

No. 701,572.

Patented June 3, 1902.

H. F. KEIL.
ELECTRIC BELL.

(Application filed Aug. 2, 1901.)

(No Model.)

Fig. 1.

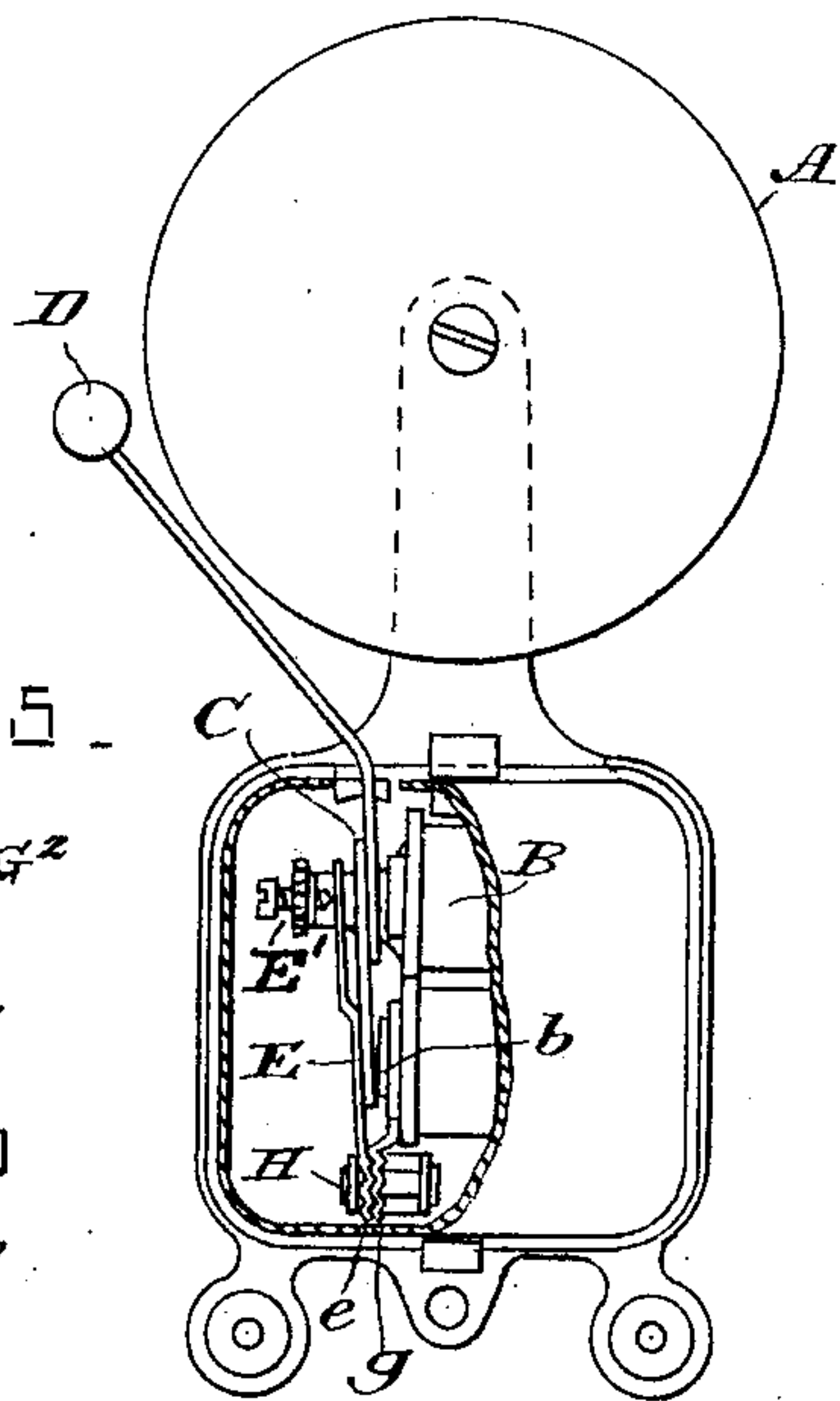


Fig. 2.

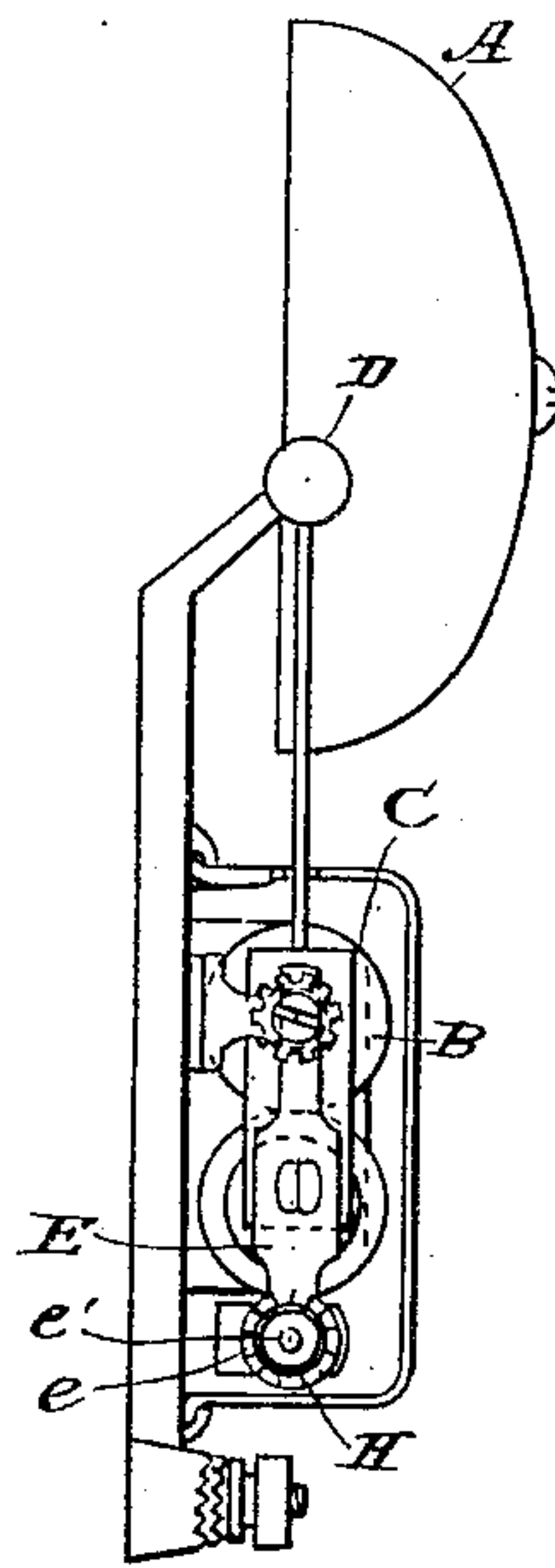


Fig. 7.

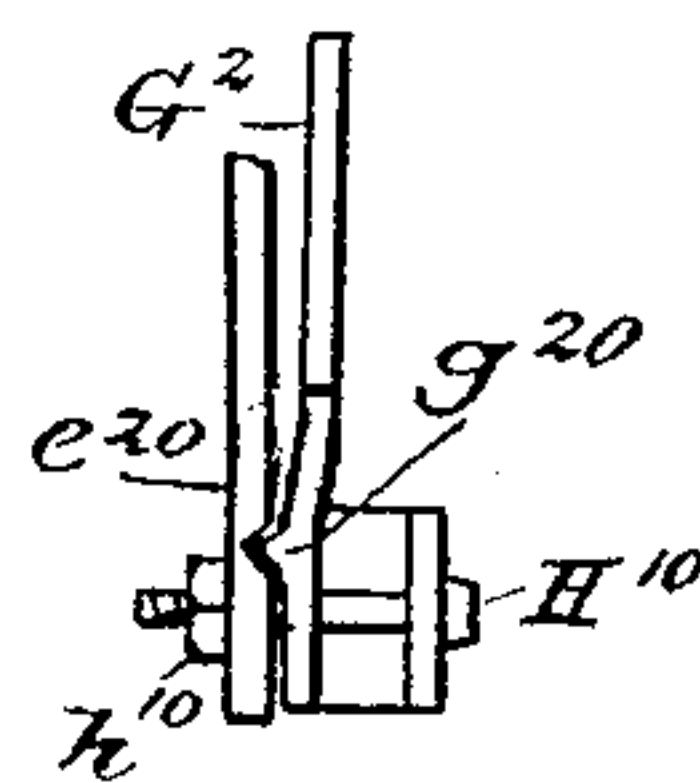


Fig. 5.

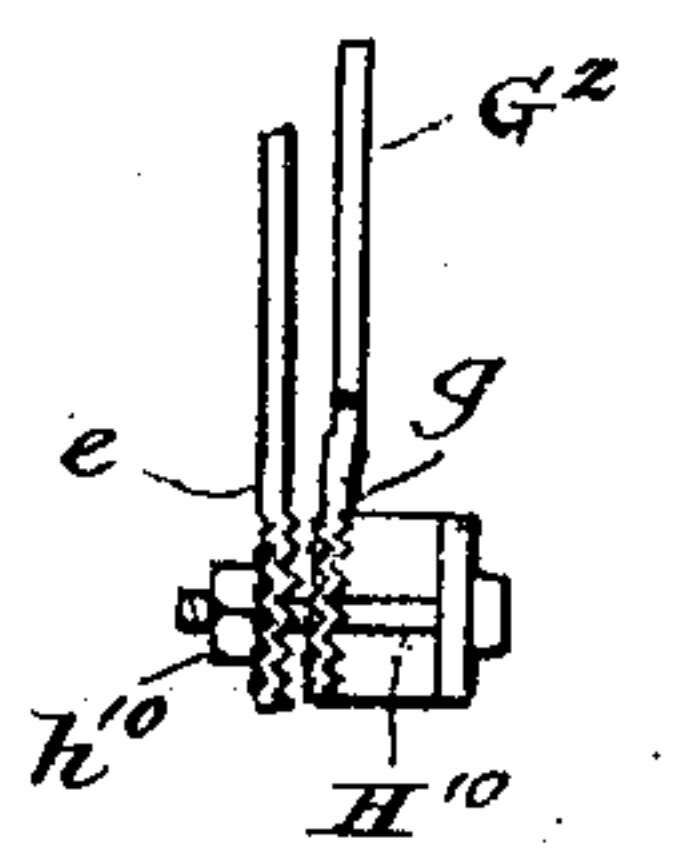


Fig-6.

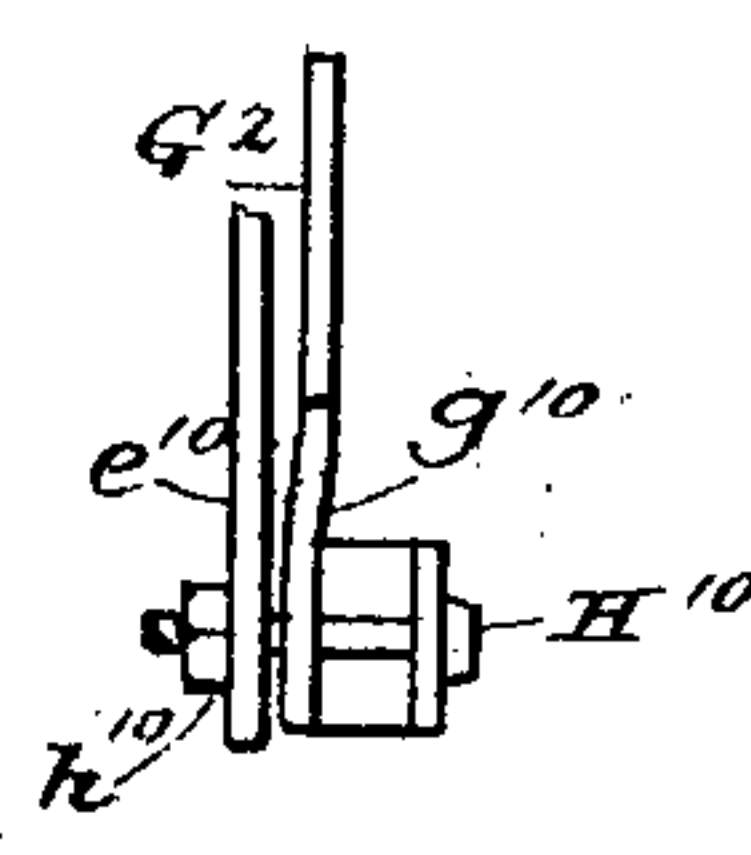


Fig. 3.

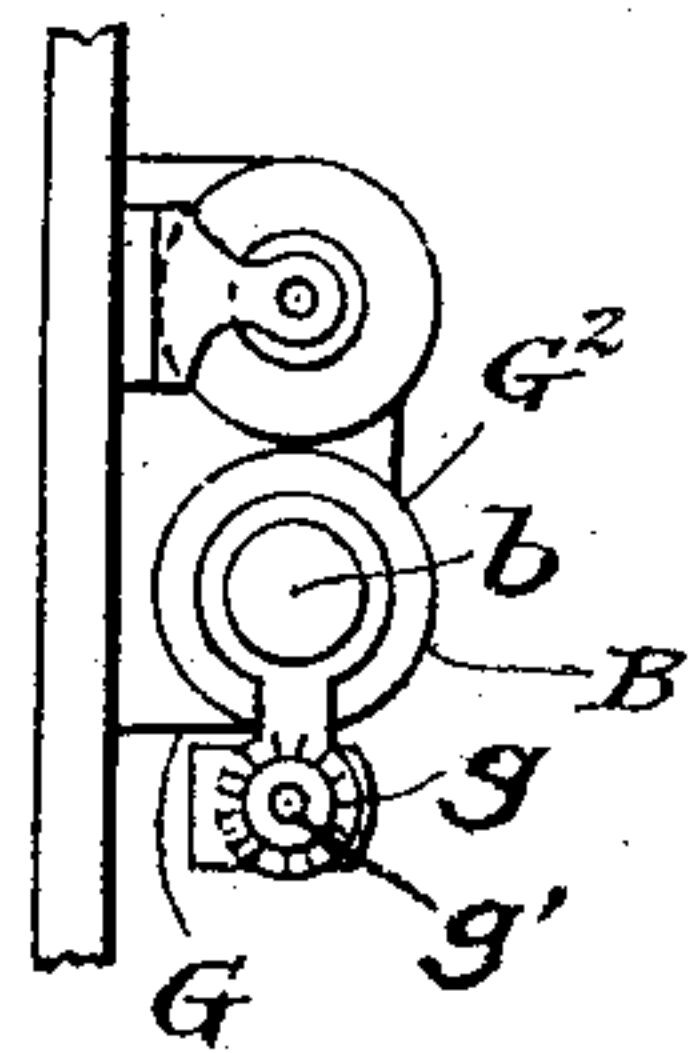
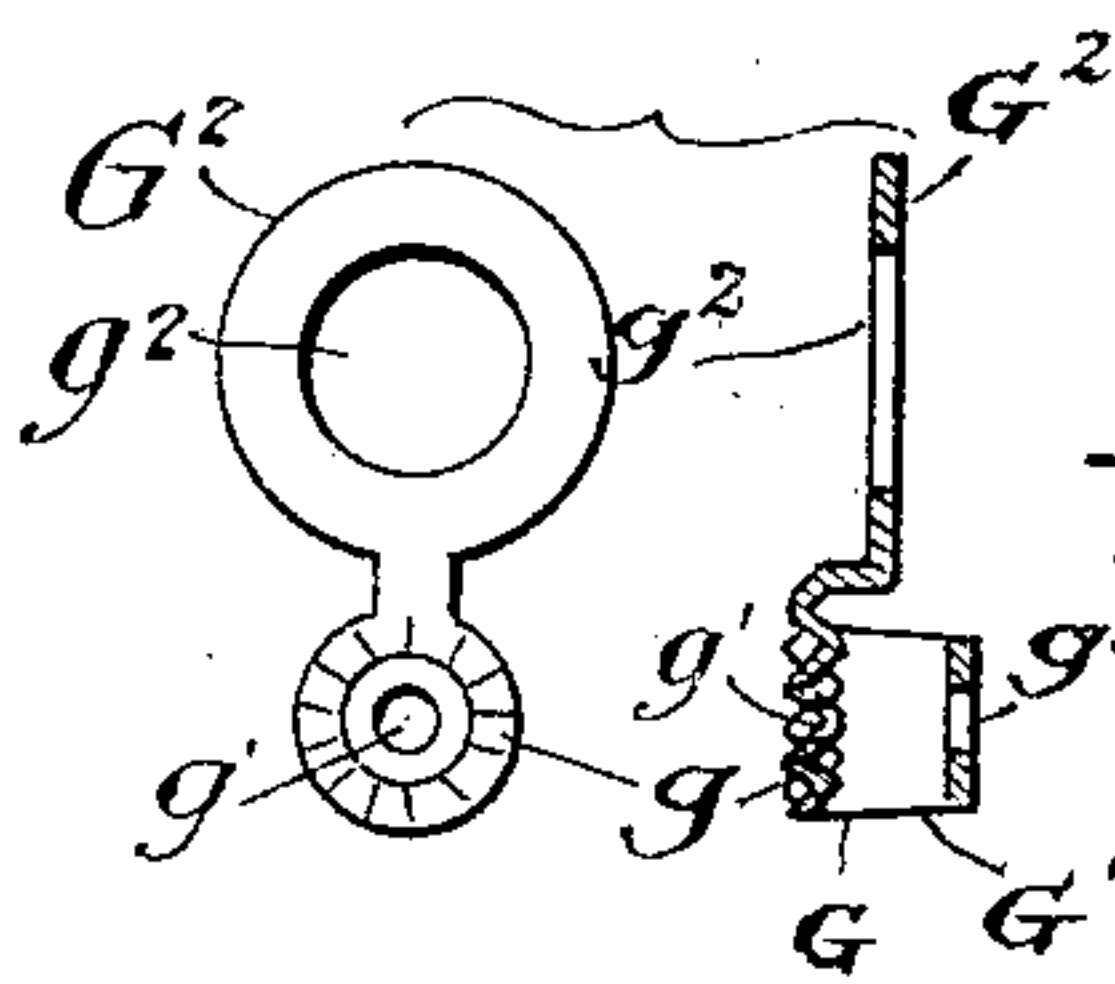


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

HENRY FRANCIS KEIL, OF NEW YORK, N. Y.

ELECTRIC BELL.

SPECIFICATION forming part of Letters Patent No. 701,572, dated June 3, 1902.

Application filed August 2, 1901. Serial No. 70,571. (No model.)

To all whom it may concern:

Be it known that I, HENRY FRANCIS KEIL, a citizen of the United States, and a resident of New York, in the county and State of New York, have invented a certain new and useful Electric Bell, of which the following is a specification.

My invention relates to an alarm or signaling device controlled or operated by a current of electricity in which the armature may be supported adjacent to or turned transversely to the electromagnet holding the same and retained in such positions at will; and it has for its object the provision of an instrument of the kind set forth simple in construction, inexpensive to manufacture, and which combines compactness of structure and light weight and also increased efficiency in practical operation.

To attain the desired end, this my invention consists in the construction, arrangement, and operation of parts herein set forth.

In the drawings which accompany and form a part of this specification, Figure 1 represents a front elevation of a bell constructed according to my invention. Fig. 2 is a side elevation of the same, and Figs. 3, 4, 5, 6, and 7 are views in detail of means for supporting the armature.

Like letters of reference indicate like parts in all the views.

Referring to the drawings, A denotes a gong-bell, and B a small electromagnet, to the armature C of which the hammer D of the bell is attached. The arrangement is such that when the circuit on which the bell is placed is completed by any suitable means, as by pressing down a button, (not shown,) the current passes in the ordinary manner through the binding-posts of the bell and post E' by a spring E to the armature, thence to the electromagnet, its core b is magnetized, the armature C is attracted, and the hammer D strikes the gong A. The circuit being broken by the motion of the armature C and spring E from the post E', the electromagnet ceases to act, the armature C falls back, completes the circuit again, and thus the automatic action of the hammer continues as long as the current passes.

The spring E sustains the armature C and is provided at its pivoted extremity with one

member of my locking means, consisting, preferably, of a radially-corrugated disk e, or, if desired, of a smooth plate or disk e¹⁰, as in Fig. 6, or a plate or disk e²⁰, provided with one or more notches or openings, as in Fig. 7, each plate or disk being provided with a central orifice e'. (Shown in Fig. 2.) The second member of my locking device consists, preferably, of a similarly-corrugated disk g, or, if desired, of a smooth plate or disk g¹⁰, as in Fig. 6, or a plate or disk g²⁰, provided with one or more projections, as in Fig. 7, each plate or disk being provided with a central orifice g', (shown in Fig. 3,) formed in a supporting spring-plate G, the central orifices e' g' of the two said disks being constructed and arranged to register with each other. The said spring-plate G has a lateral extension G², provided with a circular opening g³ (shown in Fig. 4) to fit the end of one of the cores of the electromagnet and to be rigidly engaged therewith in such a manner as to be sprung upon or detached from the same at will without disturbing the electromagnet. The other end G' of the spring-plate G extends rearward of the locking plate or disk, as g, and is bent up U shape in cross-section and is provided with a perforation g³ in alignment with the orifice g'. A fastening device, as a bolt or elongated eyelet H, is preferably loosely passed through the orifices e', g', and g³, so as to hold the parts securely in their normal positions and yet allow the armature to be turned transversely or outward relatively to the electromagnet any distance desired, the corrugations of the disk e riding over the corrugations of the disk g on account of the resilience of the spring-plate G and serving to hold the armature at any desired distance from the electromagnet, as for purposes of examining or cleaning the parts. Upon pushing the armature back again it will resume its exact normal position without requiring any adjustment whatever. By supporting the armature directly upon the core of the electromagnet a very simple, inexpensive, and efficient construction and arrangement of the parts is effected, or, if preferred, the plates or disks e¹⁰ e²⁰ in Figs. 6 and 7 may be rigidly engaged with the plates or disks g¹⁰ g²⁰ by means of the bolt H¹⁰, passing through the central orifices of the parts, and the nut

h^{10} , located on the threaded end of the said bolt H^{10} . By this construction I am able by manipulating the part of the locking device consisting of the nut h^{10} either to allow the
5 armature to turn without restraint or to hold the said armature rigidly in position at will.

In Fig. 5 the corrugated plates or disks $e g$ are shown secured together by the bolt H^{10} and nut h^{10} , which construction may be used
10 in lieu of the bolt or pin H . (Shown in Fig. 1.)

As it is evident that many changes in the construction, form, proportion, and relative arrangement of parts might be resorted to
15 without departing from the spirit and scope of my invention, I would have it understood that I do not restrict myself to the particular construction and arrangement of parts shown and described, but that such changes
20 and equivalents may be substituted therefor and that

What I claim as my invention is—

1. An electromagnet, an armature, a support therefor sustained by the core of the
25 magnet, and constructed and arranged to be sprung on or detached from the core at will, and means to hold the armature so as to move toward the electromagnet or transversely of the same.

30 2. An electromagnet, an armature, a support therefor sustained by the core of the magnet, and constructed and arranged to be sprung on or detached from the said core at will, means to hold the armature so as to
35 move toward the electromagnet or transversely of the same, and a locking device intermediate the armature and support, whereby the said armature may be sustained in a locked relation.

40 3. An electromagnet, an armature, a supporting-plate constructed and arranged to be sprung on or detached from the magnet-core at will, means to hold the armature so as to
45 be moved toward the electromagnet or transversely of the same, and a locking device, one part of said locking means being attached to the armature, and the other portion forming a part of said support.

50 4. An electromagnet, an armature, a supporting-plate constructed and arranged to be sprung on or detached from the magnet-core

at will, means to hold the armature so as to move toward the electromagnet or transversely of the same, and a locking device, consisting of a corrugated disk, attached to
55 the armature, and another portion, consisting also of a corrugated disk, forming a part of said support.

5. An electromagnet, an armature, a spring-plate supported by the core of said magnet,
60 means to hold the armature so as to move toward the electromagnet or transversely of the same, and a locking device, one part of said locking device consisting of a corrugated disk, attached to the armature, and the other
65 part, consisting also of a corrugated disk, supported by said spring-plate.

6. An electromagnet, a spring-plate supported by the core of said magnet, an armature, and a locking device, one member of
70 said locking device, consisting of a disk, attached to the armature, and another member, also consisting of a disk, supported by the said spring-plate, the two members being held together by means passing through the said
75 disks.

7. An electromagnet, a spring-plate supported by the core of said magnet, an armature, and a locking device, one member of
80 said locking device, consisting of a disk, attached to the armature, and another member, also consisting of a disk, supported by said spring-plate, the two members being held together by means passing through the said
85 disks and through an extension of the second member of the locking device.

8. An electromagnet, a spring-plate sustained by the core of said magnet, an armature coacting with the magnet and mounted to turn, and a locking device coacting with
90 the armature, whereby, upon manipulation, the movable pivoted armature may be rigidly held in any desired adjusted position.

In testimony of the foregoing specification I do hereby sign the same, in the city of New
95 York, county and State of New York, this 11th day of July, A. D. 1901.

HENRY FRANCIS KEIL.

Witnesses:

F. A. WURZBACH,
CHAS. H. J. DILG.