April 17, 1951 C. G. AUTH ET AL 2,549,157

AUDIBLE SIGNALING DEVICE

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Fig. 1.

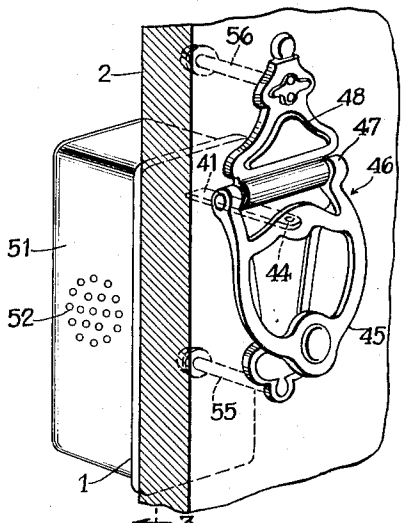


Fig. 4.

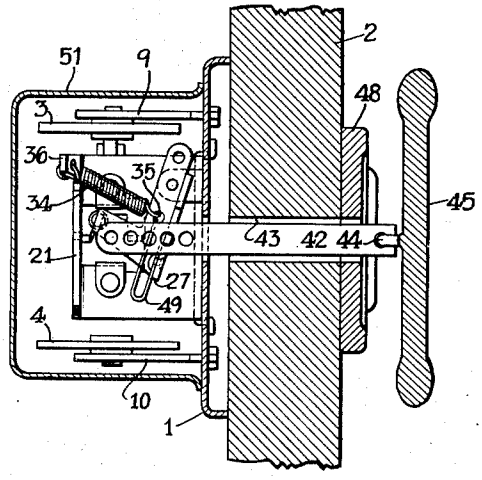


Fig. 2.

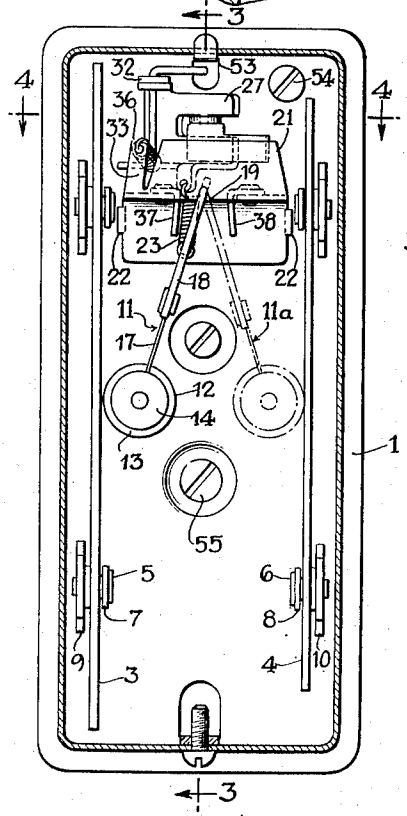


Fig. 5.

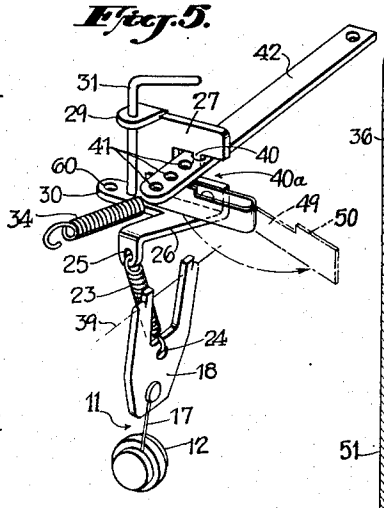


Fig. 3.

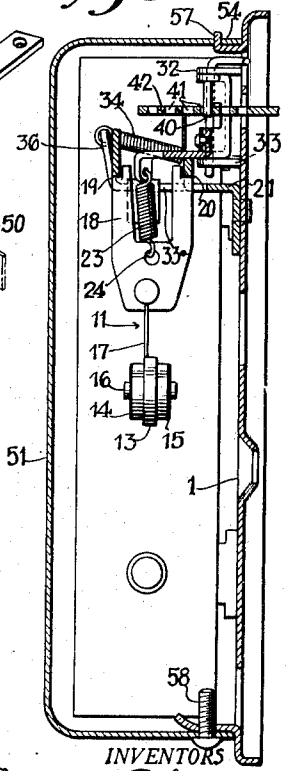
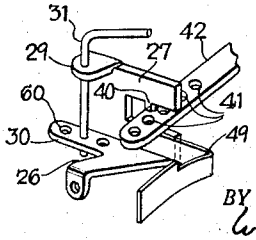


Fig. 6.



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AUDIBLE SIGNALING DEVICE

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Fig. 8.

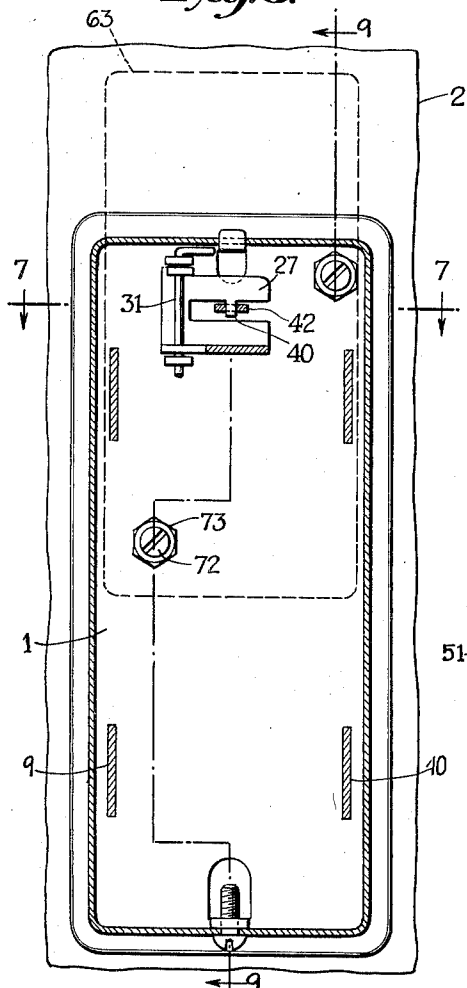


Fig. 9.

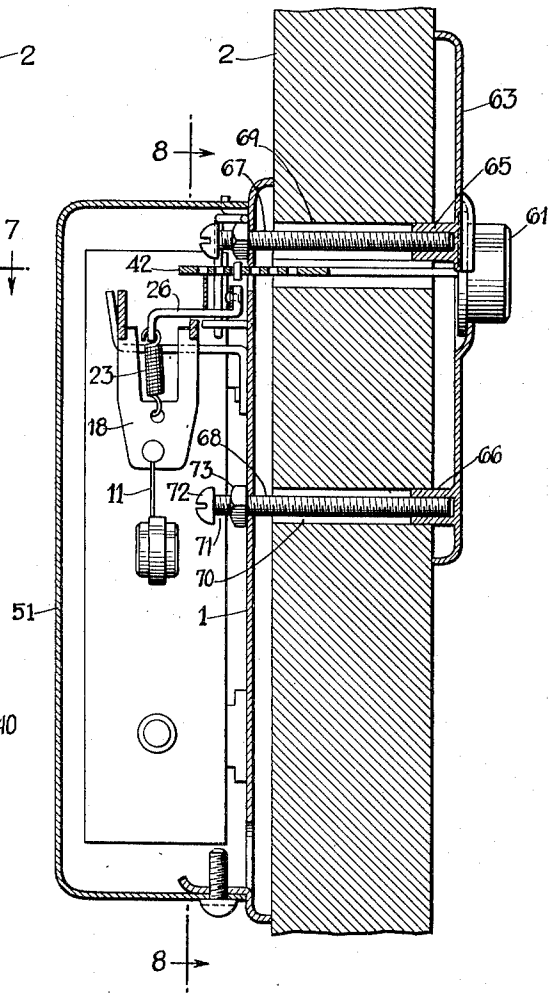
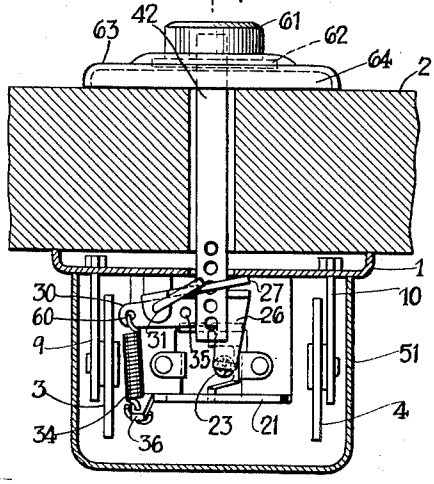


Fig. 7.



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AUDIBLE SIGNALING DEVICE

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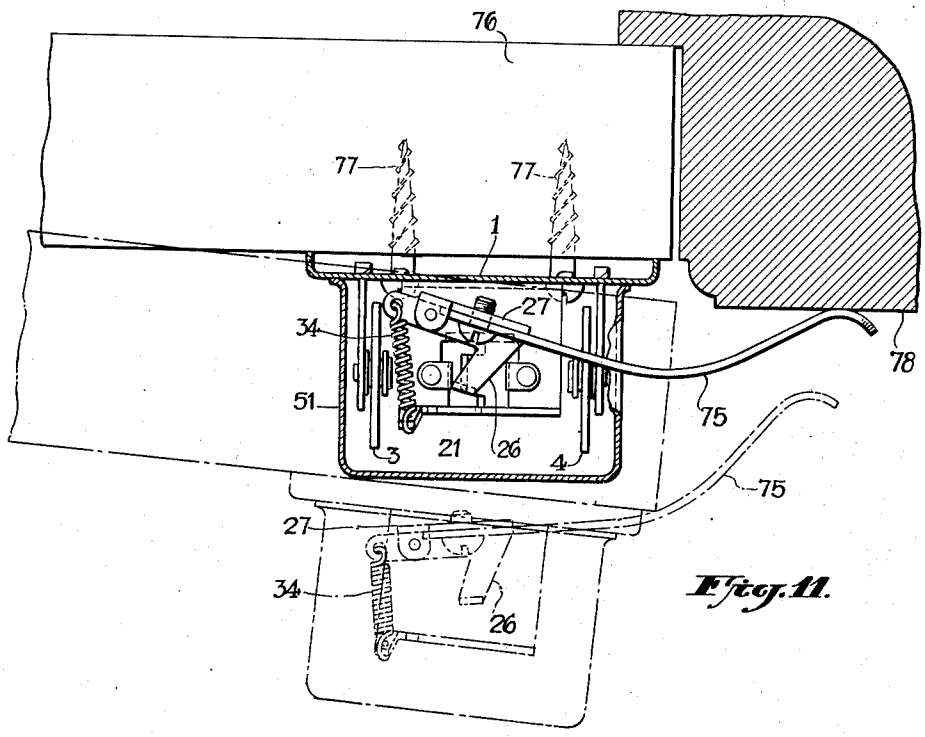
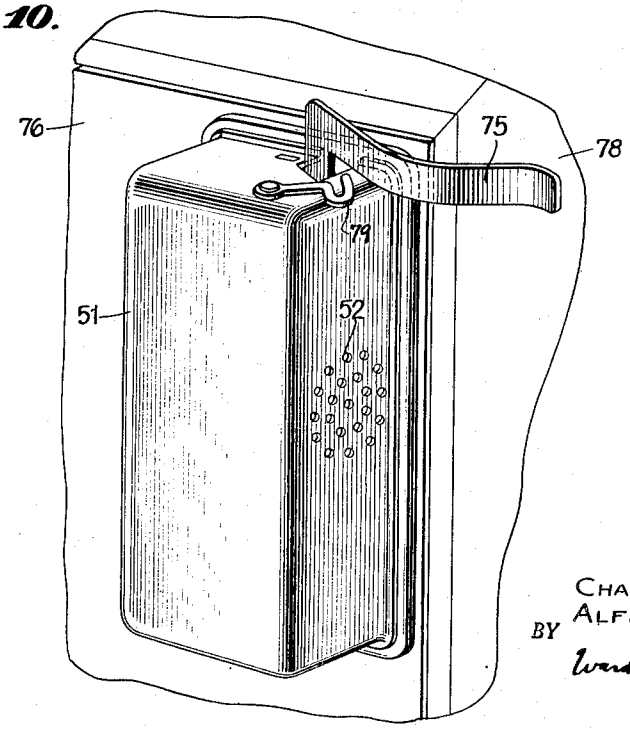


Fig. 11.

Fig. 10.



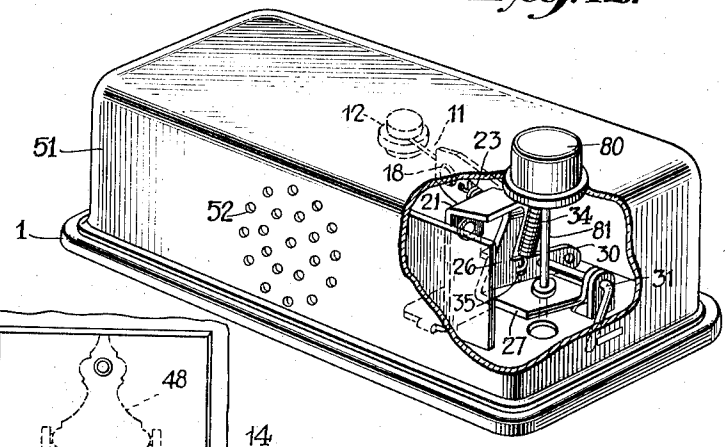
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AUDIBLE SIGNALING DEVICE

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Fig. 12.



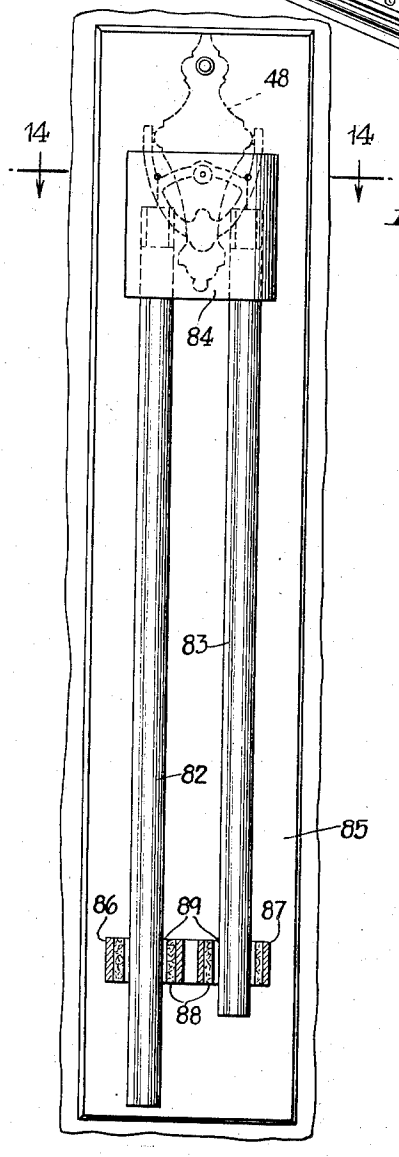
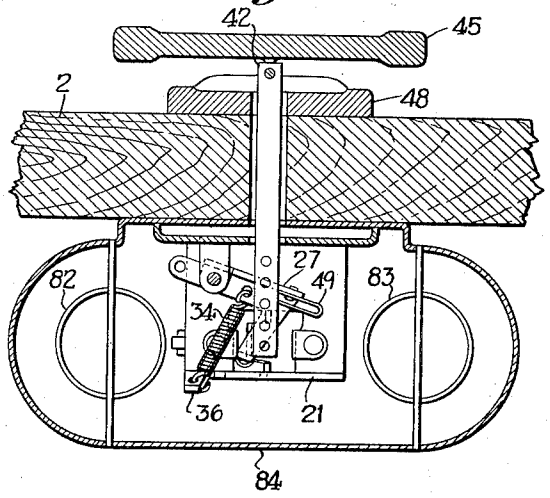


Fig. 13.

Fig. 14.



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Patented Apr. 17, 1951

2,549,157

UNITED STATES PATENT OFFICE

2,549,157

AUDIBLE SIGNALING DEVICE

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Application March 16, 1946, Serial No. 654,943

11 Claims. (Cl. 116—169)

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This invention pertains to mechanically actuated acoustical signalling devices, of simple, inexpensive, compact and rugged construction, for providing chime-like sound effects of pleasing tonal quality and adapted for use as door announcers at the entrances to homes, stores or the like, or for use as local announcers in offices, hotels, homes, etc.

The invention partakes of various forms, individual modifications of which are especially adapted to one or more of the several applications aforesaid. Certain modifications, as described more in detail hereinafter, are intended for mounting on doors and the like, and provided with push-button or door-knocker types of manual actuating members. Another modification is especially constructed and arranged for mounting on a door in such fashion as to be actuated by the movement of the door in opening and closing, this modification being particularly suited to small stores, etc. Still another modification is of a portable construction, adapted for placing on a desk, table or the like, for use as a local announcer within an office, hotel, home, etc.

For providing an extremely compact construction of the entire signalling unit, in applications as aforesaid, the acoustical elements may take the form of one or more vibratably mounted resonant metal strips for providing pleasing tonal effects when struck. In this arrangement, a suitably proportioned and perforated housing is provided for amplifying and intensifying the sound effects. In other applications in which compactness is not so essential and in which deeper, richer and more intense tonal effects are desired, the vibratile elements may comprise metal tubes of such dimensions as to provide deep, rich, cathedral-chime sound effects.

Patent 2,208,066 to C. Auth describes a manually actuated, chime-like signalling device which is constructed and arranged for actuation by rotary movement of a manual actuating element. One object of the present invention is to improve upon the patented construction aforesaid by providing a simple and effective mechanism adapted for operation by push-button or knocker-arm type of manual actuating element.

Another object is to provide an adjustable construction whereby the signalling device of the invention may be mounted upon a door panel or the like, of any thickness within practical limits, and in such fashion that the sound-producing mechanism is mounted upon one side of the door, panel, etc., while the manual actuating element, viz. push-button or knocker arm, is mounted on

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the opposite side thereof, in consequence of which the device, as thus mounted, has all the appearance, externally, of the usual door-bell or door-knocker.

In the drawings:

Fig. 1 is a perspective view of a modification of the invention as mounted on a door panel or the like, and employing a knocker-arm type of manual actuating element. Fig. 2 is a view in rear elevation of the Fig. 1 modification, with the housing removed to reveal the operating mechanism. Fig. 3 is a longitudinal section taken at 3—3 of Fig. 2; while Fig. 4 is a transverse section taken at 4—4 of Fig. 2. Fig. 5 is an enlarged, fragmentary, assembly view in perspective of the operating mechanism employed in the Figs. 1 to 4 modification, for translating movements of the manually actuated knocker arm into corresponding movements of the striker arm, this view also illustrating the aforesaid adjustable constructional feature of the invention whereby the device may be mounted upon a door or panel of any thickness within limits. Fig. 6 is an enlarged, fragmentary view in perspective illustrating certain components of the Fig. 5 assembly.

Figs. 7, 8 and 9 are, respectively, a transverse section at 7—7 of Fig. 8, a longitudinal sectional elevation at 8—8 of Fig. 9, and a longitudinal sectional elevation at 9—9 of Fig. 8, all a modification of the invention employing a push-button as the manual actuating element, this modification being otherwise generally similar to that of the knocker-arm type disclosed in Figs. 1 to 6 inc.

Fig. 10 illustrates, in perspective view, in rear elevation, a modification of the invention adapted for mounting on a door or the like, for mechanical actuation upon opening and closing of the door by cooperation with the door jamb; while Fig. 11 is a top plan view of the Fig. 10 arrangement, showing the door closed in full lines and open in dotted lines, and with the housing of the audible signalling device broken away to show the operating mechanism and its mode of actuation upon opening and subsequent closing of the door.

Fig. 12 is a perspective view of a portable, push-button type of signalling device in accordance with the invention, such as is adapted to be placed on desks, tables or the like, for providing local announcing effects. In this view, a portion of the housing is broken away to show sufficient of the internal mechanism to illustrate its operation.

Fig. 13 is a view in rear elevation, of a modifica-

tion of the invention employing resonant metal tubes for providing cathedral-chime sound effects; while Fig. 14 is a transverse sectional view taken at 14—14 of Fig. 13.

Referring to the modification of Figs. 1 to 6 inc., the signalling device comprises a base plate 1, preferably of punched and stamped sheet metal, suitable for mounting upon a wall, partition, door frame or the like, such as 2, and carrying vibratory elements adapted to be energized to produce a chime-like signal. In the illustrated form of the invention, two such chime-like sound-producing elements are employed in order to produce notes of different pitch, and which are in the form of metal strips 3, 4 suitably perforated for vibratably mounting in spaced, parallel relation to each other on metal studs, such as 5, 6 respectively, which studs are surrounded by rubber or rubber-like sleeves, such as 7, 8, for assuring the vibratile mounting of the strips 3, 4 as aforesaid. The metal studs 5 are, in turn, secured, at one end of each, to upstanding metal lugs, such as 9, 10, which lugs in turn are secured to the base plate 1. Upon being successively struck or set in vibration by a striker element, such as 11, the vibratory metal strips 3, 4, will resonate to produce chime notes at their respective pitches, the sound effects of which are preferably amplified, as hereinafter described.

In the modification shown, the striker element 11 is mounted between the vibratory metal strips 3, 4, and is movable between striking positions wherein it successively energizes these strips. To this end, the striking element 11 comprises a striker 12 consisting of a disc 13 of relatively hard felt or the like, mounted between metal discs 14, 15 of slightly smaller diameter, this assembly being integrated by means of a rivet 16. The striker 12 is mounted upon a flexible rod 17, which in turn is attached to a relatively heavy and rigid metal fitting 18, of substantially U-shaped configuration as shown in Fig. 3, which fitting 18 is fulcrumed at its upper ends in V-shaped notches 19 and 20, of a stationary punched and stamped sheet metal supporting member 21, provided with lugs for securing to the metal base plate 1, as at 22, which lugs extend through openings in the base plate and are then bent under. The metal fitting 18 is resiliently maintained in pivotal engagement with the support 21, in the V-notches 19, 20 thereof, by means of a helical tension spring 23 mounted between the legs of the fitting 18, the lower end of this spring being secured to the fitting as at 24; while the upper end of the spring is secured, as at 25, Fig. 5, to a horizontally projecting lug 26 forming part of a rotatable, punched and stamped sheet metal actuating member 27, provided with another pair of horizontally projecting lugs 29, 30, having aligned apertures respectively, for pivotally supporting said member 27 on a pin 31 for rotation about an axis perpendicular to the pivoting axis of striker 11, as particularly illustrated in Figs. 5 and 6. To this end, the pin 31, in addition to passing through the aligned apertures in lugs 29, 30 of member 27, also extends through aligned apertures of ears 32, 33, Figs. 2 and 3, which are struck up from the base plate 1, whereby the actuating member 27 is pivotally supported upon the base plate for rotation as aforesaid.

As shown in Figs. 2 and 3, the rotatable actuating member 27 is pivotally mounted above the supporting member 21, to which the striker element 11 is fulcrumed, while the striker element itself is pivotally mounted below support 21. The support 21 is accordingly appropriately slotted, as at 33*a*, Fig 3, in order to permit the tension spring 23 to extend between the horizontally projecting lug 26 of the actuating member 27, and the base of the striker element fitting 18.

The rotatable actuating member 27 is resiliently restrained against rotation about its vertical pivotal support, namely, pin 31, by means of a helical tension spring 34, one end of which is secured to the aforesaid lug 30 actuating member 27 at a point between the pivotal support 31 and the horizontal lug 26 thereof, lug 30 being provided with a punching for this purpose, as shown at 35, Figs. 4 and 6. The opposite end of spring 34 is secured to a vertically upstanding lug 36 of the stationary support 21, as shown in Figs. 2, 3 and 4.

Owing to the tension exerted by spring 34 on the rotatable actuating member 27, this member normally assumes the position shown in the drawings, particularly in Figs. 2 and 5, whereby the horizontally projecting lug 26 of member 27 exerts, through tension spring 23, a pull on the striker arm fitting 18, to pull the striker element 11 to an off-center position to the left of its median position, about its pivotal fulcrum support 19, 20. For purposes of restraining the extent to which the striker 11 is thus normally displaced to the left of its median position, the fixed support 21 has secured thereto a downwardly projecting lug 37, Fig 2, so positioned as normally to space the striker 12 slightly away from the resonant metal strip 3. A similar lug 38 is secured to the fixed support 21, on the opposite side of the striker element 11 in order to provide a corresponding limiting position of the striker element 11, an indicated by the dashed lines 11*a*, Fig. 2, when the rotatable actuating member 27 is forcibly rotated counterclockwise against the restraining action of spring 34.

It will be noted, in this connection, that the end 25 of projecting lug 26, to which spring 23 is attached, is normally positioned to the left of the pivoting axis 39, Fig. 5, of the striker 11, but that as the actuating member 27 is forcibly rotated counter-clockwise against the restoring action of spring 34, carrying with it lug 26, the end 25 of this lug moves from a position to the left of the striker axis 39 to a corresponding position to the right thereof. Conversely, and upon release of the actuating member 27 to permit a clockwise return of this member to the position shown in Fig. 5, by the retracting action of spring 34, the end 25 of lug 26 will move from a position to the right of the striker pivoting axis 39 to the position shown in the drawing to the left thereof. In consequence of the action above described, the striker 11 will always be pulled in the direction of rotation of the rotatable actuating element 27, thus causing the striker to swing first to the right and thence to the left as the actuating member 27 is forcibly rotated counter-clockwise and thereupon released to return clockwise by the restoring action of spring 34. It will further be noted that, as the actuating member 27 is thus forcibly rotated clockwise, spring 23 will progressively elongate, to increase the spring tension, as lug 26 also rotates counter-clockwise from the position shown at the left of the striker pivoting axis 39 in Fig. 5, up to the point that lug 26 is disposed directly above the striker pivoting axis 39. However, as soon as lug 26 rotates counter-clockwise beyond this position, spring 23 is permitted to retract, thereby

to swing the striker 11 to the right by snap-action, up to the point that the spring 23 engages the right-hand stop 38 of Fig. 2. However, owing to the momentum of the striker at this instant, coupled with the resiliency of rod 17 connecting the striker 12 to fitting 18, the striker will swing past the position indicated at 11*a*, Fig. 2, thereby causing the striker to strike the resonant bar 4 a sharp, sound-producing, percussion blow, whereupon the striker 12 will take up the position shown by the dotted lines 11*a*. An identically similar action takes place, in the reverse direction, due to the retracting action of spring 34 upon release of the actuating member 27. That is to say, after the striker 12 has struck bar 4 in the manner aforesaid, and the actuating member thereupon released, spring 34 will swing the actuating member clockwise, which carrying with it lug 26 will swing the striker 11 to the left, causing the spring 23 progressively to elongate up to the position in which lug 26 is disposed directly above the striker pivoting axis 39, but the instant this position is passed, spring 23 will suddenly contract, throwing the striker to the left by snap-action against the resonant bar 3, whereby the striker 12 will take up the position shown by the full lines in Fig. 2, and as determined by the limiting stop 37.

For manually operating the rotatable actuating member 27 against the restoring action of spring 34, in the manner aforesaid, member 27 is provided with a downwardly projecting lug 40 and a slotted portion 40*a* thereof, Fig. 5, which lug is adapted for insertion in any one of a series of holes 41 provided in and spaced along an operating lever 42. This operating lever 42 extends through a hole, such as 43, Fig. 4, drilled through the door panel 2 or the like, being pivotally connected at its opposite end, as at 44, Figs. 1 and 4, to the movable member 45 of a door knocker, shown generally at 46, the movable member 45 of which is pivotally secured, as at 47, to a stationary supporting member or face plate 48 mounted on the door panel.

The purpose of the series of holes 41, spaced along the operating lever 42, is to permit of adjusting the mechanism in accordance with the thickness of the panel 2. Thus, as illustrated in Figs. 1 and 4, the sound-producing portion of the device is mounted on one side of the panel, while the manual actuating or knocker-arm portion is mounted on the opposite side thereof, with the operating lever 42 extending therethrough for interlinking the two portions. Depending on the thickness of the panel 2, lug 40 of the actuating member 27 will be disposed closely adjacent a particular one of the series of holes 41 in the operating lever 42, and can thus be conveniently inserted therein, without necessity for special constructions and adjustments.

In order to provide locking engagement between lug 40 of member 27 and the operating lever 42, there is preferably secured to member 27, beneath the slot 40*a* thereof, one end of a flexible metal strip 49, Fig. 5, provided at its free end with an upstanding shoulder portion 50. Prior to assembly of lever 42 and member 27, the strip 49 is bent to the position shown by dotted lines in Fig. 5. The lever 42 is thereupon passed throgh slot 40*a*, and lug 40 inserted in the appropriate hole 41 of the lever, whereupon the projecting end of strip 49 is manually bent inwardly from the dotted position to the full-line position, as indicated by the arrow, whereby the upstanding shoulder 50 of member 49 is disposed beneath the lever 42, thus locking the lever and member 27 in pivoted engagement on lug 40.

In the operation of the device, as thus assembled, when the movable actuating arm 45 of knocker 46 is pulled manually outwardly, it pulls with it the operating lever 42 which thereby and by virtue of its pivoted engagement with lug 40 of member 27 rotates member 27 clockwise about its vertical pin support 31, against the restoring force of the tension spring 34. As above explained, this counterclockwise rotation of member 27 causes the striker 11 to swing against the resonant sounding bar 4 in a sharp percussion blow. Conversely, upon subsequent release of the actuating member 45 of the knocker 46, the restoring action of spring 34 rotates member 27 clockwise, thereby causing the striker 11 to strike the sounding bar 3 a sharp percussion blow, while at the same time forcibly withdrawing the lever bar 42 and with it the movable member 45 of knocker 46, to their initial positions.

For intensifying the sound effects produced by the chime bars 3, 4 in the manner aforesaid, these bars, together with the striker mechanism, are enclosed in a suitable housing 51, Figs. 1 and 4, of sheet metal or other suitable material, the side walls of which are appropriately perforated, as at 52, adjacent the sounding bars 3, 4 respectively, for resonating and emitting amplified sound effects.

As shown in Figs. 2, 3 and 5, the pin 31 which rotatably mounts member 27, is bent at right angle at its upper end for rotating the pin into locking engagement with a shoulder lug 53, struck up from the base plate 1. This arrangement permits of simple and rapid assembly and disassembly of the operating components.

The base plate 1 is assembled on panel 2 by means of screws 54 and 55, Fig. 2, screw 54 extending into the woodwork, while screw 55 extends through a drilled hole in the panel 2, being threaded into the lower portion of the face plate 48 of the knocker, as shown in Fig. 1. Also, for additionally securing the knocker in place, a similar screw 56, Fig. 1, extends from the rear side of the panel, through a drilled hole in the panel, being threaded into the upper portion of the knocker face plate 48. In this way, the knocker is mounted upon the front side of the panel without any exposed screws, thus improving the appearance and preventing its removal, except from the rear side of the panel.

The resonant housing 51 is assembled, by means of lug 53, Fig. 2, on the base plate, and also a cooperating slot 57 punched in the upper edge of the housing, in addition to which the housing is provided, at its lower edge, with an open-ended slot which slips over a screw 58, threaded into the base plate 1, and as illustrated in Figs. 2 and 3, whereby upon tightening up on screw 58, the housing 51 is rigidly secured in place.

In the push-button modification of the invention illustrated in Figs. 7, 8 and 9, the sound-producing mechanism mounted on the rear side of the panel 2 is identically the same as that of Figs. 1 to 6 inc., like elements being similarly designated. In this modification, however, the restoring spring 34, which extends from the fixed support 36 to the actuating member 27, is secured to a portion 60 of lug 30 which projects beyond the pivoting pin 31, on the opposite side of member 27 to that which embodies the horizontally extending lug 26 connected to the striker spring 23, in contrast to the previous modification of

Figs. 1 to 6 inc., wherein the restoring spring 34 is connected to lug 30 at a point 35 located between the pivoting pin 31 and lug 26. This change causes the mechanism to function in opposite manner, for the Figs. 7 to 9 inc. modification, as compared to the Figs. 1 to 6 modification. That is to say, whereas in the door-knocker modification of Figs. 1 to 6, the operating lever 42 must be withdrawn and thereupon released to operate the mechanism; in the push-button modification of Figs. 7 to 9 inc., the operating lever 42 must be pushed in and then released to actuate the striker element against the sounding bars 3, 4 successively. This change permits of substituting for the door-knocker type of manual actuating means, a push-button arrangement, as shown in Figs. 7 to 9 inc. In this latter arrangement, a push-button 61 having a flanged base 62 is disposed in a suitable aperture of a face plate 63, which face plate is so stamped and struck up, except along its peripheral edge, as to provide sufficient space, as at 64, between the face plate and the panel 2 to permit of depressing the push-button 61. The push-button 61 is secured to the outer end of the operating lever 42, whereby, upon depression of the push-button, the actuating member 27 secured to the opposite end of the operating lever 42 is rotated clockwise, against the restoring action of spring 34, to operate the striker against one of the sounding bars 3, 4, whereupon, and upon release of the push-button, spring 34, by virtue of its restoring action, rotates the actuating member 27 counterclockwise to operate the striker against the opposite sounding bar, while at the same time restoring the lever arm 42 and push-button 61 to their normal positions, as shown in Fig. 7.

For purposes of mounting the assembly on panel 2, the face plate 63 has secured to its inner surface a pair of internally threaded sleeves 65, 66, into which are threaded bolts 67 and 68 respectively, which bolts extend, from the opposite side of panel 2, through holes such as 69, 70 drilled therein, and also through aligned holes punched in the base plate 1 of the sound-producing unit, whereby the entire assembly is integrated. In order to provide a flexible adjustment, to care for panels of different thicknesses, the bolts 67, 68 are sufficiently long to project into the housing 51 of the sound-producing component, as clearly shown at 71, Fig. 9, there being interposed between the bolt head 72 and the panel 2 a lock nut 73, which lock nut after threading of the bolt, such as 68, into the face plate sleeve 66 to the maximum extent, is tightened against the base plate 1, as illustrated in Fig. 9.

In the door-actuated modification of the invention illustrated in Figs. 10 and 11, the construction and operation of the audible signalling device proper is identical with that of the push-button modification above described in connection with Figs. 7 to 9 inc., with the exception that the push-button is now replaced by an operating lever arm 75 which is rigidly secured, as by riveting, welding, etc., to the movable actuating member 27, like elements being otherwise similarly designated. The signalling device is mounted preferably near the upper edge of the door 76, by means of screws, such as 77, extending through the base plate 1 of the signalling device into the door. The mounting is such that the lever arm 75 normally rests against the door jamb 78, as illustrated by the full lines in Fig. 11, thereby normally to maintain the restoring spring 34 extended. Accordingly, when the door is opened, spring 34 will retract and actuate lever arm 75 to the position shown by the dotted lines in Fig. 11, thus actuating the striker, in the manner above described, against one of the resonant metal strips 3, 4 to produce one note of the chime signal. As the door swings to, after being opened, the lever arm 75 is actuated by the door jamb 78 from the dotted to the full line position, thereby to actuate the striker against the opposite metal bar to produce the second note of the chime. As shown in Fig. 10, the housing 51 of the signalling device is provided with a hook 79 adapted to engage the lever arm, as indicated, for locking the same in an inoperative position when desired.

The portable or service modification of the invention illustrated in Fig. 12 is generally similar in construction, arrangement and operation to the knocker type of Figs. 1 to 6 inc., with the exceptions noted below, like elements being similarly designated. The knocker-actuating element 45 and lever arm 42 are replaced by a push-button 80, rigidly mounted on a lever rod 81, the push button projecting through an aperture appropriately provided in the housing 51 of the signalling device. The lever rod 81 bears against the actuating member 27 pivoting on pin 31, so that when the push-button 80 is manually depressed, actuating member 27 is forcibly rotated about its pivoting pin 31 against the restoring action of spring 34, thereby to actuate the striker 12 against one of the sounding bars in the manner above described. Upon subsequent release of the push-button, spring 34 returns member 27 to the position shown in the drawing thereby to operate the striker against the opposite sounding bar.

Likewise, the cathedral chime modification illustrated in Figs. 13 and 14 is similar in construction and operation to the knocker type of Figs. 1 to 6 inc. (like elements being similarly designated), except for replacement of the resonant bars 3, 4, with the open-ended resonant metal tubes 82 and 83. As shown in Fig. 14, the striker mechanism is housed within a sheet metal or like casing 84 surrounding the upper portion of the bars of the resonant tubes, which portions of the tubes are struck successively by the striker element upon actuation of the knocker arm 45 in the same manner as described in connection with Figs. 1 to 6 inc. The striker mechanism as thus housed, and the resonant tubes 82, 83, are mounted on a base plate 85 secured to one side of panel 2, with the knocker 45, 48 mounted on the opposite side thereof. The metal tubes 82, 83 are closed at their upper ends by metal plugs to which cords are secured for vibratably suspending the same from the base plate 85, the tubes being open-ended at their lower ends to provide the desired resonance effects. Since the entire construction is ordinarily mounted on a door, and hence moves with the door, some provision is required to prevent the metal tubes from swinging and striking each other and the door. This is accomplished, in accordance with the invention, by extending the lower portions of the tubes through collars 86 and 87 provided with felt or equivalent linings 88, thereby to prevent any appreciable swinging of the metal tubes in the act of opening and closing the door. These collars are of sufficiently large diameter that when the door is stationary, for example, in the closed position, the tubes 82, 83 will be spaced from the felt-lined collars, as shown at 89, in

order that the sound effects will not be dampened thereby.

We claim:

1. In an audible signalling device, the combination of: a base plate, a pair of sounding elements, means including said base plate for vibratably supporting said sounding elements in spaced relation, a striker, means carried by said base plate for pivotally mounting said striker to swing substantially parallel to said base plate between said sounding elements, a manual actuating element displaceable substantially perpendicular to said base plate between limiting positions, means mechanically and resiliently interlinking said actuating element and striker, for normally maintaining said actuating element in one said limiting position, and for actuating said striker against said sounding elements successively, upon actuation and release of said manual actuating element, said means including a link member pivotally supported by said base plate and rotatable about an axis substantially parallel to said base plate, said link member being pivotally coupled to said manual actuating element, and being resiliently linked to said striker.

2. In an audible signalling device in combination: a base plate, a stationary supporting member extending therefrom, a pair of sounding elements vibratably mounted on said base plate, a striker pivoted to said supporting member to swing between said sounding elements, an actuating member pivoted to said supporting member on an axis substantially perpendicular to the pivoting axis of said striker, means resiliently interlinking said striker and actuating member for imparting off-center, snap-action to said striker in response to rotation of said actuating element between limiting positions, additional means, resiliently interlinking said actuating element and a stationary support for normally maintaining said element in one said limiting position, and means for forcibly displacing and thereafter releasing said actuating element, thereby to actuate said striker against said sounding element successively in sharp percussion blows.

3. In an audible signalling device in combination: a stationary support, a pair of vibratably mounted sounding elements, a resilient striker rod mounting a striker, so pivoted to said support as to swing said striker between said sounding elements; an actuating element pivoted to said support on an axis disposed at an angle to the axis of said striker element, a first means resiliently interlinking said actuating element and said stationary support, and a second means resiliently interlinking said actuating element and said striker rod, for normally maintaining said striker in an off-center position, and upon rotation of said actuating element against the restoring force of said first resiliently interlinking means, for displacing said striker to an opposite off-center position by snap-action of said second resiliently interlinking means, whereby said striker is caused to strike said sounding elements successively.

4. A manually actuated, audible signalling device adapted for mounting on a door panel and the like comprising: a sound producing unit adapted for mounting on one side of said panel with one side of said unit facing said panel, and including a vibratably mounted sounding element and a striker therefor, together with means for actuating said striker including a pivotally supported actuating member, means for manually actuating said device adapted for mounting at a point spaced from said side of said unit but adjacent thereto, said last-mentioned means including a manually actuated lever, displaceable perpendicular to said panel and a manual actuating element, said lever including a portion adapted to extend through an aperture in said panel and to engage said manual actuating element on the opposite side of said panel, said lever containing a series of longitudinally spaced apertures at the end engaging said actuating member, and said actuating member containing a lug adapted to engage any aperture of said lever, in accordance with the thickness of said panel, and a flexible metal strip carried by said actuating member, said strip being bendable into and out of engagement with said lever for adjustably locking said lug of said actuating member in engagement with any said aperture of said lever.

5. A manually actuated, audible signalling device adapted for mounting on a door panel and the like, comprising: a sound producing unit adapted for mounting on one side of said panel with one side of said unit facing said panel, and including a base plate vibratably mounting a sounding element and a striker therefor, together with means for actuating said striker including a pivotally supported operating member, means for manually actuating said device adapted for mounting at a point spaced from said side of said unit but adjacent thereto, said last-mentioned means including a panel-facing member, mounting a manual actuating element displaceable perpendicular to said panel, an operating lever linked at one end to said manual actuating element and adapted to extend through an aperture in said panel into engagement with operating member on the opposite side thereof, said lever containing a series of longitudinally spaced apertures at the end engaging said operating member and said operating member containing a lug adapted to engage any said aperture in accordance with the thickness of said panel, manually adjustable means carried by said operation member for locking said lug thereof in any of said aperture of said lever, and said panel-facing member being provided with means on the surface thereof adapted to engage said panel for mounting the same thereon by cooperating means extending through said panel from the opposite side thereof, whereby said mounting means are not exposed to view on said panel facing member, and said member cannot be removed from the side of said panel on which it is mounted.

6. In an audible signalling device in combination: a fixed support, a pair of sounding elements vibratably mounted on opposite sides thereof, a striker element comprising a striker resiliently mounted on a substantially U-shaped fitting, means pivotally mounting said fitting on said fixed support, for causing said striker to strike said sounding elements, sharp percussion blows, successively, said means including an actuating member pivoted to said support about an axis substantially perpendicular to the axis of said fitting, said actuating member including a projecting lug positioned to swing from one side of the pivotal support of said fitting to the opposite side thereof as said actuating element is rotated, a tension spring extending from said lug to the base of said fitting, whereby said striker element is normally maintained in an off-center position adjacent one said sounding element, but upon rotation of said actuating element is displaced by snap-action to an off-center position adjacent the opposite said sounding element, thereby to strike

said sounding element a sharp percussion blow, and an additional tension spring connected between said actuating member and said fixed support for normally maintaining said actuating element in the position first mentioned, whereby upon forceable rotation of said actuating element from said first position to said second position against the restoring action of said additional tension spring, followed by release of said actuating element, said striker is caused to strike said sounding elements successively in sharp percussion blows.

7. A combination as in claim 6, together with an operating lever pivoted to said actuating member, and means supporting said lever for displacement and release substantially parallel to the pivotal axis of said fitting, for actuating said signalling device as aforesaid.

8. A combination as in claim 6, wherein said additional spring is attachable from a fixed support to a portion of said actuating member disposed between the pivotal support thereof and said projecting lug, whereby said member is actuated by force exerted in one direction thereon to operate said signalling device as aforesaid, and wherein said spring is also optionally attachable to a portion of said actuating member disposed on the opposite side of the pivotal support thereof from said projecting lug, whereby said member is actuated by force exerted thereon in the opposite direction to that above stated.

9. A manually operable audible signalling device, adapted for mounting on door panels and the like and providing a cathedral-chime sound effect, comprising: a base plate adapted for mounting on one side of said panel, a pair of tubular metal cathedral-chime, sound elements, means suspending said sound elements from said base plate, a striker pivotally mounted on said base plate between said sounding elements, means for actuating said striker against said sounding elements successively, said means including a manually actuated element adapted for mounting on the opposite side of said panel, and an operating lever extending through an aperture in said panel from said manual actuating element to said striker actuating means, said operating lever being displaceable perpendicular to said panel, and means supporting the lower ends of said tubular elements, to prevent sounding thereof during movements of said panel, said means including collar surrounding each said tubular element, said collars being lined with a sound absorbing material, and being of such dimensions that said tubular members are spaced from said collars when said panel is stationary.

10. An audible signalling device adapted for mounting upon a door for mechanical actuation upon opening and closing of the door, said device comprising: a base plate adapted for mounting on said door, a pair of sounding elements mounted, in spaced relation on said base plate, a striker mounted on said base plate and adapted to swing between said sounding elements for striking the same successively, and means responsive to opening and closing of the door for actuating said striker, said means including a pivotally supported actuating element, means resiliently coupling said actuating element to said striker for actuating the same by snap-action, and a lever arm secured to said actuating element and adapted to bear against the door jamb for actuating said striker against one said sounding element when the door is opened, and against the opposite sounding element upon closure of the door.

11. An audible signalling device adapted for mounting upon a door for mechanical actuation upon opening and closing of the door, said device comprising: a base plate adapted for mounting on said door, a pair of sounding elements mounted, in spaced relation, on said base plate, a striker pivotally supported on said base plate and adapted to swing about an axis substantially perpendicular thereto, between said sounding elements, for striking the same successively, and means responsive to opening and closing of the door for actuating said striker, said means including an actuating element pivotally supported on said base plate about an axis substantially parallel thereto, said actuating element including a projecting lug adapted to swing from one side of the pivotal support for said striker to the opposite side thereof as said actuating element is rotated, means resiliently coupling said projecting lug to said striker, and additional means resiliently coupling said actuating element to a fixed support, whereby said striker is normally maintained in an off-center position, but upon forcible rotation of said actuating element against the restoring action of said additional resilient means, said striker is actuated against one sounding element by snap-action, and upon release of said actuating element, said striker is actuated against the second said sounding element by snap-action, and a lever arm secured to said actuating element and adapted to bear against a door jamb, for actuating said signalling device as aforesaid, upon opening and subsequent closing of said door.

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