

No. 625,923.

Patented May 30, 1899.

R. BRUECKNER.
MAGNETO BELL STRIKER.

(Application filed Oct. 29, 1898.)

(No Model.)

Fig. 1,

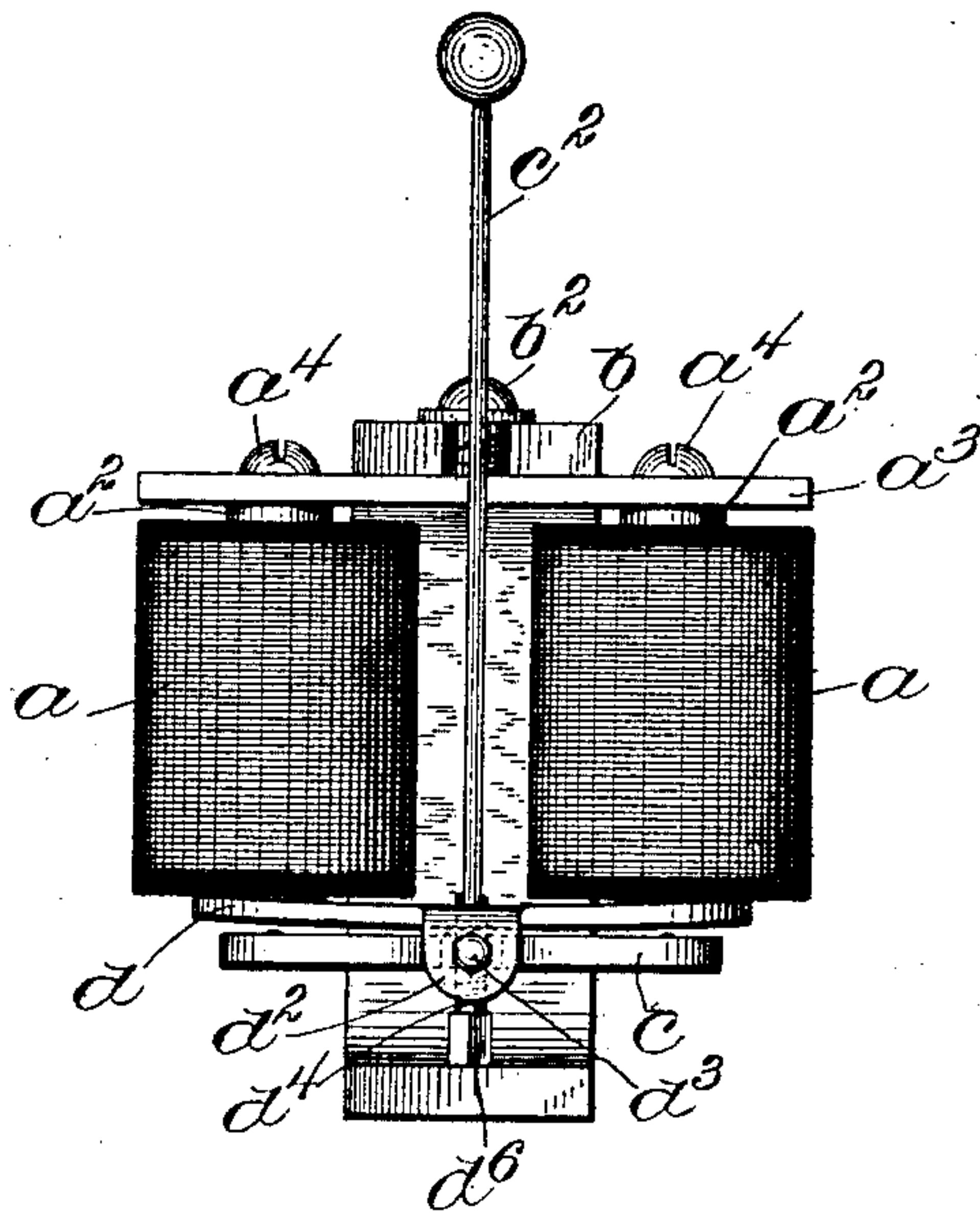


Fig. 2,

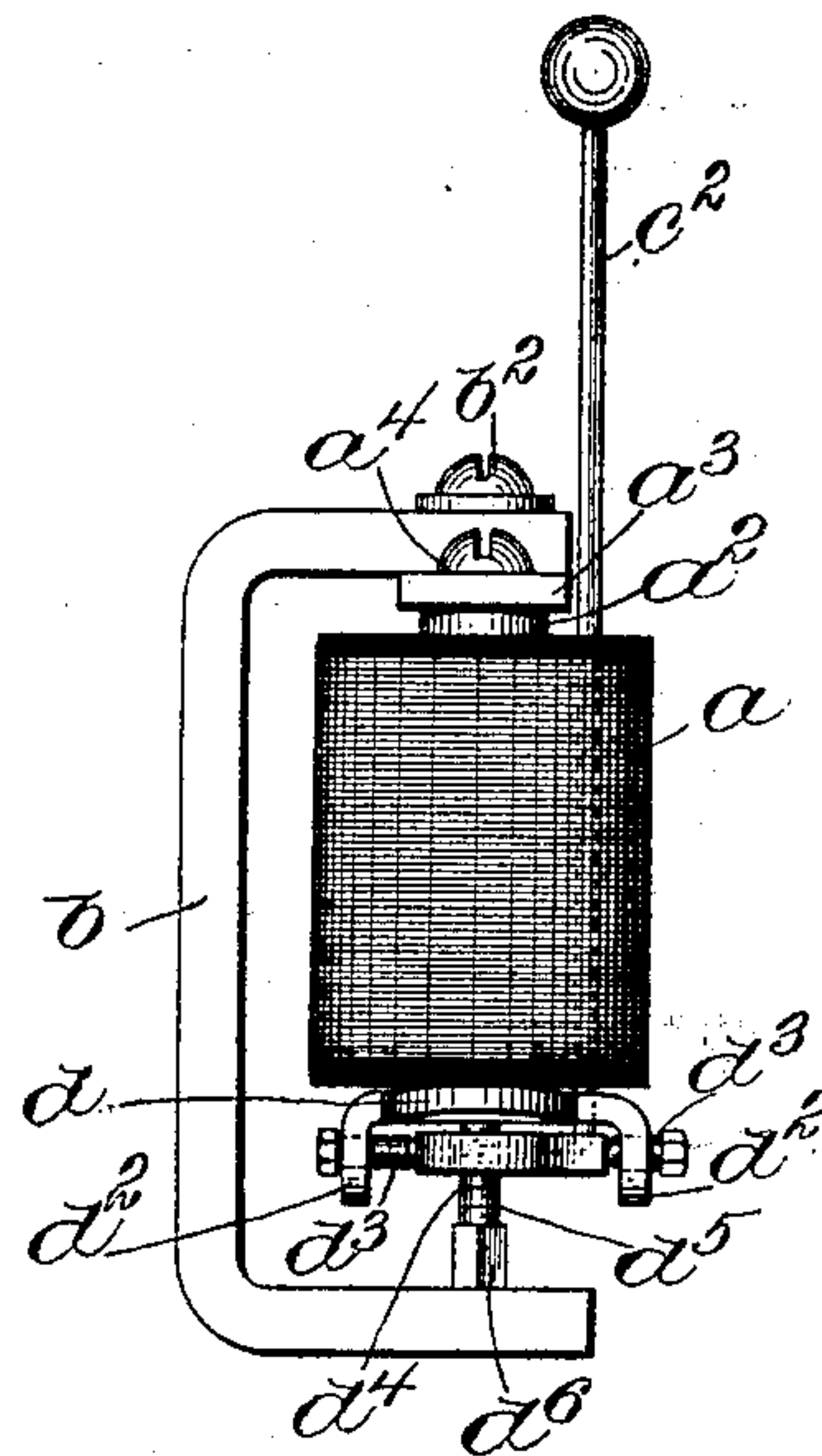
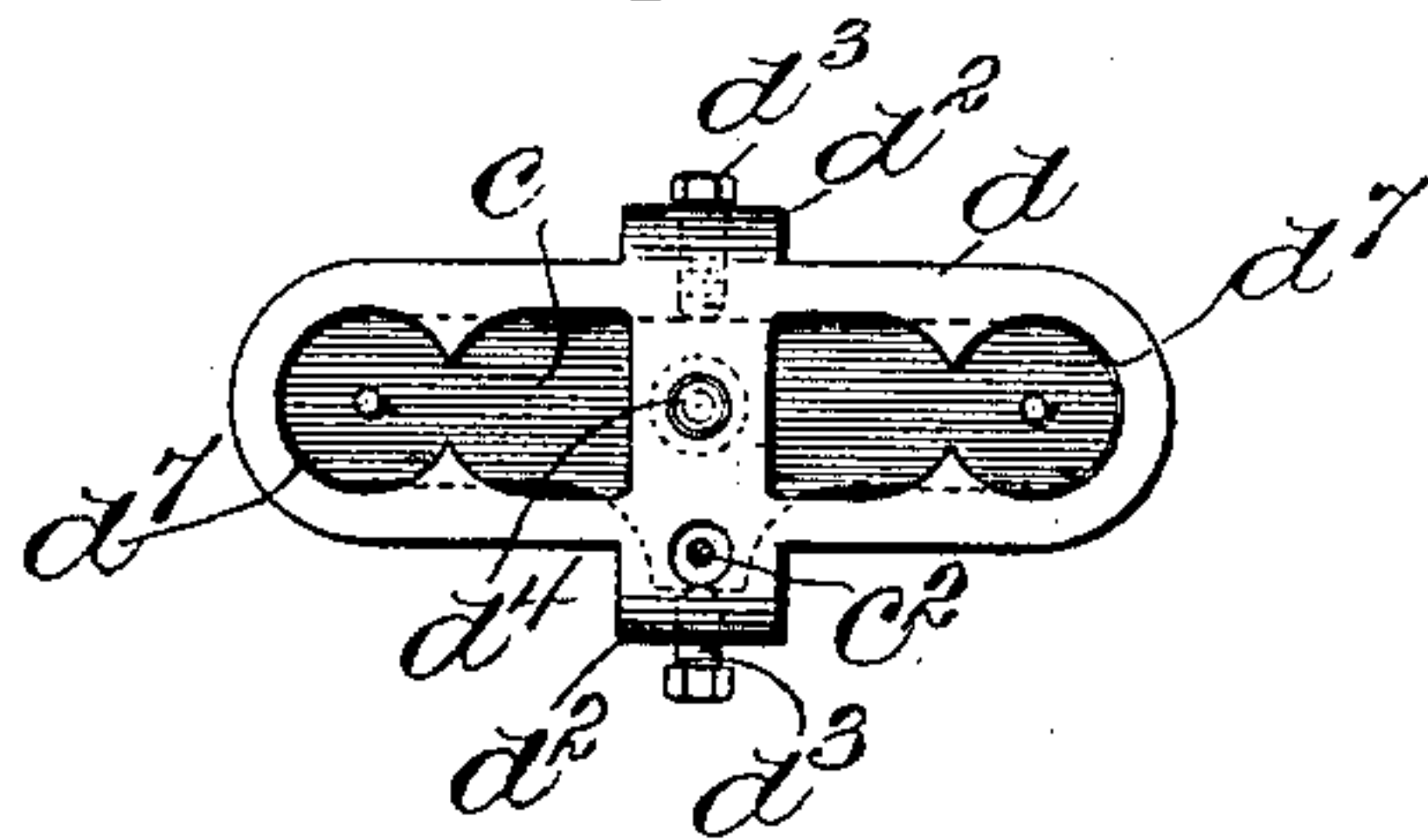


Fig. 3,



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UNITED STATES PATENT OFFICE.

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MAGNETO-BELL STRIKER.

SPECIFICATION forming part of Letters Patent No. 625,923, dated May 30, 1899.

Application filed October 29, 1898. Serial No. 694,902. (No model.)

To all whom it may concern:

Be it known that I, RICHARD BRUECKNER, of Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Magneto-Bell Strikers, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The present invention relates to a magneto-bell striker or ringer of the kind commonly employed for telephone-signals, and is embodied in a novel construction and arrangement of the armature-supporting means whereby the device is simplified, while the armature is maintained in the proper position relative to the magnets, so that the device will not readily get out of order. The armature is further provided, in accordance with the invention, with means for adjusting the position thereof with relation to the magnet-cores, so that the distance between the armature and the cores can be easily regulated.

In accordance with the invention the electromagnets which are supported upon a yoke secured to one branch or polar extremity of the permanent magnet are adapted to act upon an armature to which is secured the bell-tapper, and the said armature is supported directly by the cores of the electromagnets instead of by independent framework, as in bell-strikers heretofore commonly constructed. As herein shown, the armature is pivotally connected with a yoke of non-magnetic material which is suitably secured to the magnet-cores and extends from one to the other, thus not only having a fixed definite position with relation thereto, but also acting to bind and secure them together. Furthermore, the armature obviously cannot fail to retain the proper position with relation to the magnet-cores, since it is supported thereby. The armature is provided, however, with means for adjusting its position with relation to the cores to vary the distance between the cores and the armature without otherwise changing the relative positions thereof. This may be accomplished by providing the armature-supporting yoke with an adjusting device, and, as herein shown, the said yoke is sprung into position upon the magnet-cores so as to be slightly curved or bowed and is

held in position thereon by an adjustable projection which engages with the permanent magnet, the said projection being held in engagement therewith by the spring tension of the yoke.

Figure 1 is a front elevation of a magneto-bell embodying the invention. Fig. 2 is a side elevation of the same, and Fig. 3 is a plan view of the armature-support and armature apart from the remainder of the device.

The bell-striker embodying the invention is provided with the electromagnets a , the cores a^2 of which are supported on a yoke a^3 , directly secured to one end of the permanent magnet b . As herein shown, the cores a^2 are fastened to the said yoke by means of screws a^4 , and the yoke itself is secured to the permanent magnet b by means of a screw b^2 . The yoke is of magnetizable material, so that the cores a^2 are permanently magnetized, as usual in a magneto-bell. The bell-tapper c^2 is secured in the usual way to a vibrating armature c in the magnetic field of the cores a^2 , so as to be attracted by one core and then by the other in response to the current passed through the magnetic coils a from the magneto-generator. The said armature is supported in accordance with the present invention by the magnet-cores themselves and is shown as directly connected with a yoke d , of non-magnetizable material, arranged to be suitably secured to the cores or pole-pieces a^2 , the said yoke being shown as provided with downwardly-extending ears d^2 , provided with adjustable cone-bearings d^3 , fitting conical sockets in the armature c , the said armature c thus being fixed with relation to the magnet-cores a^2 . It is obvious, therefore, that the armature will be maintained in proper position with relation to said cores even though the fastening device or magnetic supporting-yoke a^3 should be strained or worked out of place. To retain the yoke d in position, the said yoke is shown as provided with a projection d^4 from an intermediate portion of said yoke, the said projection engaging the other branch or polar extremity of the permanent magnet b , and the said yoke d is provided with recesses d^7 , Fig. 3, which fit snugly upon the ends of the cores a^2 .

A further feature of the invention consists

in providing the bell-striker with means for adjusting the armature to vary the distance between it and the cores. For this purpose the supporting-yoke is provided with a suitable adjusting device, and, as shown in Figs. 1 and 2, said yoke is bowed or sprung to force the projection d^4 into firm engagement with the permanent magnet b , the recesses d^7 being somewhat farther apart than the cores. Since the ears d^2 are at the middle of the yoke d , it is obvious that the distance between the armature c , supported in said ears, and the cores a^2 will depend upon the amount the said yoke d is sprung. By making the projection d^4 adjustable, therefore, with relation to the magnet b and the yoke d , as by providing it with a screw-thread to cooperate with a corresponding screw-thread in one of said parts, the armature c may be adjusted so as to maintain it at the proper distance from the magnet-cores a^2 . It is obvious, however, that any suitable means may be employed for securing the yoke to the cores and for adjusting it, the construction shown, however, having the advantage that no fastening devices are required, the frictional engagement of the adjustable projection d^4 with the permanent magnet sufficing to hold the parts firmly assembled. As herein shown, the said projection d^4 comprises a bolt having a screw-thread d^5 and a faced extremity d^6 , the screw-thread cooperating with a corresponding thread in the yoke d , while the end of the bolt is held in engagement with the permanent magnet b by the spring tension of the yoke d . By turning the said bolt in one direction, therefore, the middle of the yoke d can be forced upward, thus carrying the armature nearer the magnet-cores, and by turning the said bolt in the other direction the said core is permitted to spring outward or downward, thus carrying the armature farther away from the cores.

From the foregoing description it will be seen that the construction of the magneto-bell is simplified, since the independent frame which has been commonly used to support the armature is dispensed with, while the advantage is gained that the armature cannot be displaced with relation to the magnet, as is likely to happen when the said parts are independently supported. Furthermore, the device is easily assembled and the proper adjustment of the parts attained without difficulty. It is not, however, intended to limit the invention to the specific construction shown and described, since modifications may be made without departing from the invention.

I claim—

1. In a magneto-bell striker, the combination with the electromagnets, of an armature-support mounted on the cores of said magnets and extending from one to the other, a

vibrating armature pivoted in said support at a point between said cores, and means for adjusting the position of said armature-support to vary the distance between the armature and the said magnet-cores, substantially as described.

2. A magneto-bell striker comprising a permanent magnet having electromagnetic coils wound on cores secured to one polar extremity thereof; an armature-supporting yoke fitted upon the ends of said cores; and a projection from said yoke extending to the other polar extremity of the permanent magnet to retain said armature-yoke in position, substantially as described.

3. In a magneto-bell striker the combination with the electromagnets; of an armature-support secured to the projecting cores of said electromagnets; and means for adjusting the position of the said support with relation to the said cores, to vary the distance between the armature and the polar extremities of said cores, substantially as described.

4. The combination with the electromagnets supported at one end of the permanent magnet, of an armature-support mounted upon the cores of said magnets, the middle of said support being sprung or bowed toward the opposite end of the permanent magnet; a projection from said support engaging said permanent magnet to hold the support in position; and means for adjusting said projection with relation to said support to correspondingly adjust the position of the armature supported by said support, substantially as described.

5. A magneto-bell comprising electromagnets having polarized cores and supported adjacent to each other with their axes parallel, an armature-support secured upon said cores an armature pivoted at a point between the axes thereof, and means for adjusting said armature toward and from said cores along a plane passing through the axes of both of said cores, substantially as described.

6. A magneto-bell comprising electromagnets supported adjacent to each other with their axes parallel; an armature-support secured upon the said cores and consisting of a yoke curved or sprung between said cores; an armature pivotally connected with said support, and means for varying the curvature of said support to adjust the position of the armature with relation to the cores, substantially as described.

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

RICHARD BRUECKNER.

Witnesses:

THOMAS W. NESS,
ALBERT POLLARD.