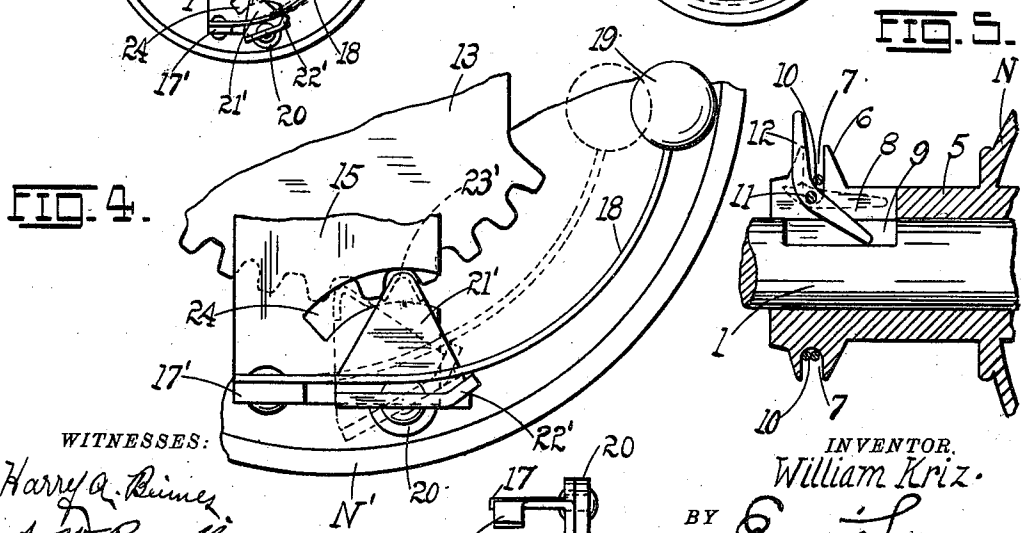
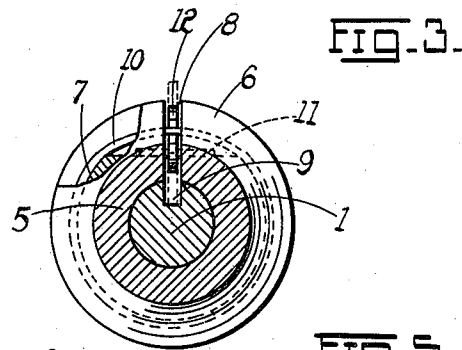
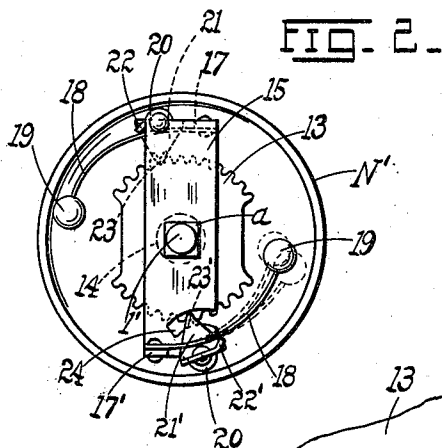
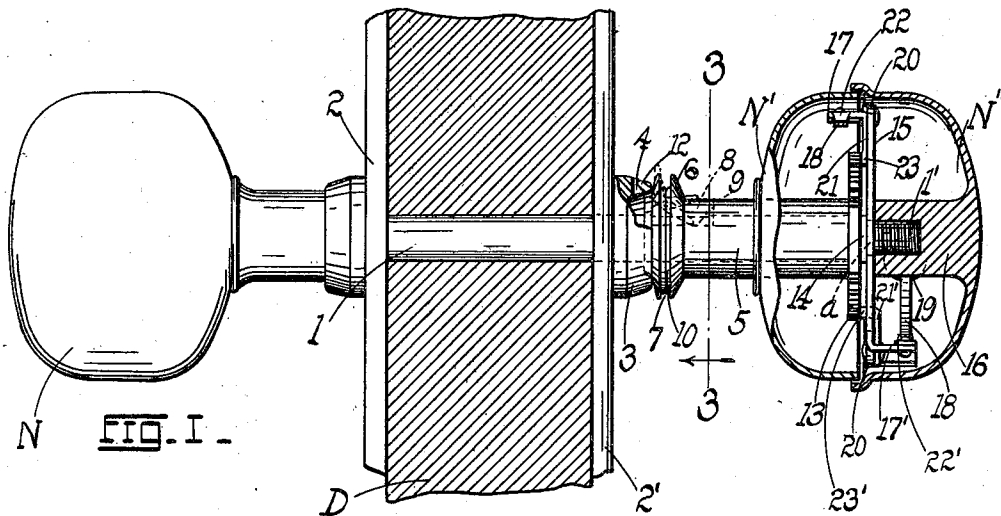


W. KRIZ.
BELL RINGER FOR DOOR KNOBS.
APPLICATION FILED AUG. 1, 1910.

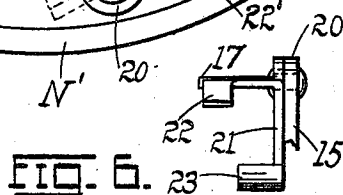
983,626.

Patented Feb. 7, 1911.



WITNESSES:

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WILLIAM KRIZ, OF ST. LOUIS, MISSOURI.

BELL-RINGER FOR DOOR-KNOBS.

983,626.

Specification of Letters Patent.

Patented Feb. 7, 1911.

Application filed August 1, 1910. Serial No. 574,989.

To all whom it may concern:

Be it known that I, WILLIAM KRIZ, citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Bell-Ringers for Door-Knobs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in door-knob bell-ringers; and it consists in the novel details of construction more fully set forth in the specification and pointed out in the claim.

In the drawings, Figure 1 is a combined elevation and middle longitudinal section of my invention, with door in section; Fig. 2 is an inner face view of the inner shell or ringing door-knob section; Fig. 3 is a cross-section on the line 3—3 of Fig. 1; Fig. 4 is an enlarged view of a portion of the inner shell and the toothed-disk and pawl riding over the same, and the bell-hammer; Fig. 5 is a longitudinal sectional detail showing the manner of locking the inner shell to the rocker-bar; and Fig. 6 is a side elevation of one of the pawls detached.

The object of my invention is to construct a door-knob which will sound an alarm should an unauthorized person attempt to turn the same, the character of the alarm being in the nature of a bell which will ring the moment the knob on the outside of the door is turned.

The precise nature and advantages of the invention will be best gathered from a detailed description thereof, which is as follows:

Referring to the drawings, D represents a section of a door, the same being provided as usual with the ordinary rotatable rocker-bar 1, one end of which receives the outside door-knob N. All parts identified with the conventional latch controlled by the turning or rocking of the member 1 are omitted, as they are old and well known and have no bearing on the present invention. As usual, the ordinary door lock is provided with plates 2, 2', secured to the outer panel of the door, the boss 3 of the inner plate 2' in the present case being provided with a slot 4 for a purpose presently to appear. Passed over the inner cylindrical portion of the member 1, and bearing against the boss 3 of the plate 2', is the hollow hub portion 5 carried by the inner half or section N' of the inner

knob, the end of the hub outside the section N' terminating in a flange 6 provided with a peripheral groove 7 intersected by a transverse notch or recess 8, capable of registering with a groove or notch 9 formed in the inner cylindrical portion of the member 1 over which the hub 5 is passed. Wrapped about the groove 7 is an open wire loop or resilient spring 10 which engages the inner edges of the meeting legs of an angle-latch 12 pivoted to the flange 6 about a pin 11 mounted across the recess 8 in position to oscillate in the transverse notch or recess 8, one leg of the latch 12 being adapted to engage the recess 4 in the boss 3 of the plate 2' for a throw of the latch in one direction, the other leg being adapted to engage the notch 9 of the member 1 with a throw or oscillation of the latch in the opposite direction. The resiliency of the spring 10 maintains the latch in engagement with the particular notch into which it has been swung. When the latch 12 engages the notch 4, it locks the hub 5 and the knob section N' to the plate 2' against rotation with any turning of the member 1 (Fig. 1). When the latch 12 is in engagement with the notch 9, the hub 5 obviously becomes coupled to the member 1, and with the turning of said member the hub 5 and the knob-section N' will likewise turn.

The inner end of the hub 5 carries a gear-disk 13, (cut away at diametrically opposite points to remove portions of the teeth), the portion 1' of the member 1 beyond the disk 13 being screw-threaded, a shoulder 14 being formed at the base of the screw-threaded portion just outside the gear-disk 13. Against this shoulder is adapted to rest a rotatable plate or member 15 passed over the square portion *a* at the base of which the shoulder 14 is formed, said square portion locking the plate 15 to the member 1 and carrying it around in the rotation of said member. The plate 15 is held against the shoulder 14 by the boss 16 formed on and projecting from the inner face of the outer half or section N'' of the inner knob, which section is screwed to the outer screw-threaded portion 1' of the rock-member 1. At diagonally opposite corners of the plate 15 are formed bracket arms 17, 17', bent in opposite directions, each arm having riveted thereto the fixed end of a flexible spring-arm 18 the free end of which carries a bell-ringing head or hammer 19. Adjacent the

bracket 17 is a lobe or lug 20 to which is pivotally secured an oscillating angle-piece or pawl 21, one leg of which (that at right angles to the plate 15) has deflected from the outer edge thereof a finger 22. The opposite leg (the one parallel to the plate 15) has formed thereon at the end thereof a pawl or "rider" 23, which rides over the teeth of the disk 13, the spring 18 being so flexed as to press on the finger 22 and tend to force the latter outwardly. Adjacent the bracket arm 17' is likewise a lobe 20 to which is pivotally secured an oscillating angle-piece 21', having a finger 22' engaging the spring 18 secured to the arm 17', and being otherwise identical in construction with the angle-piece 21, except that its rider 23' projects inwardly through a slot 24 in the plate 15 so as to engage with the teeth of the disk 13, the piece 21' being mounted to the plate 15 on the face opposite to that which carries the piece 21. The object of having the springs 18 on opposite sides of the plate 15 is to permit the hammer end or head 19 thereof to strike its respective half or section N', N'', of the inner hollow door knob, each such half serving as a bell when the device is set to sound an alarm.

The operation of the ringer is substantially as follows:—Upon throwing the latch 12 into engagement with the recess 9 of the rotatable member 1, the hollow hub 5 of the shell or inner knob-section N' becomes locked to said member 1; and since the outer shell N'' of the inner knob is already secured to the member 1, it follows that should a person turn the outer knob N, the several parts N, N', N'', and 1 will rotate as a unit for an opening movement of the knob as well understood in the art. Should however, the door be closed or locked for the night, and an unauthorized person attempt to enter, the device is set to ring the bell. This is accomplished as follows:—The latch 12 is lifted or thrown into engagement with the recess 4 of the plate 2' on the door, (and thereby disengaged from the recess 9) whereupon the hub 5 and consequently the inner shell or knob-section N' of the inner knob together with the gear-disk 13 will be locked against rotation. If then the member 1 be turned by seizing and turning the knob N, the shell N'' together with the member or plate 15 confined between the boss 16

and shoulder 14 will be turned at the same time. It follows therefore, that as the plate 15 is rotated about its axis, the riders 23, 23', of the angle pieces 21, 21', pivoted thereto will travel over the teeth of the disk 13, and in so riding will oscillate about their pivotal connections on the plate 15 and oscillate the spring arms 18, the latter always forcing the riders into positive contact with the teeth of the disk 13, the spring being deflected inwardly by the rider as the latter passes over a tooth (Fig. 4). The springs thus have imparted thereto a vibrating motion, in which their respective heads or hammers 19 strike their shells or bells N', N''. Of course, by again throwing the latch 12 into engagement with the member 1, and turning the outside knob N, the several parts will rotate as a unit, and no alarm will be sounded. The object of cutting away a portion of the teeth from the disk 13 is to allow for a free play of the hammers in the vibration of the springs 18.

Having described my invention, what I claim is:—

In combination with a rotatable bar passed through a door, and actuated from either side of the door, a shell mounted loosely on said bar adjacent to one side of the door, a latch pivoted to the shell and adapted to lock the same to the door or to the bar, a spring for holding the latch in either of its extreme positions, a toothed disk secured to the shell around said bar, a plate locked to the bar adjacent to the disk, pawls pivoted to the plate adjacent to the periphery of the disk and riding over the teeth thereof with the turning of the bar upon the locking of the shell to the door, fingers on the pawls, spring arms having ends fixed to the terminals of the plate and having intermediate portions engaging the fingers on the pawls, the latter in riding over the teeth of the disk setting the springs into vibration, and heads at the free ends of the spring arms adapted to impinge against the locked shell and provide a ringing sound.

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

WILLIAM KRIZ.

Witnesses:

EMIL STAREK,
ALONZO W. POWELL.