

No. 896,754.

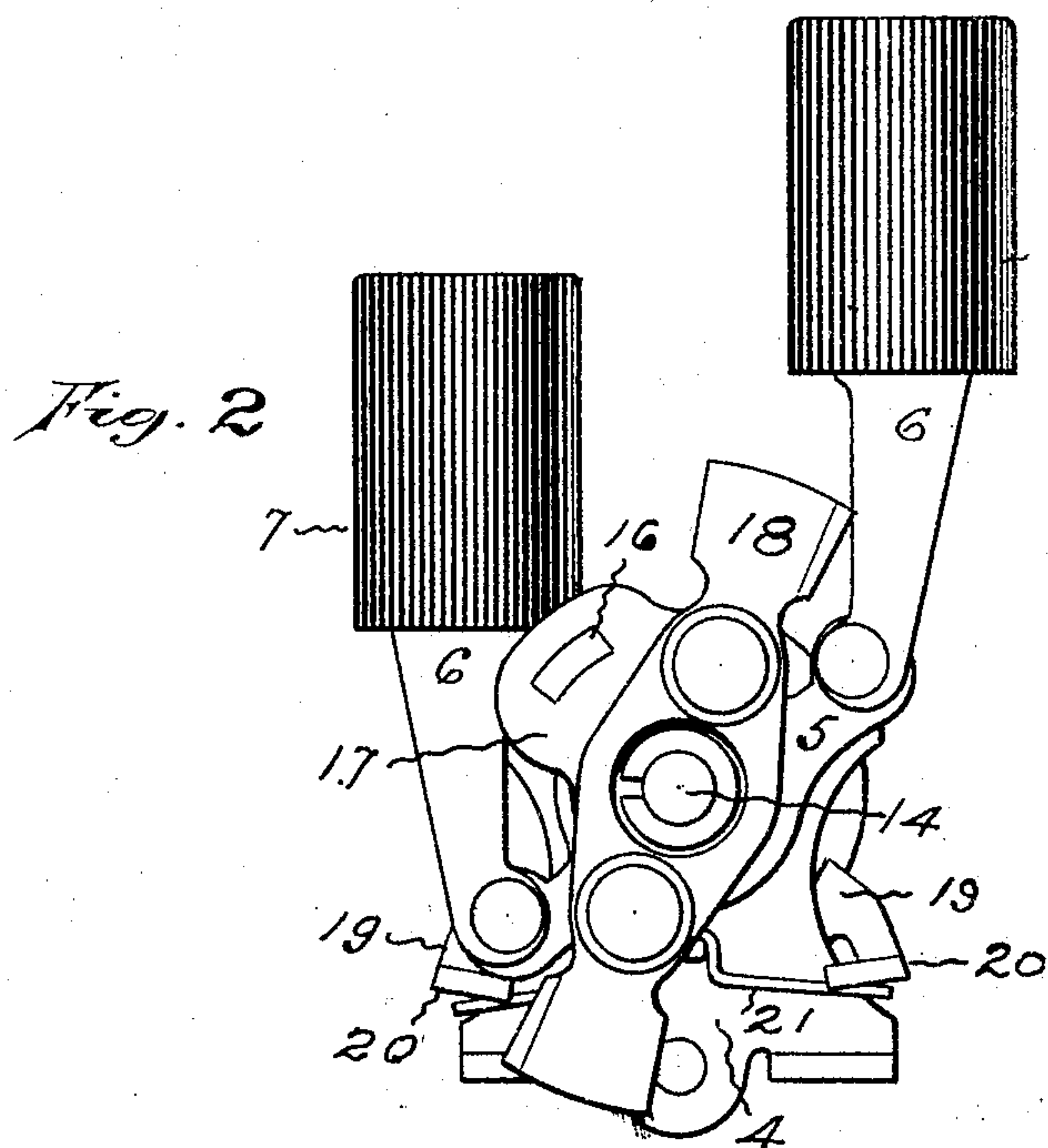
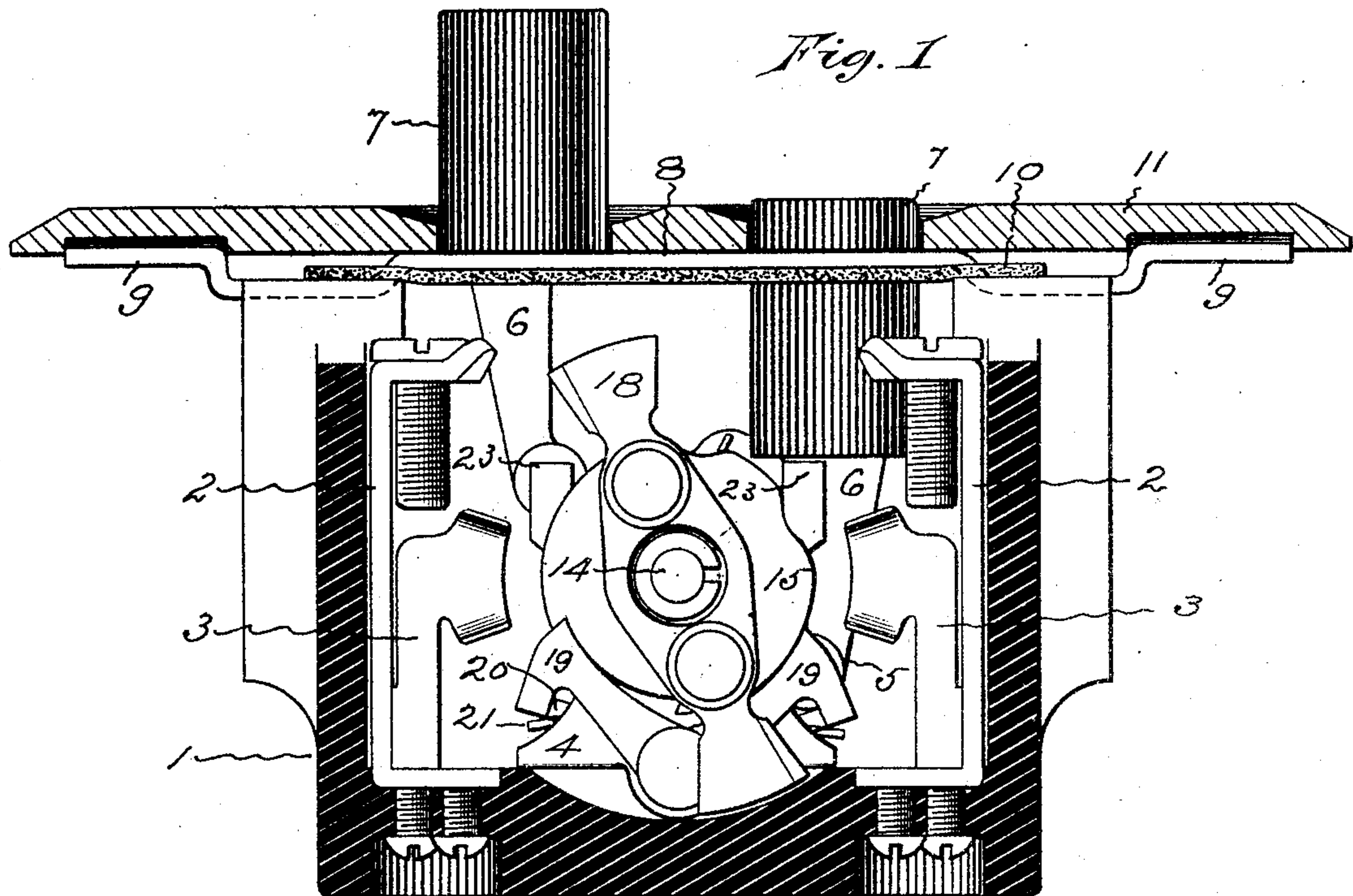
PATENTED AUG. 25, 1908.

J. G. PETERSON.

ELECTRIC SNAP SWITCH.

APPLICATION FILED JAN. 10, 1908.

2 SHEETS—SHEET 1.



WITNESSES:

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Josephine M. Stremper

INVENTOR:

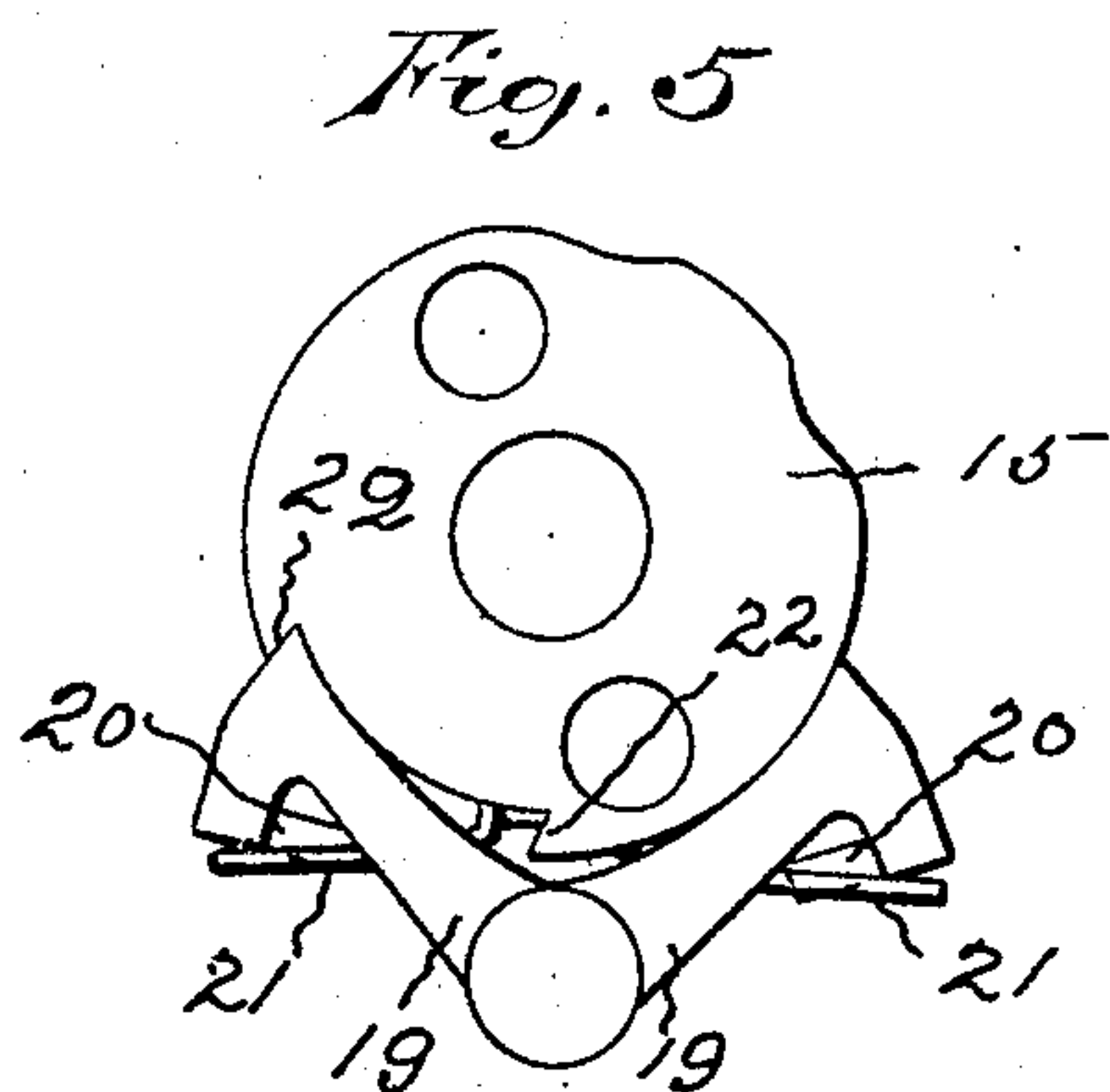
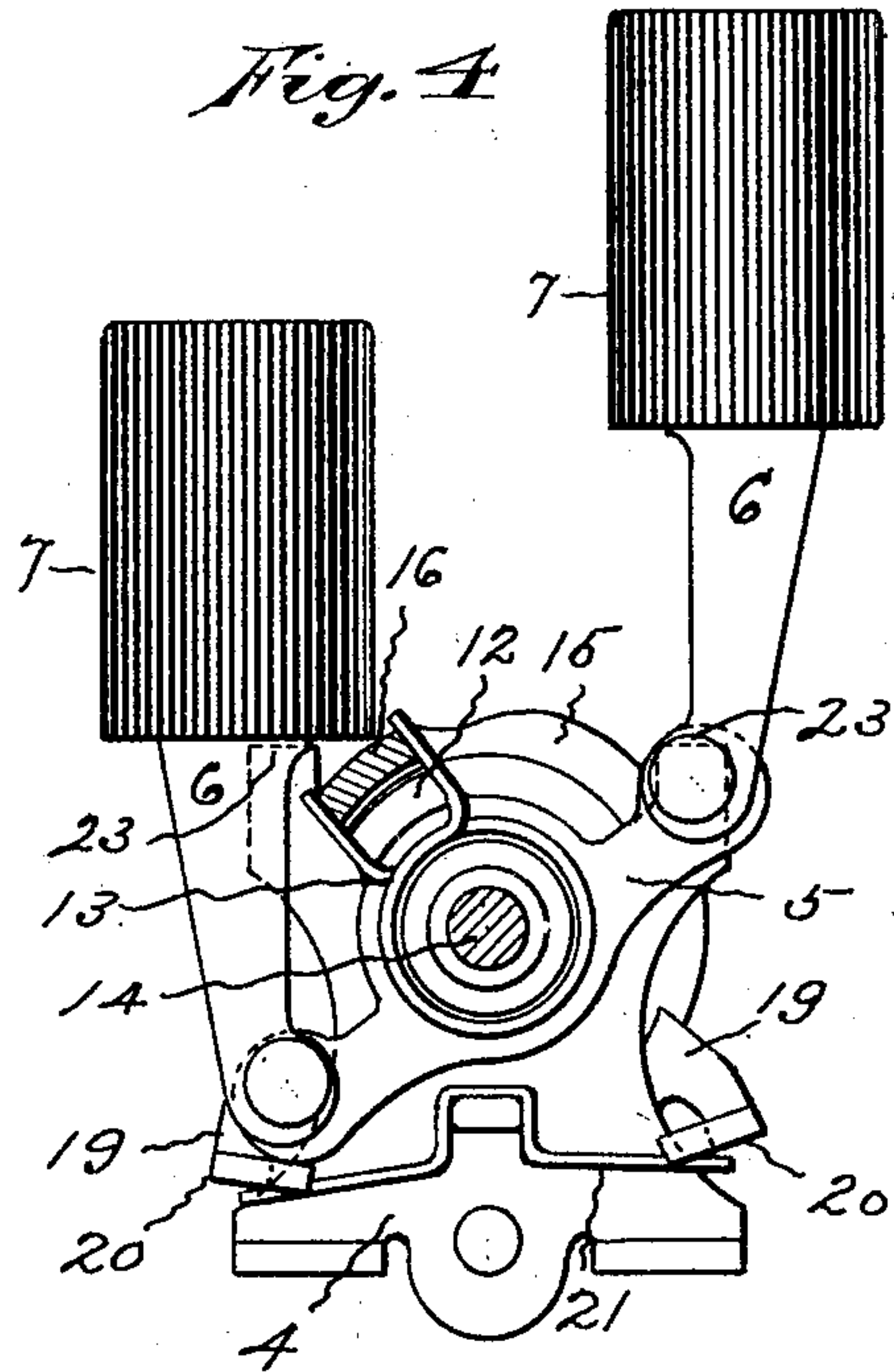
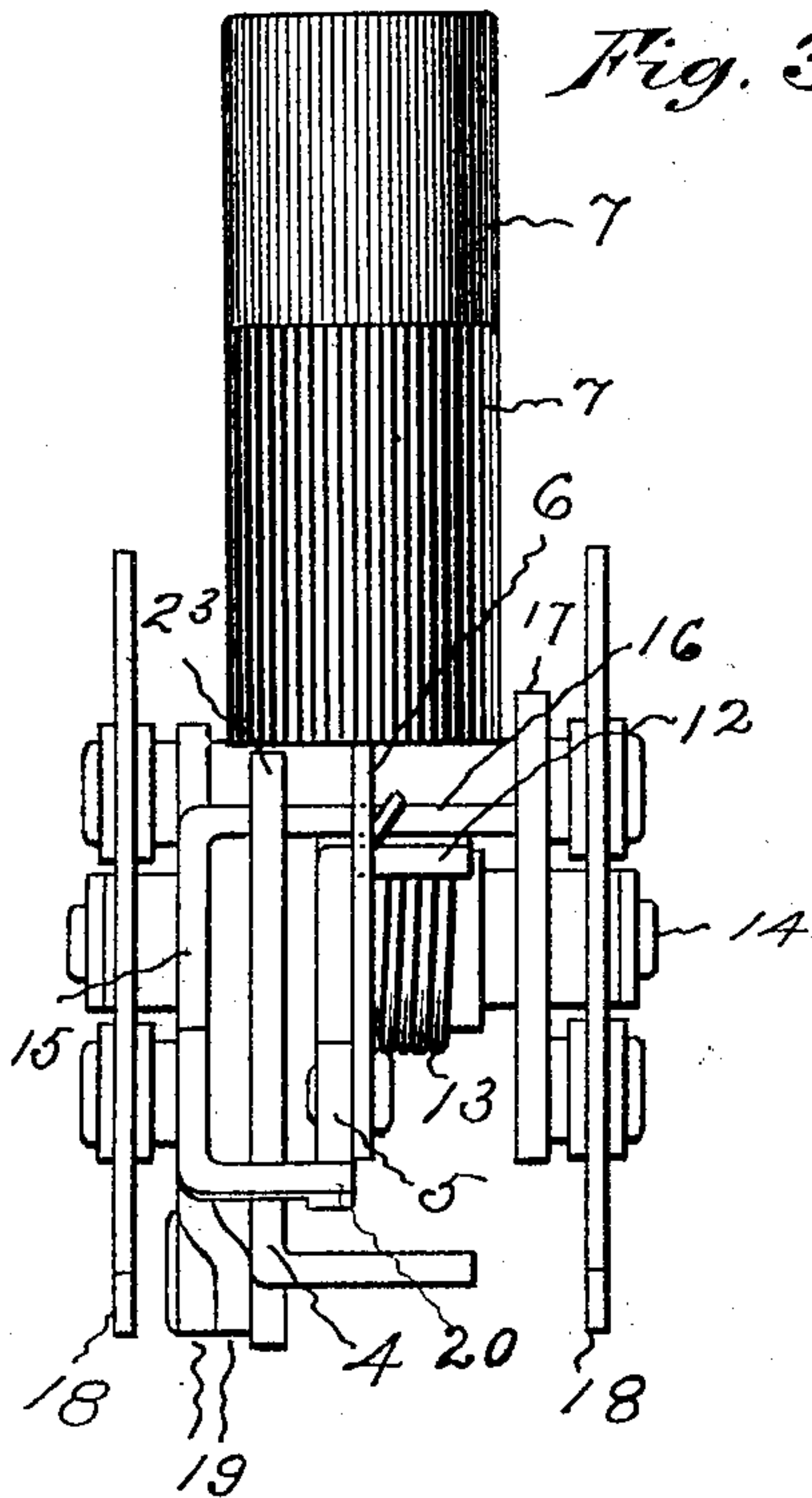
Johann F. Peterson
Harry R. Williams
attys.

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2 SHEETS—SHEET 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHANN G. PETERSON, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE ARROW ELECTRIC COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

ELECTRIC SNAP-SWITCH.

No. 896,754.

Specification of Letters Patent.

Patented Aug. 25, 1908.

Application filed January 10, 1908. Serial No. 410,162.

To all whom it may concern:

Be it known that I, JOHANN GODFREY PETERSON, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Electric Snap-Switches, of which the following is a specification.

This invention relates to the class of electric snap switches in which the spring for oscillating the movable poles into engagement with the fixed contacts is made tense by means of reciprocatory push buttons.

The object of the invention is to provide a switch of this nature which is constructed of parts that are simple and cheap to make and assemble, are sure and positive in action and are strong and durable in use.

Figure 1 of the accompanying drawings illustrates a push button switch which embodies the invention with the case cut in sections so as to show the operating mechanism in side-elevation. Fig. 2 shows an elevation of the mechanism looking at the side opposite from that shown in Fig. 1. Fig. 3 is an edge view of the mechanism. Fig. 4 is a view of the mechanism with the movable poles omitted. Fig. 5 is a view of one pole plate and the locking pawls.

The receptacle 1 may be made of any suitable insulating material, preferably porcelain, and have any approved configuration. Secured to the bottom in the interior of the receptacle by convenient means are binding posts 2 for the connection of the ends of the circuit wires. Electrically connected to these posts are pairs of spring contact fingers 3, into and out of engagement with which the movable poles of the switch are thrown.

Fastened to the bottom inside of the receptacle by suitable means is a supporting frame 4. Loosely supported by a hub that extends from the frame is a yoke 5 to which the shanks 6 of the reciprocatory push buttons 7 are connected. The buttons are guided in their movement by the perforated bar 8 which extends across the top of the receptacle and has attachment ears 9 for fastening the receptacle into the customary box. Held by this bar is a piece of sheet insulating material 10 which forms a cover for the receptacle. The usual surface plate 11 is applied to the top of the receptacle outside of the fastening bar and insulating cover in the customary manner. The yoke to which the

buttons are attached has an outwardly extending finger 12, Fig. 3 and the opposite ends of the spring 13, which is wound about a sleeve on the frame hub, extend outwardly and bear against the opposite edges of this finger, Fig. 4.

Extending through the supporting frame hub is a spindle 14 and on one end of this spindle is a plate 15 which has a finger 16 that extends across the mechanism and engages the plate 17 on the other end of the spindle. This finger extends parallel with the finger 12 that projects from the yoke and between the opposite ends of the throwing spring. If the device is designed to be a double pole switch, pole pieces 18 are mounted upon and preferably insulated electrically from the plates 15 and 17. If the device is to be used as a single pole switch, a pole piece would be mounted upon only one of these plates.

Pivoted to the supporting frame are a pair of pawls 19. These pawls have lugs 20 that are engaged by the ends of the spring 21 in such manner that the points of the pawl are held in engagement with the edge of the plate 15. This plate 15 has two ratchet teeth 22 which are alternately engaged by the opposite pawls, Fig. 5.

When the outer button is pushed inwardly the yoke is oscillated and the spring made tense by the engagement with one end of the spring of the finger which projects from the push button plate. The pole plate is held stationary until the end of the yoke engages the lug 20 on the pawl 19 in such manner as to withdraw the point of the pawl from the ratchet tooth with which it is engaged; and by means of which it holds the plate 15 and the finger 16 and plate 17 from movement. When the yoke engages the lug and withdraws the pawl from the plate, the end of the spring bearing against the edge of the finger 16 throws the parts and with them the movable pole pieces which engage the stationary contacts which are connected with the wire terminals. When one pawl is released and the parts are thrown the plate 15 is thrown sufficiently far for the opposite pawl to engage the other tooth and hold the plate against movement until that pawl is released from the tooth by the inward movement of the button that has been moved outwardly.

The upper end of the frame plate has a pair of upwardly extending lugs 23, the side edges

of which form stops for limiting the movement of the finger 16 when it is thrown by the spring and the upper edges of which form stops against which the inner ends of the push buttons abut so as to prevent them from being moved too far inwardly.

All the parts of this switch are very simple to manufacture and to assemble. The movement is very easy, and quick and the throw of the pole pieces extended so that the length of the break is sufficient to meet the requirements. When the buttons are pushed in, no work is required of them except to make the throwing spring tense until the spring is sufficiently tense and then the yoke is only required to swing a pawl out of engagement with a ratchet tooth on the pole plate, and this movement is very easy and positive for the yoke engages with the lug at the outer end of the pawl, which is of some length, and engages with the ratchet tooth in such manner that it is easily disengaged.

The invention claimed is:

1. The combination in an electric switch, of a supporting frame, a spindle held by the frame, a yoke mounted on the spindle, push buttons connected with and adapted to oscillate the yoke, a spring having its ends engaged by the yoke and put under tension by the movement thereof, a pole plate supported by the frame and adapted to be engaged by the ends of the spring and thrown by the tension thereof, contact pieces connected with the pole plate, pawls pivoted to the supporting frame, and a spring adapted to hold the pawls in engagement with ratchet teeth on the pole plate so the pawls will hold the pole plate against movement until they are

disengaged from the teeth by the engagement with them of the yoke, substantially as specified.

2. The combination in an electric switch of a supporting frame, a spindle held by the frame, a yoke mounted on the spindle, means for oscillating the yoke, a spring mounted on the spindle and adapted to be made tense by the movement of the yoke, pole plates mounted on the spindle and connected with each other, contact pieces mounted upon but insulated from the pole plates, a pair of independent pawls pivoted to the frame plate and a spring adapted to hold the pawls in engagement with ratchet teeth on the pole plate until the pawls are disengaged from the teeth by the movement of the yoke, substantially as specified.

3. In an electric switch mechanism in combination, a supporting frame, a yoke supported by the frame, a spring adapted to be made tense by the movement of the yoke, a pole plate adapted to be thrown by the spring, a contact piece carried by the pole plate, a pair of pawls adapted to engage ratchet teeth on the pole plate, lugs projecting from the pawls and adapted to be engaged by the ends of the yoke for disengaging the pawls from the ratchet teeth, and lugs extending from the supporting frame for limiting the movement of the pole plate and also limiting the movement of the yoke, substantially as specified.

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Witnesses:

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