Sheet 1-3 Sheets.

J. N. Wells.

Burglar Alarm.

No. 94,929. Patented Sept. 14, 1869.

Fig. 1

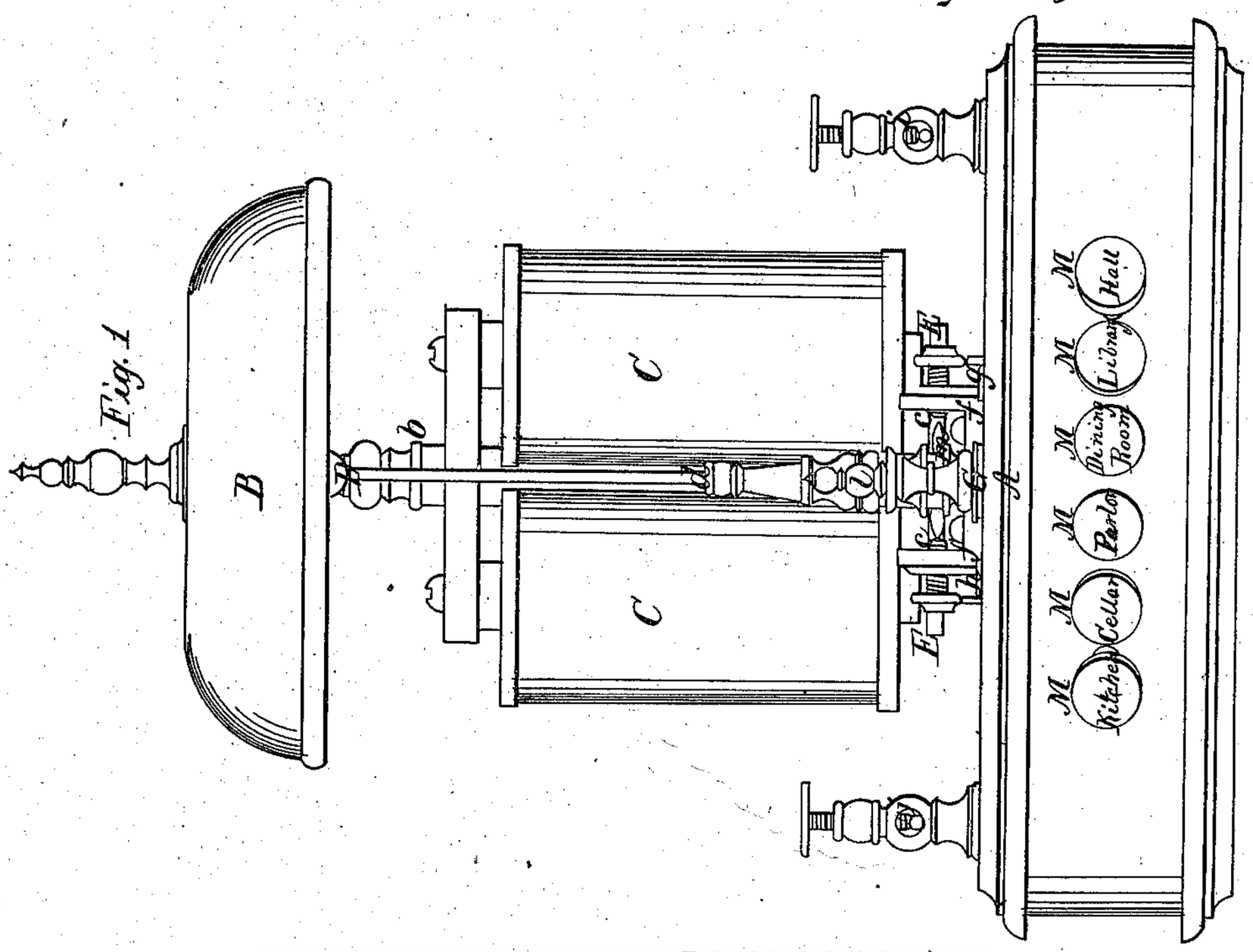
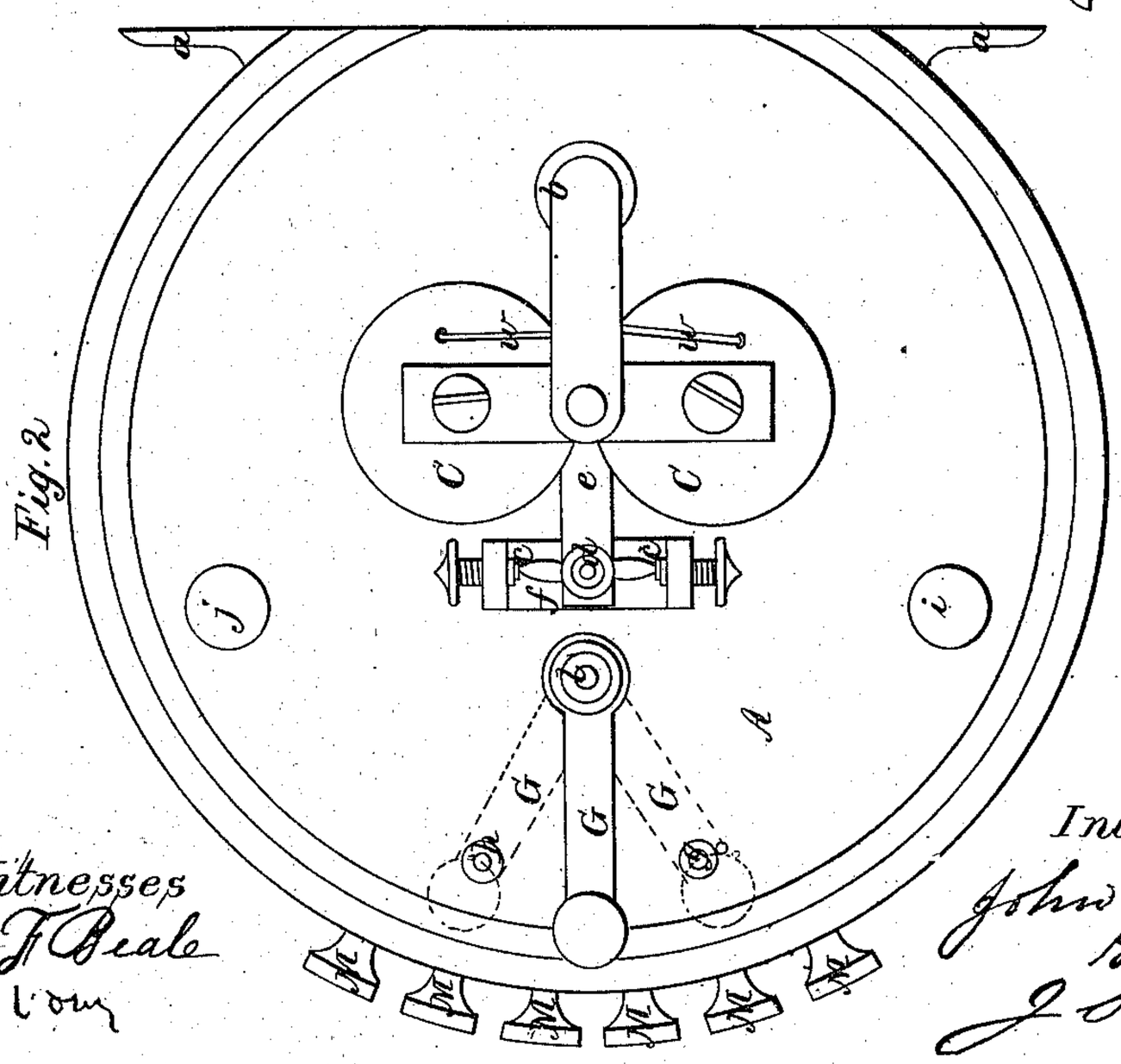


Fig. 2



Witnesses
J. F. Beale
1 Lowy

Inventor
John N. Wells
By his atty
J. J. Brown

THE NORRIS PETERS CO., WASHINGTON, D. C.

Sheet 2 - 3 Sheets.

J. N. Wells.

Burglar Alarm.

No. 94,929. Patented Sept. 14, 1869.

Fig. 5

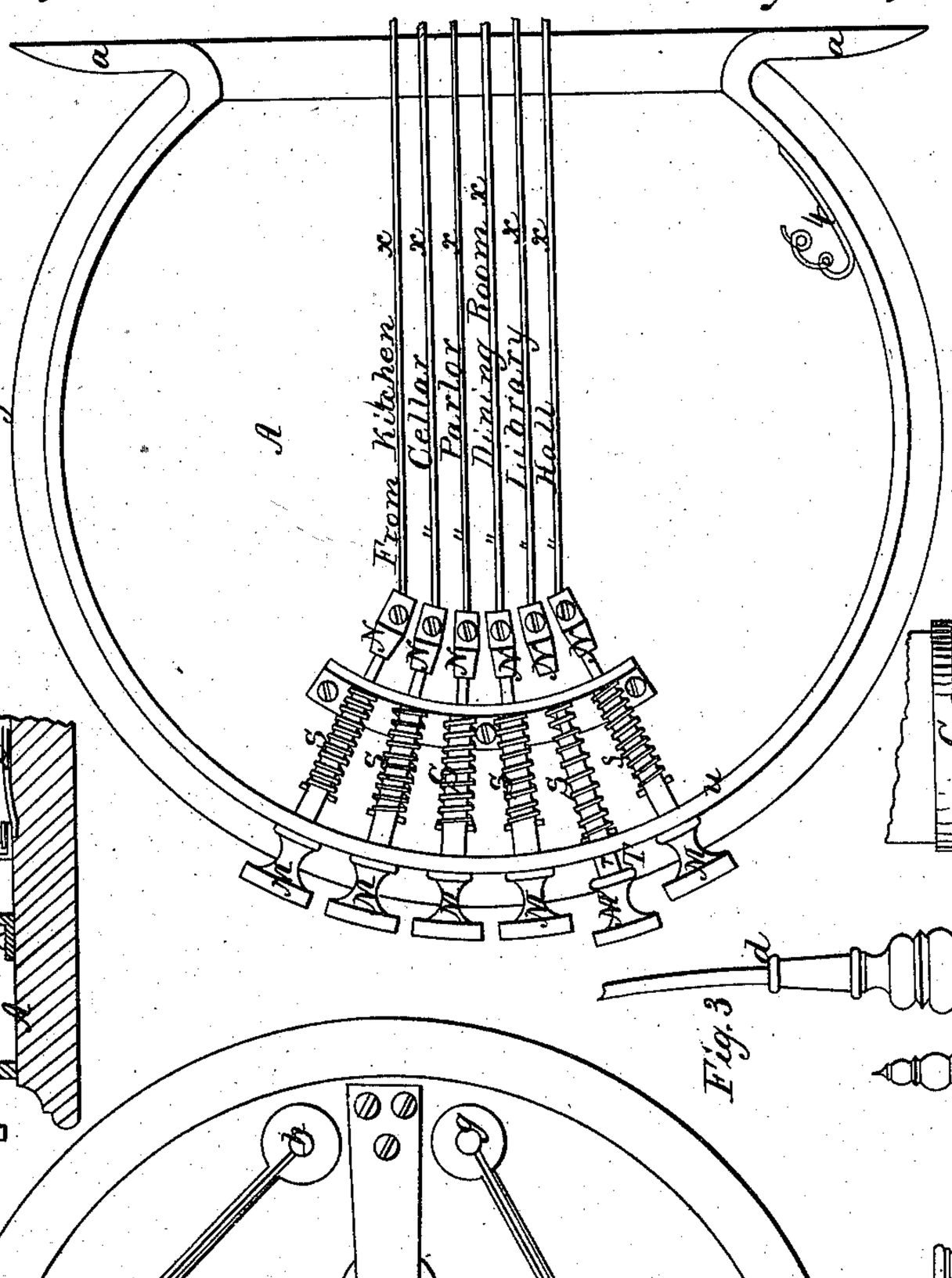


Fig. 6

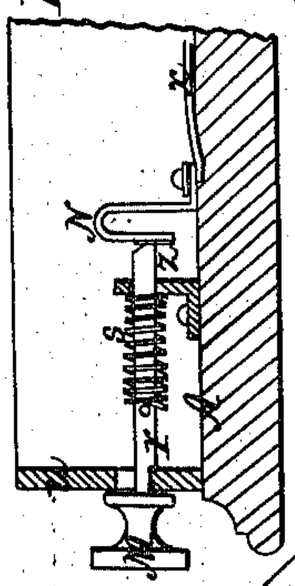
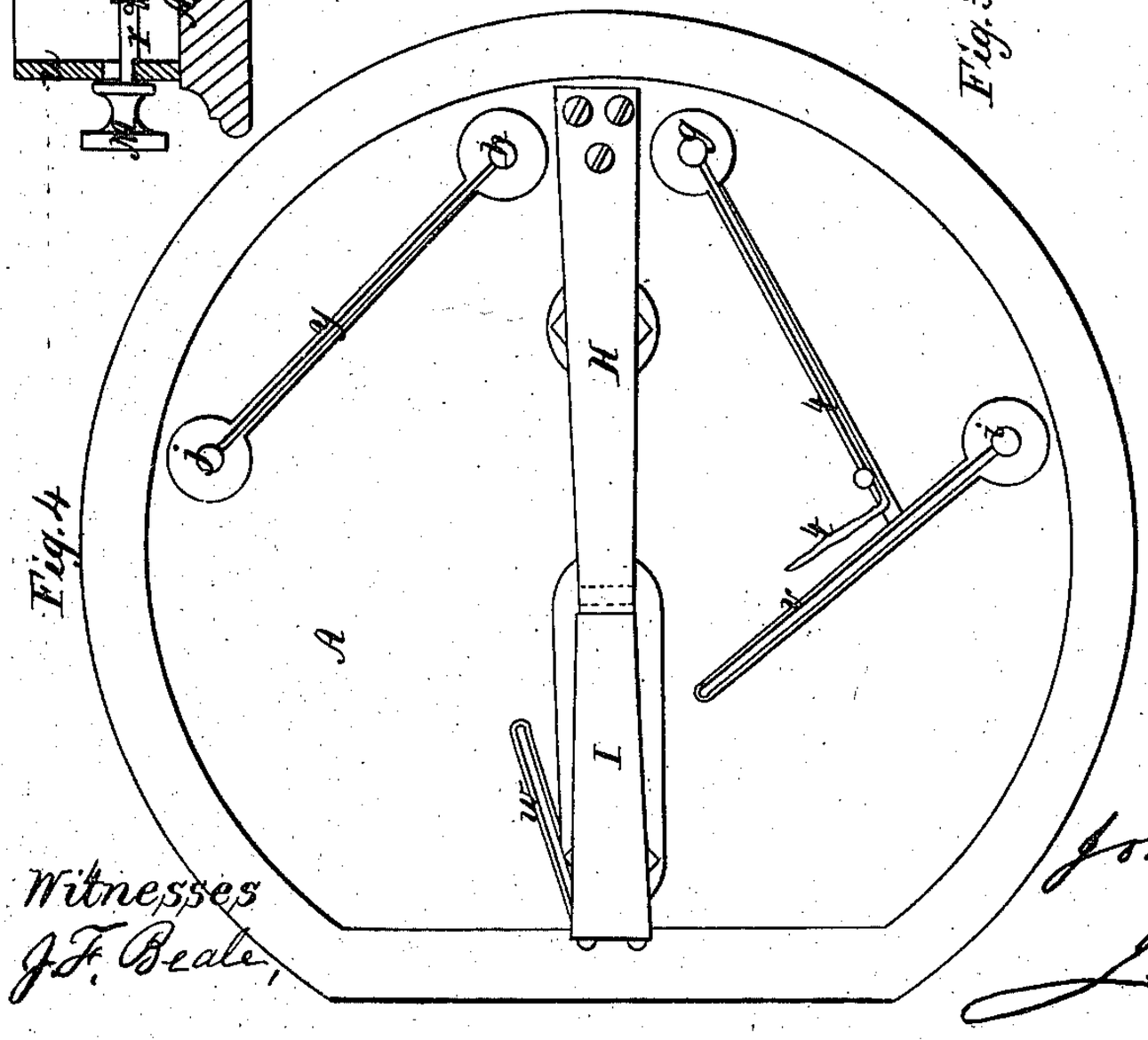


Fig. 3

Fig. 4



Witnesses
J. F. Beale,

Inventor
John N. Wells.
By his atty,
L. S. Brown.

THE NORRIS PETERS CO., WASHINGTON, D. C.

Sheet 3 - 3 Sheets.

J. N. Wells.

Burglar Alarm.

No. 94,929. Patented Sept. 14, 1869.

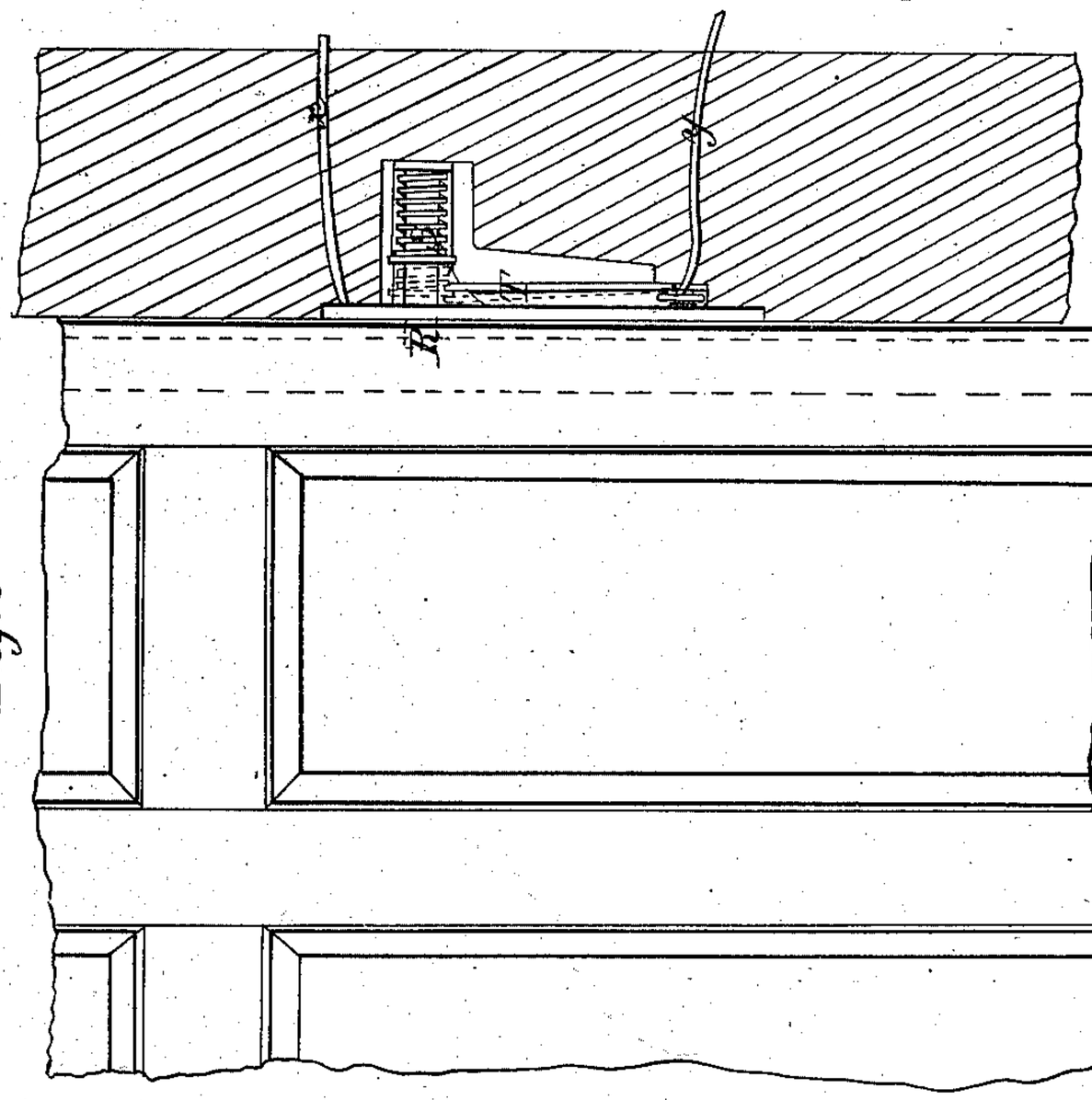


Fig. 8

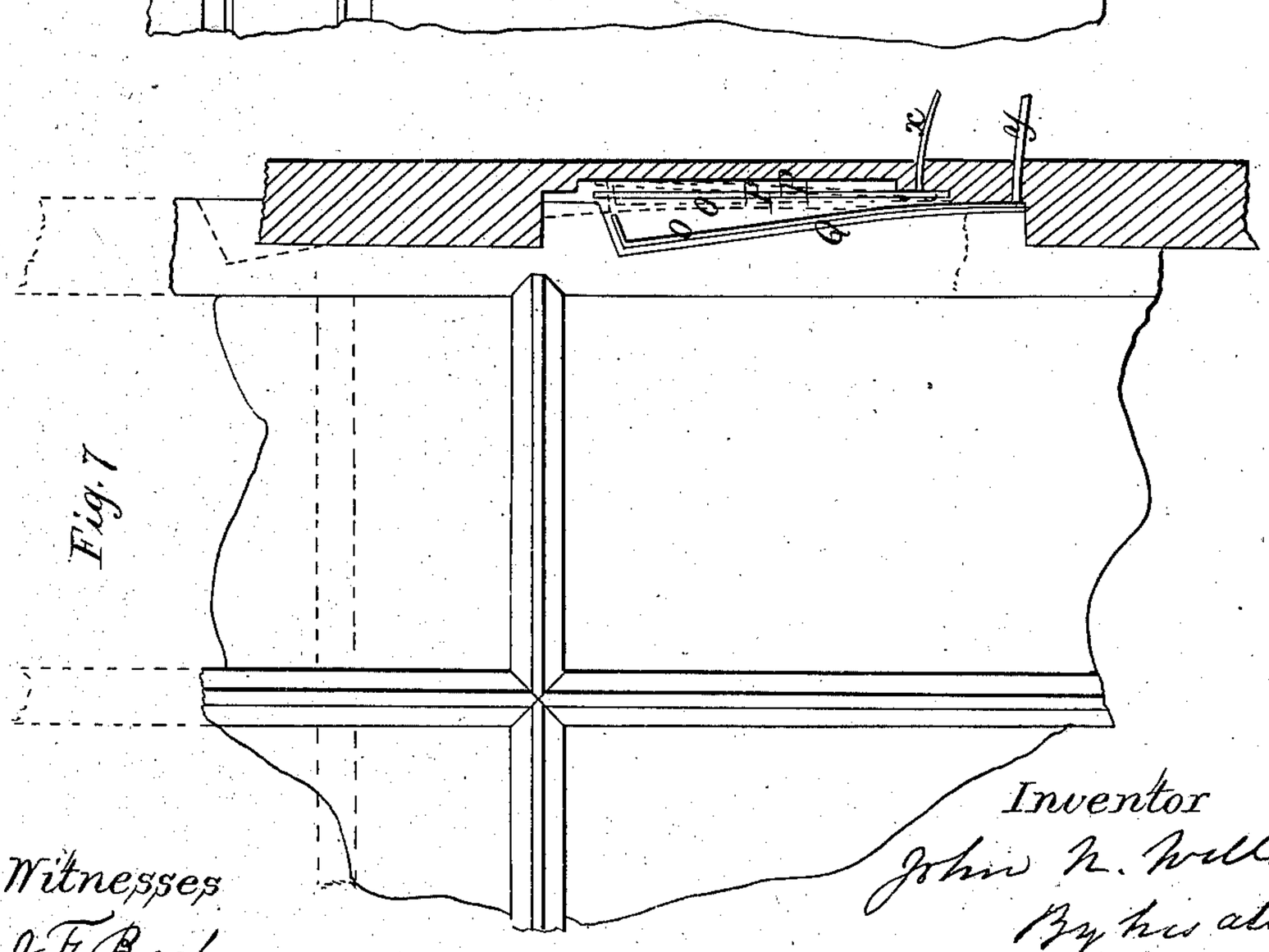


Fig. 7

Witnesses
J. F. Beale
Wm

Inventor
John N. Wells,
By his atty
L. L. Brown

THE NORRIS PETERS CO., WASHINGTON, D. C.

United States Patent Office.

JOHN N. WELLS, OF BROOKLYN, NEW YORK, ASSIGNOR TO HIMSELF, JOHN S. HULL, AND JEROME B. BRYANT, OF CINCINNATI, OHIO.

Letters Patent No. 94,929, *dated September* 14, 1869.

IMPROVEMENT IN BURGLAR-ALARMS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, JOHN N. WELLS, of Brooklyn, in the county of Kings, and State of New York, have invented an Improved Electro-Magnetic Burglar-Alarm; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a front elevation of the alarm.

Figure 2, a plan of the same, the bell being removed, to show the parts underneath.

Figure 3, a partial central vertical section thereof, in a plane cutting from front to back.

Figure 4 a view of the under side of the cap or cover of the hollow base or stand on which the instrument rests.

Figure 5, an inside view of the base or stand, looking down upon the base or bottom thereof.

Figure 6, a partial vertical section of the same.

Figure 7, a view showing the construction of a window-attachment for the alarm.

Figure 8, a view showing the construction of a door-attachment for the alarm.

Like letters designate corresponding parts in all of the figures.

The whole alarm-apparatus, including the bell B, magnets C C, bell-hammer D, armature E, key G, and their appendages, the indicating-device, the terminations of the several wires and their connections, is mounted on and in a stand or base, A, which is generally attached, by screw-flanches, *a a*, to the wall of the sleeping-room, in a convenient position for observation.

The magnets C C are supported in an upright position, and the bell B in a position over them, by a suitable standard, *b*.

The hammer-handle *d* is located in front of the magnet, and, together with the vibratory arm *e*, of the armature E, under the magnets, forms a right-angled or bent lever, turning on pivot-points, *c c*, in a bearing block, *f*, substantially as represented.

This lever is so constructed and arranged that, when the electric current is passing through the magnet-coils, the armature E will be lifted by the magnet; but when the current ceases to flow, the armature will drop by its own weight.

When the circuit is broken, and the armature drops, its arm, *e*, or a projection, *g*, thereon, rests on a spring seat, L, fig. 3, which requires to be adjusted in position, so that the armature will drop just as far, only, from the magnet as to produce a proper vibration of the bell-hammer, and keep the armature within the proper influence of the magnets.

This I effect by means of an elastic support or spring, I, and an elastic or spring-adjusting arm, H; the two being situated beneath the base-top A, and so arranged that the free end of one bears upon that of the other, substantially as shown.

An adjusting-screw, *l*, bears upon the spring-arm H, by turning which screw down, the arm H, and consequently the support I, are depressed, thus lowering the armature-seat L; but, on raising the screw, the support I springs back by its own elasticity, and raises the armature-seat.

The adjusting-screw *l* is located in a convenient position in the front part of the base.

A tightening-nut, *m*, on the adjusting-screw, serves to retain it in its position when properly adjusted.

The adjusting-screw *l* or its female socket, *p*, the arm *e* of the armature, the spring-seat L, and its support I, form parts of the electric circuit which passes through the magnet-coils, beginning at the wire *w*, fig. 4.

The moment the arm *e* or its projection, *g*, drops and touches the seat L, the circuit is closed, and the electric current renders the magnets attractive, and the armature E is raised thereby. This movement disconnects the projection *g* from the spring-seat L, and breaks the circuit; and the magnets thereby ceasing their action, the armature drops and again closes the circuit. Thus, by the alternate automatic closing and breaking of the circuit at the spring-seat L, the bell is rung.

The switch-key or circuit-connecter G, I have pivoted around the screw-socket *p*.

The usual mode of connecting the key with the hammer-lever or its armature-arm has been through its bearings and pivot-points, *c c;* but, since these pivots should be kept oiled, the oil is apt to stop the electric current. I form the connection by a coiled wire, *n*, reaching from the key-bearing or socket *p* to the lever, as shown in fig. 3.

One end may be clamped under the nut *o*, which holds the socket *p* in place.

This coiled wire will yield to the motions of the lever, and not interfere therewith, and never fails to keep the circuit complete.

An ivory or other non-conducting tip, *k*, terminates the adjusting-screw *l* in this arrangement, in order that the electric current may not pass directly to the parts H and I.

The other end, *e*, fig. 4, of the magnet-coil wire terminates at a screw-clamp, *i*, from which the return-wire extends to the battery.

The metallic connecting-point or tip, by which the other pole of the battery connects with the magnets, projects upward through the base, at *g*, in such a position that the key G may be readily swung round in contact with it, as indicated by red lines in fig. 2, and thereby form the circuit-connection, should the open-

ing of any window or door in connection with the instrument, complete the circuit, this connection being made always at night on retiring.

In the day time the key is turned off, as shown in black lines in the same figure, that the alarm may not sound.

The test-wire terminates at *h*, on the other side of the key, which is only brought in contact therewith when it is desired to ascertain if the instrument is in working order.

It connects, by the wire *y*, fig. 4, with the clamp-screw *j*, whence a wire extends to the battery.

The wires *x x*, from the several rooms which have separate connections with the instrument, as the "kitchen," "cellar," "parlor," "dining-room," "library," and "hall," indicated in the drawings, all terminate inside of the base A, as shown in fig. 5. They are, of course, all insulated from each other and from the key-connection *g*, except through the indicating-device, which I construct and arrange substantially as follows:

I make the periphery *u* of the base A of metal or other conducting material, while the top and bottom are made of dry wood or other non-conducting material. Thus its peripheral band may form part of the circuit; and it is connected with the key-point *g* by a wire, *t*, figs. 4 and 5, or equivalent means.

Through this band, in regular positions side by side, extend the shafts of the several indicating-knobs M M, corresponding in name and position with the room-wires *x x*, the inner ends of the shafts being supported by another bearing, as shown.

When these knobs are pushed in as far as they can go, their inner ends come in contact with the respective spring-clamps N N, which secure the said wires *x x* in place, and thus the circuit is rendered complete through the metallic band *u;* but, when the knob is drawn out, (as the one connected with the library-wire, in fig. 5,) the circuit through that wire is broken.

When the knobs are pushed in, they are held there by a notch, *r*, fig. 6, in the under side of each shaft; and, when released therefrom, the knobs are forced out automatically by springs *s s*, on their respective shafts, as shown. Thus, on forcing in the knobs, (which is to be done at night, in setting the instrument for action,) they are slightly depressed, and are then held in place by their notches *r r;* and, on slightly raising the knobs, the springs act to force them out and break the connection. Hence, should an alarm be sounded, all that is required is to lift the knobs M M, successively, till the ringing stops, and the last knob sprung out indicates the room where the burglar is operating.

Since the simple bearing of the knob-shafts against the wire-clamps or connections N N will not insure a bright metallic surface at the points of contact at all times, if of corrosive metal, I tip the ends of the shafts and the surfaces of the connections with platinum, as at *z*, fig. 6. Other points and surfaces of contact may be similarly protected.

The improved window-attachment, as shown in fig. 7, consists of a spring-plate, O, attached to the casing at its lower end, where one wire, *y*, is connected with it, and another spring-plate, P, insulated from the plate O, and also attached to the casing at one end, where the other wire is attached to it.

When the window is down or closed, the free end of the plate O springs away into a cam-shaped recess, Q, in the edge of the sash, and does not touch the plate P; but when the window is raised, the cam-shaped bottom of the recess Q forces the plate O back till its upper end, which bends outward, touches the plate P, and closes the circuit, whereby the alarm is sounded.

For the upper sash the positions of these plates are reversed, being then attached to the casing at their upper ends; and the cam-recess Q, in the sash, acts in the other direction.

The improved door-attachment, as shown in fig. 8, has a sliding-bolt, R, in a suitable bracket or case, attached to the door-jamb, with which bolt or its case one wire, *x*, is connected.

It bears one connecting-plate, S, while a spring-plate, T, insulated therefrom, is attached to the door-jamb with the other wire, *y*.

The bolt R is forced out, so as to project beyond its bracket and form the connection between the plates S and T, by a coiled spring, when the door is opened a very little; but when the door is closed, it pushes in the bolt R, and keeps the circuit broken.

Both of these attachments make a strong, secure, and never-failing connection, and are not liable to get out of order.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The adjustable spring-seat L, for the armature E, substantially as herein specified.

2. Also, the arrangement of the adjusting-support I, arm H, screw *l*, and of the key G, in connection therewith, as set forth.

3. Also, the coiled wire *n*, to connect the key with the hammer and armature-lever, for the purpose specified.

4. Also, making the peripheral band *u* of the base A, part of the circuit, as herein specified.

5. Also, the construction and arrangement of the indicating-knobs M M, with notched shafts or equivalent thereof, the springs *s s*, and spring-clamp connections N N, together constituting the indicating-device, substantially as herein specified.

6. Also, placing the indicator upon, or attaching it to the same base A that supports the magnets and bell.

The above specification of my improved burglar-alarm signed by me, this 11th day of February, 1869.

JOHN N. WELLS.

Witnesses:

E. H. WINCHESTER,

JOHN S. HULL.