

No. 611,794.

Patented Oct. 4, 1898.

H. S. ROSS.
BELL RINGING MECHANISM.

(Application filed Sept. 28, 1897.)

(No Model.)

Fig. 1.

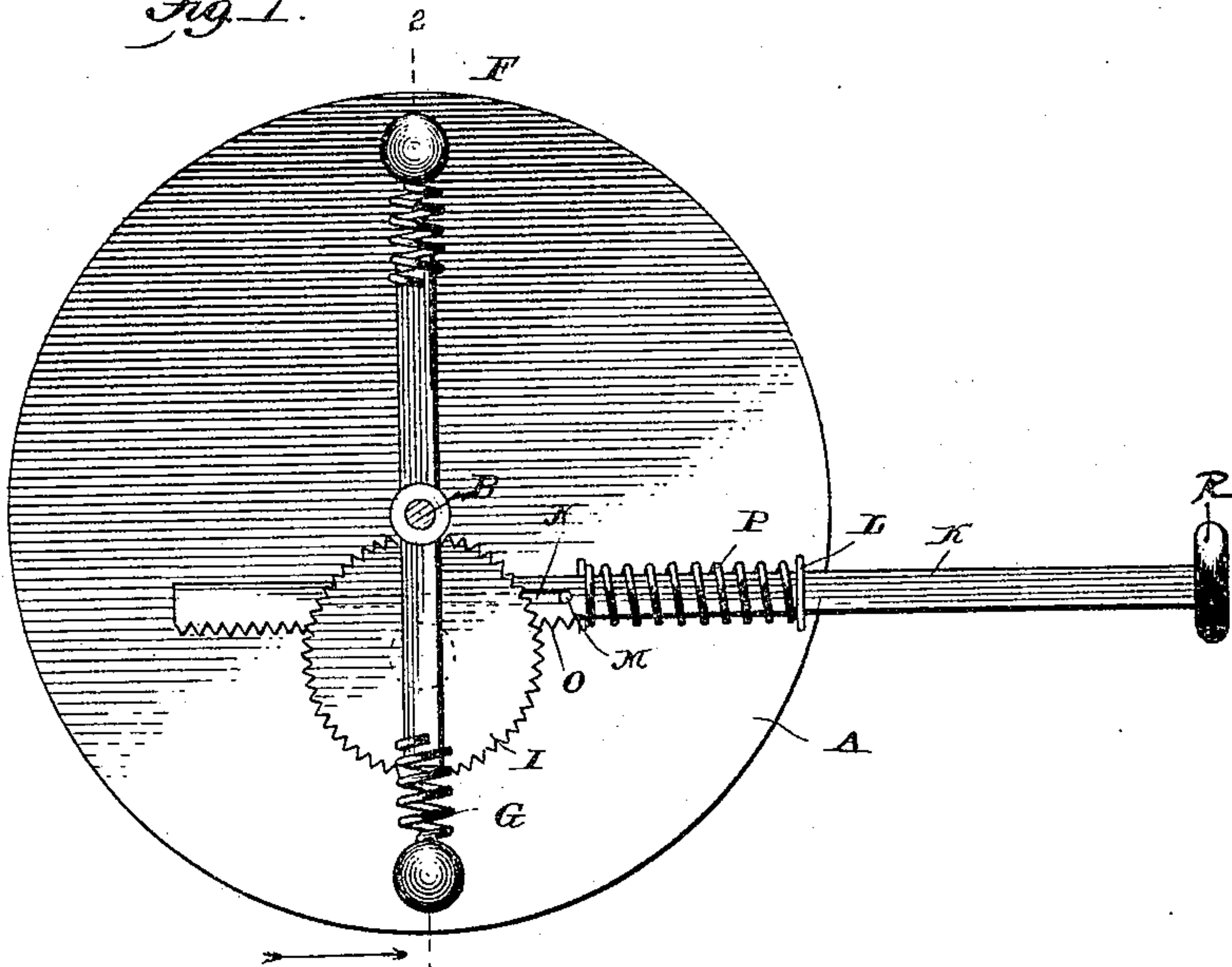


Fig. 2.

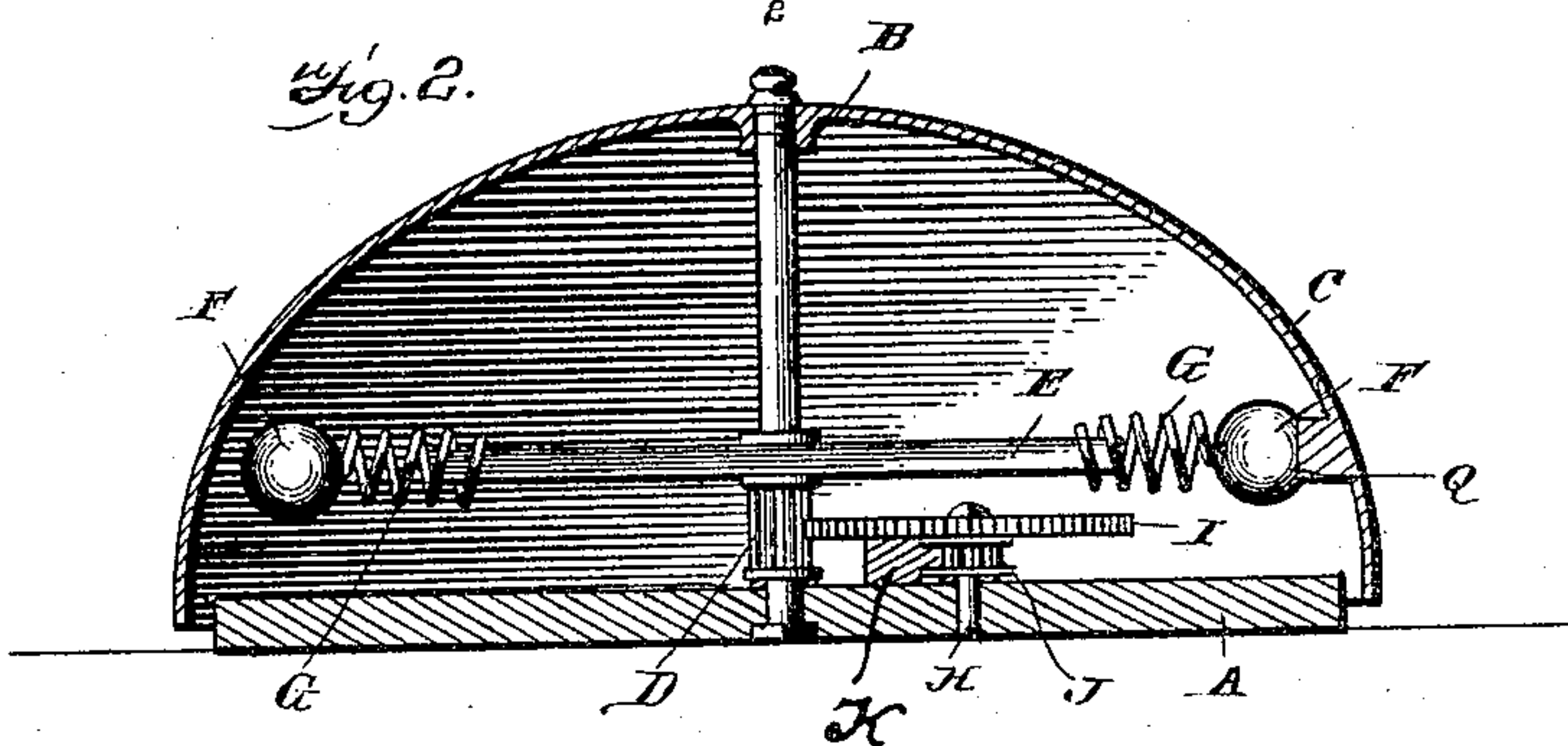


Fig. 3.

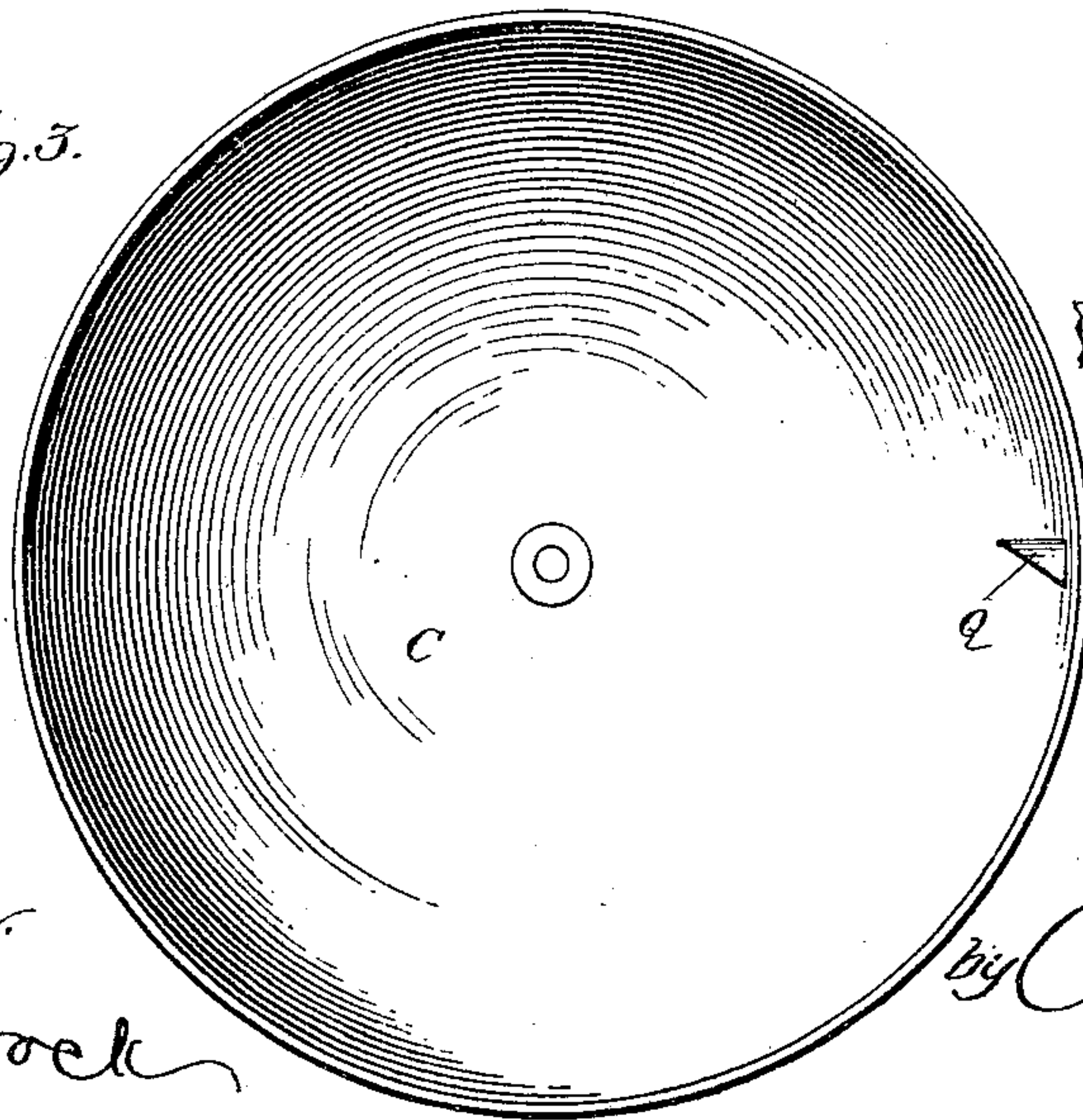


Fig. 4.

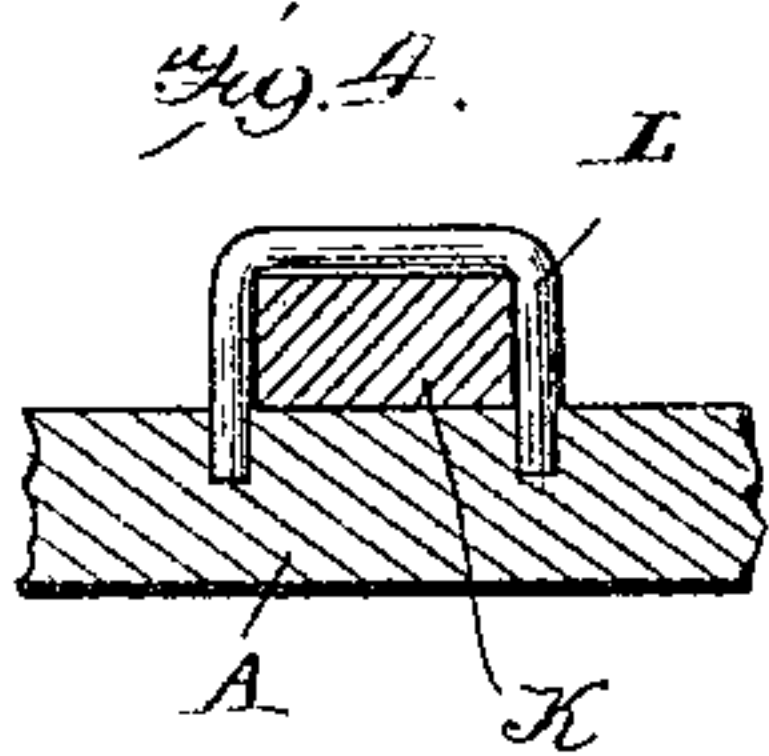
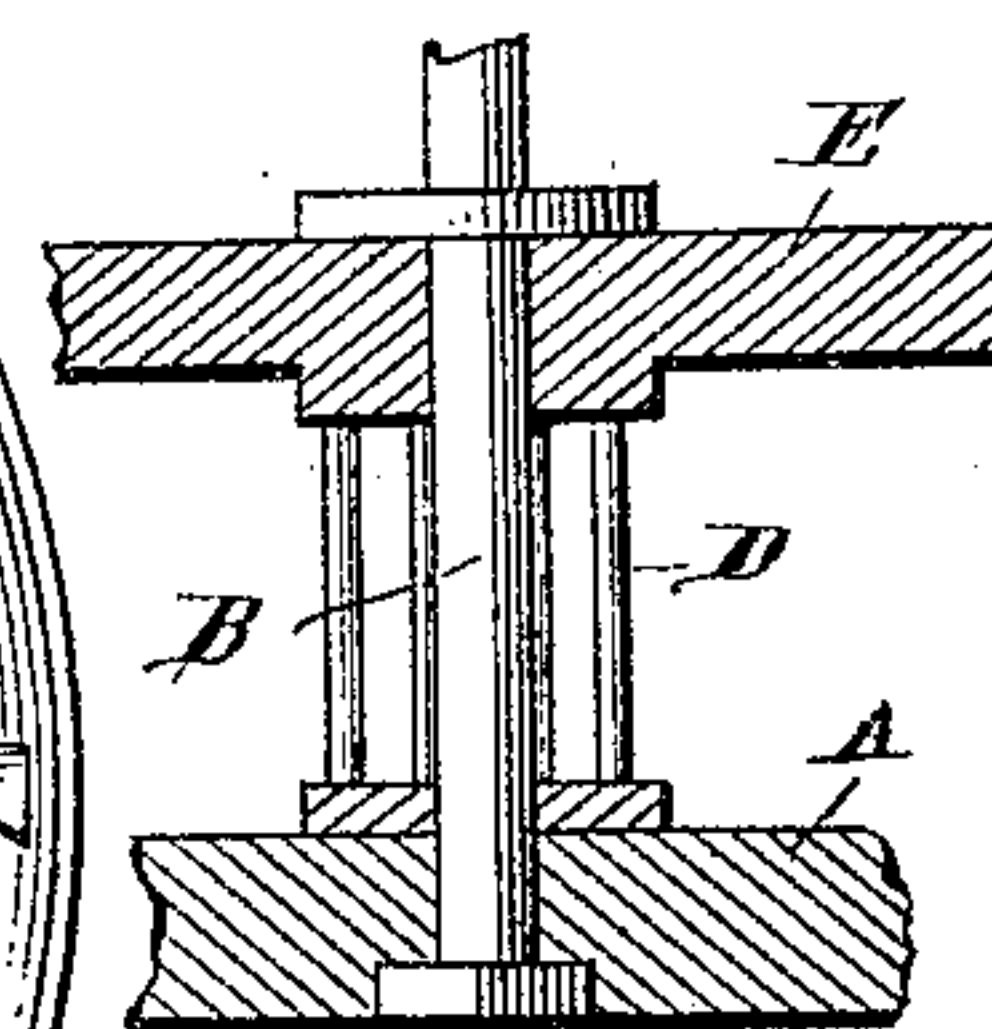


Fig. 5.



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UNITED STATES PATENT OFFICE.

HARRY S. ROSS, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
WILLIAM CAMPBELL, OF SAME PLACE.

BELL-RINGING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 611,794, dated October 4, 1898.

Application filed September 28, 1897. Serial No. 653,354. (No model.)

To all whom it may concern:

Be it known that I, HARRY S. ROSS, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Alarm-Bell, of which the following is a specification.

My invention is in the nature of an alarm-bell to be used in any position where alarm-bells, either mechanical or electrical, can be utilized.

The object of my invention is to provide a mechanically-operated alarm-bell of cheap and simple construction to take the place of electric bells in various positions, whereby the trouble and annoyance of attending to the battery and connections of electric bells will be dispensed with.

My invention consists in the improved construction, arrangement, and combination of parts hereinafter fully described and afterward specifically pointed out in the claim.

In order to enable others skilled in the art to which my invention most nearly appertains to make and use the same, I will now proceed to describe its construction and operation, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a horizontal transverse section through the central shaft of the bell, the gong being omitted. Fig. 2 is a vertical section on the line 2 2 of Fig. 1, the gong also being shown. Fig. 3 is a bottom plan view of the gong detached. Fig. 4 is a detail view illustrating the manner of guiding the operating-rod. Fig. 5 is a detail sectional view to be referred to hereinafter.

Like letters of reference mark the same parts wherever they occur in the different figures of the drawings.

Referring to the drawings by letters, A is the base, upon which is mounted an upright shaft B, upon which is threaded a gong C. The upright shaft is provided just above the base with a toothed wheel D, of any ordinary construction, upon the upper part of which is secured a diametrically-placed rod E. Balls F are attached to the ends of the rod E by means of spiral springs G. A second short shaft H is also mounted in the base A to one side of the main shaft, a cog-wheel I be-

ing secured upon the upper end of said shaft and a pinion J being also secured to said shaft below the cog-wheel I. A rod K is passed through a staple or guide L, secured to the base A, and is further guided by means of a pin M, projecting through a longitudinal slot N in said rod. The rod K is formed on one side of its inner portion with rack-teeth O, and is provided with a spring P, which may be arranged to hold it normally in either its inner or outer position, as may be desired. The rack-teeth O of the rod K engage with the teeth of the pinion J on the shaft H, while the teeth of the cog-wheel I of the same shaft engage with the teeth of the pinion D on the central shaft B. One or more inner projections Q are cast upon the inside of the gong in the track of the balls F when rotated. The rod K is provided with a suitable handle R on its outer end.

The operation of my invention may be described as follows: The base being secured in any desired position and the parts assembled as hereinbefore described, the movement of the rod K either in or out, according to the adjustment of the spring P, will, through the engagement of its teeth O with the teeth of the pinion J, cause the shaft H and gear-wheel I to be rotated. The teeth of the gear-wheel I, engaging with the teeth of the pinion D, will cause the pinion to be rotated on the shaft B and carry the arm E around with it. During the revolution of this arm the balls F will strike against the projection Q of the gong and sound two strokes for every revolution of the bar E. The arrangement of the gearing as herein described will cause the pinion D and bar E to rotate many times during a single revolution of the shaft H, which will cause a continuous repetition of strokes of the bell. As a preferable arrangement the spring P will be adjusted to normally hold the bar K in its outward position, so that by pressure inward, as before stated, a continuous striking of the bell will be caused, and when the arm K has been pushed to its inmost position the spring will return it to its outermost position, causing the same number of strokes to be made in the opposite direction.

The spiral-spring connection between the

arm E and the balls will permit the balls to slide over the projection Q in passing it, and the centrifugal force due to the revolution of the balls will stretch the springs and thus insure the revolution of the balls in an orbit sufficiently extensive to insure their contact with the projection Q at each revolution.

From the foregoing description it will be obvious that I have produced a cheap and simple mechanism which will be very effective for the intended purpose and which may be used for street-cars, police-patrols, fire departments, house-doors, bicycles, and in any other position in which a repetition of strokes of the bell is desired.

My improved alarm-bell will take the place in many instances of an electric-bell outfit, being equally effective and much less troublesome to manage.

While I have illustrated and described the best means now known to me for carrying out my invention, I do not wish to be understood as restricting myself to the exact details of construction shown and described, but hold that any slight changes or variations, such as might suggest themselves to the ordi-

nary mechanic, would properly fall within the limit and scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

The herein-described alarm-bell consisting of the base A having staples L secured therein, the central shaft B mounted in the base, the gong C mounted on shaft B and having inner projection Q, the cross-bar E journaled on shaft B and carrying pinion D, the spiral springs G on the ends of the cross-bar in line therewith, the balls F on the outer ends of the springs, the shaft H mounted in the base, the gear-wheel I mounted thereon engaging pinion D and carrying pinion J, the rack-bar K mounted in staples L and longitudinally slotted, its teeth engaging pinion J, pin M working in the slot, and the spring P normally pressing the rack-bar outwardly, substantially as described.

HARRY S. ROSS.

Witnesses:

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