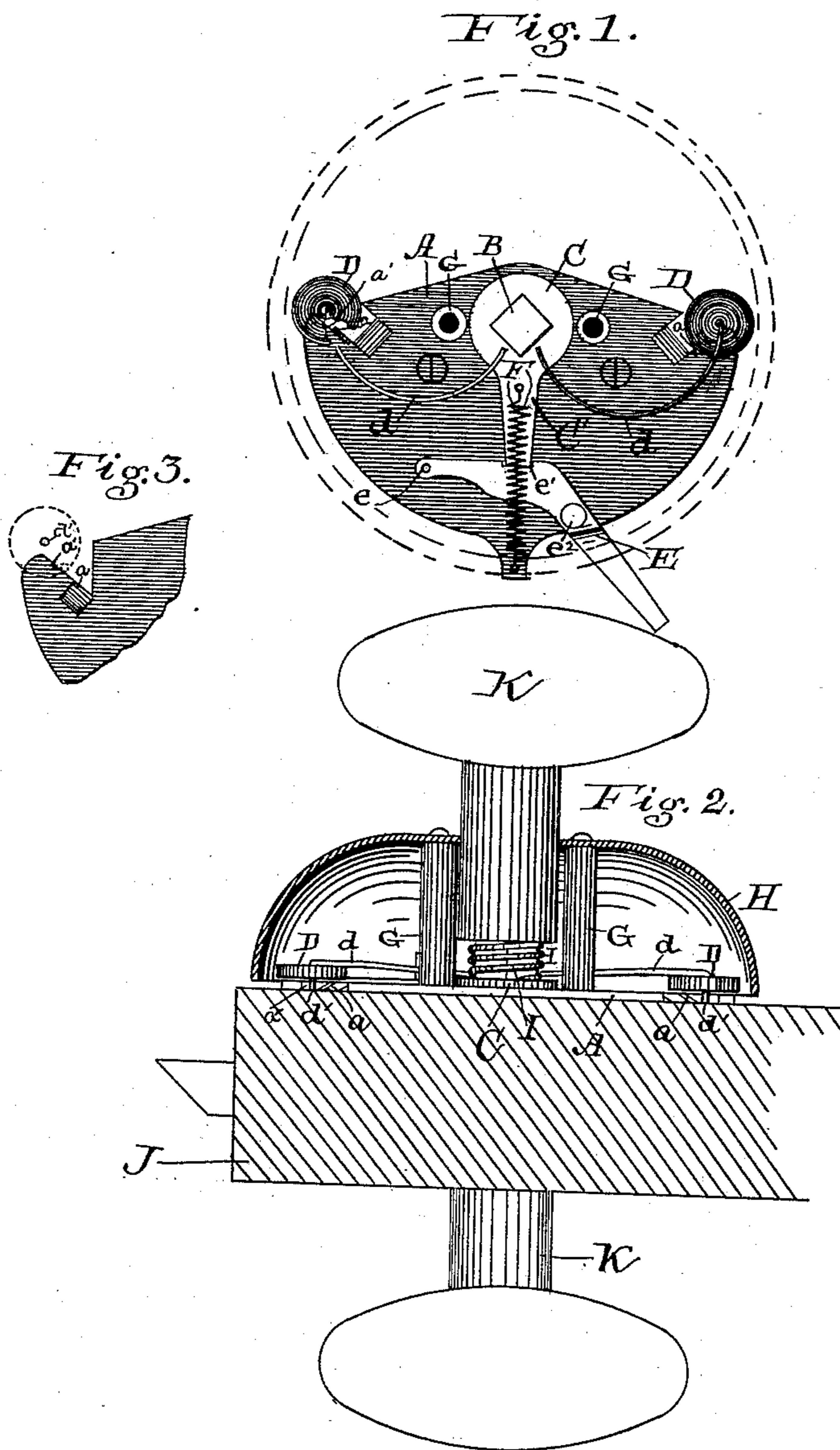


(No Model.)

H. R. STICKNEY & G. W. WAY.
DOOR KNOB ALARM.

No. 409,762.

Patented Aug. 27, 1889.



Witnesses:

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UNITED STATES PATENT OFFICE.

HENRY R. STICKNEY AND GEORGE W. WAY, OF PORTLAND, MAINE.

DOOR-KNOB ALARM.

SPECIFICATION forming part of Letters Patent No. 409,762, dated August 27, 1889.

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To all whom it may concern:

Be it known that we, HENRY R. STICKNEY and GEORGE W. WAY, both citizens of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Door-Knob Alarms; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the arts to which it appertains to make and use the same.

Our invention relates to door-knob alarms of that class which is adapted to be attached to the spindle of a door-knob and arranged to strike when the knob is turned in either direction. These alarms as heretofore constructed have either been so complicated in construction as to easily get out of order or they have been so subject to wear that they would last but a short time.

The object of our invention is to construct a door-knob alarm which shall be simple and sure in its operation, with its wearing-surfaces reduced to the smallest possible amount, and so constructed that it can be made cheaply of material adapted to endure much wear.

Our invention then consists of a door-knob alarm composed of a spring secured to the knob-spindle, a hammer on the end of said spring, a pin or projection extending downward from said hammer, a plate adapted to be attached to the surface of the door and having an inclined edge on which said projection acts to lift said hammer, and a ledge or shoulder set at an inclination to the line of motion of said hammer, whereby said spring is compressed and then suddenly released. A switch is also provided having a notch to engage a tongue attached to said spindle, and a stud to be brought into contact with the bell to muffle the same.

We illustrate our invention by means of the accompanying drawings, which show an alarm constructed according to our invention; but we do not desire to be limited to the exact structure herein shown.

Figure 1 of the drawings shows a plan view of our device with the bell removed. Fig. 2 is an elevation showing the bell in sections. Fig. 3 is a modified construction of the ledge and incline.

J represents the door, K being the knob, and B the knob-spindle, of any suitable construction. In the form here shown we provide a disk C, having a square hole for the admission of the knob-spindle, and a tongue C', extending therefrom. To this disk, which is slipped over the spindle, are attached two springs *dd*, extending in opposite directions parallel with the surface of the door. These springs we prefer to make of hardened and tempered steel wire, and they are curved or bow-shaped in form. We here show the springs as attached to the disk C by being inserted in grooves cut for that purpose; but they may be attached in any suitable manner, or they may be attached directly to the spindle. On the end of each spring is a hammer D, of composition or other suitable metal, firmly secured to it by being cast around it or otherwise. A pin *d'* projects from the under side of each hammer, and, as here shown, we form it by extending the end of the wire spring bent at right angles down through the hammer. The end of the pin *d'* rests on or near the surface of the door.

A plate A is secured to the door between it and the disk C. In that portion of the plate which is adjacent to each hammer there is a notch one side of which forms a ledge or shoulder *a'*, extending at an inclination to the path the pin *d'* would naturally follow when rotated about the spindle for a center. At the side of this ledge *a'* is an inclined surface *a*, the object of which will be shown hereinafter. Two standards G are set in the plate A, and to them is secured the bell H, it being provided with a central opening for the passage of the knob. A spiral spring F is secured to the tongue C' and to the plate A in such a manner that the latter is always brought back to its normal position after being rotated. A switch E is provided for the double purpose of locking the door by preventing the knob from turning, and of muffling the bell when it is desired to prevent it from sounding. It consists of a lever pivoted by its end to the plate A at *e*. It has a notch *e'* to receive the end of the tongue C', and a stud *e²*, adapted to press against and muffle the bell when at its extreme outward position. The end of the switch projects out from beneath the edge of the bell to form a handle.

The operation of our alarm is evident from its construction. In Fig. 1 the switch is represented as thrown in, so that the end of the tongue enters the notch e' , whereby the knob-spindle is prevented from turning, thus effectually locking the door. When the switch is thrown out so as to release the tongue, the knob-spindle may be rotated, and the alarm will then be in operation. When the knob is turned in either direction, the pin d' on one of the hammers impinges against the inclined ledge a' , by which it is deflected inward toward the center, compressing the spring d . As it continues along the ledge it comes to the inclined surface a , which lifts it until it is released, when it flies outward and strikes the edge of the bell. As it turns back the end of the pin slides along on the surface of the plate A and drops back to its former position. It thus appears that whether the knob is turned to the right or the left the bell is struck by one of the hammers.

In most devices where a hammer is tripped to strike a bell it is obliged to pass over some obstruction on its return movement; but in our alarm this is not true, as the pin simply slides easily along the plate and drops at once into its first position.

All the wear in our alarm comes on the hardened-steel pin, where the friction is very slight, and it is evident that the parts will wear for a long time without getting out of order.

When the switch E is thrown out as far as it will go, the stud e^2 will rest against the inside of the bell and prevent it from ringing, although it will be struck each time the door is opened. It will thus be seen that the switch E accomplishes the purpose of locking the knob-spindle in position by bringing the notch e' in engagement with the end of the lever c' , and it also serves to muffle the bell when necessary, as before explained. It is evident that the inclined surface might be placed at right angles to its present position, as in Fig. 3, whereby the pin would first be deflected and then released before ascending the inclined surface.

The cheapness of manufacture is an important point in devices of this kind, and it is evident that our alarm can be made at a very low cost.

The plate A can be stamped out, as can also the switch E and the disk C and the

tongue C'. It has few wearing-surfaces and few moving parts, so that there is no reason why it should not last a long time without getting out of repair.

As a rule, we prefer to construct the alarm, as here illustrated, with two hammers, one of which strikes whichever way the knob may be turned; but we may also use a single one or a series placed radially, so that several will strike in succession as the knob is turned.

We claim—

1. In a door-knob alarm, the combination, with a knob-spindle and a bell, of one or more bow-springs attached to said spindle, a hammer at the end of each spring, a pin projecting from the under face of said hammer, a plate having a ledge formed in it at an inclination to the line of motion of said pin, and an inclined surface adjacent to said ledge, whereby said pin is deflected to compress said spring and lifted to release it, substantially as shown.

2. In a door-bell alarm, the combination, with a knob-spindle and a bell, of one or more bow-springs attached to said spindle, each having its end turned down to form a pin, a hammer secured to said spring, a plate provided with a ledge formed at an inclination to the line of motion of said pin, and an inclined surface adjacent to said ledge, substantially as shown.

3. In a door-bell alarm, the combination, with a knob-spindle and a bell, of a disk fitting over said spindle, one or more bow-springs attached to said disk, hammers secured to the end of said springs, a pin projecting from the under face of said hammer, and an inclined ledge for tripping said hammer, substantially as shown.

4. In a door-bell alarm, a locking device composed of a disk fitting over the knob-spindle, a tongue connected therewith, a pivoted switch having a notch to receive the end of said tongue, and a stop to swing against the bell to muffle it, substantially as shown.

In testimony whereof we affix our signatures in presence of two witnesses.

HENRY R. STICKNEY.
GEORGE W. WAY.

Witnesses:

S. W. BATES,
W. T. CUSHING.