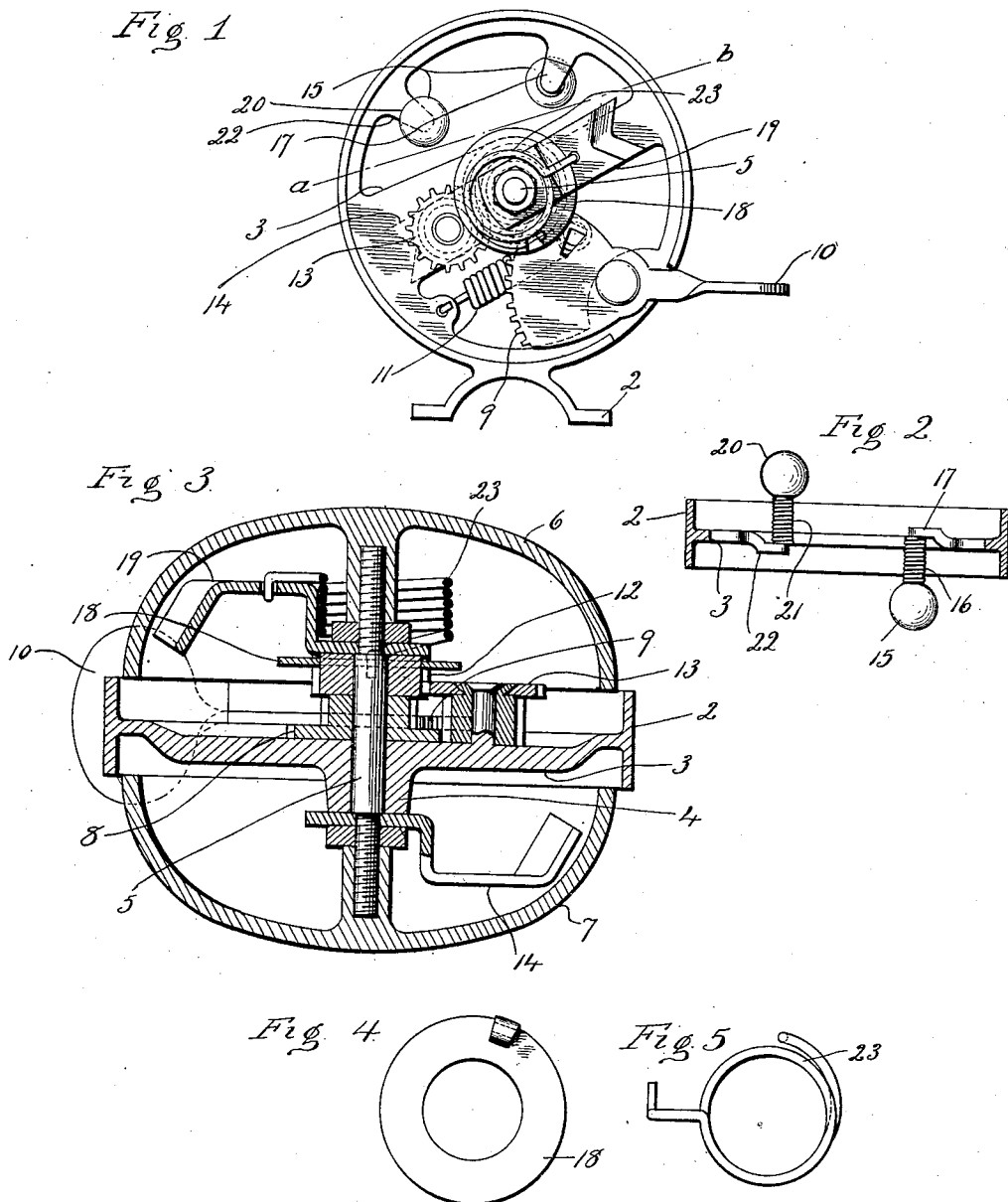


E. P. NICHOLS.
 BELL.
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 1,050,379.
 Patented Jan. 14, 1913.



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UNITED STATES PATENT OFFICE.

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BELL.

1,050,379.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWARD P. NICHOLS, a citizen of the United States, residing at East Hampton, in the county of Middlesex and State of Connecticut, have invented a new and useful Improvement in Bells; and I do hereby declare the following, when taken in connection with the accompanying drawings and the characters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this application, and represent, in—

Figure 1 a plan view of a bell constructed in accordance with my invention, with the gong removed. Fig. 2 a sectional view on the line *a—b* of Fig. 1. Fig. 3 a transverse sectional view. Fig. 4 a plan view of the operating disk, detached. Fig. 5 a plan view of the operating spring, detached.

This invention relates to an improvement in bells, and particularly to signal bells for vehicles, and more especially to bells for this purpose in which the gongs are rotated and the hammers operated to produce a succession of strokes for each movement of the operating lever. For many purposes it is desirable to have comparatively heavy gongs, and when these gongs are rotated by the operating lever at the end of the stroke the gongs come to a short stop which necessarily produces wear on the parts.

The object of this invention is to insert a spring between the bells and the operating mechanism, so that a spring cushion will be provided at the end of each stroke of the operating lever; and the invention consists in the construction hereinafter described and particularly recited in the claims.

In carrying out my invention, I employ a frame 2 adapted to be secured to a bicycle or other vehicle in the usual manner. The frame includes a web 3, and extending through a hub 4 formed in the center of the web is a spindle 5 supporting gongs 6 and 7 at opposite ends. Preferably and as herein shown, a pinion 8 is loosely mounted on the spindle 5, said pinion being in mesh with a rack 9 pivoted to the frame and provided with an operating lever 10. This rack is connected with the frame by a spiral spring 11 the tendency of which is to return the rack to the normal position after it has been moved. Loosely mounted on the spindle 5 above the pinion 8 is a pinion 12 which

is connected with the pinion 8 through an intermediate gear 13 mounted in the frame and so as to multiply the rotation of the pinion 12. Secured to, and carried by one end of the spindle 5 is a cam-arm 14 which extends into the path of a hammer-head 15 mounted on a spiral spring 16 which is fixed to a lug 17 projecting inward from the frame. Secured to the pinion 12 is a flat disk 18, and fixed to the spindle above the disk is a cam-arm 19 adapted to operate a hammer-head 20 attached to the end of a spring 21 secured to a lug 22 projecting inward from one side of the frame. This hammer-arm 19 is connected with the disk 18 by a coiled spring 23, and so that the hammer-arms and gongs will be permitted a slight movement beyond that imparted to them by the gears.

In operation, the movement of the lever moves the rack 9, and through the gears and spring rotates the spindle, and hence moves the cam-arms which engage with the respective hammer-heads to draw them inward, and then release them to strike against the inner surfaces of the gongs which turn with the cam-arms. At the limit of the movement of the rack in either direction, the spring 23 will permit the spindle to have a slight movement beyond that given it by the rack, and this movement in either direction is limited by the extent to which the spring 23 may be contracted or expanded. The movement in either direction is very slight, but sufficient to take the shock due to the weight of the gongs and assures a clear ring.

It is apparent, without further illustration, that the gong 7 might be omitted, and also the cam-arm 14 and hammer-head 15. In other words, the bell might be provided with a single gong instead of two, as shown.

I claim:—

1. In a bell, the combination with a frame, of a centrally arranged spindle, a gong connected with said spindle, a pinion loosely mounted on the spindle, means for operating said pinion, a disk fixed to said pinion, a cam-arm fixed to the spindle, and a spring connecting the cam-arm and disk whereby the rotation of the pinion imparts a rotation to the spindle.

2. A bell comprising a frame, a spindle free for rotation in the frame, a gong and a hammer-arm secured to each of the oppo-

site ends of said spindle, two pinions loosely mounted on said spindle, a gear connecting said pinions, means for moving said pinions, a spring connecting one of the hammer-arms with one of the pinions, and hammer-heads in the paths of said cam-arms.

3. In a bell, the combination with a frame, of a centrally arranged spindle, a gong connected with said spindle, a pinion loosely mounted on the spindle, means for operating said pinion, a cam-arm fixed to the spindle,

and a spring connecting the cam-arm and pinion whereby the rotation of the pinion imparts a rotation to the spindle.

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

EDWARD P. NICHOLS.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
