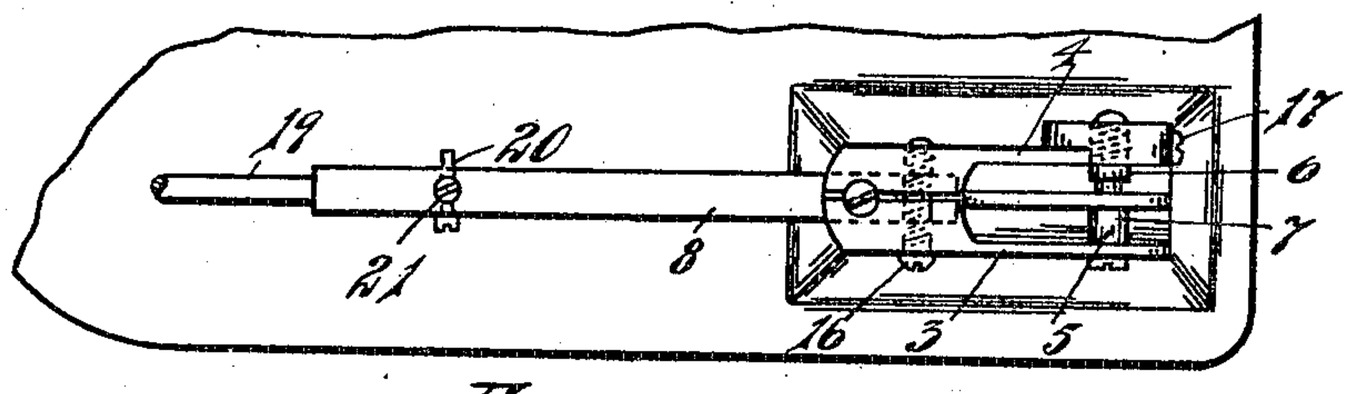

Fig. 2.

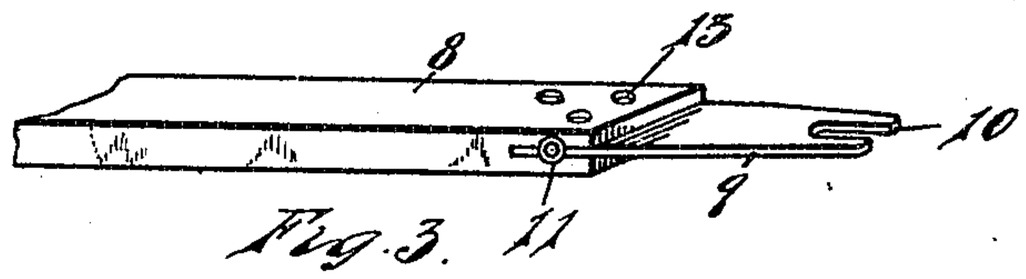

Fig. 3.

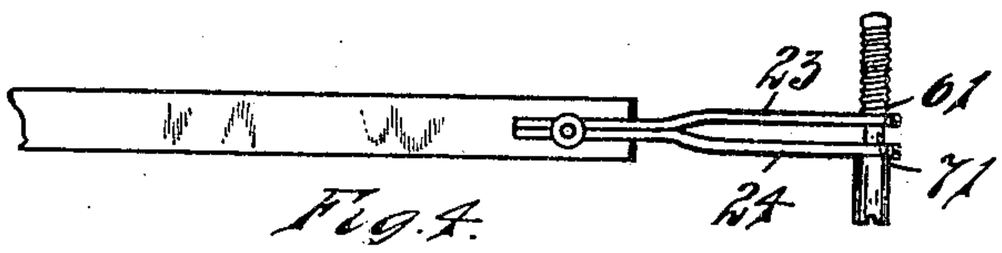

Fig. 4.

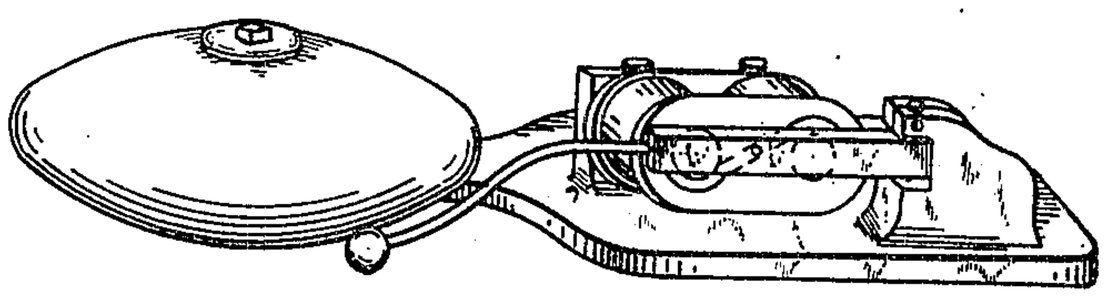

Fig. 5.

WITNESSES

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ELECTRIC SIGNAL.

No. 837,670. Specification of Letters Patent. Patented Dec. 4, 1906.

Application filed February 5, 1906. Serial No. 299,517.

To all whom it may concern:

Be it known that I, HAROLD W. EDEN, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Electric Signals; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to electric signals.

It has for its object an improved construction of and bearing for the armature of a magnetic bell.

In the drawings, Figure 1 is a side elevation, partly in section. Fig. 2 is a plan. Fig. 3 is a perspective of the pivoted end of the armature. Fig. 4 shows a modified form of the pivoted end. Fig. 5 is a perspective showing the general location of the parts shown in the other figures.

1 indicates the base of the apparatus, from which rises a post 2, the upper part of which is split and for a distance spread in order that the end of the armature may enter between the flanges of the post. Still above this the ends of the posts are brought together to form a split clamping-nut for the upper cone-pivot of the armature. Through the branches 3 and 4 is a horizontal hole threaded in the thickened branch 4 of the post, and in this hole engages a screw 5, the shank of which is reduced in size midway between its ends and between the shoulders 6 and 7, and this reduced shank occupies a position substantially midway between the branches 3 and 4 and directly in alinement with the axis of the armature. The armature 8 is made of a bar of magnetic material the end of which is split, and in the split end is inserted a plate-spring 9, provided with a notch 10 at the rear end. The notch engages around the reduced shank of the screw between the shoulders 6 and 7, and the spring has freedom of movement along the shank between the shoulders and comes into a condition of tension when the armature is oscillated in either direction sufficiently far to produce such tension. At the junction of the armature of magnetic material and the spring on each side there is set into the armature a bearing of non-magnetic material, (shown at 11 and 12.) This may be integral with the spring, which may be of non-magnetic material, or it may be independent of the spring, in which case the spring itself may be of steel or non-magnetic material and the screw 5 of non-magnetic material. The spring is held in position in the split end by boring holes through the end of the spring and punching the end of the armature to force the material into the holes, as indicated at 13.

The under bearing for the armature is a hardened point 14, set into a shelf of the post. The upper bearing is a hardened screw 15, driven through a threaded seat for the screw, which threaded seat is cut partially in the face of one branch 4 and partially in the face of the other branch 3. The two faces are drawn together to hold the screw firmly in place by a transverse screw 16. The screw 5 is held in place by a set-screw 17, which bears against a soft-metal plug 18 and presses the same against the threads of the screw 5. At the front end of the armature the hammer-handle 19 is secured to the armature, and a contact-breaking point 20 traverses the armature at the proper point and is held in place by a set-screw 21.

In the modified form of armature shown in Fig. 4 instead of a single spring extending to the rear of the armature two lighter springs 23 and 24 are provided, which are normally spread to engage against the shoulders 61 and 71. In this form of armature the oscillation of the armature is always counteracted somewhat by the spring, whereas in the form first described there is a period of movement at the first part of the oscillation in either direction in which the spring does not engage and is not under tension, and this period of non-engagement occurs especially at the time when the power of the magnet to overcome resistance is at a minimum, and the spring action takes effect only toward the close of the oscillation when the magnetic attraction is approaching a maximum. Likewise in the form shown in Fig. 4, while there is always the tension of the light spring 24 to be overcome by the attraction of the magnet, this is added to by the increment due to the spring 23 as soon as the oscillation has been sufficiently great to flex the spring 24 and bring the spring 23 into contact with it.

It is proper to say that in the drawings the

divergence between the flanges of the spring is considerably exaggerated beyond that which is used in actual practice.

What I claim is—

1. In combination with an armature for electric signals, a pivotal bearing therefor, an abutment-screw provided with a reduced shank between shoulders, a spring extending from said armature engaging around the reduced shank and between the shoulders of said abutment-screw, substantially as described.

2. In a bearing for the armature of electric signals, in combination with an armature of magnetic material, bearing-contacts connected therewith of non-magnetic material, cone-bearings therefor, a spring rigidly secured to said armature and engaging between abutments against which said spring bears after the armature has oscillated a predetermined distance in either direction, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

HAROLD W. EDEN.

Witnesses:

MAY E. KOTT,

CHARLES F. BURTON.