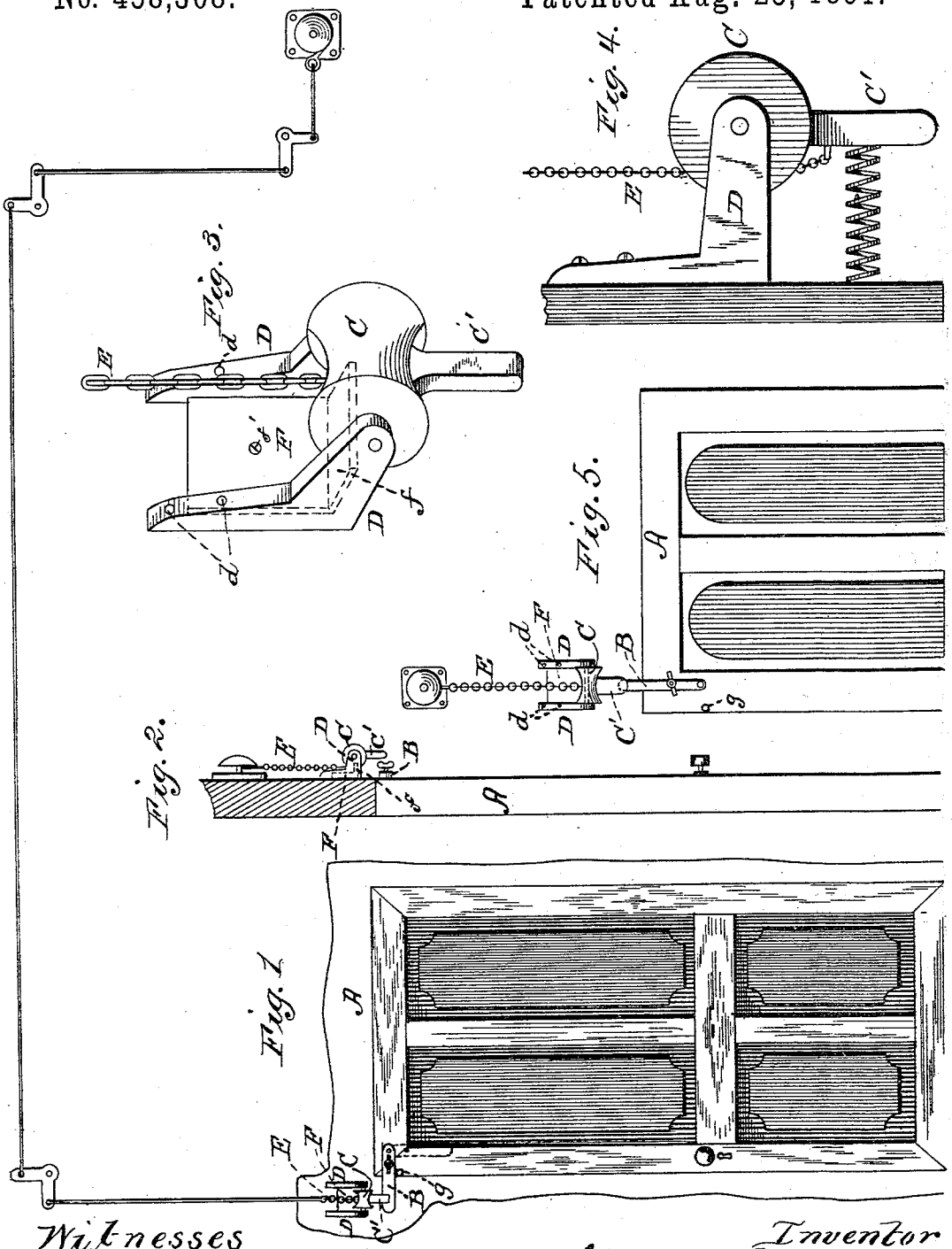
(No Model.) 2 Sheets—Sheet 1.

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AUTOMATIC DOOR BELL RINGER OR ALARM.

No. 458,308. Patented Aug. 25, 1891.



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(No Model.) 2 Sheets—Sheet 2.

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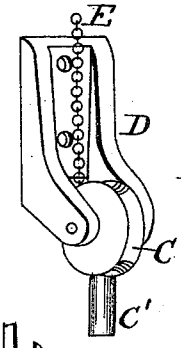


Fig. 6.

Fig. 7.

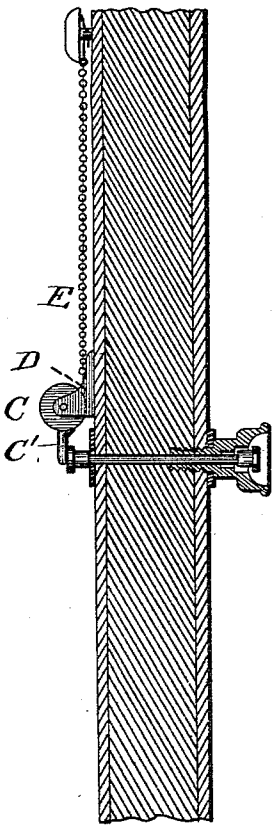
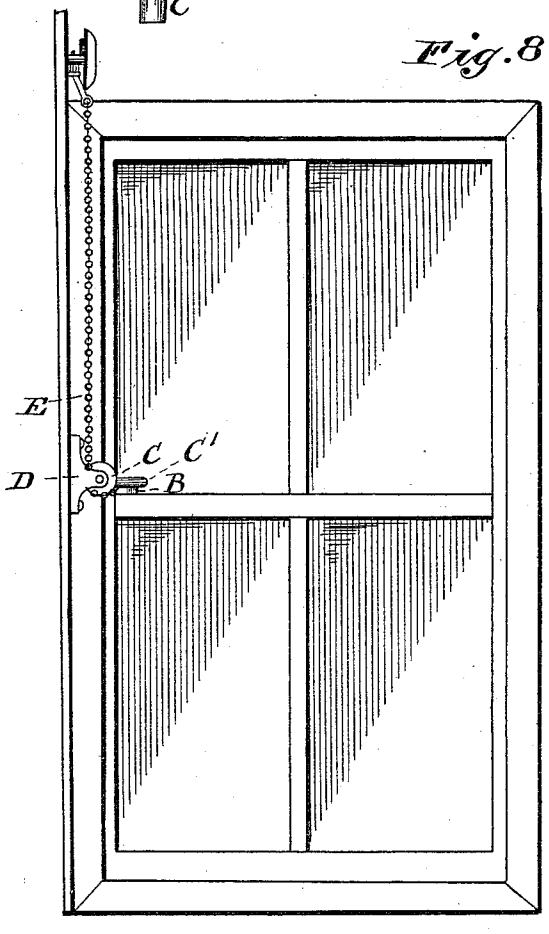


Fig. 8.



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UNITED STATES PATENT OFFICE.

CHARLES A. EMME, OF WASHINGTON, DISTRICT OF COLUMBIA.

AUTOMATIC DOOR-BELL RINGER OR ALARM.

SPECIFICATION forming part of Letters Patent No. 458,308, dated August 25, 1891.

Application filed January 5, 1891. Serial No. 376,716. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. EMME, a citizen of the United States, residing at Washington city, in the District of Columbia, have invented certain new and useful Improvements in Automatic Door-Bell Ringers or Alarms; and I do 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.

The object of my invention is to provide a simple device that may be readily applied without skilled labor to doors, drawers, &c., for the purpose of automatically sounding an alarm or ringing a bell upon the opening of such door or drawer; and in carrying out my invention I proceed as follows, reference being had to the accompanying drawings, forming a part hereof, wherein—

Figure 1 is a view in elevation of a store or other door having my automatic bell-ringer applied in position thereto, the ringer being attached to the side of the door and the bell or alarm located in the rear of the premises; and Fig. 2 is a sectional side elevation of the said door and ringer, the bell, however, in this instance being located directly above the ringer. Fig. 3 is a detail view in perspective of the concave roller with its depending tongue and chain and the brackets for supporting said roller in position; and Fig. 4 is an edge view of the same, a spring also being shown at the back of the tongue for the purposes as will hereinafter appear. Fig. 5 is a view in elevation of a door having the ringer arranged at the top of the same. Fig. 6 represents a detailed view of the bracket and stop cast integral. Fig. 7 is a sectional view in illustration of the ringer as applied in position to operate an ordinary door bell or alarm through the medium of a push-bar whose outer end extends to the outside of the door and is operated by hand, and Fig. 8 represents the device as applied to the window to act as an alarm should the said window be opened.

Similar letters of reference designate like parts in the several figures.

The letter A indicates a door at the edge of which, as in Figs. 1 and 2, or top, as in Fig. 5, is removably attached a short bar B, one of the screws for securing which bar to the door being a thumb-screw, whereby the said bar may be quickly detached and swung out of position, as in dotted lines in Fig. 1, when it is not desired to operate the bell or alarm.

C is a concave-faced roller, supported in brackets D D, that are adapted to be applied to the door-frame by screws entering the holes *d* thereof. Depending from this roller C is a tongue or lug C′, that is preferably formed integral therewith, and attached to the rear of which tongue is a chain E, which chain may be attached directly to the bell or alarm, as in Figs. 2 and 5, or it may be connected by suitable wires and bell-cranks to a bell or alarm located in the rear of the premises, as in Fig. 1.

The operation is as follows: Upon opening the door, the roller C and bar B having been applied in proper position relative to each other, so that the bar B will engage beneath the depending tongue C′ of the roller C, said tongue is forced outward and the chain E wound upon the roller, and such chain having connection with the bell or alarm the same is sounded. The further opening of the door carries the bar B beneath the tongue C′, when the gravity of said tongue, aided by a reacting-spring, returns the parts to their normal position. Upon shutting the door the bar B pushes the tongue C′ back and passes behind the same, the length of the tongue being so proportioned relative to the brackets that support the roller that the said tongue will swing free and permit the ready passage of the bar B beyond the same without impinging against the door-frame.

As will be noted, this device is very simple in construction, may be made at a very slight cost, and applied without skilled labor. Any form of bell or alarm may be used in connection therewith, and the said bell or alarm may be arranged as may be most convenient or desirable. The weight of the chain connection assists the roller to return to its normal position and permits the winding thereof upon the roller without stretching or breaking of the same. In order that the parts of the ringer may be positively returned to their normal positions after the roller has been rotated by the movable bar and the bell rung, a spring is ar-

ranged so as by its resilience to act upon the bell-operating devices and react the same, and in case where the bell or alarm is located in the rear of the premises at some distance from the door, requiring more or less length of wire and several bell-cranks, as in Fig. 1, it may be necessary to arrange such spring so as to engage the tongue of the roller so that, by its resilience, it will have a positive action on the roller and insure its return movement, as in Fig. 4; but such reacting-spring may be located at any convenient point between the bell and the operating devices, and one or more may be used, as found necessary, and instead of having the said roller concave upon its entire circumference only a portion thereof may be so curved sufficient to receive and hold the chain as the same is wound thereon upon the outward movement of the tongue C′. To prevent the too-far reverse movement of the roller, a stop is provided, as at F, between the arms of the bracket to receive the impact of the tongue when released from the bar on the door, so that the roller is prevented from getting out of position, and this stop F may be formed of a narrow strip of sheet metal having a bent end *f* of a width equal to the width of the roller, so that it will serve as a gage to prevent the brackets D D being placed too close together and thereby bind the roller. Thus the proper hanging of the device is further simplified, all that is necessary being to secure one of the brackets in place. Then the combined stop and gage is applied against this bracket and so held by a screw, as at *f′*, when the second bracket, with roller, is placed against the gage and secured, when the parts will be in their proper relative positions, and without the exercise of skill or nice adjustment.

Instead of employing a thumb-screw, as in Figs. 1 and 5, that is passed through the bar B, said bar may be held in a proper horizontal position and be capable of being swung out of action by simply placing a rest, that may be a nail or screw driven into the door, for the bar to rest on, as at *g*, Figs. 1 and 5.

As shown in Fig. 6, the bracket and stop for the tongue of the roller may be cast or formed in one piece, and, as shown in Fig. 7, the roller, with tongue, may be used in connection with a push-bar for operating the bell by hand and not automatically and independently of the movement of the door, the bar for operating the roller being the same as that shown in my patent, No. 433,724, dated August 5, 1890, which extends through the casing of the door to the outside edge and having a push-button on its end.

In Fig. 8 the roller is applied to the side of the window and operated to sound an alarm upon raising the sash, and in the same manner the roller may be applied to a money-drawer, the roller being stationed near the door and operated by a bar projecting from said door either upon the inner or outer portion.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination, in a door-bell ringer, with the bell, of a concave-faced roller having its journal-bearing in a bracket secured to the frame of the door adjacent the edge of said door, a single chain secured at one extremity to the inner side of the periphery of said roller and at its other end with the bell, a tongue depending from the periphery of the roller, a stop arranged between the arms of the bracket to limit the return movement of the tongue of the roller, and a movable bar arranged to engage the said tongue of the roller, partially rotate the roller only in one direction, and ring the bell, as described and shown, for the purposes specified.

2. The combination, in a door-bell ringer, with the bell, of a concave-faced roller having its journal-bearing in a bracket secured to the frame of the door adjacent the edge of said door, a single chain secured at one extremity to the inner side of the periphery of said roller and at its other end with the bell, a tongue depending from the periphery of the roller, a spring arranged between the bell and roller to react the parts after being operated to ring the bell, and a movable bar arranged to engage the said tongue of the roller, partially rotate said roller only in one direction, and ring the bell, as described and shown, for the purposes specified.

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Witnesses:
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