

UNITED STATES PATENT OFFICE.

CHARLES L. NEWTON, OF PUEBLO, COLORADO.

BELL.

SPECIFICATION forming part of Letters Patent No. 695,829, dated March 18, 1902.

Application filed November 2, 1901. Serial No. 80,946. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. NEWTON, a citizen of the United States, residing at Pueblo, in the county of Pueblo and State of Colorado, have invented new and useful Improvements in Bells, of which the following is a specification.

My invention relates to bells for doors, bicycles, and the like, the same residing particularly in a novel construction of the operating mechanism for the bell.

My invention is designed, primarily, as a door-bell, in which the bell proper is mounted in or forms part of one of the knobs, and the other of said knobs is provided with a push-button or similar device so connected with the bell-hammer that when the same is forced inwardly said hammer will be thrown into operation and the bell sounded.

The invention consists in certain features and details of construction and combinations of parts, which will be hereinafter more fully described and claimed.

In the drawings forming part of this specification, Figure 1 is a vertical longitudinal sectional view through two door-knobs, showing my invention applied thereto. Fig. 2 is a horizontal section through the knob in which the bell is mounted. Fig. 3 is a detail perspective view of the rocking lever for actuating the bell. Fig. 4 is a similar view of the hammer and the hammer-arm. Fig. 5 is a detail cross-section through the knob-spindle. Fig. 6 is a detail longitudinal section of the push button or bar, showing a modified construction of the means for attaching the connecting-rod thereto; and Figs. 7 and 8 are detail views showing a modified construction of the rocking lever or frame and the hammer-arm with which the same coöperates.

Like reference-numerals indicate like parts in the different views.

My invention has been shown in connection with two door-knobs 1 and 2, located on opposite sides of a door and connected, as usual, by a rectangular spindle 3. Connected with or forming part of the knob 2 is a bell 4, the same being shown as secured to a hollow casing which constitutes the body of the knob 2 by means of a bar 5, suitably threaded at its opposite ends to connect, respectively, with the bell 4 and with the body of the knob 2.

The said bar 5 is formed with a vertically-extending slot or opening 6, intermediate its ends, and located within said slot is a bell-crank lever 7, the same being fulcrumed at 8 to the bar 5, so that it is capable of rocking movement in a vertical plane. Connected to the two arms of the bell-crank lever 7 is a segmental zigzag wire 9, the said wire being concentric in its curvature with the fulcrum 8 of the bell-crank lever 7, as clearly shown. The hammer-rod 10 of the bell is pivoted on the pin 11 to the bar 5 adjacent to the point of connection of said bar with the bell 4, so that the same is capable of a swinging movement in a horizontal plane. The said hammer-rod and the hammer 12 on the end thereof are adapted to move through the horizontal openings 13 in the bar 5. The said hammer-rod 10 is made up of the plate 14, through which the pin 11 passes, and the wires 15, extending outwardly therefrom, lying parallel to each other, and having their outer ends bent upwardly, as shown at 16, so as to extend through the hammer 12. The plate 14 is provided with a slot or notch 17, through which the zigzag wire 9 passes. Now it will be readily understood that when the bell-crank lever 7 is rocked on its pivot 8 the zigzag wire 9 will be caused to pass through the notch 17 in the plate 14, forming part of the hammer-rod 10, which action will cause a vibratory movement to be imparted to said hammer-rod and the hammer 12 thereon, actuating the bell and making the desired call.

It is obvious that in lieu of the zigzag wire 9, which connects the two arms of the bell-crank lever 7, I may employ a segmental plate 18, provided with a zigzag notch 19, which coöperates with a pin 20 on the hammer-rod 10. Said plate 18 may be secured to the two arms of the bell-crank lever 7 or it may be integral with said bell-crank lever. The action of the device is substantially the same in both cases.

Any desired means may be employed for rocking the bell-crank lever 7; but when the bell is used as a door-bell and is mounted in or forms part of one of the door-knobs 2 I operate the same by means of a push button or bar 21, longitudinally movable in the outer knob 1. This push button or bar 21 has connected with it a rod 22, which extends through

a suitable groove in the spindle 3 and is pivotally connected at its opposite end to the lower arm of the bell-crank lever 7. By this construction it will be obvious that when the push button or bar 21 is forced inwardly it will cause a rocking movement to be imparted to the bell-crank lever 7, and the zigzag wire 9, connected therewith, will be moved upwardly through the slot 17 in the plate 14, causing the striking of the hammer 12 against the bell 4. After the bell-crank lever has been rocked in the manner just described and pressure is relieved on the push-button 21 the parts will return to their normal positions by gravity. I may, however, provide a spring 23 to assist in the return of the parts to their normal positions. This spring 23 is connected at one end to a stationary part and at the other end to a crank or arm 24 on the projecting end of the pin or shaft 8, to which the bell-crank lever 7 is secured and on which it is mounted to turn.

As it may be necessary to use my improved device upon doors of different thickness, it is important to provide an adjustable connection between the connecting-rod 22 and the push button or bar 21. For this purpose the connecting-rod 22 is provided at its outer end with screw-threads 25, which mesh with corresponding screw-threads in the push button or bar 21. The original length of the rod 22 is such as to accommodate the device for the widest door. When a narrow or thin door is to be supplied with my improvement, a portion of the screw-threaded end of the rod 22 is cut off and the remaining portion screwed into the bar 21. In lieu of this means of adjustably connecting these two parts together I may provide in the push bar or button 21 a transverse opening 26, into which an arm 27, formed on the end of the rod 22, is adapted to fit. By cutting off the bar 22 to the proper length and afterward bending the same, so as to form the arm 27, and inserting the same into the opening 26 a proper adjustment of the parts may be obtained.

To accommodate the connecting-rod 22, the knob-spindle 3 is provided with a groove 28 or 29, either one of which may be employed with either form of connecting-rod 22, as may be found desirable.

My device has been described in the form which is deemed by me at this time to be preferable; but many minor changes may be made therein without departing from the nature or spirit of the invention. I do not, therefore, limit myself to any of the details of construction, except as defined by the appended claims.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a bell, a hammer, a vibrating hammer-rod having an engaging portion thereon, and comprising two parallel wires located on opposite sides of said engaging portion and con-

nected to said hammer, and a rocking lever or frame having a segmental portion thereon movable between said wires, the said segmental portion being concentric in its curvature with the fulcrum of said lever or frame, and provided with zigzag walls cooperating with the engaging portion on said hammer-rod.

2. In a bell, a hammer, a vibrating hammer-rod having a slot or opening therein, and comprising two parallel wires located on opposite sides of said slot or opening and connected to said hammer, and a rocking lever or frame having a segmental zigzag wire thereon movable between the wires of said hammer-rod and within said slot or opening, the said segmental zigzag wire being concentric in its curvature with the fulcrum of said lever or frame.

3. The combination with a pair of door-knobs connected together on opposite sides of a door, of a bell secured to or forming part of one of said knobs, a bell-hammer, a vibrating hammer-rod having an engaging portion thereon, and comprising two parallel wires located on opposite sides of said engaging portion, and connected to said hammer, a lever having a segmental portion thereon movable between said wires, the said segmental portion being provided with inclined walls cooperating with said engaging portion, a push button or bar in the other of said knobs, and connections between said push-button and said lever, as and for the purpose set forth.

4. The combination with a pair of door-knobs connected together on opposite sides of a door, of a bell secured to or forming part of one of said knobs, a bell-hammer, a vibrating hammer-rod having a slot or opening therein and comprising two parallel wires located on opposite sides of said slot or opening, and connected to said hammer, a lever having a segmental zigzag wire thereon movable between the wires of said hammer-rod and within said slot, said segmental zigzag wire being concentric in its curvature with the fulcrum of said lever, a push button or bar in the other of said knobs, and connections between said push-button and said lever, as and for the purpose set forth.

5. The combination with a pair of door-knobs connected together on opposite sides of a door, of a bell secured to or forming part of one of said knobs, a pivotally-mounted hammer-rod comprising a plate having a slot or opening therein and parallel wires leading outwardly therefrom and having their ends bent upwardly, a hammer connected to the upbent ends of said wires, a bell-crank lever having a segmental zigzag wire connecting the two arms thereof, said wire being concentric in its curvature with the fulcrum of said lever and movable in said slot, a push button or bar in the other of said knobs and a rod connecting said push-button with one of the arms of said bell-crank lever, as and for the purpose set forth.

6. The combination with a pair of door-

knobs connected with each other on opposite
sides of the door, of a bell secured to or form-
ing part of one of said knobs, a pivotally-
mounted hammer-rod having an engaging
5 portion thereon, a lever having a segmental
portion thereon concentric in its curvature
with the fulcrum of said lever and provided
with inclined walls coöperating with said en-
gaging portion, a crank-arm on said lever, a
10 spring connected with said crank-arm for re-
turning said lever to its normal position, a
push button or bar in the other of said knobs

and connections between said push-button
and said lever, the said connections acting on
said lever in opposition to said spring, as and 15
for the purpose set forth.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit-
nesses.

CHARLES L. NEWTON.

Witnesses:

J. J. LANGDON,
G. A. LANGDON.