

(No Model.)

2 Sheets—Sheet 1.

C. M. BURGESS.
DOOR BELL.

No. 502,612.

Patented Aug. 1, 1893.

Fig. 1.

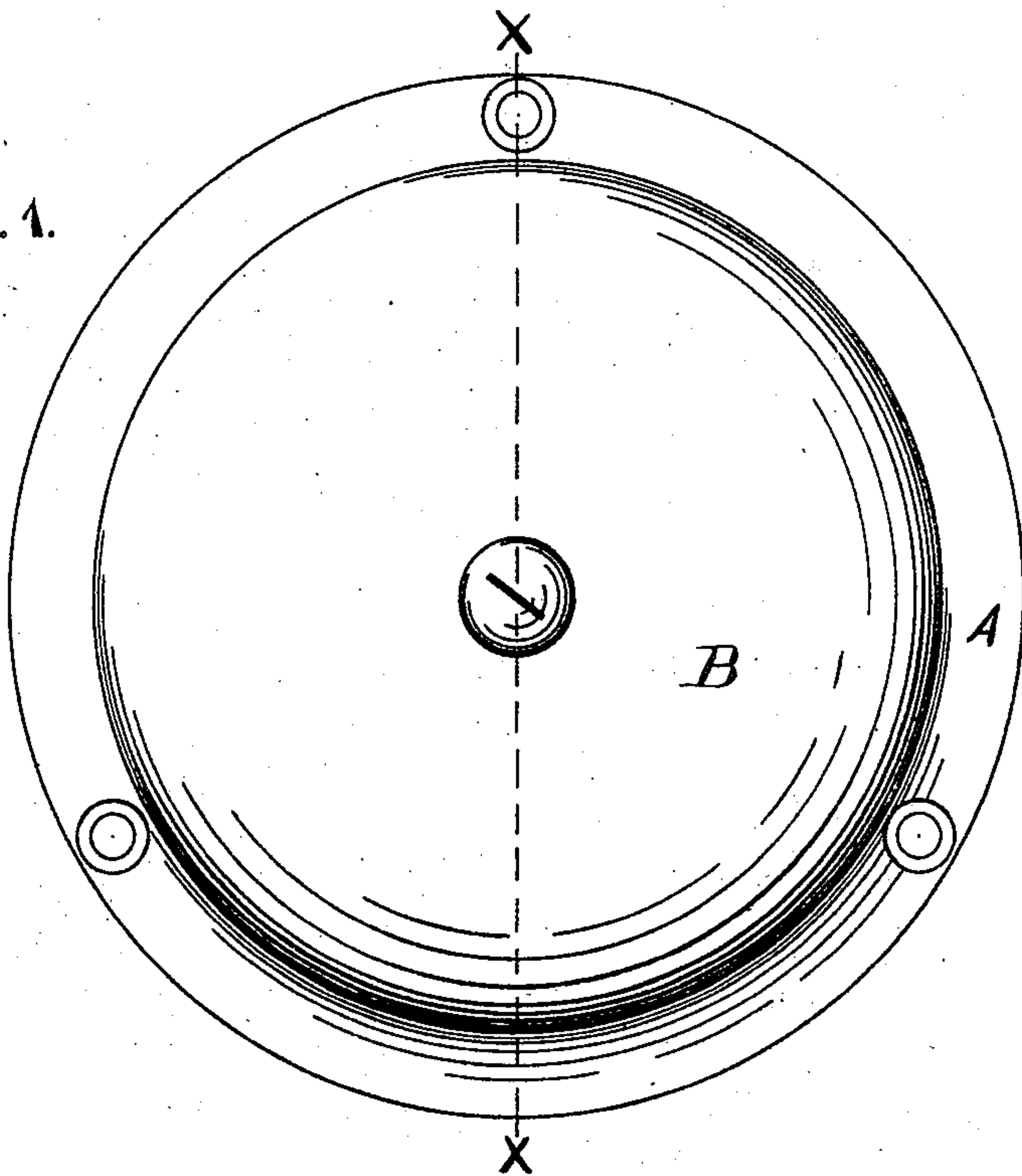
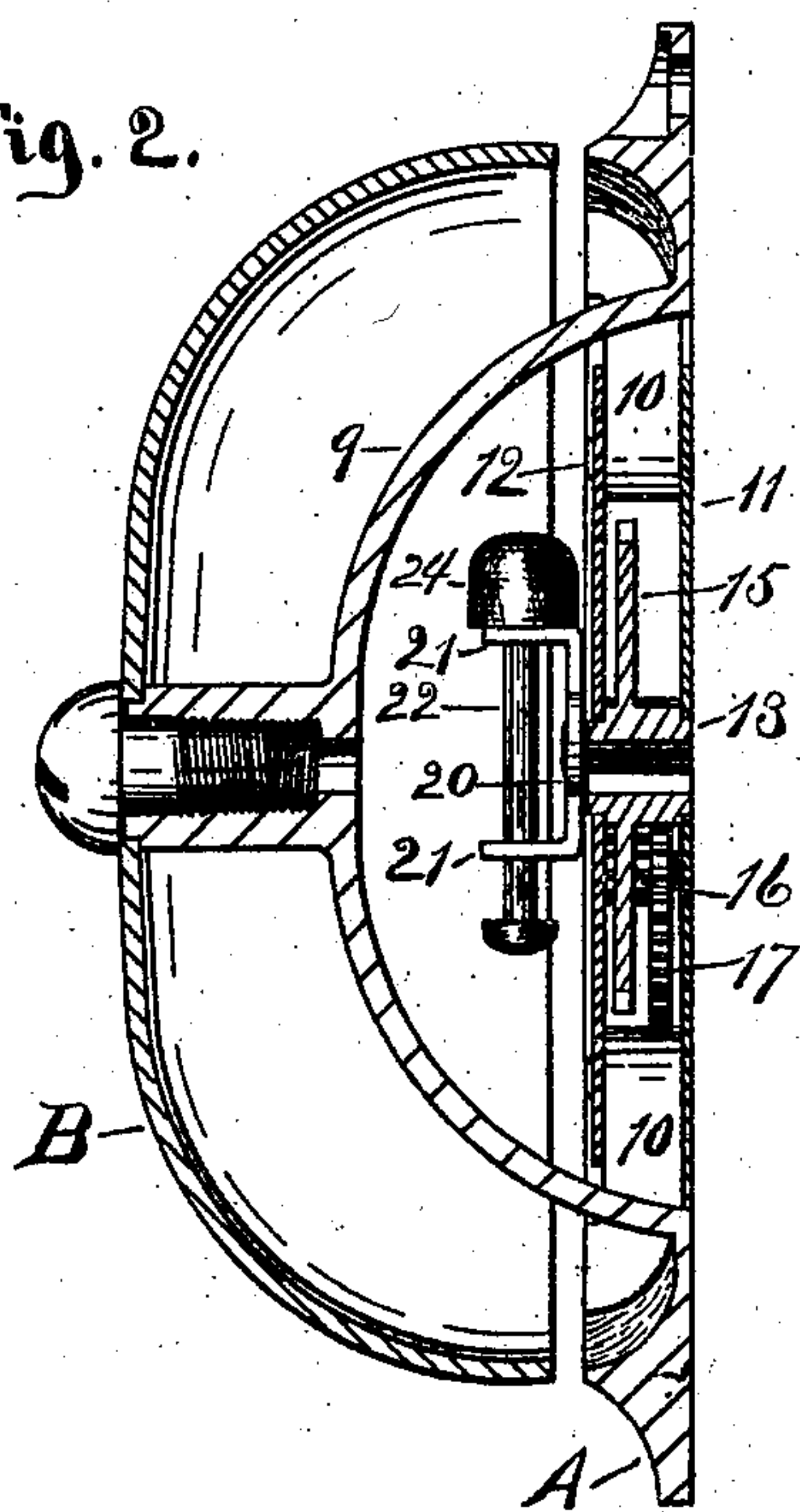


Fig. 2.



Witnesses.

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By James Shepard
Atty.

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Fig. 3.

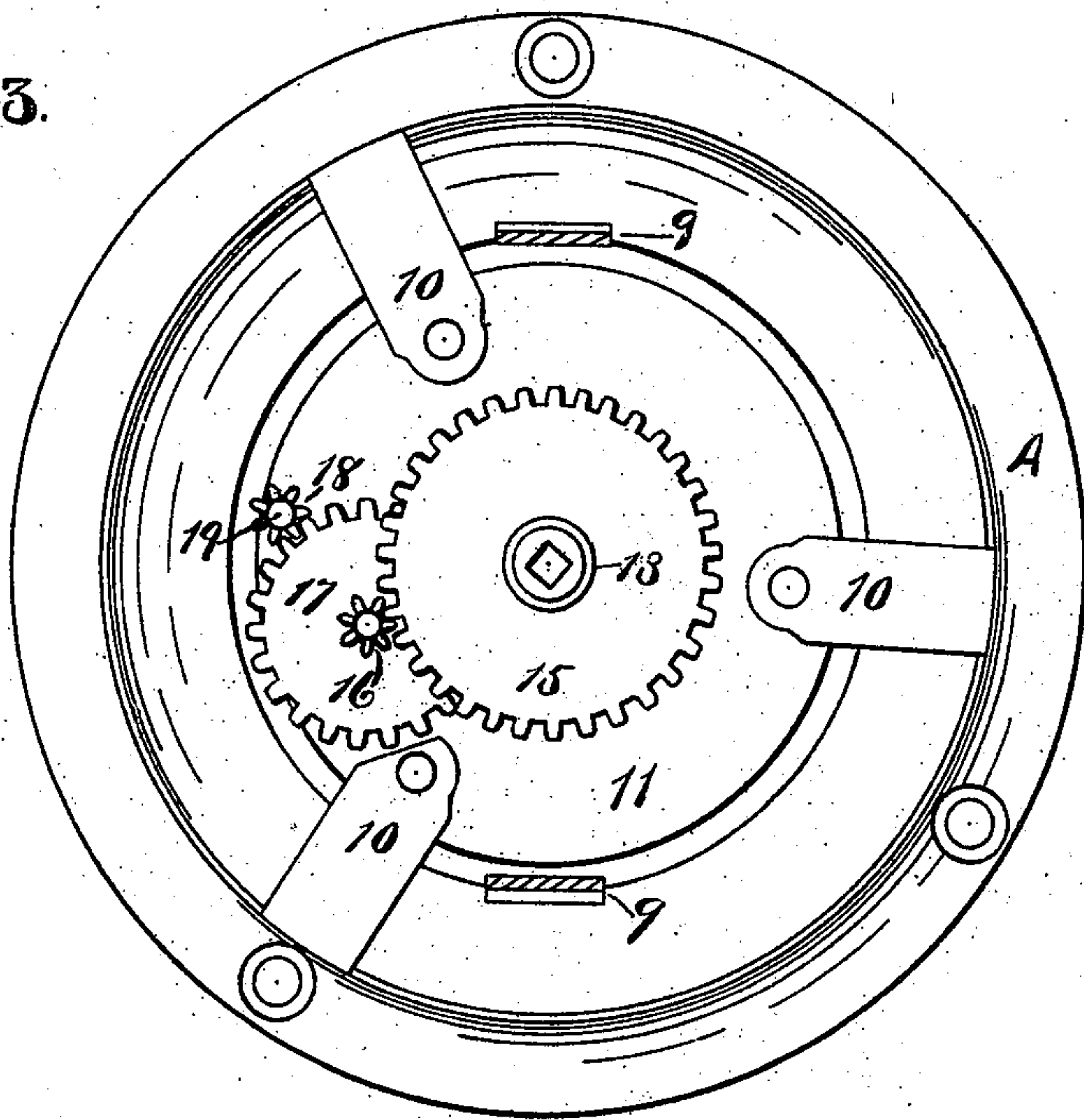


Fig. 4.

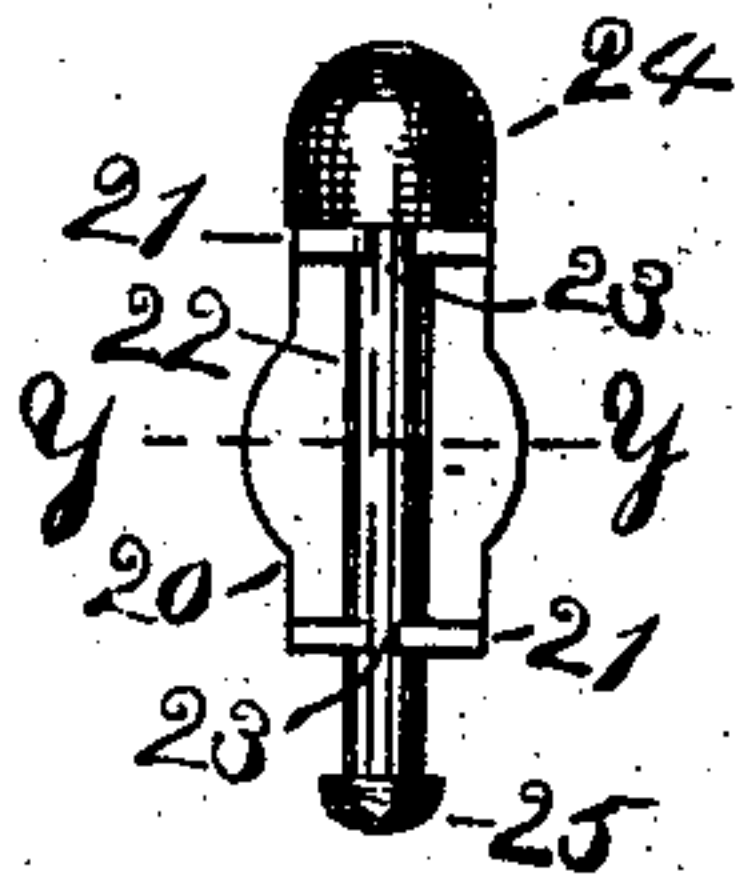


Fig. 5.

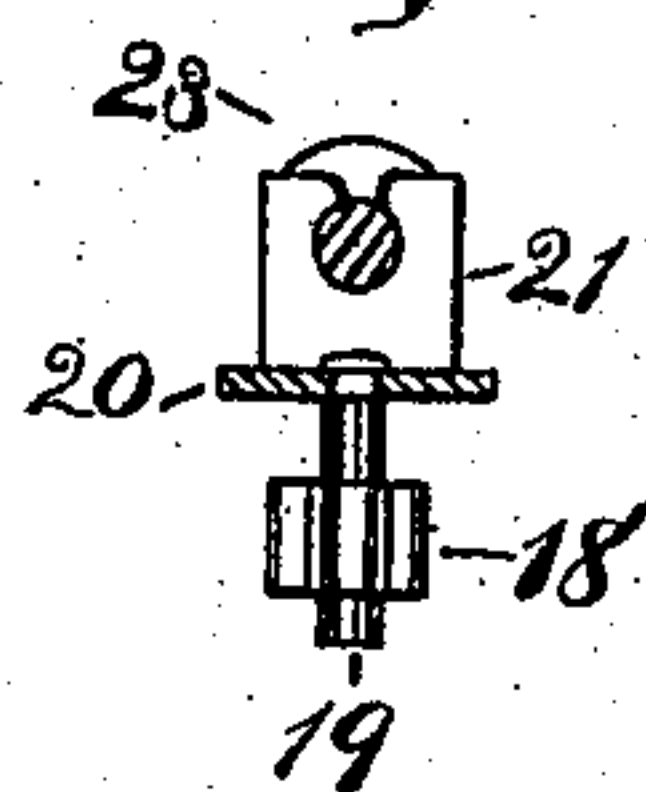


Fig. 6.

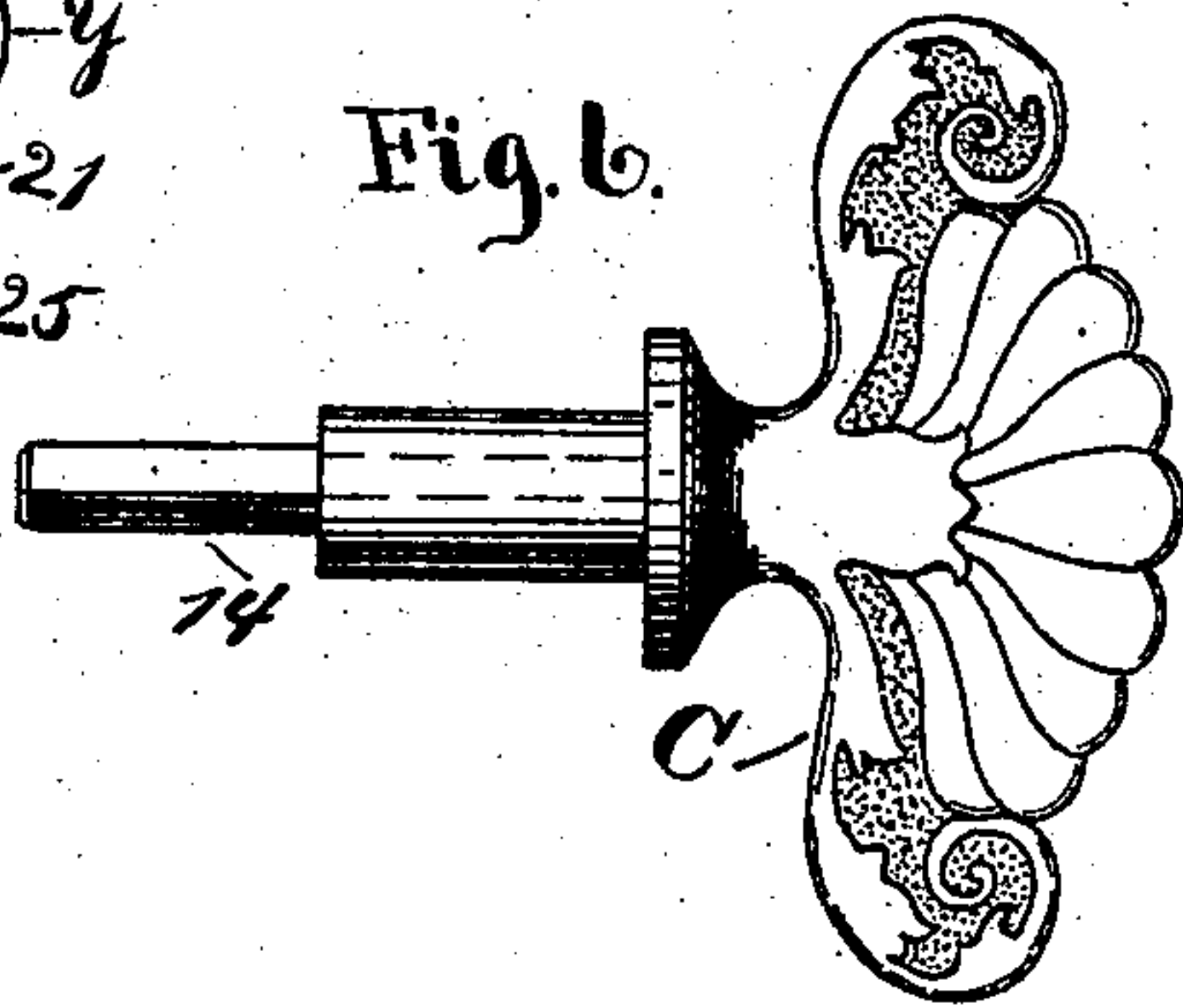


Fig. 7.

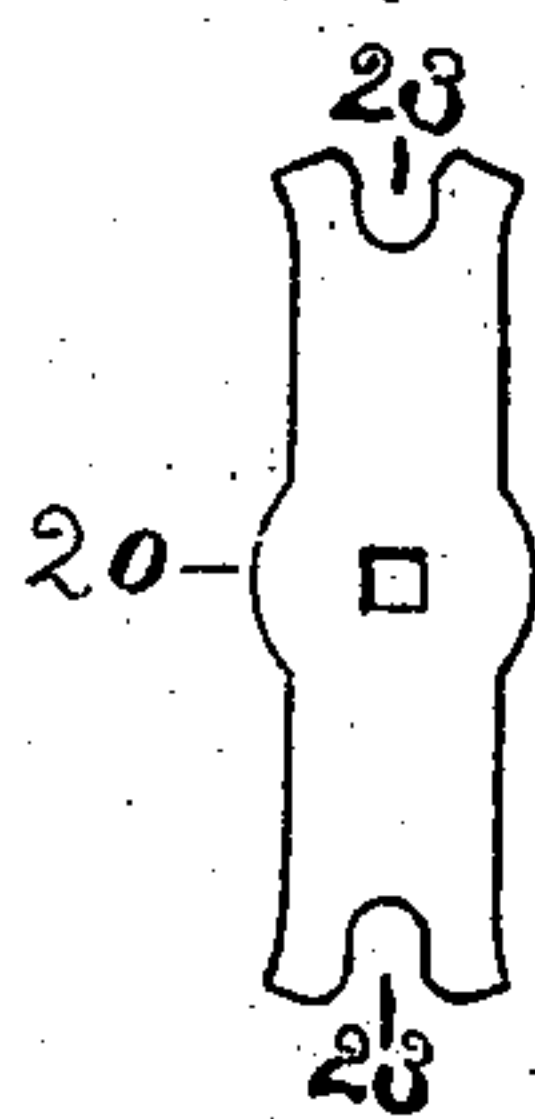
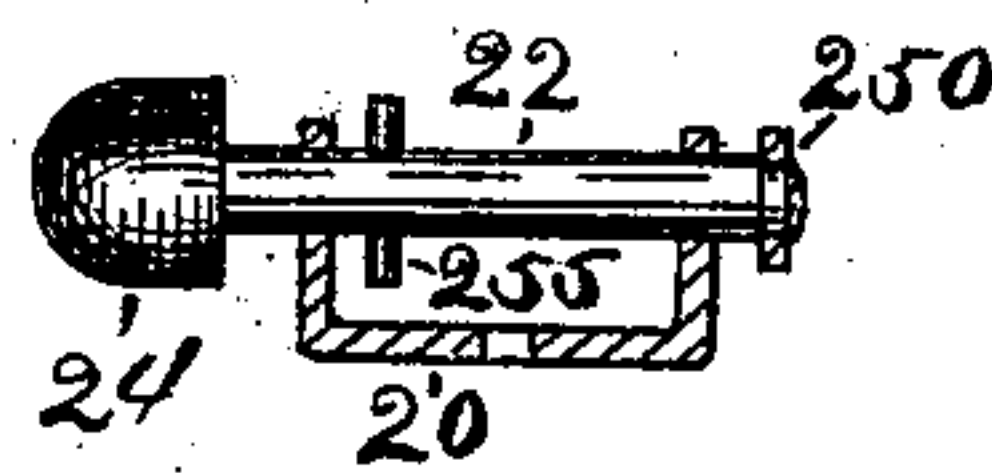


Fig. 8.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES M. BURGESS, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE
RUSSELL & ERWIN MANUFACTURING COMPANY, OF SAME PLACE.

DOOR-BELL.

SPECIFICATION forming part of Letters Patent No. 502,612, dated August 1, 1893.

Application filed January 31, 1893. Serial No. 460,394. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. BURGESS, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Door-Bells, of which the following is a specification.

My invention relates to improvements in door bells; and the objects of my improvement are simplicity and economy in construction and general efficiency in operation.

In the accompanying drawings, Figure 1 is a front elevation of my door bell. Fig. 2 is a vertical section of the same on the line xx of Fig. 1. Fig. 3 is a front elevation of parts of the same, the supporting bridge for the bell being shown in section. Fig. 4 is a front elevation of the hammer carrier and hammer. Fig. 5 is a transverse section of the same together with the hammer-carrier shaft and pinion. Fig. 6 is a side elevation of the operating handle or key. Fig. 7 is a plan view of the blank for making the hammer carrier, and Fig. 8 is a longitudinal section of a hammer carrier with a side elevation of a hammer in a somewhat modified form.

A designates the base plate which is mainly of an annular form and provided with a bridge 9 upon which to secure the bell B, in any ordinary manner. This base plate is also provided with radial lugs 10 by means of which I secure the movement plates 11 and 12, the same being riveted or bolted to said lugs. In the center of the movement plate and frame is a spindle hub 13 having its bearings in said movement plates and provided with a square socket for receiving the spindle or bit 14 of the operating handle C, Fig. 6. This hub 13 is also provided with a wheel 15 which engages a pinion 16, said pinion being mounted rigidly with another wheel 17 which in turn engages the pinion 18 of the hammer shaft 19, thus making a train of gearing that is driven by said spindle hub and which constitutes the driving mechanism for revolving the hammer. Inasmuch as the spindle hub is in the center of the movement plates and bell it follows that the hammer carrier is eccentric thereto and thus I am enabled to make it strike the bell and rebound without the employment of a lug on the inside of the

bell. Upon the front end of the hammer-carrier shaft 19 outside of the movement plates, I secure a hammer carrier 20 so that said hammer carrier revolves with said shaft, as for example by riveting said carrier to the end of the shaft. This carrier is made from a blank substantially as shown in Fig. 7, which consists of a flat strip of metal with its ends slotted as shown. The ends of the blank are bent at right angles to its body thus forming guiding lugs 21 for receiving and guiding the longitudinally sliding hammer 22. The body portion of this hammer is in the form of a bar or rod which is received and slides loosely in the slots 23 of the hammer carrier lugs. I provide one end of this hammer with a hammer head 24, while its opposite end is provided with a stop 25 large enough to limit the endwise movement of the hammer in one direction, but projecting a less distance from the hammer carrier than does the hammer head, whereby it does not come in contact with the gong or bell. This sliding hammer with its head and stop may be cast all in one piece and then dropped into the open slots of the hammer carrier in a sidewise direction, after which the side walls of the slots are compressed inwardly to prevent the accidental detachment of the hammer as shown in Figs. 4 and 5.

If desired instead of making the hammer with its head and stop both solid in one piece and dropping it into the hammer carrier sidewise through slots, the lugs of the hammer carrier may be provided with drilled holes and the body of the hammer inserted endwise through said holes and secured against accidental displacement by a stop washer 250 riveted to the end of said hammer as shown in Fig. 8, or if desired as a substitute therefor, the body may be provided with a transverse hole into which a stop pin 255 may be driven as also shown in said Fig. 8.

The hammer carrier is mounted on its shaft in such relation to the bell or gong B that as the hammer carrier revolves and the hammer head 24 is moved outwardly to the full extent of its movement, it will strike the bell in its revolution, while the stop or other end of the hammer cannot engage the bell. It is, however, evident that the stop 25 can be made

larger if desired so that it would constitute another hammer head for striking the bell, but a better effect is believed to be produced by having only one head engage the bell. The
5 hammer head 24 acts as a stop to limit the longitudinal movement of the hammer in one direction and if two heads were employed the other head would limit such movement in the reverse direction.

10 The construction herein shown and described is one of the best known to me but it is evident that many features thereof may be changed without departing from my invention.

15 The base A and bell B are designed to be placed upon the inside of the door, while the spindle 14 of the operating handle or turn button is made to engage the spindle hub 13 by passing it through the door from the out-
20 side. It may be secured on the door in any ordinary manner. By turning said handle to drive the train of gearing, the hammer carrier and hammer are revolved rapidly, when the centrifugal force will throw the hammer
25 head 24 outwardly the whole extent of its longitudinal movement, thus bringing it within reach of the bell. As it strikes the bell, it immediately rebounds and withdraws therefrom so that it passes on and is again forced out-
30 ward by centrifugal force ready to strike the bell at its next revolution, whereby a series of rapid strokes are given to the bell which may be continued as long as may be desired.

35 While I have described my device as a door bell, it is evident that the same mechanism may be employed in a portable call bell without any material modification.

40 By my improvements I cheaply produce an efficient door bell which will give a series of strokes in rapid succession, and which may be sounded as long as the operator may desire. By providing the sliding hammer with only one head for sounding the bell, I am enabled to speed up the hammer shaft so as to
45 give an efficient blow and at the same time allow a sufficient interval between the strokes to give a clear ring to the bell, which would

not be the case if the hammer revolved at the same speed and made two strokes of the bell at each revolution.

I am aware that prior patents show a revolving hammer or hammers in connection with a train of gearing for operating a hammer in sounding a bell, and the same is hereby disclaimed.

I claim as my invention—

1. The combination of a bell, a revolving hammer carrier mounted eccentrically to said bell and having transverse hammer guides, a longitudinal sliding hammer loosely mounted
60 within said guides, and left free to be thrown outwardly by centrifugal force, and a train of gearing for operating said hammer carrier, substantially as described and for the purpose specified.

2. In combination with suitable driving mechanism, the hammer carrier 22 having slotted guiding lugs, the hammer consisting of a bar like body, hammer-head and stop with the side walls of the slot in said lugs
70 bent over the body of the hammer for holding it in place, substantially as described and for the purpose specified.

3. In combination with a bell and suitable driving mechanism, the hammer carrier having hammer guides, the hammer consisting of
75 a bar like body loosely mounted in said guides and having the hammer head at one end and a stop of less projection that does not engage the bell, substantially as described and for the purpose specified.

4. In combination with a bell and suitable driving mechanism, the revolving and sliding hammer having a hammer head at one part only, a revolving hammer carrier upon which
85 said hammer is loosely mounted and guided to slide out and in for striking said hammer head against said bell, substantially as described and for the purpose specified.

CHARLES M. BURGESS.

Witnesses:

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JAMES SHEPARD.