

(No Model.)

J. T. O'BRIEN.  
ELECTRIC BELL.

No. 587,062.

Patented July 27, 1897.

Fig. 1.

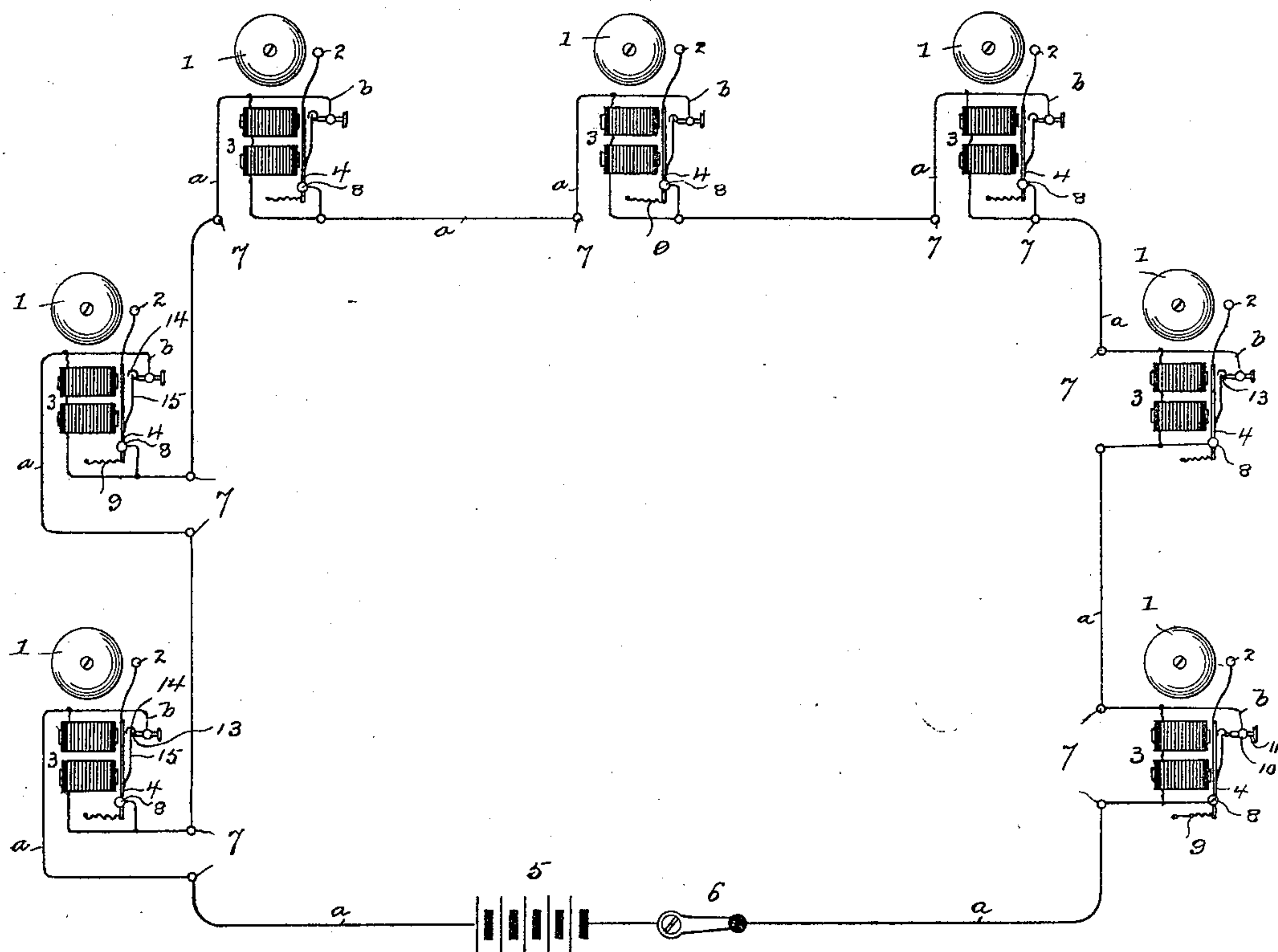
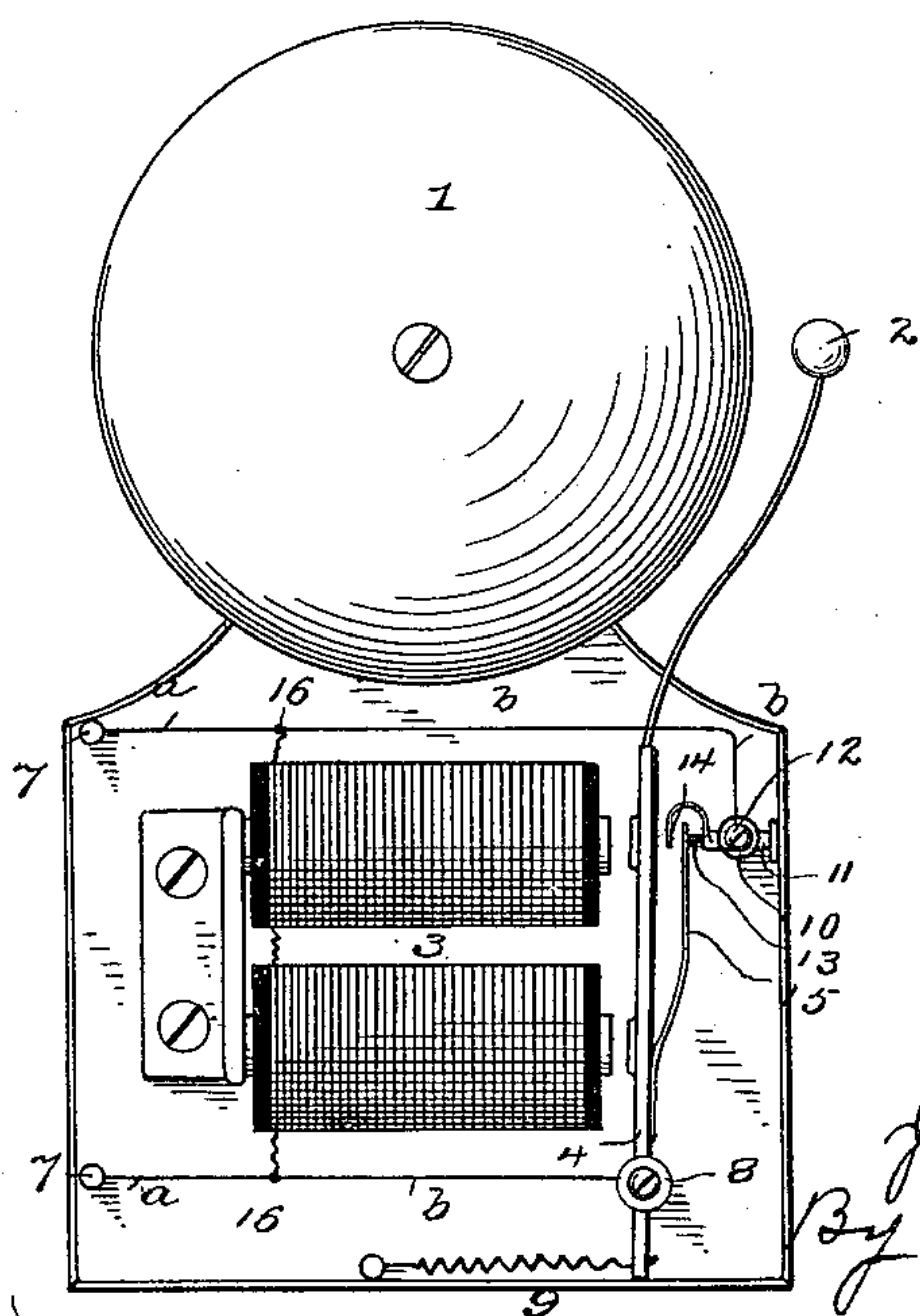


Fig. 2.



WITNESSES

H. F. Lamb.  
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# UNITED STATES PATENT OFFICE.

JOHN T. O'BRIEN, OF BRIDGEPORT, CONNECTICUT.

## ELECTRIC BELL.

SPECIFICATION forming part of Letters Patent No. 587,062, dated July 27, 1897.

Application filed April 13, 1897. Serial No. 631,930. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN T. O'BRIEN, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Electric Bells; 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 has for its object to provide an electric bell so constructed that when placed in series all the bells in the series may be rung simultaneously, and should anything interfere with the ringing of any of the bells no other bell in the series will be affected thereby—as, for example, should dirt accumulate between the contacts the closing of the main circuit, while it will not produce continuous ringing of this special bell, will cause a single blow to be struck and will thereby give a warning, no other bell in the circuit being in any way affected by the condition of the special bell which is not working perfectly. In order to accomplish this result, I have devised the novel electric bell of which the following description, in connection with the accompanying drawings, is a specification, reference-characters being used to designate the several parts.

In my novel bell there is no closing and opening of the main circuit to cause the ringing of the bell, but instead of a closing and opening of the main circuit to ring the bell this result is accomplished by the closing and opening of a shunt-circuit.

Figure 1 is a diagrammatic view illustrating a number of my novel electric bells in a circuit, and Fig. 2 is an enlarged view of one of the bells.

1 indicates the bells; 2, strikers; 3, electromagnets; 4, armatures by which the strikers are carried; 5, a battery or other source of electrical energy; 6, a switch; *a*, the main circuit; *b*, shunt-circuits, and 7 binding-posts. The armature is shown as pivoted on a post 8 and as controlled by a spring 9.

10 denotes a post having an opening in which a pin 11 is adapted to slide, said pin being locked in place after adjustment by a screw 12. The tip of this pin is provided

with a block of insulating material, as at 13, and with a contact 14, which I have shown as substantially U-shaped, the free end of this contact lying at a slight distance from the insulating material.

15 is a contact preferably a spring extending from the armature and the free end thereof lying between the insulating material and the free end of contact 14, said contact 15 lying normally in contact with the insulating material, as clearly shown in Fig. 2. The shape of contact 14 is of course not of the essence of my invention. It is simply necessary that contact 14 extend away from pin 11 back of the insulating material and be so shaped that the free end thereof may be readily engaged by contact 15. Should any adjustment of contact 15 be necessary to make the bell ring softer or louder, it may be readily effected by loosening screw 12 and moving pin 11, which carries contact 14 in or out, and then locking it in position after adjustment.

The operation will be readily understood from Fig. 2, which see in connection with the diagrammatic figure.

When the main circuit is closed, the current is through the electromagnet, and the armature is drawn to the poles, causing a blow of the striker upon the bell. The movement of the armature into contact with the poles of the magnet carries contact 15 away from the insulating-block and into engagement with contact 14, which closes the shunt-circuit *b*. The current now passes through the shunt-circuit instead of through the magnet and passes back into the main circuit again, as at 16. The instant the shunt-circuit is closed the armature drops away from the poles of the magnet and contact 15 passes out of engagement with contact 14 and rests against the block of insulating material, as in the drawings, which opens the shunt-circuit and again closes the main circuit, thereby causing another blow upon the bell. This shifting of the current from the main circuit to the shunt-circuit and back again to the main circuit will continue until the main circuit is opened, the ringing of all the bells in the series that are in operative condition being continuous and not being affected to the



slightest extent by bells not in operative condition, which will themselves ordinarily sound once each time the main circuit is closed.

Having thus described my invention, I  
5 claim—

1. The combination with a main circuit, a shunt-circuit, a bell and an electromagnet in the main circuit, of an armature in the shunt-circuit carrying a striker and a contact 15,  
10 and a pin 11 in the shunt-circuit carrying an insulating-block and a contact 14, said contact 15 being normally in contact with the insulating-block but being placed in engagement with contact 14 and thereby closing the  
15 shunt-circuit by the movement of the armature to the magnet which is caused by the closing of the main circuit.

2. In combination a main circuit, a shunt-circuit, a bell, an electromagnet in the main-circuit, an armature in the shunt-circuit carrying a striker and a contact 15 and an adjustable pin 11 in the shunt-circuit carrying  
20 an insulating-block and a contact 14, said contact 15 being normally in contact with the in-

25 sulating-block but being placed in engagement with contact 14 and thereby closing the shunt-circuit by the movement of the armature to the magnet which is caused by the closing of the main circuit.

3. The combination with a main circuit, 30 a shunt-circuit, a bell and an electromagnet in the main circuit, of an armature in the shunt-circuit which carries a striker, an adjustable pin in the shunt-circuit which carries an insulating-block and a U-shaped contact 35 14, and a contact 15 on the armature the free end of which normally engages the insulating-block and is adapted to be placed in engagement with contact 14 by the movement of the  
40 armature to the magnet when the main circuit is closed.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN T. O'BRIEN.

Witnesses:

A. M. WOOSTER,  
SUSAN V. HELEY.