

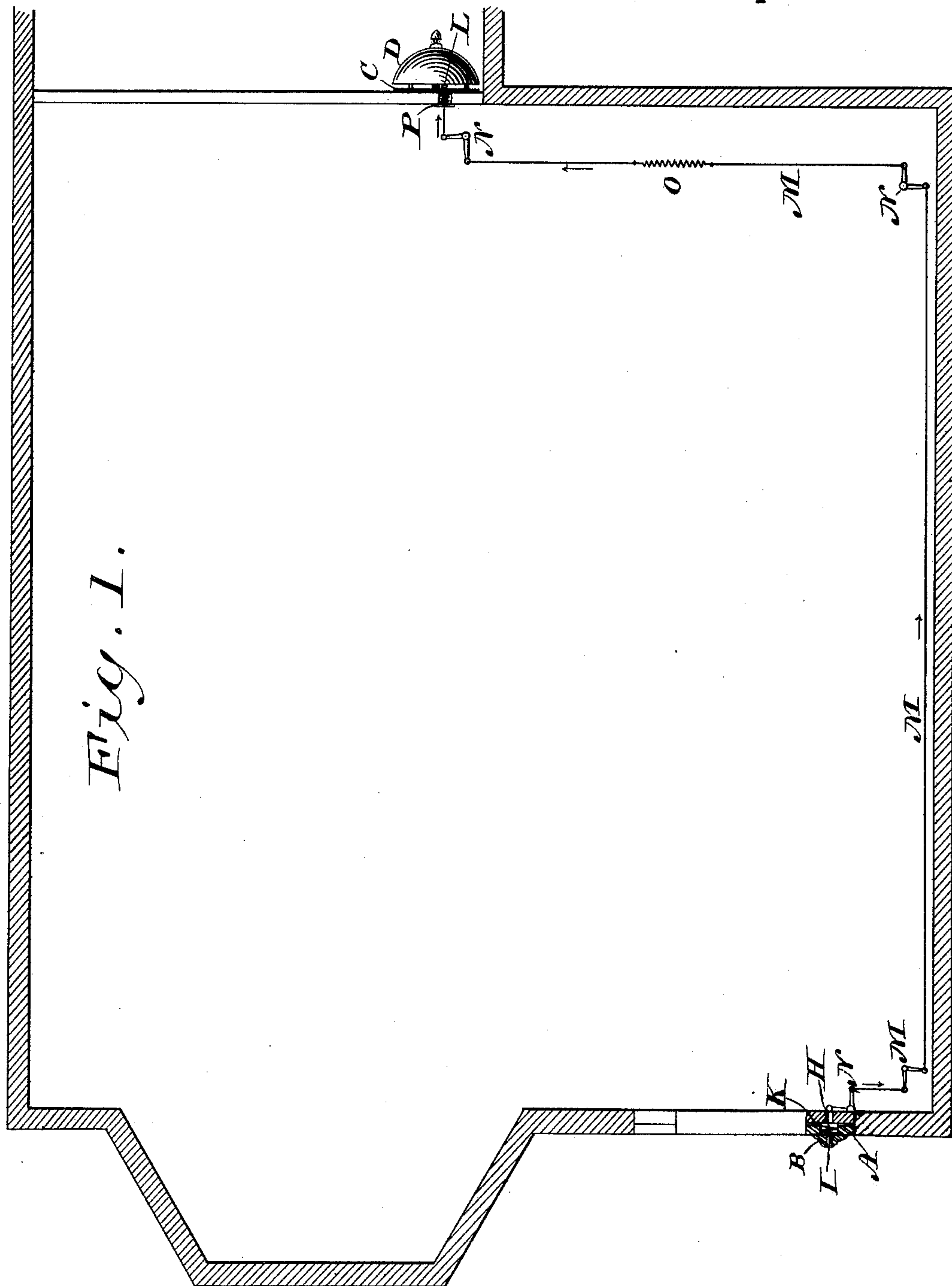
(No Model.)

2 Sheets—Sheet 1.

A. F. ROCKWELL.  
DOOR BELL.

No. 410,449.

Patented Sept. 3, 1889.



WITNESSES

*H. C. Newman,*  
*O. S. Newman.*

INVENTOR

*Albert F. Rockwell,*  
*By his Attorney*  
*Marcus S. Hopkins.*

(No Model.)

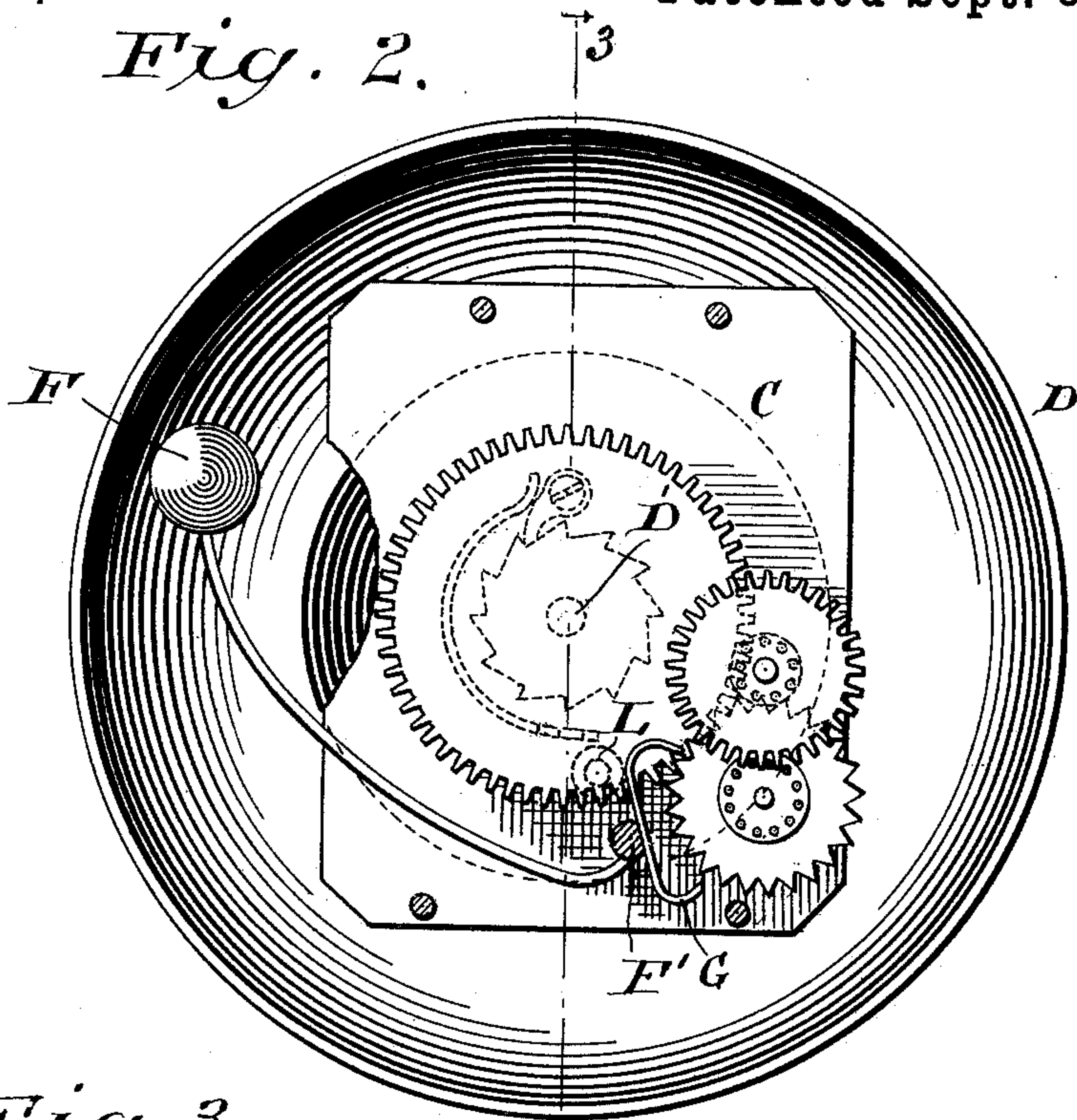
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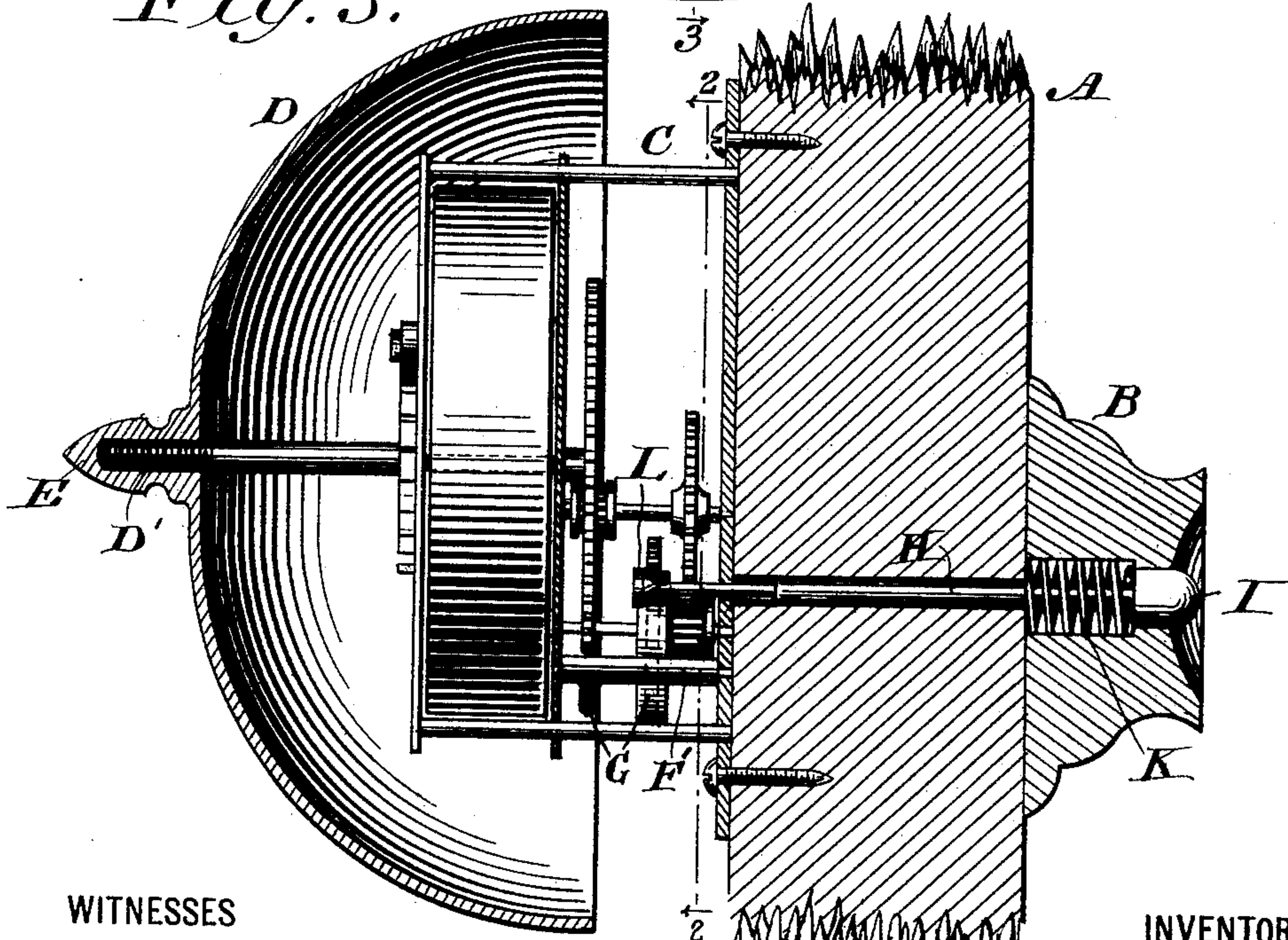
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*Fig. 2.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

ALBERT F. ROCKWELL, OF JACKSONVILLE, FLORIDA.

## DOOR-BELL.

SPECIFICATION forming part of Letters Patent No. 410,449, dated September 3, 1889.

Application filed June 20, 1888. Serial No. 277,624. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT F. ROCKWELL, of Jacksonville, in the county of Duval and State of Florida, have invented certain new and useful Improvements in Door-Bell Mechanism, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to produce a door-bell operated by mechanical means that shall be an exact imitation of an electric bell in appearance and sound; and my invention consists in certain improvements in door-bells of this class, which I will describe in detail and then succinctly specify in my claim.

In the accompanying drawings, illustrating my improvements, Figure 1 is a plan view of my improvements applied, showing bell-wires and bell-cranks, and the bell at a distance from the front door. Fig. 2 is a section on the line 2 2 of Fig. 3, and Fig. 3 is a section on the line 3 3 of Fig. 2.

Referring to the letters upon the drawings, A indicates, for example, a section of a door-frame upon which my improvements are applied.

B indicates an escutcheon of any ordinary kind secured to the outside of the frame.

C indicates a frame of clock-alarm mechanism, which may be of any ordinary or suitable kind, not necessary to describe in detail.

D indicates a bell, which is secured to an extension D' of the mainspring-arbor of the clock-alarm mechanism, so that the main-spring may be wound up by turning the bell.

E indicates an internally-screw-threaded projection upon the bell, by means of which it can be screwed to place upon the threaded extension of the mainspring-arbor D'.

F indicates the bell-strike, which is of ordinary character, pivoted, as shown, to the same pivot F' to which the tappet G is secured.

H indicates the push-rod provided with an ordinary button I, and with a retracting coiled spring K, all of usual construction.

L indicates a conical stop secured to the inner end of the push-rod and adjusted so as normally to bear against one end of the tappet, for the reason that the coiled spring operates to draw the stop into contact therewith.

The push-rod and button are preferably made circular, so as to readily turn. The result is that the conical stop will not always bear in the same part of its surface against the tappet, but will be turned more or less in use and can be turned specially at any time, so that wear of the stop will be on all sides of it, and it will therefore endure in practice much longer than otherwise.

By the use of this device it will be observed that but slight movement of the button and push-rod is required to cause the bell to be struck with a clattering stroke, like that of an electric bell. It will also be observed that the stroke will continue as long as the button is depressed and no longer, as in the case of an electric bell. It will also be observed that but slight force, merely that necessary to push the rod against the slight power of the coiled spring, is required to cause the bell to ring, the power directly acting to ring it being the clock-work.

To wind up the mainspring of the time mechanism, it is only necessary to turn the bell, so that a key is dispensed with.

It is necessary that the push-rod be connected either mediately or immediately with the alarm mechanism in such a manner that a push upon the button sufficient to overcome the resistance of the spring K and force the push-rod inward will result in releasing the alarm mechanism and setting in operation its train of gears, and strike by the force of the mainspring D'.

In Fig. 1, where the bell is shown as applied at a distance from the push-rod, M indicates a small bell-wire, and N the ordinary bell-crank levers.

As the movement to operate my device is but slight, the wire has to be carefully adjusted, and in order to provide for variations in tension, due to changes of temperature, I place a small steel-wire coiled spring O in the line-wire, which will yield slightly and compensate for any variations of tension in the wire after the original adjustment of it. In order to draw the wire toward the bell when the button is pushed inward, so that it may be so drawn, I provide a small coiled spring P, applied to the push-rod and of sufficient force to automatically engage and disengage



the stop with the tappet whenever the button is pushed inward or released. This spring P should be smaller and of less power than the button spring, so that the latter will overcome the force of the former, and so that the stop will engage with the tappet upon the removal of pressure upon the button. Thus my device may be made to operate as well at a distance as when the alarm mechanism is directly connected with the push-rod to which the button is applied, and it is a simple, economical, and complete imitation of an electric bell.

By my improvements, the ringing of the bell being limited in duration to the push upon the button, which is generally only instantaneous, it is found in practice that a single winding of an ordinary mainspring, by turning the bell or otherwise, will conserve force enough to ring the bell, as a rule, for a period of about six months. Therefore the alarm mechanism need only be wound, at the most, two or three times a year, as a rule.

Having thus described my improvements, what I claim, and desire to secure by Letters Patent of the United States, is—

In a door-bell mechanism secured within a building, the combination of a spring push-button to be operated from the outside, a bell-wire and bell-crank levers connecting the spring push-button with the alarm-bell mechanism, a push-rod provided with a retracting-spring and connected with the bell-wire, and a stop upon the inner end of the push-rod for engagement or disengagement with the tappet of the alarm mechanism, all arranged substantially as set forth.

In testimony of all which I have hereunto subscribed my name.

ALBERT F. ROCKWELL.

Witnesses:

MARCUS S. HOPKINS,  
C. P. ELWELL.