

No. 665,848.

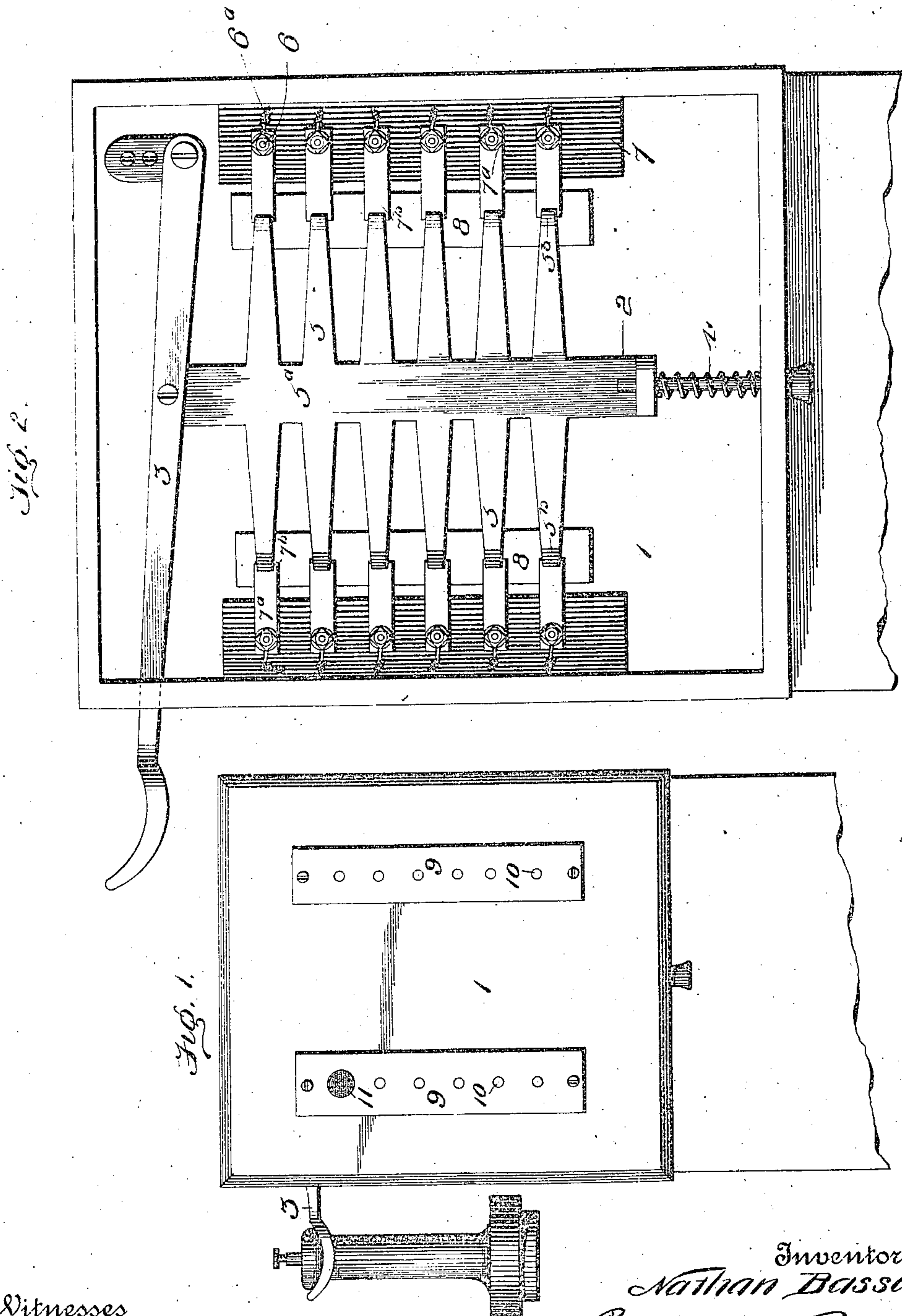
Patented Jan. 8, 1901.

N. BASSETT.
TELEPHONE SWITCH.

(Application filed May 3, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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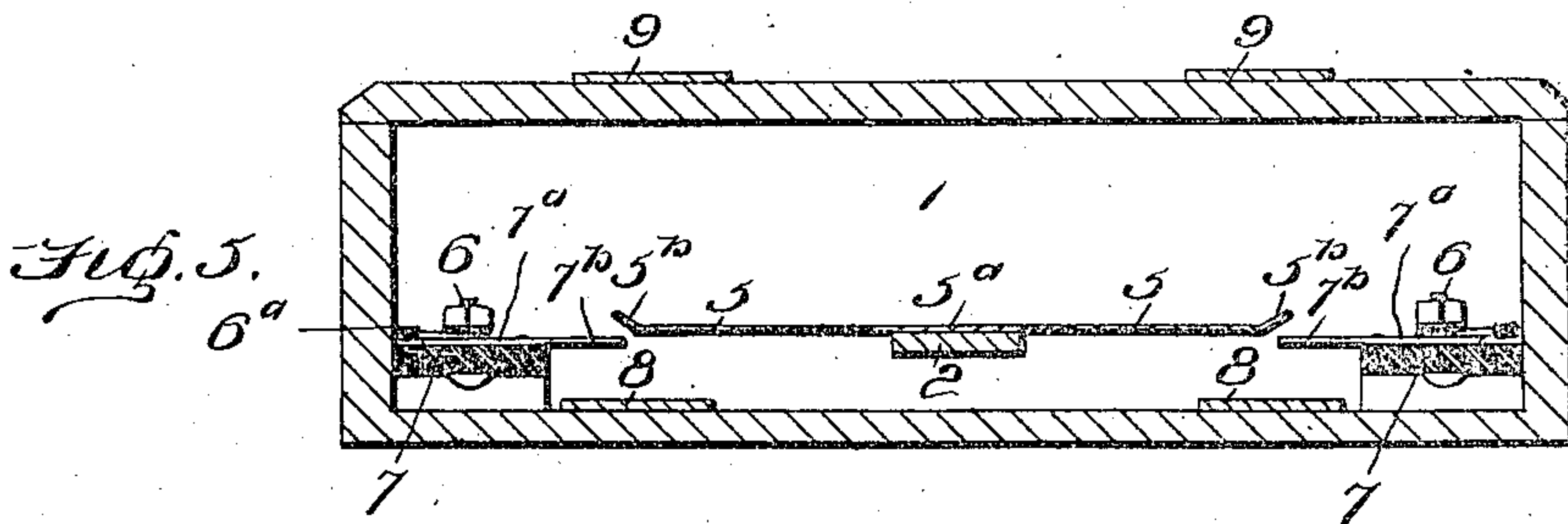
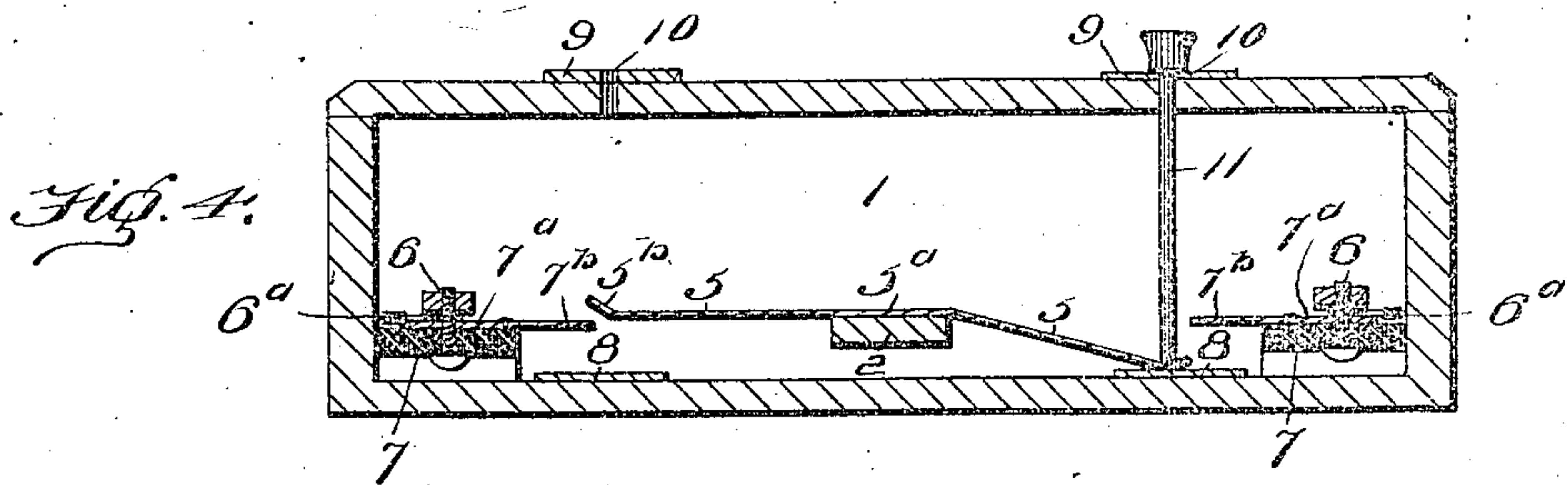
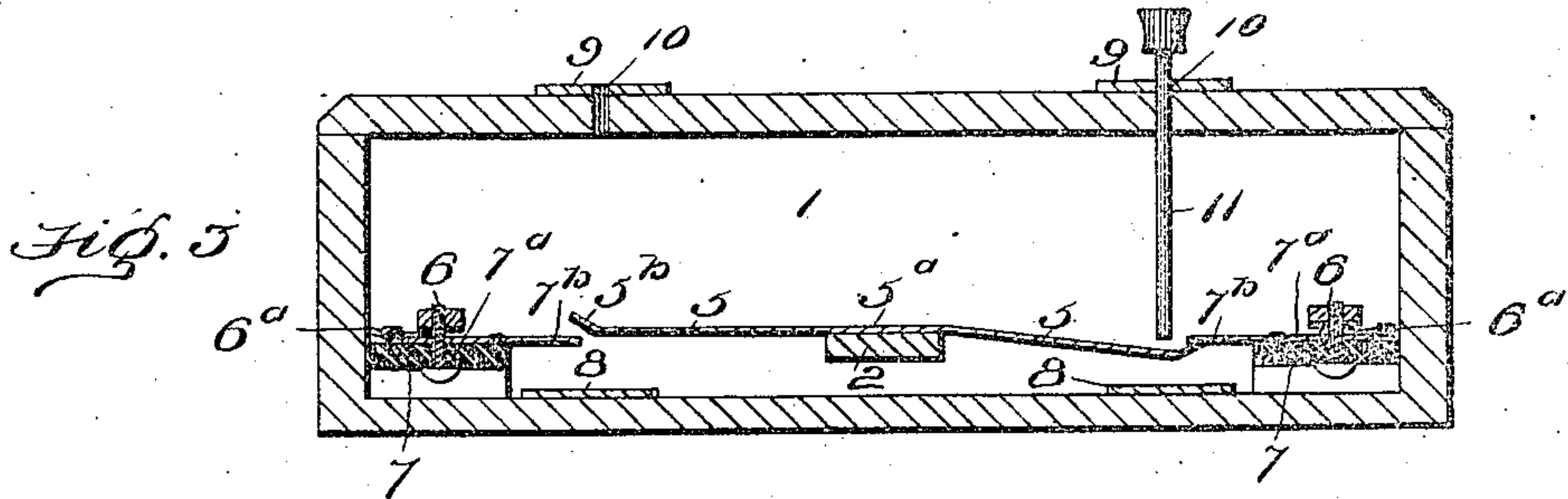
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Witnesses
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UNITED STATES PATENT OFFICE.

NATHAN BASSETT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE GLOBE TELEPHONE MANUFACTURING COMPANY, OF SAME PLACE.

TELEPHONE-SWITCH.

SPECIFICATION forming part of Letters Patent No. 665,348, dated January 8, 1901.

Application filed May 3, 1900. Serial No. 15,388. (No model.)

To all whom it may concern:

Be it known that I, NATHAN BASSETT, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Electrical Switches; 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 relates to improvements in electrical switches more especially designed for telephones.

It has for its object more especially to provide against the accidental or unintentional leaving open of the circuit by failure of the user to return or replace the switch-lever to the initial position or contact, as practiced in some forms of this class of appliances or apparatus, as often happens, or even where a spring is used to restore the switch-lever to its initial or original position this objection is not wholly overcome, since the spring is subject to relaxation, and consequently measurably loses its tension, and the switch-lever is liable to become clogged or "stuck" in the sweep of its movement when released by the hand after use. In addition to remedying the aforesaid pointed-out difficulties my invention is also positive and direct in its action and is not involved in the arrangement of the many or numerous circuit or contact wires employed in devices of this kind. It is also adapted for throwing or bringing into circuit a number or plurality of wire-contacts for use simultaneously to provide for speaking to a number of persons at one using of the telephone. It also provides for readily bringing into requisition the bell-circuit and to use the telephone-circuit contacts in connection with the bell-circuit. It also provides for utilizing to the maximum the capacity of the circuit maker and breaker, whereby a multiplicity of circuit-contacts is arranged within a proportionately or comparatively small space or compass. It also insures quick responsive action between the contacts of the various circuit-wires in closing the circuits and provides for the ready throwing out of circuit said contacts after using the telephone.

It is also adapted to prevent the establishment or closing of the telephone-circuit by the manipulation of the initial or push-pin contact after the using of the telephone or while the receiver is hung or suspended upon the telephone; also, to equally provide for the ready throwing into circuit any one or more telephone-circuit-wire contacts by the use of a common circuit-closer; also, to effect the moving of the circuit-closer automatically into position.

It consists, primarily, of a sliding or movable circuit maker and breaker arranged in a suitable electrical circuit, a spring-contact, means to effect the throwing in and out of circuit of said spring-contact after the previous adjustment of said circuit maker and breaker, and of sundry subcombinations of parts, substantially as hereinafter more fully disclosed, and specifically pointed out by the claims.

In the accompanying drawings, illustrating the preferred embodiment of my invention, Figure 1 is a view in elevation, showing the same as applied for use in connection with an ordinary telephone. Fig. 2 is a view with the cover of the inclosing case removed to disclose the switch structure. Fig. 3 is a cross-section. Fig. 4 is a similar view showing the switch adjusted for the bell-circuit. Fig. 5 is a like view disclosing the position of the parts when the receiver is hung upon the lever or hook of the circuit closer or maker and breaker.

Latitude is allowed herein as to details, as they may be changed or varied according to circumstances without departing from the spirit of my invention and the same yet remain intact and be protected.

In carrying out my invention I arrange in a suitable casing or closure 1, fastened upon the base of and opening through or into the telephone, the principal features of my switch.

The slide or bar 2, constituting the circuit closer or maker and breaker, is suitably hung or pivoted to an end forked or furcated lever 3, with one end suitably pivoted, preferably, as shown. The other or forked end of said lever projects through and beyond the casing 1 and is adapted to permit of the suspending thereon of the telephone-receiver when not

in use. The slide or bar 2 is preferably cushioned or upheld in its normal position by the action of a spring 4, preferably applied thereto so as to restore or return said bar or slide to its initial position after depression and release.

Brazed, soldered, or otherwise suitably secured to the bar or slide 2 in the direction of its length or longitudinal plane is a series or multiplicity of spring contacts or arms 5, preferably stamped up or made in a single piece of metal, as shown. In the present instance two series of contacts or arms are employed, extending from and merged into a central upright portion 5^a to provide for utilizing to the maximum the circuit-forming capacity of the instrument.

Herein I improvise or utilize the usual binding-posts 6 of the telephone-circuit wires 6^a as contacts, which may be ordinary screw-bolts passed through lateral strips or boards 7, with interposed washers or plates 7^a for engaging the spring-contacts 5 in making the telephone-circuits. The washers or plates 7^a are preferably rectangular, with lateral elongations 7^b for such engagement, though it is obvious these may be circular or disk-like, as usual, and equally serve the purpose of contacts. The spring contacts or arms 5 are each deflected or bent, as at 5^b, at their free ends outward or so as to engage the inner or opposite surface of the telephone-wire contacts (presently described) after the forcing of said bent or free ends past said contacts and the withdrawal of pressure therefrom, as will more fully appear hereinafter. The angles or elbows of said bent end portions of the spring-contacts 5 are designed to engage the bell-contact (described farther on) as they are manipulated to effect that purpose in ringing the bell at the distant end of the line or other telephone, also more clearly disclosed hereinafter.

Suitably secured to the inner end of the surface of the casing or closure 1 directly opposite and contiguously to the free or bent end portions of the spring-contacts carried by the circuit maker and breaker is a metal piece or plate 8, constituting the bell-contact, suitably connected up in circuit by a wire with the distant end of the line or other telephone.

Preferably through a separate or removable piece or board 9, attached to the casing or closure 1, over an opening therein, are produced holes or perforations 10, ranging in line with the spring-contacts 5 and adapted to permit of the insertion therein of the initial push-pin 11 in establishing the circuit or circuits.

It will be observed that when the instrument or telephone is not being used—i. e., when the telephone-receiver is hung upon the lever 3, weighting the outer end of said lever 3—the slide or circuit maker and breaker will be depressed against the resistance or action of its spring. This has the effect to bring the

contacts or arms 5 relatively intermediately of the telephone-circuit wire or contacts 7^a, thus effectively holding the same out of possible contact or engagement with said contacts 7^a when the instrument or telephone is not in use.

In operating or using the instrument or telephone the push-pin 11 simultaneously with the taking of the receiver from the telephone-box in the hand is inserted into any one or more of the holes or perforations 10, according as to whether the user desires to "call up" one or a number of persons, and said pin pressed therein, so as to engage the coincident or opposite spring-contacts 5, the spring-contacts 5 thus also having, by the upward movement of the circuit maker and breaker, been brought opposite or in alinement with said washer elongations or contacts 7^a. The spring-contact as it is continued to be pressed inward will, having its free end bent or deflected, as stated, readily spring past the contacts or washer elongations 7^a and engage the bell-contact 8, and thus effect the ringing of the bell at the distant end of the line or of other telephone. The spring-contact will be held by continued pressure upon the push-pin 11 in engagement with the bell-contact 8 as long as it is desired to keep up the ringing of the bell. The bent end of the spring-contact will upon removal of pressure from said push-pin spring into contact with the inner side of the opposite contact 7^a, thus establishing the telephone-circuit.

From the foregoing it will be seen that any number of circuits can be established from one upward, according to the number of persons it may be desired to call up, all with a common circuit-closer. This enables the user of the telephone to hold conversations with any number of persons at one using of the telephone, thus avoiding the shifting of a switch-lever each time it is desired to call up a person, as usually practiced.

It will be noted that all the points of advantage as claimed or set up in the outset in behalf of my invention have been fully borne out by the aforesaid construction and arrangement of parts. Notably among these is the positive and direct action of the circuit making and breaking devices, also the fact that the switch-lever is always in its initial position when the instrument is out of use, it being thus retained by the telephone-receiver, which the user is compelled to hang thereon as the only way of properly disposing of it, and also the fact that the circuit closer or maker and breaker is automatically moved into position when the telephone-receiver is removed from the telephone or taken in the hand for use.

It is here observed that the series of spring-contacts may be duplicated as relates to their arrangement in parallel planes, being suitably insulated one series from the other to provide for return-circuit metallic contacts.

Having thus fully described my invention,

what I claim, and desire to secure by Letters Patent, is—

1. In an electrical switch of the character described, the combination of a circuit maker and breaker comprising a spring-contact, a circuit-wire contact, said spring-contact normally adapted to be sprung over said circuit-wire contact and standing initially out of engagement therewith, and means to effect the subsequent engagement of said spring-contact with said circuit-wire contact, substantially as set forth.

2. In an electrical switch of the character described, the combination of a circuit maker and breaker carrying a series of spring-contacts, a series of circuit-wire contacts, said spring-contacts normally movable in line with said circuit-wire contacts and standing initially out of engagement therewith, and means to effect the subsequent engagement of said spring-contacts with said circuit-wire contacts, substantially as specified.

3. In an electrical switch of the character described, the combination of a circuit maker and breaker comprising a movable or sliding bar carrying a series of spring contacts or arms extending laterally from a part common to all of said spring contacts or arms, a series of circuit-wire contacts, said spring-contacts normally movable in line with said circuit-wire contacts and standing initially out of engagement therewith, and means to effect the subsequent engagement of said spring-contacts with said circuit-wire contacts, substantially as described.

4. In an electrical switch of the character described, the combination of a circuit maker and breaker comprising a movable bar or slide, a forked or furcated lever adapted to be weighted at its forked or free end, a series of spring-contacts carried by said bar or slide, a series of circuit-wire contacts, said spring-contacts normally movable in line with said circuit-wire contacts and standing initially out of engagement therewith, and means to effect the subsequent engagement of said spring-contacts with said circuit-wire contacts, substantially as set forth.

5. In an electrical switch of the character described, the combination of a circuit maker and breaker comprising a movable or sliding bar pivoted or hung from a lever with its free end adapted to be weighted and cushioned or upheld by a spring, a series of spring contacts or arms extending from a part common to all of said spring contacts or arms, a series of circuit-wire contacts, said spring-contacts normally movable in line with the circuit-wire contacts, and means to effect the engagement of said spring contacts or arms, with said circuit-wire contacts, substantially as set forth.

6. In an electrical switch of the character described, the combination of a circuit maker and breaker comprising a series of spring-contacts having bent or deflected free ends, a series of circuit-wire contacts having washer

elongations, said spring-contacts normally movable in line with said washer elongations and standing initially out of engagement therewith, and means to effect the subsequent engagement of said spring-contacts with said washer elongations, substantially as set forth.

7. In an electrical switch of the character described, the combination of a circuit maker and breaker comprising a series of spring-contacts having bent or deflected free ends, a series of circuit-wire contacts comprising screw-bolts and washers connected up in electrical circuit, said spring-contacts normally movable in line with said washers and standing initially out of engagement therewith, means to effect the subsequent engagement of said spring-contacts with said washers, substantially as specified.

8. In an electrical switch of the character described, the combination of a circuit maker and breaker comprising spring-contacts having bent or deflected free ends, a bell-circuit contact-plate connected up in an electrical circuit with a bell at the distant end of the line or telephone, a series of circuit-wire contacts, said spring-contacts normally movable in line with said circuit-wire contacts and standing initially out of engagement therewith, and means to effect the subsequent engagement of said spring-contacts with said circuit-wire contacts, substantially as set forth.

9. In an electrical switch of the character described, the combination of a circuit maker and breaker comprising a series of spring-contacts having bent or deflected free ends, a series of circuit-wire contacts, said spring-contacts normally movable in line with said circuit-wire contacts, a push-pin adapted to effect the engagement of said spring-contacts with said circuit-wire contacts, said series of spring-contacts normally movable in line with said circuit-wire contacts, substantially as specified.

10. In an electrical switch of the character described, the combination of a circuit maker and breaker comprising a sliding or movable bar carrying a series of spring-contacts having bent or deflected free ends, a bell-circuit contact-plate adapted to be engaged by the angles or elbows of said bent or deflected free ends, a series of circuit-wire contacts comprising circuit-connected-up screw-bolts and washers having elongations, said spring-contacts normally movable in line with said washer elongations, and a push-pin adapted to engage and move said spring-contacts into engagement with said circuit-wire contacts and into engagement with said bell-circuit contact-plate, substantially as set forth.

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

NATHAN BASSETT

Witnesses:

WM. K. SERYOCK,
MILTON WOLF.