

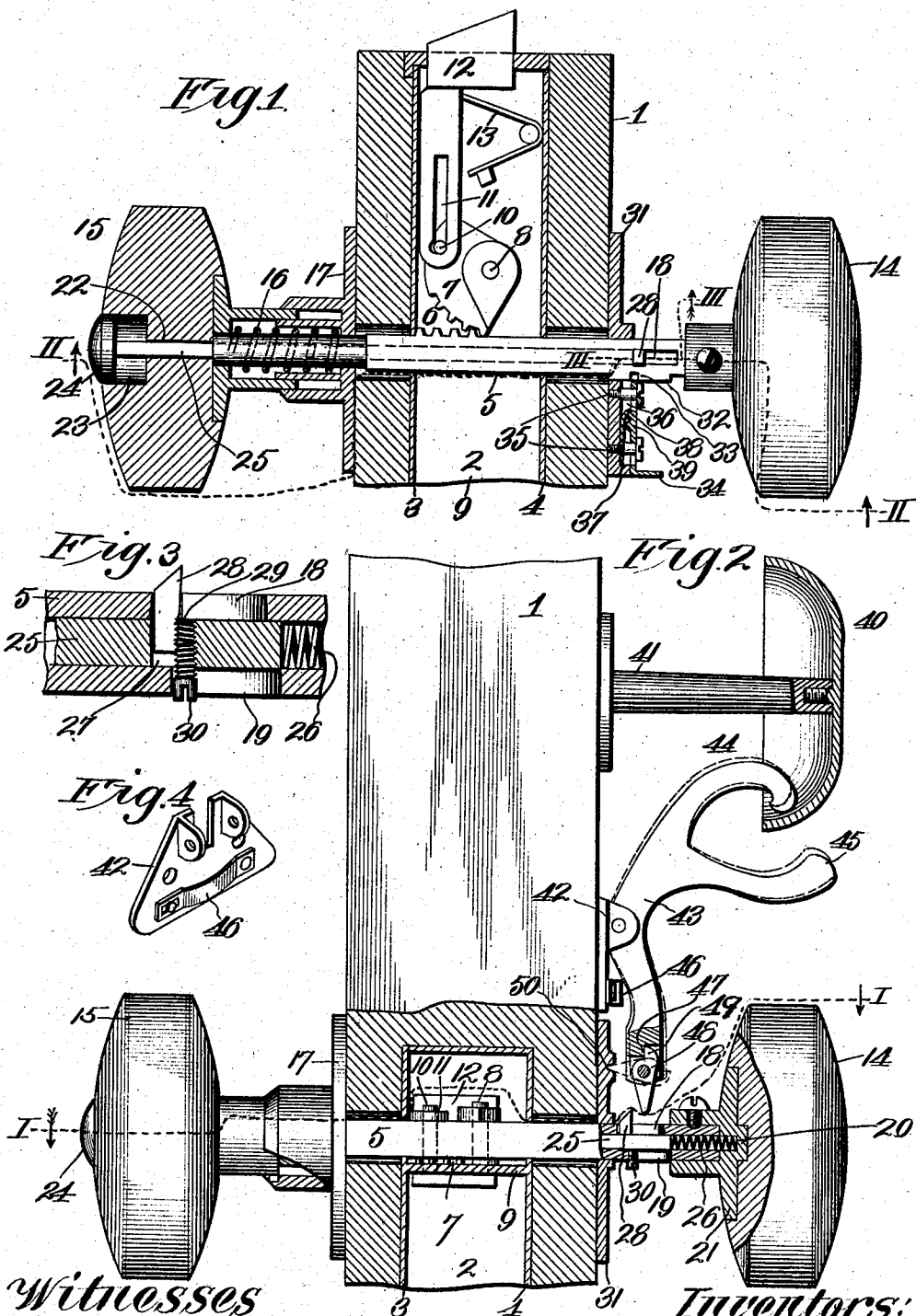
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A. R. POOL & W. ELLIOTT.

DOOR BELL MECHANISM.

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UNITED STATES PATENT OFFICE.

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DOOR-BELL MECHANISM.

No. 894,901.

Specification of Letters Patent.

Patented Aug. 4, 1908.

Continuation of application Serial No. 302,799, filed February 24, 1906. This application filed November 27, 1906.
Serial No. 345,343.

To all whom it may concern:

Be it known that we, AUSTIN R. POOL and WILBERT ELLIOTT, citizens of the United States, residing, respectively, in Wetmore township, Nemaha county, and Jefferson township, county of Jackson, and State of Kansas, have invented certain new and useful Improvements in Door-Bell Mechanism, of which the following is a specification.

Our invention relates to door bell mechanism and has for its object to produce means whereby a door bell may be rung by and also independently of movement by the door-knob.

A further object is to produce means for breaking the connection between the bell and bell-operating mechanisms.

A still further object is to produce a mechanism of the character described of simple, strong, durable and comparatively inexpensive construction.

With these objects in view the invention consists in certain novel and peculiar features of construction and organization as herein-after described and claimed; and in order that it may be fully understood reference is to be had to the accompanying drawing, in which—

Figure 1, is a horizontal section taken approximately on the dotted line I—I of Fig. 2. Fig. 2, is a vertical section taken approximately on the dotted line II—II of Fig. 1. Fig. 3, is a vertical section on an exaggerated scale on the dotted line III—III of Fig. 1. Fig. 4, is a detail perspective view of a part of the bell mechanism.

In the said drawings 1 indicates a door, 2 a lock casing mortised therein, 3 the cover or outer face plate and 4 the back plate of the casing.

5 indicates the knob stem passing through square openings in the casing so as to be capable of sliding but not turning therein.

6 is a series of cog teeth on the stem and engaging the segmental gear 7 journaled upon a vertical stud 8 of a horizontal partition 9 of the casing. The gear 7 carries a pin 10 engaging normally the contiguous end of a slot 11 in the latch bolt 12, the latter being held yieldingly advanced by spring 13 or its equivalent. The stem 5 is equipped at its inner end with a knob 14 and at its outer end with a knob 15, and a spring 16 is interposed between knob 15 and the outer escutcheon

plate 17 to hold the knobs and stem and the segmental gear yieldingly in the position shown in Fig. 1. In this position it will be seen that if the door is closed the latch bolt can slide inward without affecting the position of the segmental gear and knob stem, the spring 13 readvancing the latch after such closure is effected. It will also be seen that by pushing inward on knob 15 the resistance of spring 16 is overcome and the latch through the gearing described is drawn into the casing, the pressure which effects this object also incidentally causing the door to open.

All of the mechanism thus far described and other features which will be hereinafter pointed out particularly are disclosed in our pending application for patent on combined door lock and bell mechanism, filed Feb. 24, 1906, Ser. No. 302,799 in which is claimed the door-locking mechanism herein described, and of which the present application is a continuation.

The knob stem 5 is hollow and is provided near its inner end with longitudinal slots 18 and 19 opening into its passage, the latter at its inner end registering by preference with a socket 20 in the plate 21 rigidly uniting the knob 14 with the inner end of the stem. The opposite end of the stem registers with the passage 22 through knob 15, the outer end of the last-named passage being diametrically enlarged as at 23 to receive a push button 24 secured on the outer end of a rod 25 fitting slidingly in stem 5 and held pressed yieldingly outward by a spring 26 fitting in the passage of the stem and bearing at its opposite ends against the base of the pocket 20 of plate 21 and the inner end of rod 25, said spring 26 being of sufficient strength to force rod 25 outward but weaker than spring 16 so that the rod can be pushed inward without affecting the position of the stem.

The rod is provided with a square hole 27 and a beveled pin 28 is snugly fitted therein and projects up through and beyond slot 18 of the stem. To hold the pin 28 in position and to easily and accurately adjust the same vertically, a thread-seat is tapped in the inner side of hole 27 and also in the inner or opposing face of the pin 28, the latter being of course held in any suitable manner while such thread seat is cut. 29 indicates said

thread-seat and 30 a screw which engages said seat and holds the pin 28 at the desired position of vertical adjustment, this adjustability being desired to compensate for wear.

5 The said screw depends through slot 19 and plays therein in the independent reciprocatory action of the rod induced by inward pressure on push button 24 and outward pressure of spring 26. It will thus be

10 seen that the pin can be caused to move inward and outward either by pushing inward on knob 15 or push button 24, the spring 16 returning the knob and pin in the first instance, and the spring 26 in the last instance, to original position.

15 The stem 5 where it extends through the inner escutcheon plate 31 is preferably widened as at 32 and provided with a notch 33 in line with a locking plate 34, mounted slidingly on the guide pins 35 carried by the escutcheon plate in line with the notch 33 when the stem is in normal position as shown in Fig. 1. The escutcheon plate is provided with a channel 36 bridged by plate 34, and

20 contains a spring 37 adapted to engage the front face of beveled teeth 38 or 39 of said locking plate when withdrawn from or engaged with said notch 33 as the case may be, this spring being to prevent accidental locking or unlocking movement of said plate.

30 When advanced and engaging said notch it prevents movement of stem 5 without interfering with the operation of the rod 25 and thus serves to cause the latch 12 to act as a

35 locking bolt as well as a latch bolt.

40 indicates a bell mounted on a bracket 41 secured to the door vertically above knob 14 by preference.

42 indicates a bracket secured to the inner

40 side of the door between escutcheon plate 31 and bracket 41, and, pivoted for movement in a vertical plane to said bracket, is a clapper 43 having its upper end bifurcated to produce a clapper arm 44 to strike the inner

45 side of the bell and an arm 45 to strike the outer side of the bell, a spring 46 carried by bracket 42 exerting a yielding pressure on the clapper below its pivotal point so as to hold it normally in the position indicated by

50 dotted lines Fig. 2. The lower end of the clapper is bifurcated and provided with an inwardly disposed shoulder 47 and pivoted in said bifurcation is a rock arm 48 having its lower end normally in the path of inward

55 movement of pin 28 and its upper end provided with a lug 49 engaging shoulder 47 so that said arm shall form a rigid extension of the clapper when pin 28 presses inwardly against its lower end through inward movement imparted either to stem 5 or to rod 25

60 independently of said stem, such inward movement of the rock arm causing the clapper to rock until its arm 45 strikes the bell, the pin 28 passing inward of the rock arm by

65 preference, just before said arm 45 strikes.

As the bell rings the pressure on the knob 15 or the push button is removed and the spring 16 or 26 returns the stem 5 or rod 25 as the case may be to its original position, the clapper also gravitating back toward and beyond

70 its original position—which is indicated in dotted lines—under the momentum of its gravitation so that its inner arm strikes the inner side of the bell. The clapper thus produces two rings for each inward movement

75 of the pin 28, it being noted in this connection that the return movement of said pin to its original position is unopposed by the rock arm 48 because the lower end of the latter will swing outward under outward pressure on pin 28 and then gravitate back to its

80 vertical position so as to be ready for the next inward movement of said pin.

Should it be desired to prevent the ringing of the bell when the door is opened by inward

85 pressure of the stem 5 produced by inward pressure on knob 15 or inward pull on knob 14, the rock arm 48 is swung upward to the position indicated by dotted lines and engaged with a notch 50 in the escutcheon

90 plate 31, in which position it is held by the gravitative tendency of the bell clapper, it being further noted in this connection that when the rock arm is in the position described the bell cannot be rung by inward movement

95 of the push button.

From the above description it will be apparent that we have produced a bell mechanism possessing the features of advantage enumerated as desired and we wish it to be

100 understood that we do not desire to be restricted to the exact details of form and organization as obvious modifications within the scope of the appended claims will suggest themselves to one skilled in the art.

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Having thus described the invention what we claim as new and desire to secure by Letters Patent, is:—

1. A device of the character described, comprising a door, a bell supported at the

110 inner side of the same, a bracket secured to the door, a bowed spring carried by the bracket, and a bell-clapper pivoted to said bracket and provided at one side of its pivot with an arm held yieldingly away from the

115 door by said spring and at the other side of its pivot with a pair of arms to alternately strike the bell at its inner and outer sides.

2. In a device of the character described, a door, a bell and a clapper pivotally mounted

120 on the door and provided with a pair of arms to alternately strike the bell at its inner and outer sides, a rock arm carried by the clapper, and a plate secured to the door and adapted to be engaged by said rock arm for the purpose of holding the clapper in inoperative

125 position.

3. In a device of the character described, a door, a bell and a clapper pivotally mounted

130 on the door and provided with a pair of arms

to alternately strike the bell at its inner and outer sides, and a rock arm pivoted to the clapper and provided with a shoulder engaging the latter to cause it to move with the rock arm when moved in one direction.

4. In a device of the character described, a door, a bell and a clapper pivotally mounted on the door and provided with a pair of arms to alternately strike the bell at its inner and outer sides, a knob-stem extending slidably and non-rotatably through the door, and a pin adapted to be moved inward with said knob stem and in such movement operate the clapper in one direction.

5. In a device of the character described, a door, a bell and a clapper pivotally mounted on the door and provided with a pair of arms to alternately strike the bell at its inner and outer sides, a knob stem extending slidably and non-rotatably through the door, a pin adapted to be moved inward with said knob stem and in such movement operate the clapper in one direction, and means to return the knob stem and pin to their original positions.

6. In a device of the character described, a door, a bell and a clapper pivotally mounted on the door and provided with a pair of arms to alternately strike the bell at its inner and outer sides, a knob-stem extending slidably and non-rotatably through the door, a pin adapted to be moved inward with said knob-stem and in such movement operate the clapper in one direction, a spring to return the knob stem to its original position, and a spring to cooperate with the knob stem in returning the pin to its original position.

7. In a device of the character described, a door, a bell secured to the same, a clapper therefor suitably pivoted and provided with a rock arm to swing freely in one direction and to operate the clapper when moved in the opposite direction, a stem mounted slidably in the door and provided with knobs and held yieldingly at its outward limit of movement, a rod slidably carried by the stem and held yieldingly at its outward limit of movement, and a pin projecting from said rod and adapted to move inward when the stem or the rod is moved inward, and engage said rock arm to cause the clapper to strike the bell.

8. In a device of the character described, a door, a bell secured to the same, a clapper therefor suitably pivoted and provided with a rock arm to swing freely in one direction and to operate the clapper when moved in the opposite direction, a tubular stem mounted slidably in the door and provided with a longitudinal slot, a spring holding said stem pressed yieldingly outward, knobs on the stem, a rod fitting slidably in the stem and projecting through the outer knob, a spring in the stem and bearing at its opposite ends against the inner knob and the inner end of said rod, and a pin projecting from said rod through the slot of the stem and adapted when the stem moves inward or when the rod moves inward independently of the stem, to cause the clapper to strike the bell.

9. The combination of a door, a bell carried thereby, a clapper therefor, a stem extending slidably through the door and provided with knobs and with a notch, a spring to hold the stem yieldingly at its outward limit of movement, a rod carried slidably by the stem and accessible from the outer side of the door, means to hold the rod yieldingly at its outward limit of movement, a pin projecting from said rod in the path of inward movement of the stem and adapted when moved inward by the latter or by inward pressure on the rod to cause the clapper to strike the bell, and a slide plate carried by the door and adapted to engage the notch of the stem to prevent movement of the latter when desired.

10. In a device of the character described, a door, a bell carried thereby, a pivoted clapper mounted on the door, a yielding stop to normally hold the clapper out of contact with the bell, a knob stem, a rod slidably carried thereby and provided with a pin to operate the clapper and cause it to strike the bell, and means for yieldingly holding said rod at its outward limit of movement.

In testimony whereof we affix our signatures, in the presence of two witnesses.

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WILBERT ELLIOTT.

Witnesses:

S. H. STAUFFER,
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