R. HAZELRIGG.

COMBINED DOOR KNOB AND BELL.

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970,222.

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Fig. 1.

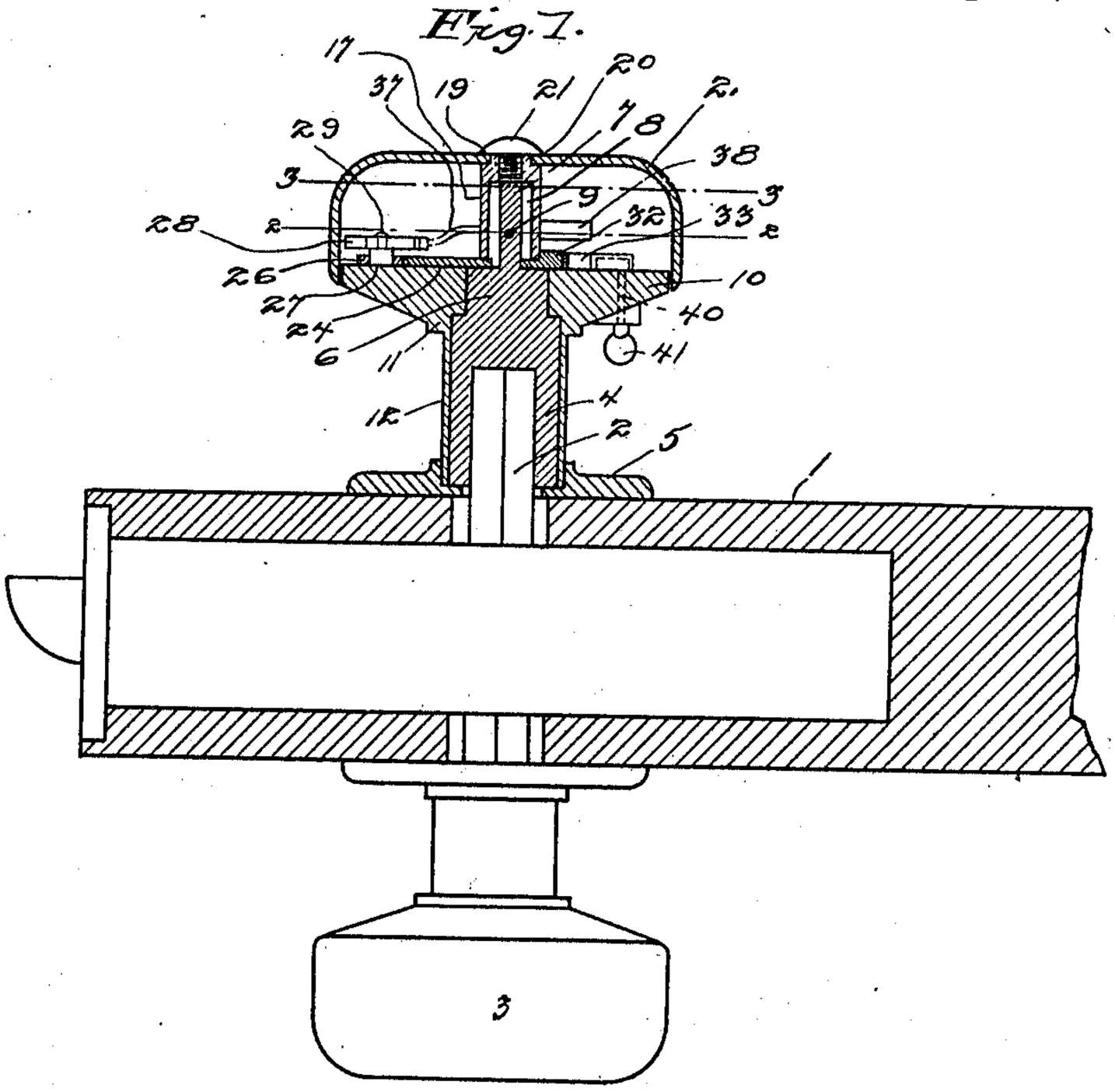


Fig. 2.

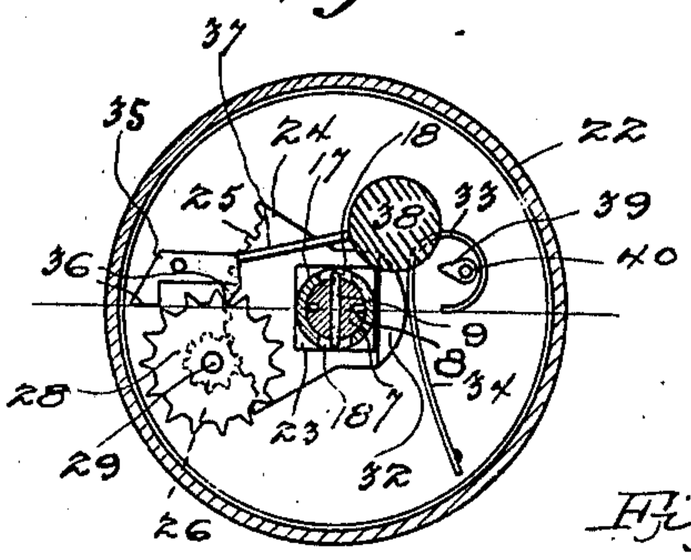


Fig. 3.

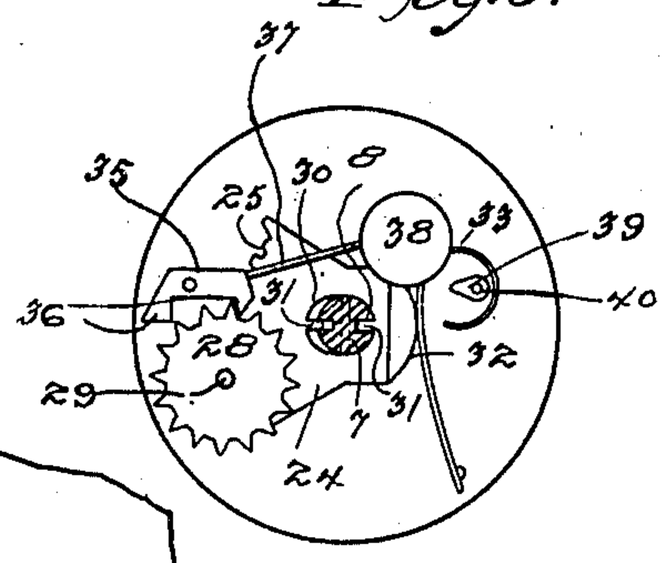
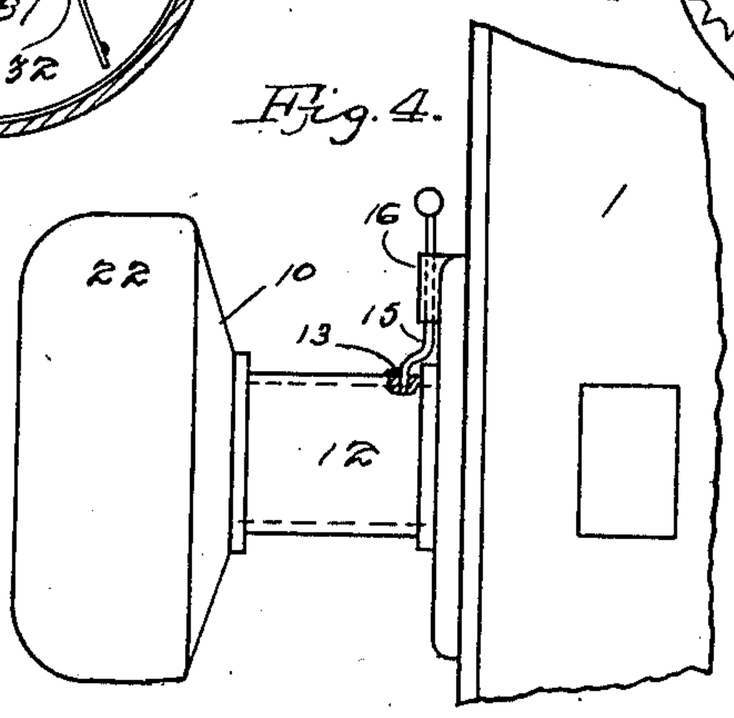


Fig. 4.



WITNESSES:

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COMBINED DOOR KNOB AND BELL.

970,222. Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed April 28, 1909. Serial No. 492,761.

To all whom it may concern:

Be it known that I, ROSS HAZELRIGG, citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Combined Door Knobs and Bells, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to door knobs, and has particularly in view a bell attachment therefor which will sound an alarm when the knob is turned.

In carrying out the object of the invention generally stated above it is contemplated forming one of the knobs of a bell shell and inclosing therein novel hammer operating mechanism whereby when the knob is rotated, said hammer will strike the bell rapidly thus indicating to the occupants of the house that said knob is being rotated. In connection with the foregoing it is contemplated equipping the improved knob with means whereby the striker or hammer actuating mechanism may be disengaged and also with means whereby the actuating mechanism may be permitted to rotate with the knob, and thereby prevent the alarm to be sounded.

It will be understood of course that the essential features involved in carrying out the invention are necessarily susceptible of changes in details and structural arrangements, but a preferred and practical embodiment thereof is shown in the accompanying drawings, wherein—

Figure 1 is a sectional view of the improved knob and alarm, showing the same attached to a door. Fig. 2 is a horizontal sectional view thereof taken on the line 2—2, Fig. 1. Fig. 3 is a similar view taken on the line 3—3, Fig. 1 with the sleeve and shoulder removed. Fig. 4 is a view in side elevation of the improved knob and alarm.

Referring to said drawings by numerals, 1 designates a door through which the knob spindle 2 projects in the usual manner and has a knob 3 fast on one end thereof, said knob 3 being of the conventional type. The other end of said spindle projects into a socket 4 rotatably seated in a stationary door plate 5. Said socket 4 has its outer end shouldered as indicated at 6 and terminates in a reduced extension 7 provided with oppositely disposed longitudinal slots 8 and also with a transverse pin 9. A base plate 10 has a shouldered portion 11 fitting over the shouldered portion 6 of the socket, said base plate being annular and provided with a tubular extension 12 which fits loosely over the socket 4 and extends into the door plate 5, said extension being provided with a transverse opening 13 which is adapted to be engaged by a pin 15 slidably mounted in a guide slot or lug 16 projecting from the door plate 5 to lock said extension to the door plate and thereby prevent the rotation of base plate 10 when the knobs are rotated, as will be obvious.

A sleeve 17 surrounds the extension 7 of the socket 4 and is provided with oppositely disposed longitudinal slots 18 through which the pin 9 projects and in which said pin has a limited play so that said sleeve may be slightly rotated without contacting with said pin 9, thus compensating for incidental jars or the like such as might tend to sound the alarm. Said sleeve has its outer end provided with an outstanding reduced portion 19 provided with a threaded opening 20 for the reception of a screw or the like 21 which holds the bell metal shell 22 fast but detachable thereon. Said sleeve 17 has a squared base 23 which rests on a gear segment 24 the teeth 25 of which are in mesh with a pinion 26 fast on the hub 27 of a gear wheel 28 carried by a pin or lug 29 projecting from the base plate 10. Said gear segment is provided with an enlarged opening 30 which surrounds the extension 7 and whose opposite edges are provided with lugs 31 which engage with the slots 8 of said extension 7, the arrangement being such that one of said lugs is at all times in engagement with one of the slots, thus assuring of the said segment having a uniform relative movement to said extension. Said gear segment is also provided with an upstanding rounded end 32 which serves as an abutment for the squared end or base 23 of the sleeve 7 so that the turning of sleeve 7 causes said squared base 23 to act as an ec-

centric upon said abutment and thereby impart a sliding movement to said segment 24 to disengage the same from the pinion 26 said upstanding rounded end also serves as an abutment for the curved or coiled free end 33 of a spring 34 which has its opposite end soldered or otherwise rigidly fastened to the base plate 10.

An escapement lever 35 is pivotally mounted on the base plate 10 and has its angular ends 36 held in the path of movement of the teeth of the gear wheel 28. Said escapement lever carries a rod extension 37 having a hammer 38 at its outer end.

A cam or eccentric 39 is carried by one end of a shaft 40 which projects through the base plate 10, said cam being located within the end coil or convolution of the spring 34. Said shaft 40 has its outer end provided with a knob or handle 41 whereby it may be rotated to turn the cam 39 and cause it to contact with the coiled end of the spring 34 and move the same from contact with the abutment end of the gear segment.

It will be seen from the foregoing that with the parts of the invention in the position shown in the accompanying drawings, a rotation of either knob will cause the gear segment to rotate the pinion 26 and gear 28 thus actuating the escapement lever 35 to cause the hammer 38 to rapidly strike the shell 22, and thereby sound an alarm. To prevent the said gear segment operating the alarm, the cam or eccentric 39 may be rotated to remove the pressure of the spring 34 from the end thereof, thus permitting said gear segment to move from engagement with the pinion 26 by the contact of the squared end of sleeve 7 and thereby permit the knob to be turned without the alarm being sounded. Or if desired, the base plate 10 may be locked to the door plate 5 by means of the pin 15 carried by the door plate 5, so that said base plate will not rotate when the knobs are turned. The first described manner of preventing the alarm being sounded is to permit occupants of the house to open the door without noise, the last mentioned manner being used when it is not necessary or desirable to have the alarm sounded, such for instance as when the door is within the vision of the occupants.

What I claim as my invention is:—

1. A device of the character described comprising a spindle, a socket fast to one end thereof, a knob in the form of a bell detachably connected to said socket, a base erated by said socket to actuate said bell striking mechanism carried by said plate, a gear segment slidable on said plate and operated by said socket to actuate said bell striking mechanism, a spring normally holding said segment in engagement with the striking mechanism, and means for causing the said gear to slide to a disengaged position.

2. A device of the character described comprising a spindle, a socket thereon provided with a slotted extension, a sleeve surrounding said extension, a knob in the form of a bell detachably secured to said sleeve, a base plate loosely mounted on said socket, bell striking mechanism carried by said plate, a gear segment surrounding said extension and provided with lugs engaging with the slots therein, and a spring for normally holding said segment in engagement with said striking mechanism.

3. A device of the character described comprising a spindle, a socket fast thereon and provided with an extension, a sleeve surrounding said extension, a pin for holding said extension in engagement with said sleeve, a bell metal shell carried by said sleeve, a base plate loosely mounted on said socket, bell striking mechanism carried by said base plate, a gear segment surrounding said extension and adapted to slide transversely thereto, a spring for holding said segment in engagement with said striking mechanism, and a cam for removing the pressure of said spring from said segment.

4. A device of the character described comprising a bell metal shell, a spindle a socket supported by said spindle, a base plate carried by said socket, a stud carried by said plate, gear wheels mounted on said stud, a gear segment slidably carried by said socket for actuating said gears, means carried by said spindle socket for sliding said segment away from said gears, a hammer actuated by said gears to strike said shell, a spring for holding said segment in engagement with said gears, and means for removing the pressure of said spring from said segment.

5. A device of the character described comprising a spindle a socket, a base plate loosely mounted thereon, bell striking mechanism carried by said base plate, gears for operating said mechanism, a gear segment carried by said socket, a spring for holding said segment in engagement with said gears, a shaft extending through said plate, a cam carried by one end of said shaft, and a knob for actuating said shaft to cause the cam to remove the pressure of the spring from said segment.

6. A device of the character described comprising a spindle, a socket mounted thereon and provided with a reduced and slotted extension, a pin extending transversely through said extension, a sleeve surrounding said extension and provided with slots which are engaged by said pin, a bell metal shell detachably connected to said

sleeve, a base plate loosely mounted on said socket, a gear segment surrounding said extension and provided with inwardly projecting lugs which engage with the slots therein, bell striking mechanism carried by said plate, gears for operating said striking mechanism, a spring for normally holding said segment in engagement with said gears, and means carried by said sleeve for moving the said gear segment away from the gear of the striking mechanism.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

ROSS HAZELRIGG.

Witnesses:
F. P. SCHROEDER,
H. C. SCHROEDER.