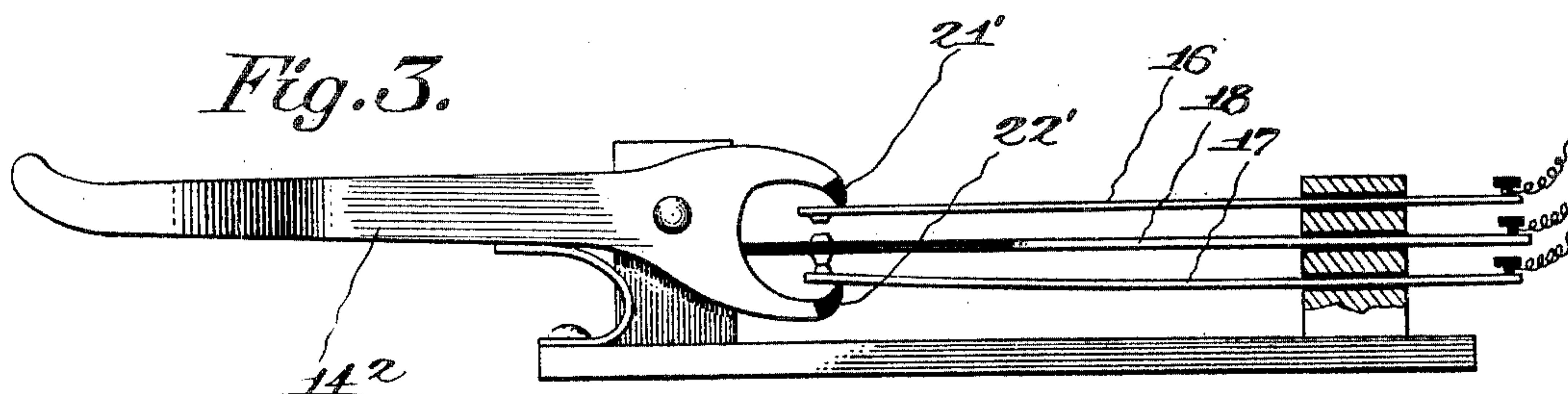
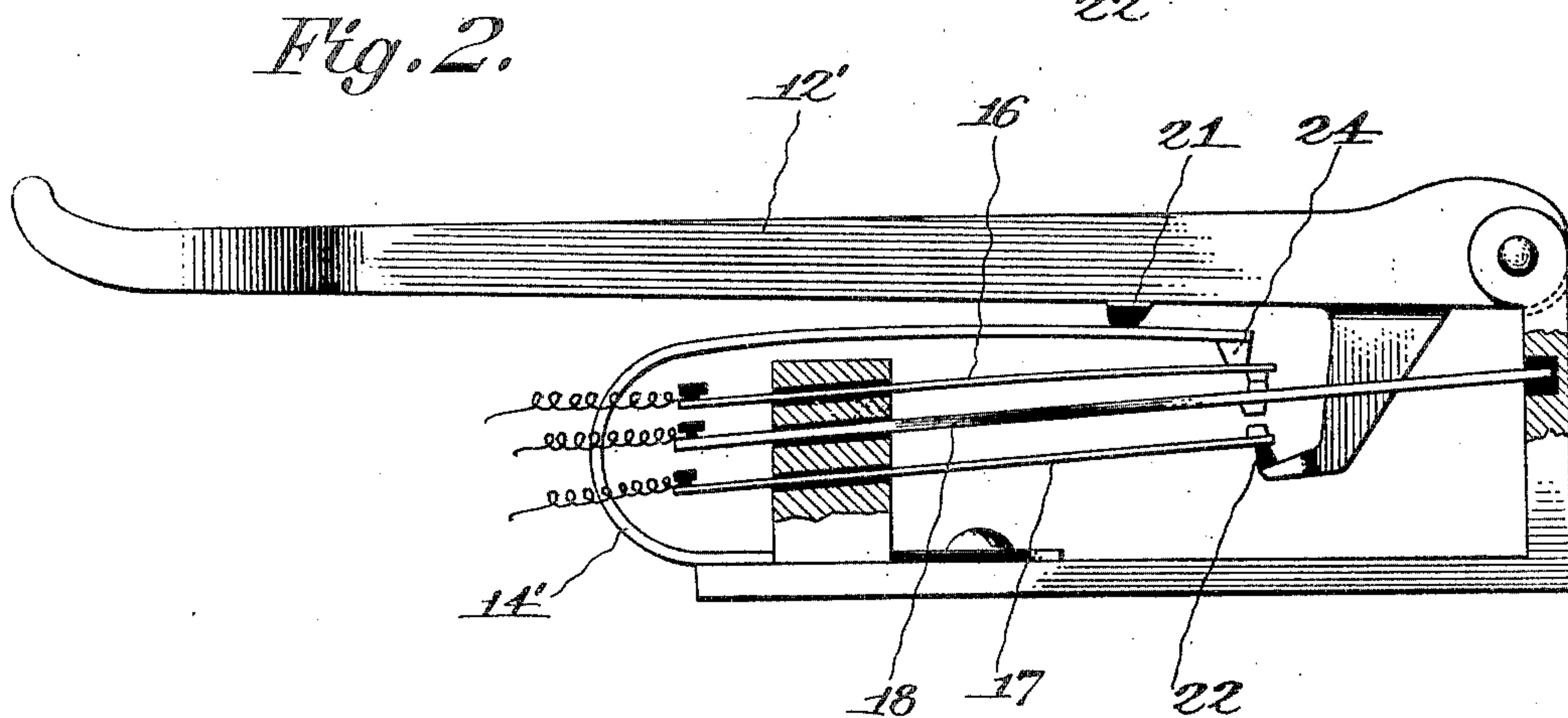
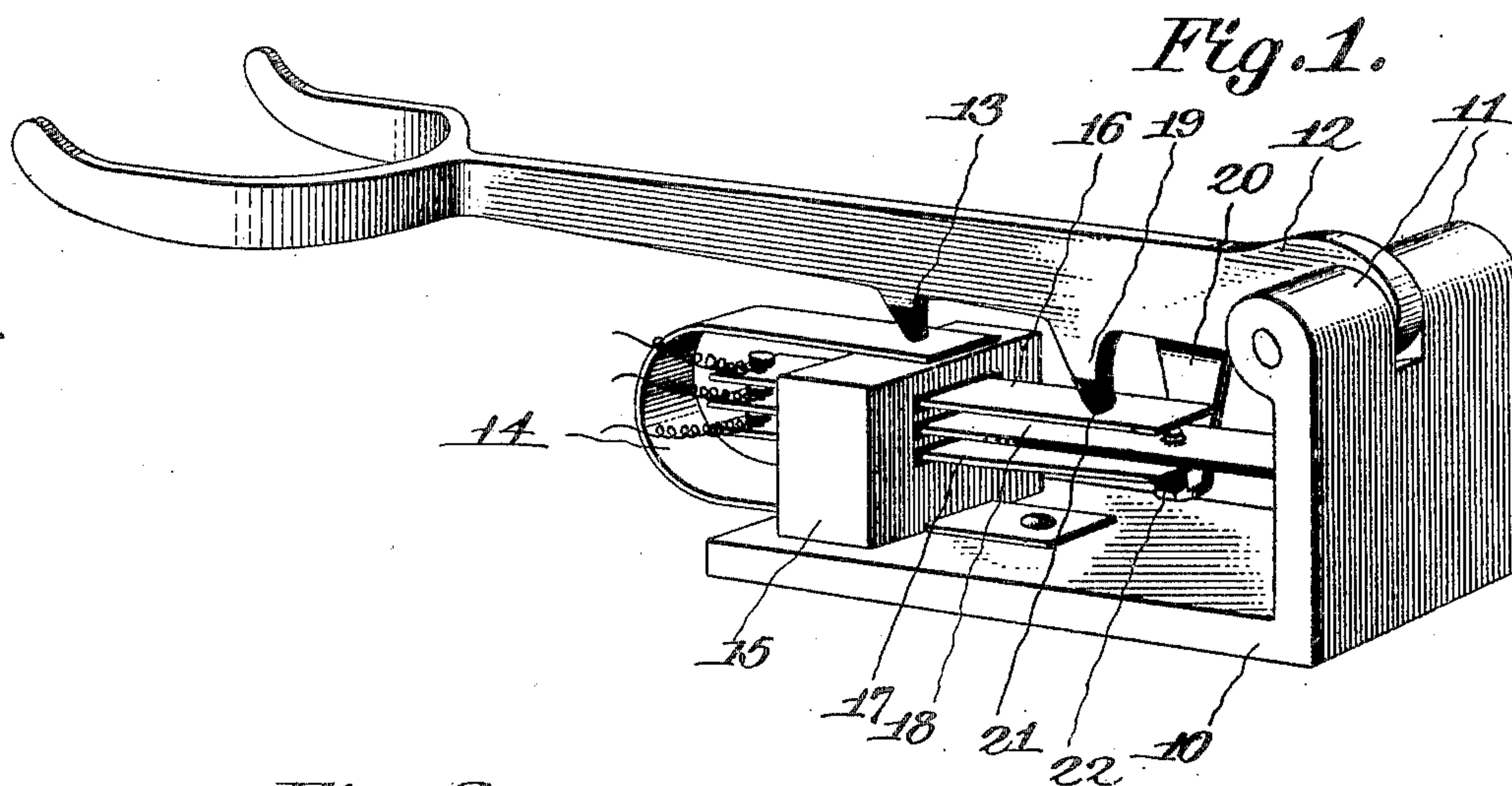


No. 797,561.

PATENTED AUG. 22, 1905.

J. McK. CLEMENT.
TELEPHONE HOOK SWITCH.
APPLICATION FILED MAR. 8, 1905.

2 SHEETS—SHEET 1.



Witnesses

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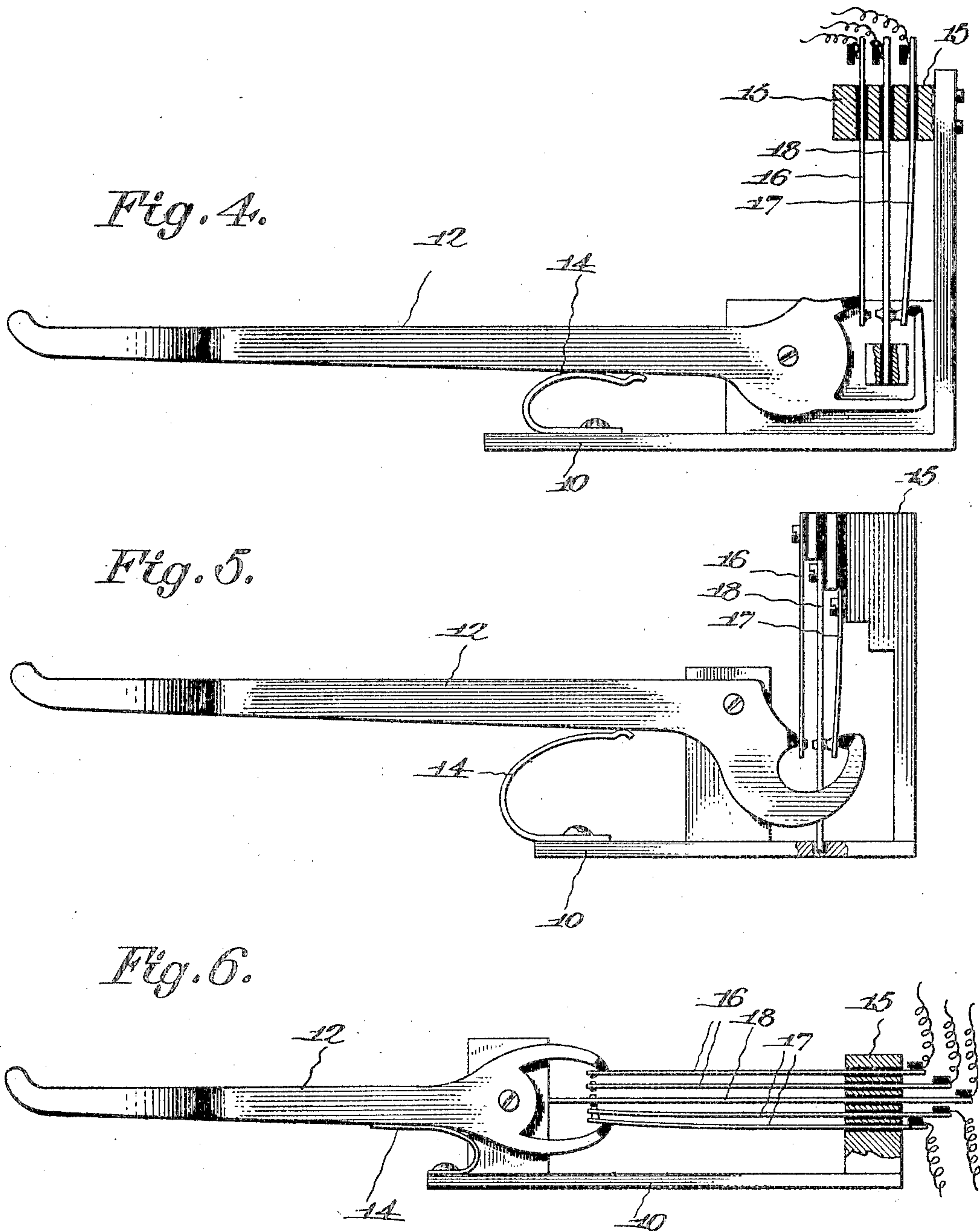
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2 SHEETS—SHEET 2



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UNITED STATES PATENT OFFICE.

JOSEPHUS MCKINLEY CLEMENT, OF MINERALBLUFF, GEORGIA.

TELEPHONE HOOK-SWITCH.

No. 797,561.

Specification of Letters Patent.

Patented Aug. 22, 1905.

Application filed March 8, 1905. Serial No. 249,103.

To all whom it may concern:

Be it known that I, JOSEPHUS MCKINLEY CLEMENT, a citizen of the United States, residing at Mineralbluff, in the county of Fanin and State of Georgia, have invented a new and useful Telephone Hook-Switch, of which the following is a specification.

This invention relates to electric switches, and has for its principal object to provide a novel form of switch by means of which perfect electrical contact may be assured.

A further object of the invention is to provide a switch in which a yieldable contact is moved into engagement with a relatively fixed contact, which at the same time forms a stop for limiting movement of the switch-operating member.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a perspective view of an electric switch constructed in accordance with the invention. Fig. 2 is a side elevation of a slightly-modified form of switch. Figs. 3, 4, 5, and 6 are similar views illustrating still further modifications of the invention.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The device forming the subject of the present invention, while capable of use in many classes of electrical work, is of particular value when employed as a telephone-switch, and the drawings illustrate the invention as applied to a hook-switch, although it is to be understood that it is not limited to this special class of work.

The contacts usually employed in telephone switch-boxes and in many other classes of work are in the form of small strip-springs, one of which is engaged by the telephone-hook as it moves either up or down and forced into engagement with the other, both of the contacts yielding and the degree of force with which they are held in engagement with each

other depending altogether on the stress of the outer or second spring or contact, and should the latter become weakened or strained the circuit will not be completed. In carrying out the present invention this and other disadvantages are avoided by the employment of a yieldable spring-contact which is forced by the receiver-hook or other movable member into engagement with a relatively fixed contact, which at the same time serves as a stop for limiting movement of said switch-hook or operating member.

The frame 10 may be of any ordinary construction and is provided with lugs or ears 11, to which is pivoted the inner end of a receiver-hook 12, that is provided at its outer end with the usual forked arms for the reception of the receiver. At a point under the hook is a lug 13, with which engages an elevating-spring 14 of the usual construction for raising the hook when the receiver is removed therefrom. To the frame is secured a block 15, formed of insulating material and forming a support for three contacts 16, 17, and 18, the contacts 16 and 17 being yieldable, while the contact 18 is in the form of a comparatively heavy strip of metal and is rigidly supported, one of its ends being held by the block 15, while the opposite end is secured to, but insulated from, the frame 10. The hook carries two lugs 19 and 20, the lug 19 being provided with an insulating-block 21 at a point above the spring-contact 16, while the lug 20 carries an insulating-block 22 at a point below the spring-contact 17.

When the parts are in the position shown in Fig. 1—that is to say, with the receiver removed from the hook and the latter elevated by the spring 14—the small block 22 will engage with and force the contact 17 up against the rigid contact 18 and perfect electrical contact between the two parts will be assured, the circuit closed in this instance being usually the talking-circuit of the telephone, or it may be a signaling or other circuit, depending on the character of the work which the switch is to perform. The contacts are held in engagement with each other with a degree of force depending on the strength of the spring 14, and the rigid strip 18 therefore forms a stop for limiting the upward movement of the receiver-hook. When the receiver is placed on the hook, the latter will be depressed and block 21 will be forced down into engagement with the hook 16, the latter being pressed against

the third contact 18 and in this case closing the signaling-circuit, the degree of force with which the contacts are held in engagement depending on the weight of the receiver-hook. The engagement of the contacts will therefore be firm and positive and good electrical connection is insured.

In the modified form illustrated in Fig. 2 the receiver-hook 12' carries the insulating-blocks 21 and 22 and the spring 14' is continued inward to a point above the upper spring-contact 16 and is provided with a block 24, which when the spring 14' is depressed will come into engagement with the spring 16 and force the latter down firmly against the relatively rigid contact 18.

In the construction illustrated in Fig. 3 the receiver-hook 14² is bifurcated at its rear end, forming a pair of arms that carry blocks 21' and 22' for engagement with the spring-contacts 16 and 17, respectively, and these serve by engagement with the relatively rigid contact 18 to limit movement of the receiver-hook in both directions.

In the construction shown in Fig. 4 the strips 16, 17, and 18 are arranged vertically, while the receiver-hook retains its approximately horizontal position.

Fig. 5 illustrates a further modification of the vertical arrangement of the contact-strips, and in Fig. 6 is shown a still further modification wherein a larger number of flexible contact-strips may be used, the number of strips depending on the number of circuits to be closed.

It will be observed that the two flexible strips may be connected in independent circuits—as, for instance, the signaling and talking circuits of an ordinary telephone—while the approximately rigid strip is connected in both circuits.

It is obvious that each of the contacts 16, 17, and 18 may be formed of two or three or more members, depending on the class of work for which the switch is used, and in some cases the member 18 may be formed of non-conducting material and may or may not form a part of the circuit, according to the results desired. For ordinary forms of switches the spring 14 may be dispensed with and other

means employed for holding the lever 12 in position.

Having thus described the invention, what is claimed is—

1. In an electric switch, a rigid contact, independently-movable flexible contacts arranged on opposite sides of said rigid contact, and an operating member serving to force one or other of the flexible members into engagement with the rigid contact without positive movement of the second member, said flexible contacts automatically moving from engaging position when released, the rigid contact serving as a means for limiting movement of the operating member.

2. In a telephone hook-switch, a rigid contact, flexible contacts arranged on opposite sides of the rigid contact, and means operable on movement of the hook for forcing one or other of the flexible members into engagement with the rigid contact, the latter serving as a means for limiting movement of the hook.

3. In a telephone hook-switch, a rigid contact, a pair of flexible contacts arranged one on each side of the rigid contact, and a receiver-supporting hook serving on movement in either direction to force one of the flexible contacts into engagement with the rigid contact, the latter serving also as a means for limiting movement of the hook.

4. The combination with a frame, of a contact formed of an approximately rigid strip of metal having its opposite ends fixed to the frame, a pair of flexible strips also carried by the frame and insulated from each other and from the rigid strip, and a pivotally-mounted telephone receiver-hook having a pair of lugs or blocks for engaging the flexible strips and forcing the same against the rigid strip, the latter serving also as a means for limiting movement of the receiver-hook.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOSEPHUS MCKINLEY CLEMENT.

Witnesses:

A. F. CHRISTOPHER,
J. E. MCNELLEY.