(No Model.)

H. C. WILLIAMS.

DOOR BELL.

No. 438,789. Patented Oct. 21, 1890.

Fig. 1.

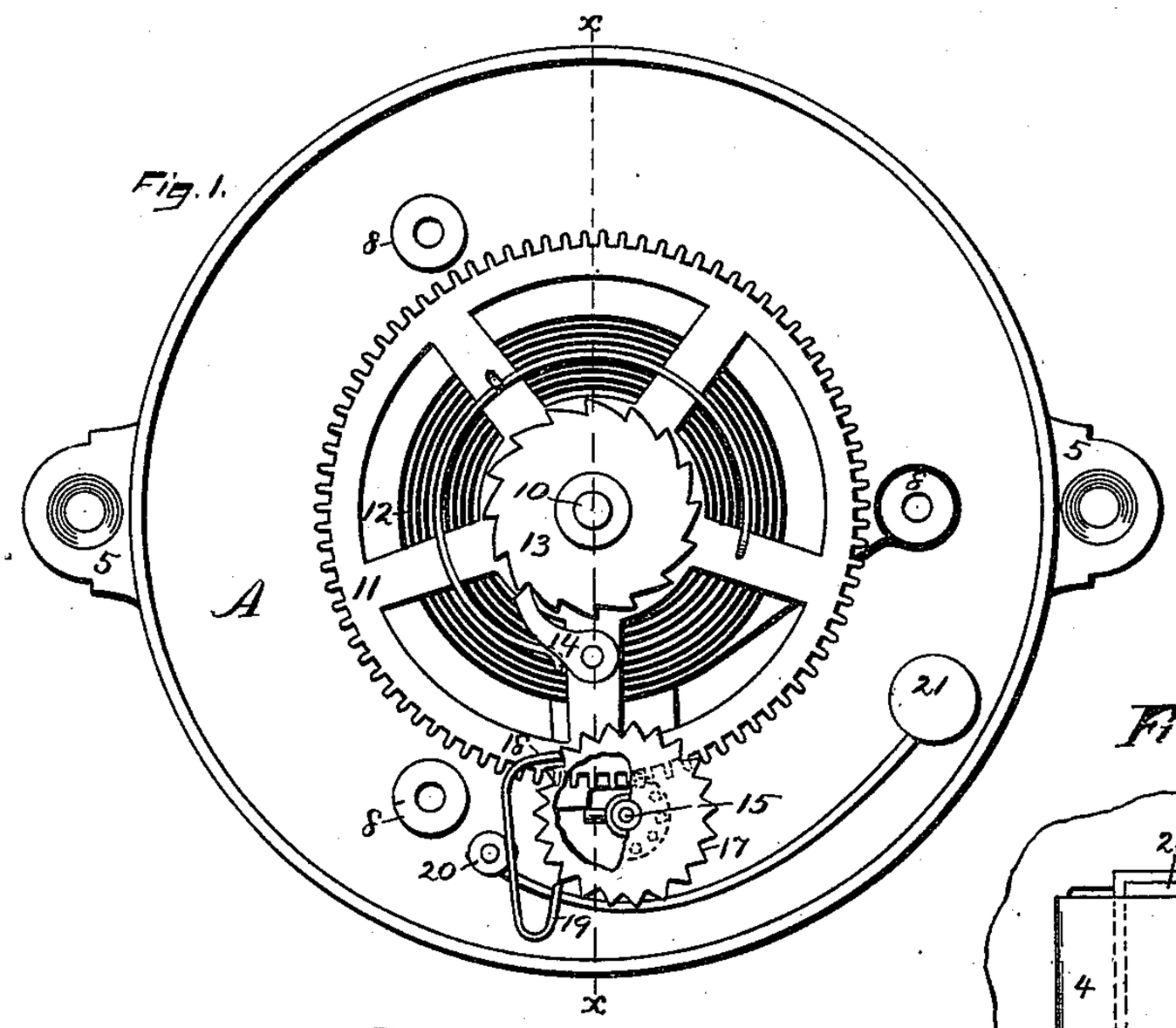


Fig. 3.

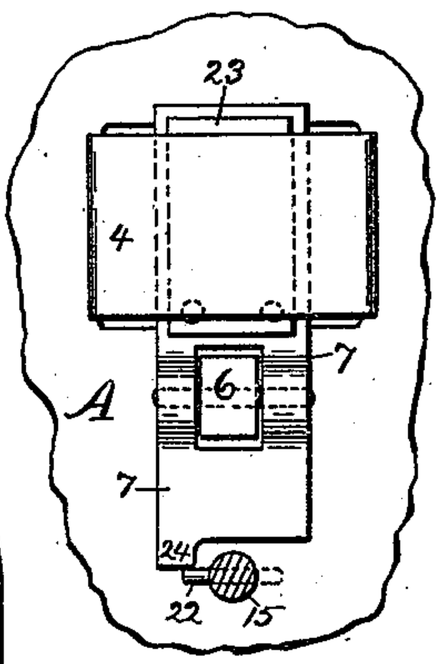
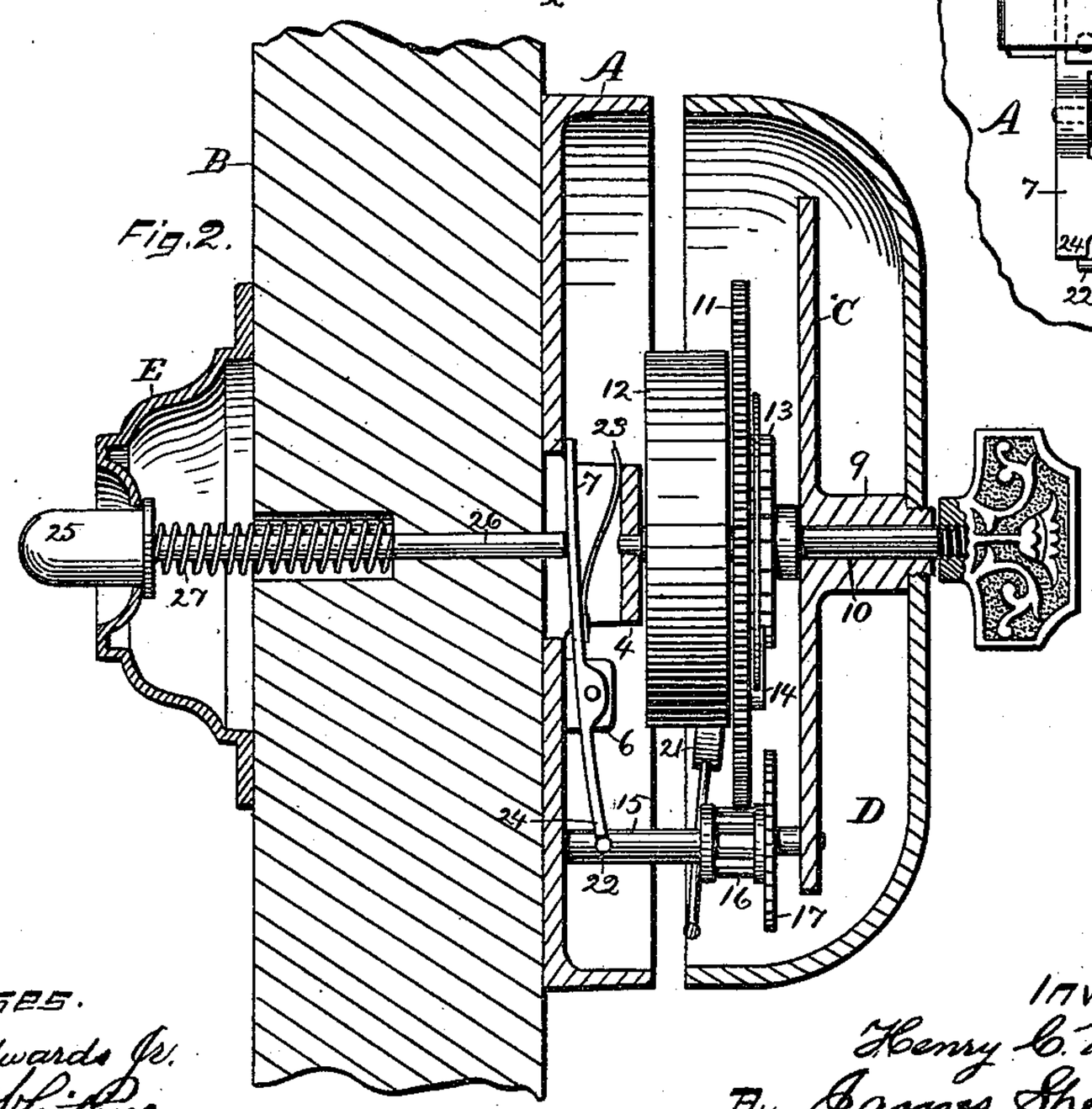


Fig. 2.



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HENRY C. WILLIAMS, OF NEW BRITAIN, CONNECTICUT.

DOOR-BELL.

SPECIFICATION forming part of Letters Patent No. 438,789, dated October 21, 1890.

Application filed May 2, 1890. Serial No. 350,316. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. WILLIAMS, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Door-Bells, of which the following is a specification.

My invention relates to improvements in door-bells of the class having a hammer-actuating train; and the objects of my improvement are simplicity and economy in construction, efficiency in operation, and to more conveniently arrange the parts connected with the push-button or operating device on the outside of the door.

In the accompanying drawings, Figure 1 is a front elevation of my door-bell with the gong and front plate removed, a portion of the escapement-wheel being broken away in order to better illustrate other parts. Fig. 2 is a vertical section on the line *x x* of Fig. 1 of the push-button escutcheon, a portion of a door, the movement plates, and gong, the other parts being shown in side elevation; and Fig. 3 is a detached portion, showing the tripping mechanism.

A designates the base-plate, having a central opening that is covered by the bridge 4 and provided with lugs 5 5, having screw-holes to facilitate fastening the said base-plate to the door B or other suitable support. Said base-plate is also provided with a lug 6, in which to pivot the trip-lever 7. Parallel to the base-plate A is the companion movement plate C, Fig. 2, which is held in proper position relatively to the base-plate A by the pillars or posts 8 8 8, Fig. 1, as in ordinary alarm-movements. The plate C is also provided with a central boss 9, upon which the gong D is stationarily affixed.

10 designates the main shaft, having one of its bearings in the central boss 9 of the plate C and its other bearing in the bridge 4 of the base-plate A. Said shaft is provided with the gear-wheel 11, spring 12, ratchet 13, and pawl 14, all arranged in the usual manner for the main shaft of spring-actuated movements.

15 designates the escapement-shaft, which has its journal-bearings in the plates A C, and is provided with a pinion 16, that meshes into and is driven by the gear-wheel 11, and an escapement-wheel 17, that engages the pallets 18 and 19 on the hammer-shaft 20, which shaft is also journaled in the movement plates and carries the hammer 21 for striking the gong as the wheels are actuated by the spring in the ordinary manner for alarm-movements.

In order to trip the alarm-movement for sounding the gong for a given time or approximately a given number of strokes and then stopping it, I provide the trip-lever 7 and arrange its stop end 24 so as to engage a projection 22 or projections upon the escapement-shaft 15. The lever 7 is provided with a spring 23, which, engaging the inside of the bridge 4, holds the lever in the position represented in Fig. 2, and the pin 22 is so set in the escapement-shaft 15 as to be in the same plane as the stop end 24 of the lever 7 when the lever is in this position.

While I have represented only one pin or projection 22 on the shaft 15, other like projections may be added, if desired, as one other projection is indicated by broken lines at the right-hand side of the shaft 15 in Fig. 3.

Upon the outside of the door B or other place of attachment for the bell I arrange the push-button 25 and its escutcheon E or other equivalent device for tripping the lever 7. The shank 26 of the push-button extends through the door and rests upon the lever 7 opposite the bridge 4 of the base-plate and preferably in axial alignment with the bell, the inner end of said lever being in the form of a broad plate-like device. The push-button is also provided with a spring 27 to assist in returning it into the position shown; but said spring is not essential, as the spring 23 may be made strong enough to return the push-button when it returns the lever 7 to its normal position.

By depressing the push-button 25 the lever 7 is depressed so as to withdraw its stop end 24 out of the path of the pin 22 in the revolving shaft 15, thereby releasing the alarm mechanism and allowing the bell to be sounded. The push-button may be immediately released, and the lever will return to its normal position and stop the alarm mechanism as soon as the escapement-shaft has completed one revolution and the pin 22 again comes in contact with the stop end 24 of the lever 7. If,

however, two pins instead of one are employed, then the bell will be stopped when the escapement-shaft has made only one-half of a revolution. By thus arranging the pins or projections upon the escapement-shaft at given distances apart and in the plane of the stop end 24 of the lever 7 said lever can be easily disengaged and the bell will be sounded approximately a given number of strokes every time that the push-button is depressed, no matter how quickly said push-button may be released after its depression, thereby insuring a sufficiently prolonged call. The opening inside the bridge may be large enough to admit a lever of considerable width with a broad surface, against which the shank of the push-button may be applied, and the location of the bell with reference to the push-button may be varied to a considerable extent, whereby the application of the bell to a proper position is very simple and convenient. This feature of my invention may be embodied in bells whose holding and ringing mechanism beyond the push-rod and broad plate-like end of the lever, against which said rod bears, are of a different construction from that herein shown. I am also enabled to arrange the external operating device centrally with reference to the bell, whereby the bell upon one side of the door and the push-button upon the other may be symmetrically arranged.

I claim as my invention—

1. The combination of gong D, the hammer-actuating train, a projection 22 on the escapement-shaft of said train, the spring-pressed lever 7, having a stop end 24 in the path of said projection when said lever is in its normal position, and a push-rod for acting on said lever, substantially as described, and for the purpose specified.

2. The combination of the base-plate A, having central opening and bridge 4, the main shaft 10, bearing the main wheel 11 and having the bearing for one end in said bridge, the shaft 15, bearing the pinion 16 and projection 22 and having the bearing for one end in said base-plate in a different plane from that of said bridge, the trip-lever 7, and means for operating said lever, substantially as described, and for the purpose specified.

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