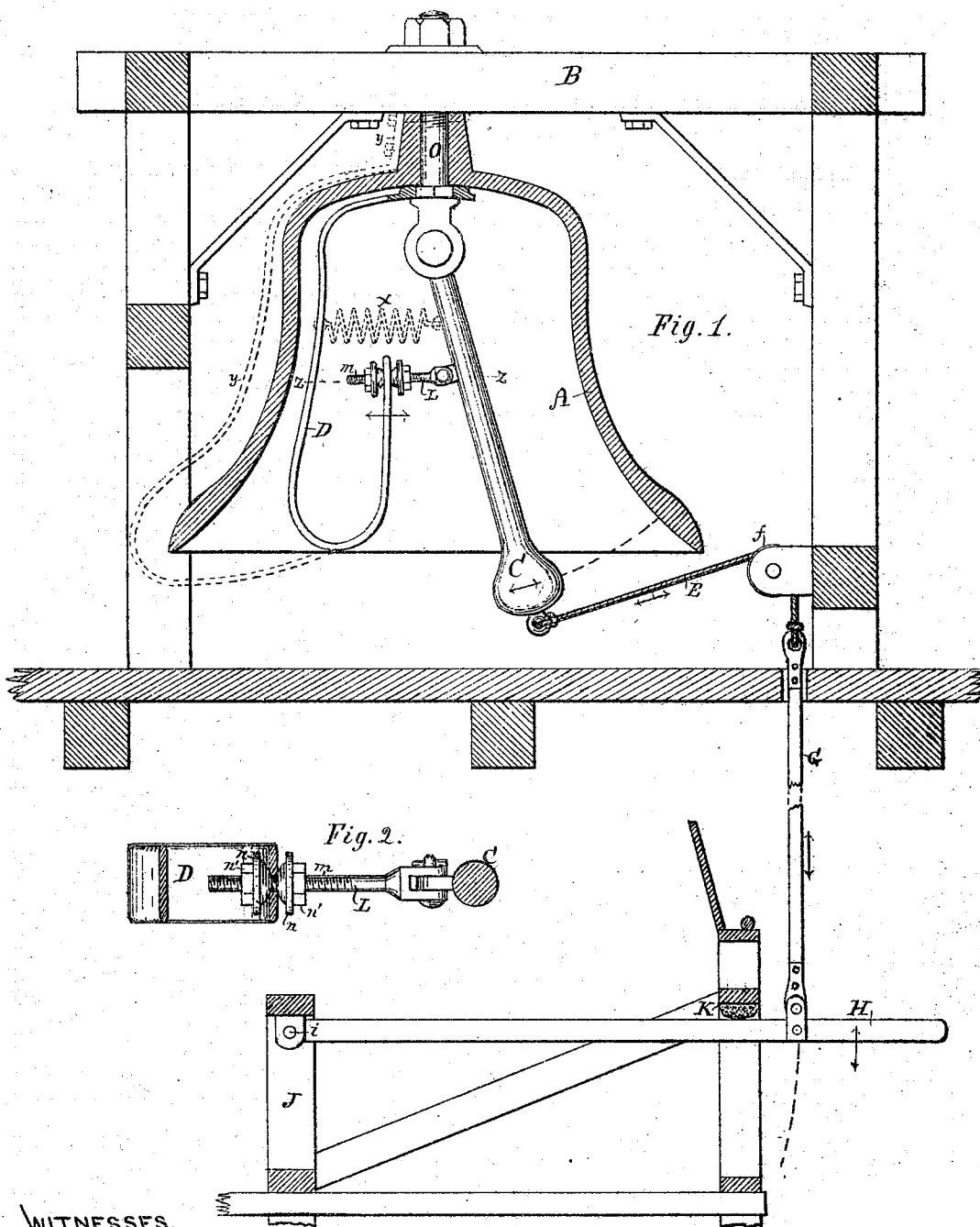


Improvement in Chime Alarm and other Bells.

No. 122,397.

Patented Jan. 2, 1872.



WITNESSES.

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IMPROVEMENT IN CHIME, ALARM, AND OTHER BELLS.

Specification forming part of Letters Patent No. 122,397, dated January 2, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, GEORGE R. MENEELY, of West Troy, in the county of Albany and State of New York, have invented certain Improvements in Chime, Fire-Alarm, and other Bells, in which the bell is suspended by its top with its mouth permanently downward and has a clapper hung therein and is sounded by swinging and striking the clapper outward against the inner side of the sound-bow of the bell; and I hereby declare that the following is a specification of my said invention, reference being had to the accompanying drawing, in which—

Figure 1 is a sectional elevation of a chime-bell which embodies the distinguishing features of my invention; and Fig. 2 is a plan, on a larger scale, of a section of a part of the same at the line *z z*, in Fig. 1.

Chime-bells in church-towers are commonly rung by means of cords and rods attached to their clappers and led by pulleys to the ringer's room—which is commonly fifty to eighty feet below—where they are attached to horizontal levers that may be conveniently manipulated. In order to counterbalance the very considerable weight of such ringing-levers and their connections with the clappers and to assist the weight and rebound of the clappers to quickly raise the levers and hold them up against fixed stops after each stroke, springs have sometimes been fastened at one end to wooden supports in the tower, below and outside and away from the bells, and at the other end to the lower ends of the clappers, by means of flexible cords, so that the springs would pull back on the clappers throughout their ringing strokes. In such cases it has been quite difficult and expensive to prepare and erect the necessary extra supports to fasten the springs to and to apply the springs in the various positions required below and outside of the several bells crowded together in the tower; and such springs, when thus fastened to wooden supports, are liable to soon work loose and become defective in operation; and if the ringing-lever should be detached or dispensed with and the bell then rung or tolled as a fire-alarm or fog-bell, by alternately pulling and releasing the free end of a cord or rope leading to the clapper, in such case the spring,

by being connected to the clapper by a flexible cord, would cause or allow the clapper, after each stroke, to swing back against the opposite side of the bell, or past its ordinary stationary position therein, without resistance from the spring. Church-bells commonly have springs secured to the crown or top of the bell and extended down between the bell and its clapper so that the springs shall just press and keep the clapper from contact with the bell immediately after each ringing blow; but such springs are not connected to the clapper and do not act on the clapper throughout its return movement, and do not prevent the clapper from swinging across to the opposite side of the bell.

The principal distinguishing feature of my invention is the combination, with a bell having a swinging clapper suspended within and from the upper part of the bell, of a spring having one end secured in or to the upper part of the bell, and the other end connected to the said swinging clapper in the bell and constructed so that the said spring shall force, or constantly tend to force, the said clapper back from the place where the clapper strikes on the sound-bow of the bell to the place where the clapper begins to move forward toward the sound-bow of the bell in striking the latter. By this improvement the clapper-retracting spring can be cheaply made and fitted or fastened to the bell and its clapper at the foundry where the bell is cast, whereby all necessity and expense for any extra support for a clapper-retracting spring below or outside the bell when mounted is avoided; and by this improvement a considerable less space than heretofore is occupied by the bell and its clapper-retracting spring when mounted together, which advantage is of much practical importance in mounting chimes of bells in the usually too-small bell-rooms in towers.

In the aforesaid drawing, A is the stationary bell suspended by its top from a frame, B, and C is the clapper hung in and to the top of the bell, as usual in chime and fire-alarm bells. D is the spring having one end secured to the upper part of the bell and its other end constantly connected to the clapper. E is the ringing-cord, fastened to the clapper and led over a pulley, *f*, and fastened to a rod, G, which is jointed to the ringing-lever H, which is pivot-

ed, at *i*, to the frame J and furnished with a cushioned stop, K, to limit the upward movement of the lever. By depressing the lever H by hand the clapper C is struck against the bell, and upon releasing that lever the spring D pulls back the clapper, the connections E G, and the lever H until the latter meets the stop K, where the lever is retained by the tension of the spring D, that result being secured whether the spring be connected to the clapper by a flexible cord or by the device shown in the drawing. Although, in carrying out my invention, the clapper-retracting spring may be secured to the suspended clapper in the bell by means of a flexible connection, as above stated, yet I commonly prefer to have that spring secured to the clapper by means of an adjustable thrusting-and-pulling connection, essentially as hereinafter specified. In the apparatus represented in the drawing the spring D is connected to the clapper by a thrust-rod, L, which is pivoted to the clapper and secured to the spring; and the spring D is so constructed that in case the lever H and its connections with the clapper shall be detached or dispensed with, and the clapper shall then be struck against the bell by simply pulling on the free end of a cord, E, attached to the clapper, as in ringing fire and fog-alarm bells by hand, the spring D will then not only pull the clapper C back from the bell after each stroke, but will, by means of its thrusting connection with the clapper, act as an elastic stop to resist the backward swing of the clapper past its usual stationary position, and will, by its elastic resistance to the swing of the clapper in either direction, quickly bring the clapper to rest and hold it there ready for another blow. The spring D is secured to the rod L by means of a screw, *m*, and adjustable screw-nuts *n n' n'* on the rod. By means of

this device the clapper, when otherwise free, may be readily adjusted and held at rest by the spring D at a greater or less distance from the sound-bow of the bell, so that the clapper shall have a longer or shorter stroke and the spring greater or less retracting power on the clapper; and the retracting power of the spring on the clapper may be quickly made greater or less, while the clapper may be stopped at the same or at different distances from the bell by the connections E G, lever H, and stop K or their equivalent, which adjustments of the clapper and its retracting spring are of much practical importance in adapting the apparatus for striking either light or heavy or quick or slow blows, or for playing either slow or quick music on chimes of bells. In carrying out my invention I commonly prefer to have the spring D of a reflex form and fastened to the inner side of the top of the bell by the clapper-supporting bolt O by which the bell is suspended from the frame, as shown by full lines in the drawing; but the spring may sometimes be bolted or fastened to the outer side of the top of the bell, as indicated by dotted lines at *y*, or may be of a spiral shape, as represented by dotted lines at *x*, or of other suitable form.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the bell, the swinging clapper suspended in the bell, and the clapper-retracting spring secured in or to the upper part of the bell and connected to the clapper, and constructed to operate on the clapper, substantially as herein set forth.

GEORGE R. MENEELY.

Witnesses:

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