(No Model.) 2 Sheets—Sheet 1.

# E. D. ROCKWELL.

## BELL.

No. 456,062. Patented July 14, 1891.

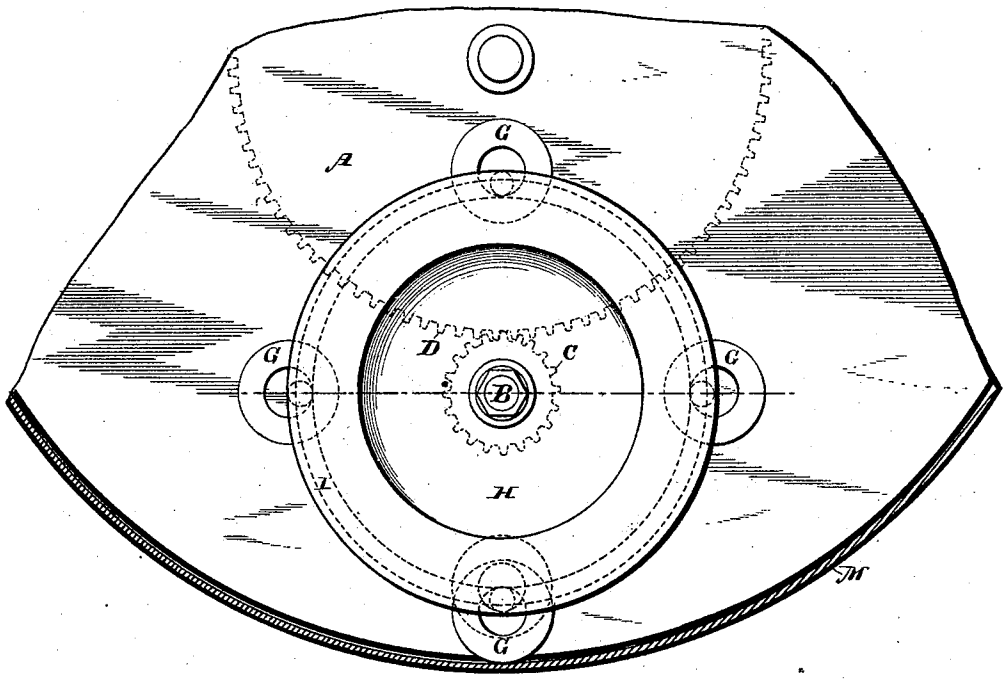


Fig. 1.

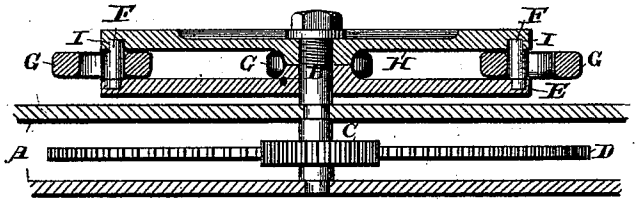


Fig. 2.

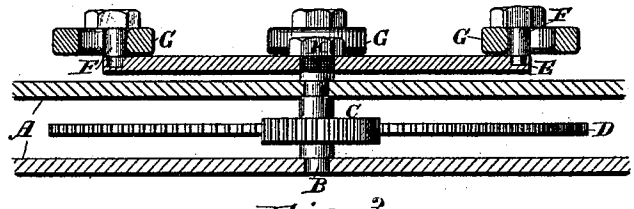


Fig. 3.

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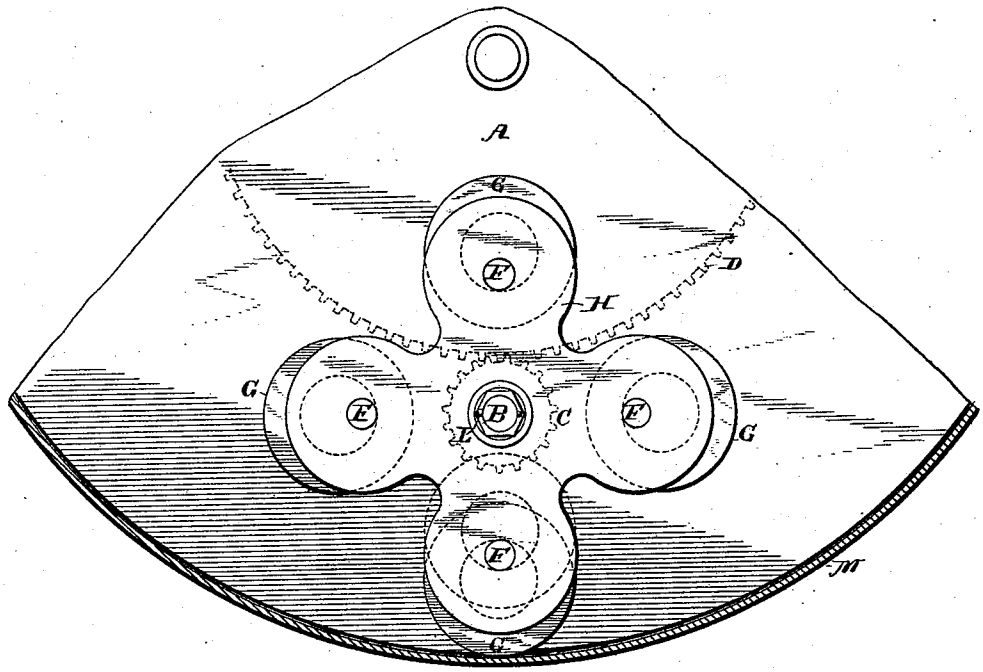
(No Model.) 2 Sheets—Sheet 2.

# E. D. ROCKWELL.

## BELL.

No. 456,062. Patented July 14, 1891.

*Fig. 4.*



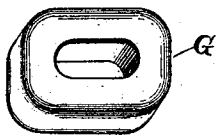




*Fig. 5.*

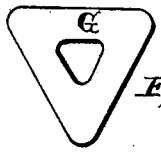



*Fig. 6.*

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# UNITED STATES PATENT OFFICE.

EDWARD DAYTON ROCKWELL, OF BRISTOL, CONNECTICUT, ASSIGNOR TO THE NEW DEPARTURE BELL COMPANY, OF SAME PLACE.

## BELL.

SPECIFICATION forming part of Letters Patent No. 456,062, dated July 14, 1891.

Application filed March 2, 1891. Serial No. 383,364. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD DAYTON ROCKWELL, of Bristol, county of Hartford, and State of Connecticut, have invented certain new and useful Improvements in Bells, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to produce a more effective and more durable device for sounding bells—such, for instance, as gongs, alarm-bells, or the like.

My invention belongs to that class of bells in which the strikers are loosely carried on a revolving part and are thrown against the side of the adjacent gong by the revolution of the part to which they are attached. Heretofore to bells of this description a serious objection has been that the striker would become by constant use worn in places, so that the bell would either refuse to sound at all or sound imperfectly.

The object of my invention is to produce a striker that, on account of its peculiar construction, will wear evenly, and for that reason obviate the difficulty named.

In the accompanying drawings, Figure 1 is a plan view of a portion of bell mechanism, showing my striking device in place. Fig. 2 is a central vertical section through the striker-head, showing the arbor in elevation. Fig. 3 is a similar view showing a modification of the striker-head. Fig. 4 is a view similar to Fig. 1, showing a plan of a modification of the striker-head. Figs. 5 and 6 illustrate modified forms of strikers.

Referring to the letters on the drawings, A indicates the frame-work of a bell, in which upon suitable bearing is carried an arbor B.

C indicates a pinion upon the arbor which meshes with the cogs of the gear-wheel D, by which rotary motion may be imparted to it. The gear-wheel D may be operated by any suitable means in a manner well known in the art, and does not for that reason require special description and illustration. Near the end of the arbor B is fastened a head or plate, which I will call the "striker-plate" E. This plate may be circular in form or, for the sake of lightness, notched, as shown in Fig. 4 of the drawings, and has its periphery located in proximity to the gong M. It is provided upon one side with studs or pins F, preferably four in number, and situated equidistant from each other and at equal distances from the center. Around these pins are loosely carried strikers G. The strikers consist, preferably, of regularly-rounded and comparatively heavy pieces of metal. They may be made circular, as illustrated in Figs. 1, 2, 3, and 4 of the drawings, or oblong, as illustrated in Fig 5, or of any other suitable shape—as, for instance, triangular, as shown in Fig. 6.

Upon the end of the arbor B is fitted a cap-plate H, which extends over the ends of the studs and holds the striker in place. Other suitable means for holding the strikers in place—such, for instance, as the broad-headed screw-studs screwed into the striker-plate, as shown in Fig. 3 of the drawings—may be employed. The cap-plate may be made to conform to the shape of the striker-plate, and may be secured to the end of the arbor by any suitable means. When made circular, as illustrated in Fig. 1 of the drawings, the end of the arbor may be screw-threaded and the cap-plate screwed into place, in which instance the inside of the cap-plate should be provided with an annular groove I, within which the ends of the pins F may travel while the cap-plate is being screwed into place. If preferred, however, the end of the arbor may be made square and provided on its extremity with a small screw-thread and the cap-plate cut to fit the square end of the arbor. It may then be held in place by a nut K, screwed onto the extremity of the arbor, as illustrated in Fig. 3 of the drawings. Any suitable device for locking the nut of the cap-plate in place—such, for instance, as a pin L, passed through the end of the arbor—may be employed.

It is necessary for the perfect operation of my machine to have the strikers thrown by centrifugal force against the inside of the gong and to fly back instantly. A space should therefore be provided between the pivot-pin of the striker and the arbor, within which the striker may retreat out of the way of the gong. If preferred, the edges of the cap-plate and

the striker-plate may be extended somewhat over the outer edges of the strikers when they are retracted.

From the foregoing description it will appear that by the rotation of the arbor B the strikers will be thrown against the inside of the gong and cause it to sound. Being loosely pivoted, they will not tend to strike in the same place each time, but will be from time to time whirled upon their pivots and strike at different points, thereby insuring equal wear on all the striking points or surfaces.

In order to increase or diminish the number of strikes in a bell, I do not by my device have to change the operating mechanism of the bell itself, but may increase or diminish the number of strikers from one to four. By employing one striker I will have one strike in each complete revolution of the arbor B, and can increase them proportionately up to four strokes or more, if desired, in the same time; or if, where two strikers (which, perhaps, is the number which would be most desirable to employ) are used, their pivot-pins should be broken or worn, the strikers can be shifted to the other set of pivot-pins and the loss by wear in that way repaired without expense or delay.

What I claim is—

A bell-striker having a central aperture for loosely pivoting it to a rotating hand and various striking points or surfaces around its exterior and adapted to be rotated on its pivot by each blow to bring to bear a new striking surface, substantially as set forth.

In testimony of all which I have hereunto subscribed my name.

EDWARD DAYTON ROCKWELL.

Witnesses:
ETTA B. SPRING,
C. P. ELWELL.