

E. BOWMAN.  
MAGNETO BELL RINGER.  
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1,034,964.

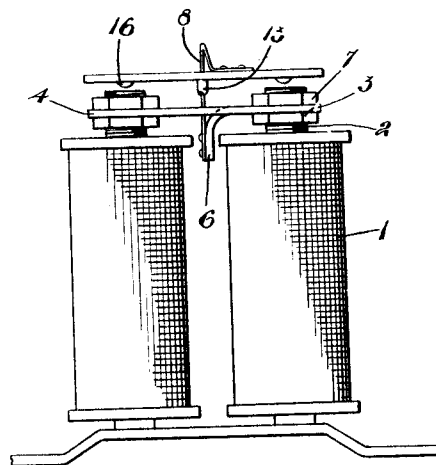


Fig. 1.

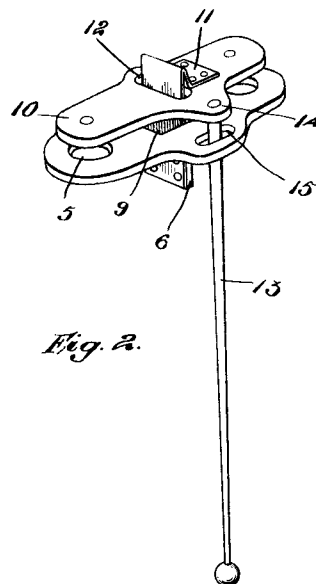


Fig. 2.

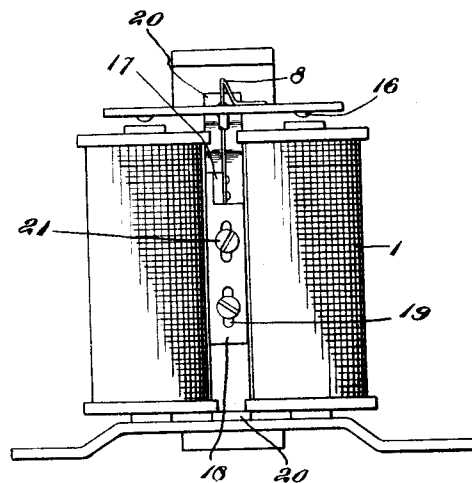


Fig. 3.

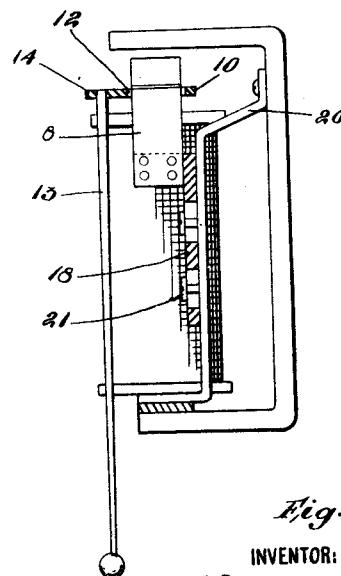


Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## MAGNETO-BELL RINGER.

1,034,964.

Specification of Letters Patent.

Patented Aug. 6, 1912.

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### *To all whom it may concern:*

Be it known that I, ELHANAN BOWMAN, a subject of the King of Great Britain, resident of the village of Elmwood, county of Bruce, Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Magneto-Bell Ringers, described in the following specification and illustrated in the accompanying drawings, that form part of the same.

The invention consists essentially in the novel construction and arrangement of parts whereby the armature is operatively supported adjacent to the magnet cores upon a flexible spring suspension.

The objects of the invention are, to obviate the difficulties due to friction and wear met with in the ordinary construction of pivotally supported armatures, and to devise a new method of suspension which will allow perfect freedom of movement to the armature and will eliminate all wear of the parts, thereby providing a bell which will be perfectly reliable and will not get out of order.

In the drawings, Figure 1 is an elevational view of a pair of electro-magnets showing my improved spring suspension armature attached thereto. Fig. 2 is a perspective detail of the armature and its supporting plate and suspension. Fig. 3 is an elevational view of an electro-magnet showing a slightly modified application of my invention. Fig. 4 is a central vertical sectional view of the device shown in Fig. 3.

Like numerals of reference indicate corresponding parts in each figure.

Referring to the drawings, 1 is a pair of electro-magnets having the cores 2 projecting from one end and suitably threaded.

3 are adjusting nuts threaded on to the ends of the cores 2. 4 is a plate preferably formed of sheet metal and having the holes 5 through the ends thereof adapted to receive the threaded ends of said cores and having a tongue 6 punched therefrom and bent downwardly, said tongue having its extremity arranged in a perpendicular position mid-way of the length of said plate.

7 are lock nuts threaded on to the cores 2 and securing the plate 4 rigidly in place.

8 is a length of thin flat spring metal rigidly secured at its lower end to the perpendicular portion of the tongue 6 and extending upwardly through the opening 9 in the

plate 4. The upper end of the spring member 8 is doubled back and the extremity thereof is bent laterally. 10 is the armature which is rigidly secured to the laterally bent portion 11 of said spring and is formed with an opening 12 arranged centrally between the ends through which the vertical portion of the spring 8 extends.

13 is the striker rod rigidly secured in the laterally extending lug 14 of the armature and extending downwardly through the slot 15 in the plate 4.

In the operation of this device, on the magnetizing of the electro-magnets the armature is attracted first to one core and then to the other and being supported on the flexible spring suspension member 8 it moves very readily, the spring suspension member bending mid-way of its height and also bending slightly at the return bend at the outer end. The practical effect of this peculiar formation of a spring suspension member is that the armature operates practically the same as if swung upon a central pivot, thereby eliminating the possibility of a sliding contact between the brass contacts 16 on the underside of the armature and the ends of the magnet cores. This form of suspension is very sensitive and may be constructed very cheaply and when once adjusted to a proper position will retain that adjustment indefinitely. As there are no parts to come loose or wear, the bell will therefore operate indefinitely without attention.

In the forms of construction shown in Figs. 3 and 4 I show a slightly different method of supporting the armature. In this case the lower end of the spring 8 is rigidly secured to a laterally extending lug 17 forming part of a plate 18, said plate being formed with the longitudinal slots 19 and adjustably secured to a supporting bar 20 by a pair of screws 21. The armature and spring in this form are exactly the same as the form described in Figs. 1 and 2.

What I claim as my invention is:—

1. In a magneto bell ringer, the combination with the electro-magnets, of a supporting member arranged adjacent to said magnets, a thin flat spring member rigidly secured to said supporting member and extending therefrom mid-way between said electro-magnets and having a return bend in its outer end, and an armature rigidly secured

to the returned end of said spring and supported thereby adjacent to the cores of the magnets.

2. In a magneto bell ringer, the combination with the electro-magnets, of a supporting member adjustably arranged adjacent to said magnets, a thin flat spring member rigidly secured to said supporting member and extending therefrom mid-way between  
10 said electro-magnets and having its outer end bent back and formed with a lateral extension at its extremity, an armature having a slot therethrough through which the bent end of said spring extends, said armature  
15 being rigidly secured to the laterally bent end of said spring and supported in close proximity to the ends of the magnet cores.

3. In a magneto bell ringer, the combination with a pair of electro-magnets, of a

plate adjustably held upon the extending  
20 cores of said magnets and having a tongue portion cut out and bent inwardly, the extremity thereof being arranged in right angular relation to the plate, a flat spring  
25 member secured to the end of said tongue and extending outwardly through the slot in said plate and having a return bend formed at its outer end, an armature having a centrally arranged slot therethrough through which the bent end of said spring extends,  
30 said armature being secured to the extremity of said spring and adapted to swing freely.

Signed at the village of Elmwood this 4th day of April 1912.

ELHANAN BOWMAN.

Witnesses:

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