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J. E. MURRAY.
BURGLAR ALARM.
APPLICATION FILED FEB. 1, 1907.

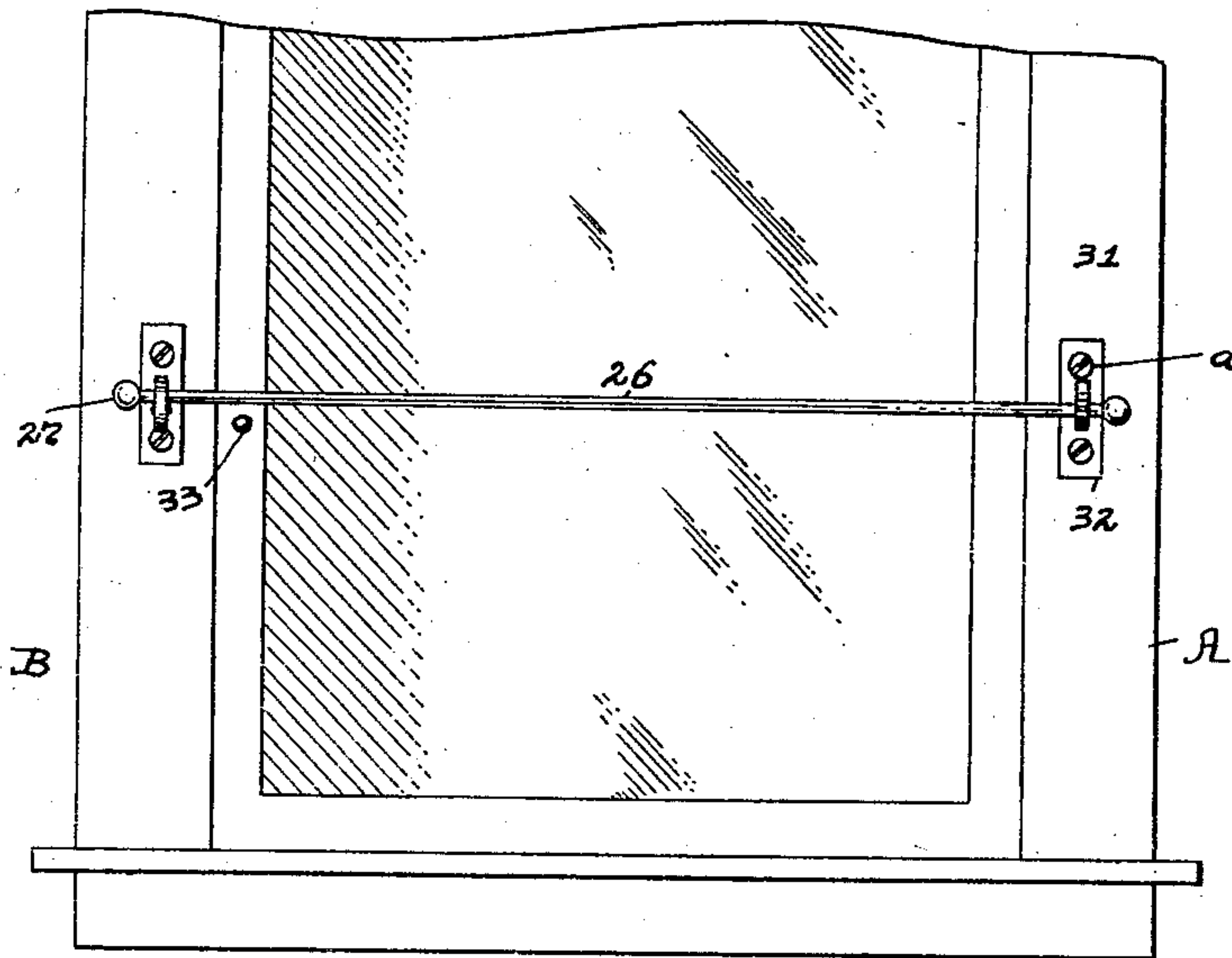


Fig. 1.

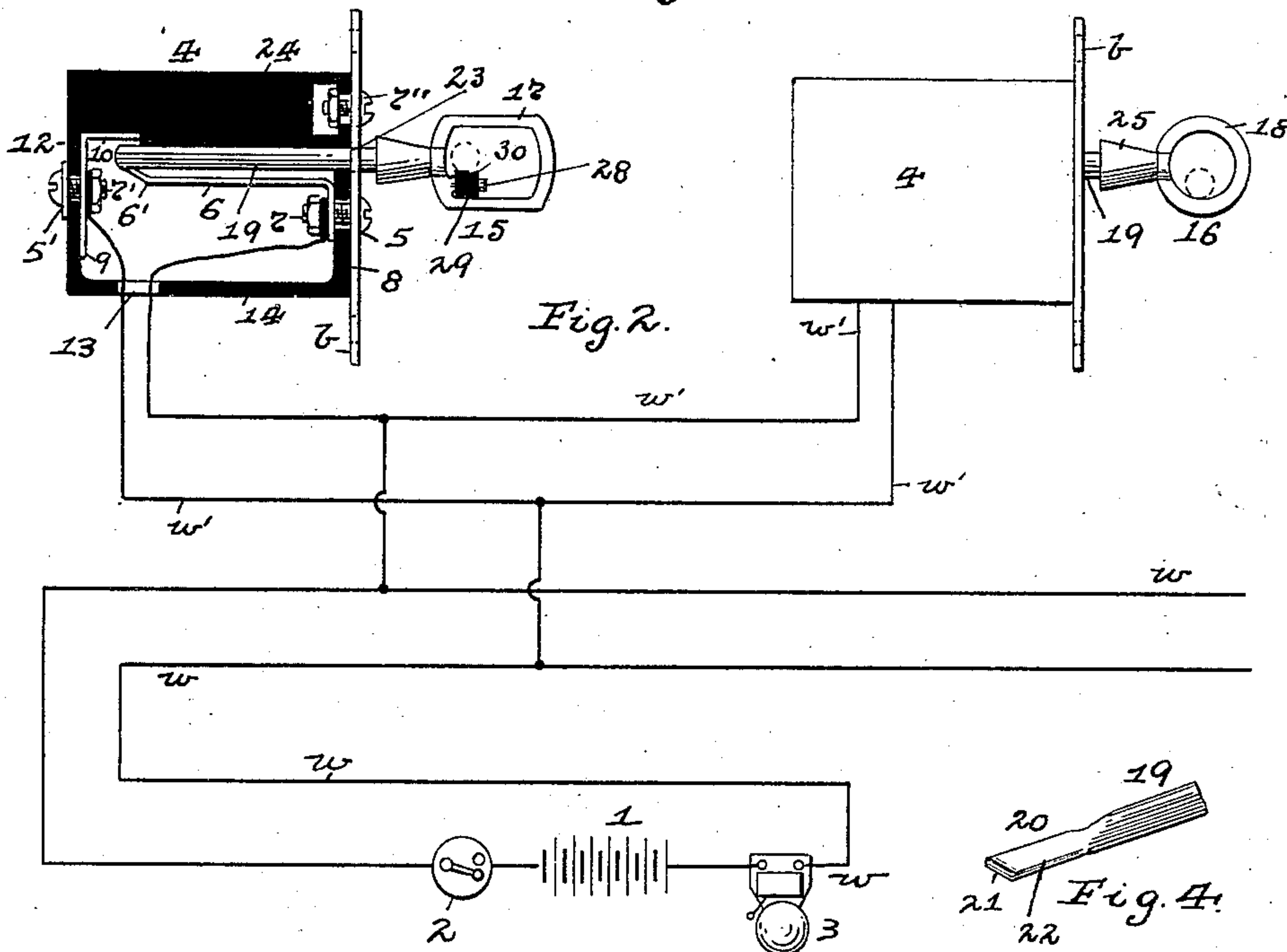


Fig. 2.

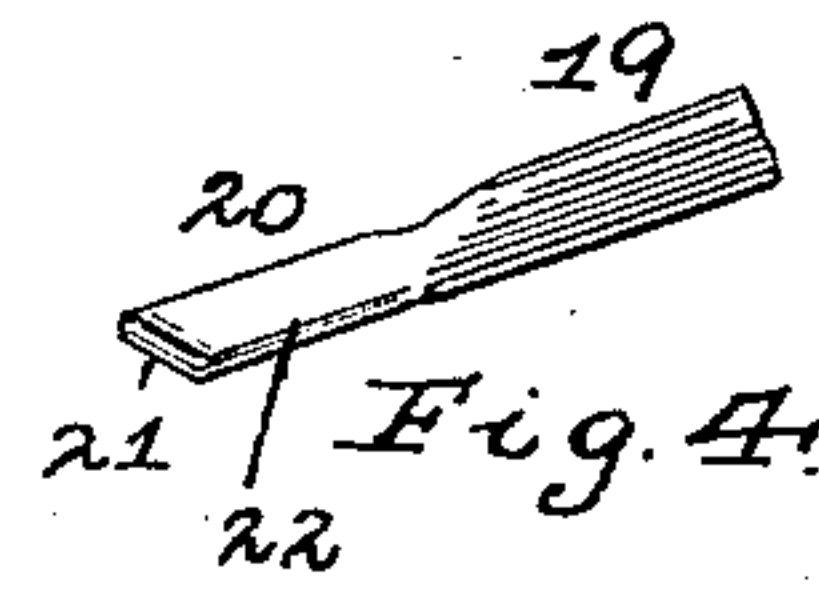


Fig. 4.

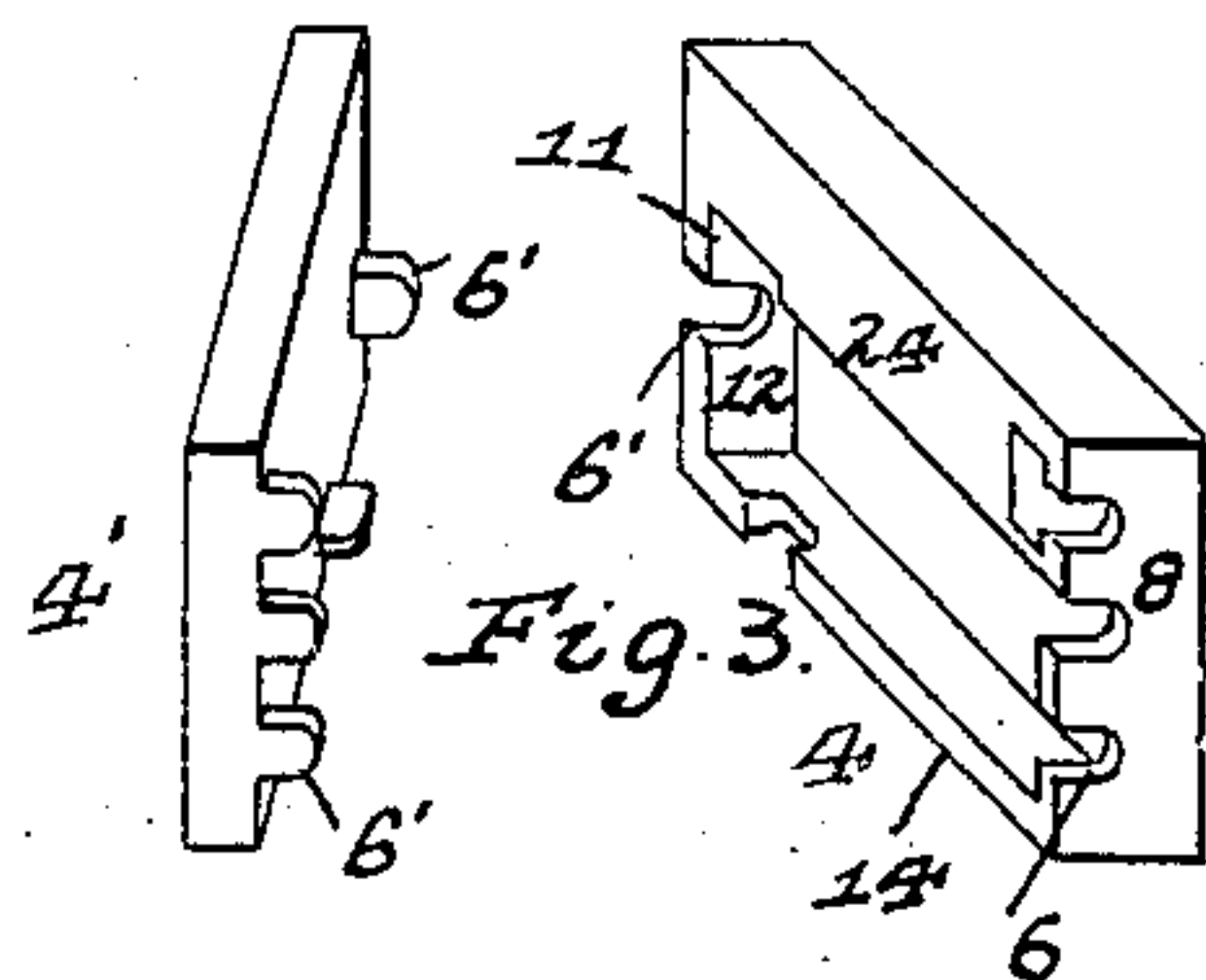


Fig. 3.

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BURGLAR-ALARM.

No. 879,568.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES E. MURRAY, a resident of Washington, in the county of Washington and State of Pennsylvania, have
5 invented a new and useful Improvement in Burglar-Alarms; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to burglar alarms,
10 and particularly to such form of alarm as is adapted to give notice of attempted entry to a building through the windows of the same.

The object of the invention is to provide a
15 cheap, simple and efficient form of burglar alarm which is operated by electricity, one which can be depended upon to give the alarm if tampered with and which will not present an unsightly appearance.

In the drawing, Figure 1 is a side view of a
20 portion of a window frame, showing my invention applied thereto. Fig. 2 is a view showing the cover removed from one of the boxes, and the electrical connections of the system. Fig. 3 is perspective view of one of
25 the contact boxes and its cover. Fig. 4 is a perspective view of the end portion of the pin of the contact box.

Like symbols of reference indicate like parts in each of the figures.

30 As illustrated in the drawing, A represents the frame of a window to which is applied my improved burglar alarm, consisting of the battery 1 which may be of any approved form, the switch 2, the alarm 3, and the con-
35 tact boxes 4 with their accessories hereinafter to be described.

The battery 1, switch 2, and bell 3, are connected in series, and have a pair of wires
40 *w* leading therefrom, to which, by means of the branch wires *w'*, are connected the terminals 6 and 9 of the contact boxes 4, said boxes being constructed of porcelain or other suitable insulating material and have the covers or lids 4' removably fitting thereon by
45 the tongue and groove joint shown in Fig. 3, and are secured to the frame A by screws passing through the plates *b* on said boxes and taking into said frame. The terminal 6, in the shape of a flat spring having a curved
50 end 6', is made of any suitable conducting material, and is held in place by means of the bolt 7 passing through the wall 8 of the box, while the body of the box is connected to the plate *b* by the bolts 7, 7". The con-
55 tact plate 9 has an angle portion 10 fitting in

a seat 11 in the box, and held in position by means of a bolt 7' passing through the end wall 12. The connections to the battery are made by the wires *w'* passing through the
60 hole 13 in the bottom 14 of the box, and the ends of said wires are secured to the contacts by means of the nuts on the bolts 7 and 7".

Pins 15, 16, consisting of the eyes 17 and 18 and the shanks 19 having a flattened end 20
65 thereon the plane of the body of said flattened end being in the same plane as the eyes, pass through holes 23 in the end wall 8 and plate *b*, and are guided by the bottom of the top wall 24 of the boxes. The shank 19
70 has a shoulder 25 thereon, which prevents the end 20 from extending to and making contact with the contact plate 9, while at the same time the end 20 will force the end 6' of the contact 6 out of engagement with the
75 angle portion 10 of the contact plate 9.

Extending between the pins 15 and 16 and through the eyes 17 and 18 thereof and loosely supported thereby, is the rod 26, consisting
80 of any suitable conducting material having suitable end pieces 27 on the ends for preventing the withdrawal of the rod from said eye-pins, and the said rod may also be provided with a shoulder or other suitable means
(not shown) at the inner side of said eye-pins to prevent the withdrawal of said rod should
85 the same be cut or broken. The rod 26 rests directly upon the eye 18 of one of said eye-pins, while the eye 17 of the other pin is provided with a lug or projection 28 extending
90 within the same which is faced with insulating material 29, having its upper surface slightly concaved, as at 30, so that the rod 26 will rest thereon and will not roll off unless disturbed.

The installation and connection of my im-
95 proved burglar alarm is as follows:—The battery 1 may be placed in any suitable place, as for instance in the cellar where it will be near the batteries used for the door-bell or
100 any other such service in the building. From the poles of the battery the wires *w* run to the switch 2 and bell 3. The bell and switch may be placed in series in one of the wires, and from there the wires *w*, by means of the
105 branch wires *w'*, will lead to any desired window frame A, which has one of the contact boxes 4 placed in each side of the same at an equal distance from the bottom, so that the rod 26 will be supported in the eyes 17 and 18
110 in a horizontal position. These boxes may

be placed in the window frame A so that the end walls 8 thereof will come even with the surface of the frame on the inside or outside, or they may be placed within the inside or outside casings 31 of the frame A and holes drilled through the same for the admission of the pins 15 and 16, and plates 32 may be set within the face of the boards 31 for the shoulder 25 of the said pins to rest against and thus prevent the end 20 of the pins 15 and 16 from coming in contact with the terminals 9 when the said pins are inserted. These plates 32 can be held in place by screws *a*, which also hold the boxes 4 within the frame A. It will thus be seen that the boxes may be so placed that the rod will be supported from either the inside or outside of the window as is desired, or is most convenient, and a number of rods may be employed. The two boxes being fixed in position in the window frame, may be connected electrically, as above described, by means of the pair of wires *w'* joining the terminals 6 of each of the boxes to the terminal 9 of the other box, and one of these wires is connected to one of the pair of wires *w* leading from the battery 1, while the second wire may be connected to the other of said wires leading from the battery.

The installation and connecting up of the system may be done at any time before the completion of the building, and all the wiring therefor may be concealed.

The alarm is put in condition for service by inserting the shanks 19 of the pins 15 and 16 into the holes 23 in the end-walls 8 of the boxes 4, and placing the end of the rod 26 on the insulation 29 of the eye 15. This prevents an electric circuit being completed through the rod 26. When the pins have been inserted until the shoulders 25 engage the outer face of the end wall 8 of the boxes, or with the plates 32 in the boards 31, the ends 20 of the pins will engage the springs 6, forcing their ends 6' out of engagement with the angle portions 10 of the contact plates 9. This breaks the circuit through the boxes 4, and the switch may now be closed, thus placing the system in operative condition.

It will be seen by the foregoing description, that when the switch 2 is closed the circuit is completed to the terminals 6 and 9 of the boxes. Hence in the following description of the working, it will be necessary to describe only what takes place at the window to make clear the conditions giving the alarm.

When the system is disturbed in any of the following ways, the bell will ring:—If, in attempting to obtain entrance through the window, the rod 26 is disturbed, owing to the very slight concavity of the surface of the insulation 29, it will readily roll off the said insulation and come in contact with the uninsulated portion of the eye 17 and the following circuit will be established, causing

the bell to sound:—From the wire connected to the terminal 6 of the box on the left-hand side of the window through said terminal to the shank 19, from the shank 19 to the eye 17 and from thence to the rod 26; through the rod 26 to the eye 18 of the pin in the other box, thence through the shank 19 of said pin to the terminal 6 of said box, completing the circuit. If, however, the disturbance be sufficient to withdraw either of the pins 15 and 16 but a short distance, or entirely, the circuit in the respective box, or parallel circuits through the two boxes should both pins be withdrawn, will be completed by the end 20 of the pin or pins being freed from engagement with the spring contact plate 6, thus allowing the end 6' to assume its normal position against the angle portion 10 of the contact plate 9. The bell will then ring. In case the rod 26 should be cut or broken and the pieces allowed to hang down, the pins 15 and 16 would be turned around until the eyes assume a horizontal position, in which event the ends 20 being flattened would be freed from engagement with the spring contact plate 6, and electrical connection would be set up between the terminals 6 and 9, as just described, and the bell would sound. It will thus be seen that the pair of wires *w* may be extended so as to include all the windows of a building and similar operating mechanism at each window may be connected across the wires, thus placing the operating mechanisms at the various windows in multiple, and a single cell or set of cells will operate the whole system, while at the same time a faulty connection or other defect at any of the windows would not hinder the working of the system at any of the other windows, as would be the case were the alarms at the various windows connected in series. A removable pin 33 in the sash will engage the bar 26 to operate the device should the sash be raised.

It will be obvious that the device can be applied to doors and other places, and that various changes in the construction, form, and material of the parts may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

I claim:—

1. In combination with a window or other like frame, an alarm system comprising a battery, a switch, an alarm, a contact box on each side of said frame, a pair of contacts in each of said boxes, a pin separating each pair of contacts, and means engaging said pins and adapted to positively operate one or both of the same for closing the alarm circuit and sounding the alarm, substantially as described.

2. In combination with a window or other like frame, an alarm system comprising a battery, a switch, an alarm, a pair of contacts on each side of said frame, pins for engaging with

one of the contacts of each pair, one of said pins having an insulated portion, and circuit-completing means extending between and engaging with one of said pins and the insulated portion of the other and adapted when displaced from said insulated portion to close the alarm circuit and sound the alarm, substantially as described.

3. In combination with a window or other like frame, an alarm system comprising a battery, a switch, an alarm, a contact box on each side of the window frame, a pin in each of said boxes engaging one of the contacts thereof, one of which pins has an insulated portion, and a circuit completing rod extending between the pins and engaging one of the same and the insulated portion of the other and adapted when displaced from said insulated portion to close the alarm circuit and sound the alarm; substantially as described.

4. In combination with a window or other like frame, an alarm system comprising a battery, a switch, an alarm, a contact box on each side of the window frame, a pin in each of said boxes for engaging with one of the contacts thereof, said pins having eyes at their end, one of said eyes having an insulated portion, and a circuit-completing rod extending between said eyes and engaging one of said eyes and the insulated portion of the other eye, and adapted when displaced from said insulated portion to close the alarm

circuit and sound the alarm; substantially as described.

5. In combination with a window or other like frame, an alarm system comprising a battery, a switch, an alarm, a pair of contacts, a pin having a flattened end and adapted in one position to prevent the said contacts from engaging with each other and when slightly rotated to permit engagement thereof, and means for rotating said pins; substantially as described.

6. In combination with a window or other like frame, an alarm system comprising a battery, a switch, an alarm, a contact box on each side of the window frame, a pin in each of said boxes having a flattened end adapted in one position to prevent the contacts from engaging with each other and when slightly rotated to permit engagement thereof, each of said pins having an eye at its outer end, and a circuit-completing rod extending between said pins and within said eyes, which rod when severed will drop at each end and impart a rotary movement to said pins, substantially as described.

In testimony whereof, I the said JAMES E. MURRAY have hereunto set my hand.

JAMES E. MURRAY.

Witnesses:

J. N. COOKE,
WM. R. McCOMMON.