(No Model.)

H. C. SUTTON.

DEVICE FOR OPERATING DOOR BELLS.

No. 492,753. Patented Feb. 28, 1893.

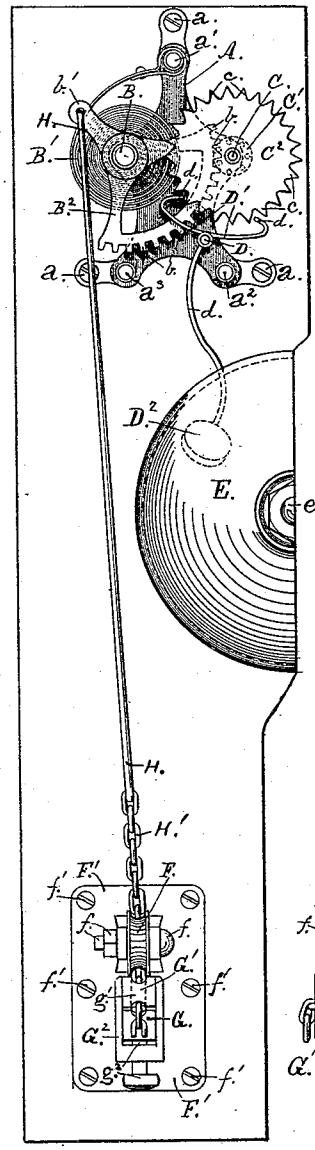

Fig. 1.

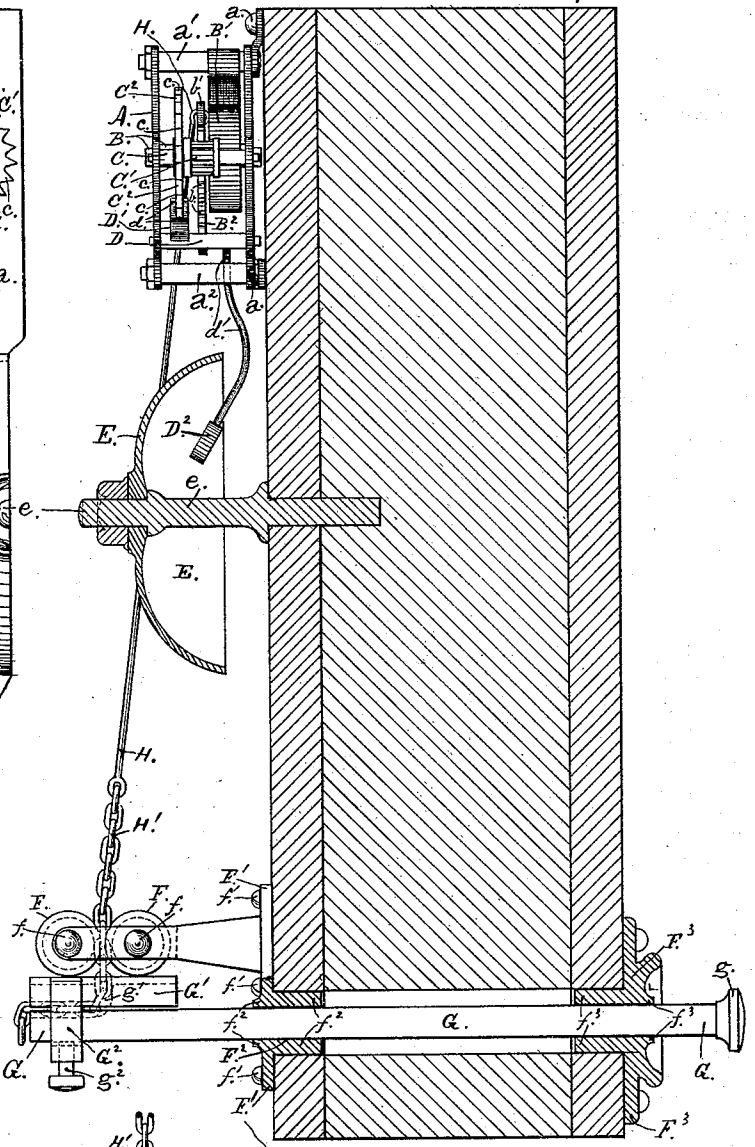

Fig. 2.

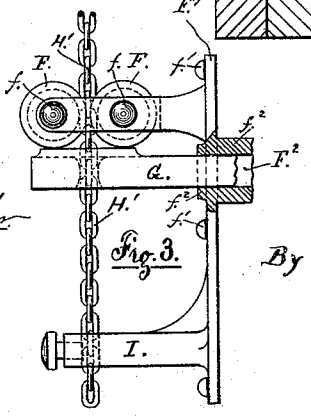

Fig. 3.

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DEVICE FOR OPERATING DOOR-BELLS.

SPECIFICATION forming part of Letters Patent No. 492,753, dated February 28, 1893.

Application filed April 7, 1891. Serial No. 388,041. (No model.)

To all whom it may concern:

Be it known that I, HARRY C. SUTTON, of Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Devices for Operating a Door-Alarm or Call-Bell; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in a device for operating a door alarm or call-bell in which a chain, wire or cord has one end attached to the mechanism of the alarm or bell and after passing between two grooved pulleys pivoted close together in a line between the arms of a jaw fixed in position against the inside of a wall or door jamb has the other end secured to the inner extremity of a rod or bar movable longitudinally in or out through said jamb or wall, the rod or bar lying in the vertical plane of the pulleys having its inner end close to said pulleys and its outer end provided with a push or pull button; and, the invention also relates to improvements in the mechanism of the alarm as will be clearly set forth in the following specification and claims.

The object of the invention is to provide the convenience of electric effects, dispensing with the usual electric current.

The purposes of the invention are attained by the mechanism and devices illustrated in the accompanying drawings in which similar letters of reference designate like parts throughout the several views, and in which:—

Figure 1 is an inside elevation of a portion of a wall, or door-jamb, showing a clock-work alarm with the elements of my invention in place, but the front plate of the alarm frame removed to expose the alarm mechanism; Fig. 2, a view from the right of Fig. 1 with the portions in front of the operating rod cut away; and, Fig. 3, a view showing a different application of the operating rod to the chain or cord.

In the drawings A designates the clock-work alarm which is attached to the door jamb or wall by screws a, and a', a^2 and a^3 represent posts which hold the front and back plates of the alarm frame in place, into these plates are journaled the extremities of arbors B, C and D, which support the actuating mechanism of the alarm.

With one end secured to and permanently wound about the arbor B in a number of close folds or coils to give it sufficient tension is a strap spring B′ having its other end secured to the post a'; a sector B^2 having in the periphery of its arc teeth or cogs b and an arm or lever b' placed opposite the geared portion is also secured to the arbor B. The arm or lever b' may be detached from the sector and separately attached to the arbor B; or, the arbor B may be permanently fixed in position, the sector made to turn upon the arbor and the inner end of the actuating spring attached to the sector, but in this case the lever or arm b' will have to be integral with or attached to the sector. These constructions being so evident their separate illustration is deemed unnecessary.

Having its rungs or bars meshing with or engaging the teeth of the sector just described is a pinion cradle C′ rigidly secured to the arbor C, and to one disk of the cradle is attached a circular disk C^2 having equiangular ratchet teeth c in the periphery of its entire circumference, which teeth are adapted to engage alternately two similarly formed pallets d and d, one being at each end of an upwardly curved pallet plate D′ which at the center of its back is rigidly attached to the arbor D; and, a hammer D^2 has the upper end of its curved stem or handle d' secured to the same arbor. The hammer is arranged to strike a bell or gong E mounted on a standard or post e, but only one half of each is shown in the drawings.

In the drawings the gong and hammer are so placed that the latter will strike the former on the inside, but they may be so arranged that the hammer will strike the gong on the outside. The hammer may also be placed between two gongs, and for effect such gongs may have different tones. These dispositions are so evident that their illustration is deemed superfluous.

Two pulleys F and F are so arranged that the grooves in their peripheries will form and maintain a vertical orifice between them and they are pivoted by bolts and nuts f between the forward ends of the arms of a jaw projecting perpendicularly from a plate F′ attached to the wall or door jamb by screws f'. Through this plate and just below the jaw is an orifice F^2 surrounded by projecting walls f^2 forming

a guide for the actuating rod yet to be described, while to the outside of the jamb or wall is attached a guide plate F^3 having at its center a similar orifice surrounded by walls f^3. Through these orifices is passed a rod or bar G extending from a little beyond the inner pulley F to a short distance beyond the outside guide plate where its extremity is provided with a push or pull button g, while on top of the inner end of the bar is placed a clamp block G′ having vertically through its center an orifice g', in its upper face a longitudinal groove and in the rear portion of its under face a similar groove which corresponds with a similar groove in the rear end of the upper face of the rod G. A yoke G^2, embracing the rod G, has the upper ends of its arms rigidly attached to the block G′, and the cross piece below is provided with a set or clamp-screw g^2.

To the extremity of the arm or lever b' of the sector B^2 before mentioned is pivoted the upper end of a cord or wire H extending downward to a short distance above the grooved pulleys also before mentioned, where its lower end is attached to an end of a chain H′, which is continued downward through the groove-orifice between the pulleys, by means of the orifice g' through the block G′, and through the grooves therebetween out at the rear ends of the rod G and block G′, when after having been drawn taut the chain H′ is securely clamped and held by means of the clamp screw g^2 having been screwed home.

In Fig. 3 the chain H′ is passed through the rod G and has its lower end secured and held in place by means of a set screw in the end of a post I which is placed some distance below the rod G. In both constructions the rod G is so placed that when said rod is moved either in or out the pulleys F will roll on its upper face.

It may here be observed that in place of the jaw having the pulleys F pivoted at its inner end a perpendicular post may be used, said post having near its extremity a vertical orifice to guide the chain; and, that the pulleys are introduced to measurably reduce the friction at this point.

Now the several parts of the invention occupying the positions indicated in the drawings the operation is such that either a pull or push on the button g draws the arm or lever b' downward and moves the alarm mechanism, which motion is continued when the spring B′ returns said mechanism to the original position; while in both movements said motion agitates the hammer and sounds the alarm or call.

Having now described the invention, what I do consider new, and desire to secure by Letters Patent, is—

1. In a device for operating a door alarm or call-bell, the guide plate secured to the inner face of a wall or door jamb, said plate having a guide orifice surrounded by projecting walls, a perpendicular arm having a jaw projecting inward secured to the plate, two pulleys pivoted between the arms of said jaw, and a vertical orifice between the peripheries of said pulleys; and, the guide plate having a guide orifice surrounded by projecting walls secured to the outer face of the wall or door-jamb; substantially as described and for the purpose set forth.

2. In a device for operating a door alarm or call-bell, an operating rod extending through and some distance beyond the inner and outer faces of a wall or door-jamb, a push or pull button secured to the outer end of the rod, and a short groove in the upper face of its rear end; a clamp-block placed on the upper face of the rear end of said rod, the block having a vertical orifice through the center, a longitudinal groove in the upper face, and a groove from the orifice to the rear end in the lower face; a yoke embracing the rear end of the rod, the upper ends of its arms secured to the block and a set or clamp-screw in the cross piece below, substantially as described and for the purpose set forth.

3. The combination in a device for operating a door alarm or call-bell, with the guide plate F^3, having the guide orifice formed by the walls f^3, secured to the outer face of the wall or door-jamb; the plate F′, having the guide orifice F^2 formed by the walls f^2, secured to the inner face of said wall or door-jamb; the jaw projecting perpendicularly from and secured to the plate F′; the pulleys F and F pivoted between the arms of the jaw; the vertical orifice between the peripheries of the pulleys; the rod G in the guide orifices of the plates F′ and F^3, having at its outer end the push or pull button g and in the upper face of its inner end a short groove; the clamp-block G′, having the vertical central orifice g', the longitudinal groove in its upper face and the groove from the orifice g' to the rear end in its under face, resting on the inner end of the rod G; and, the yoke G^2, embracing the rod G, having the upper ends of its arms secured to the block G′ and the clamp screw g^2 in the cross piece below; of a chain H′ having an end secured to the rod G by means of the clamp-block G′ the yoke G^2 and the clamp-screw g^2 as shown, the chain H′ passed through the groove-orifice between the pulleys F and F, having its other end secured to an end of the wire or cord H, having its other end pivoted to the outer end of the arm or lever b' of the alarm mechanism, substantially as described and for the purpose set forth.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

HARRY C. SUTTON.

Witnesses:
W. D. BOLLINGER,
JOHN BAKER.