

No. 637,892.

Patented Nov. 28, 1899.

C. G. PERKINS & J. TREGONING.

ELECTRIC SWITCH.

(Application filed June 2, 1899.)

(No Model.)

Fig. 1

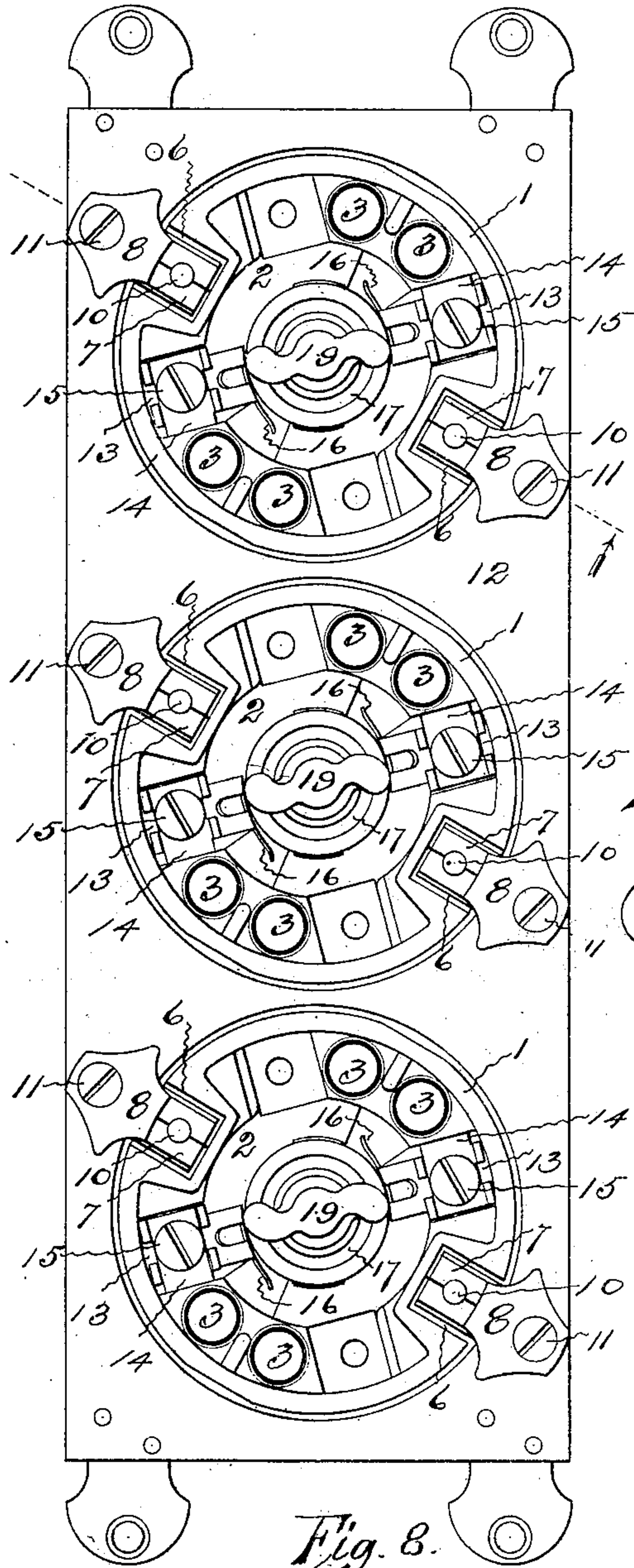


Fig. 2

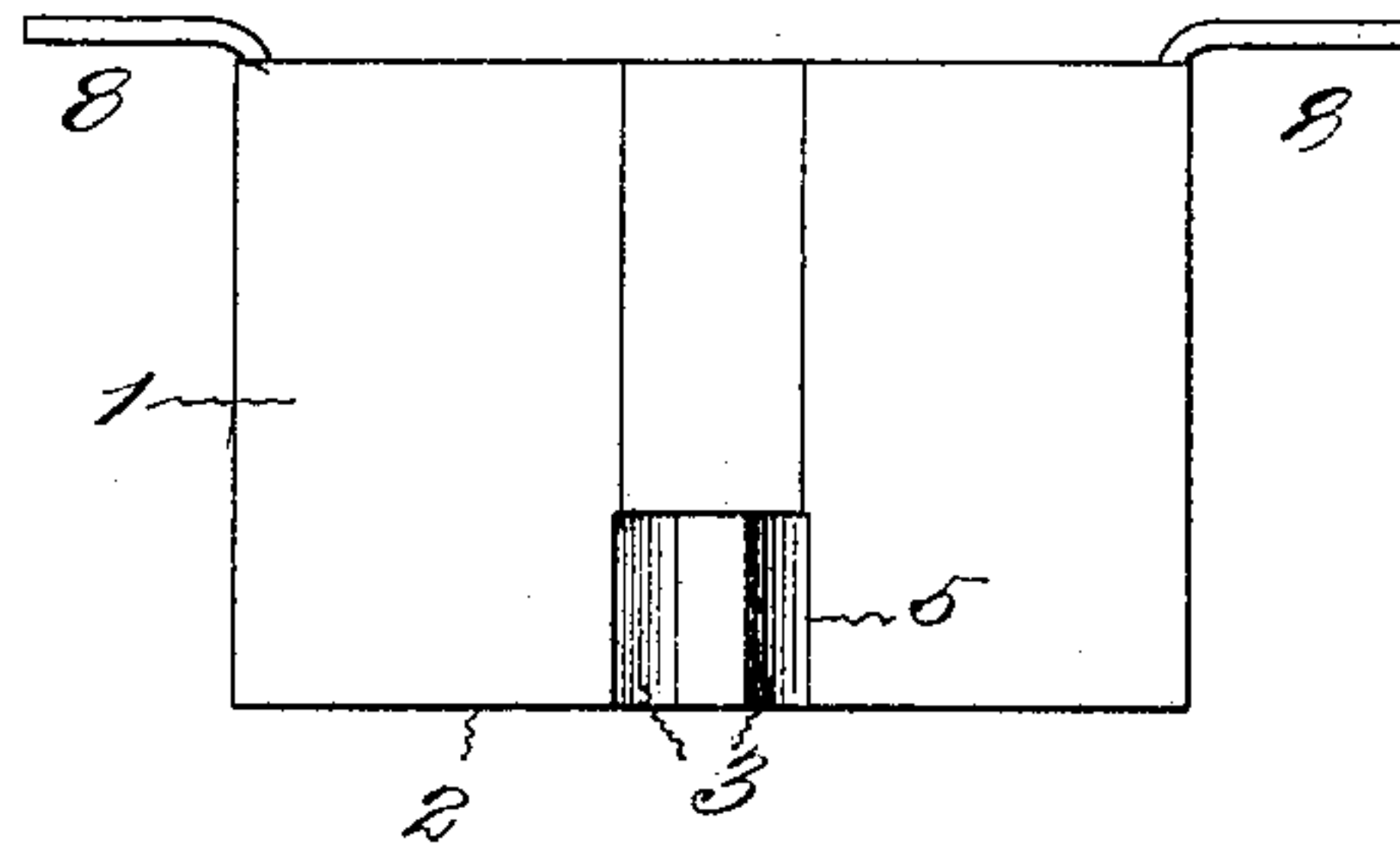


Fig. 3

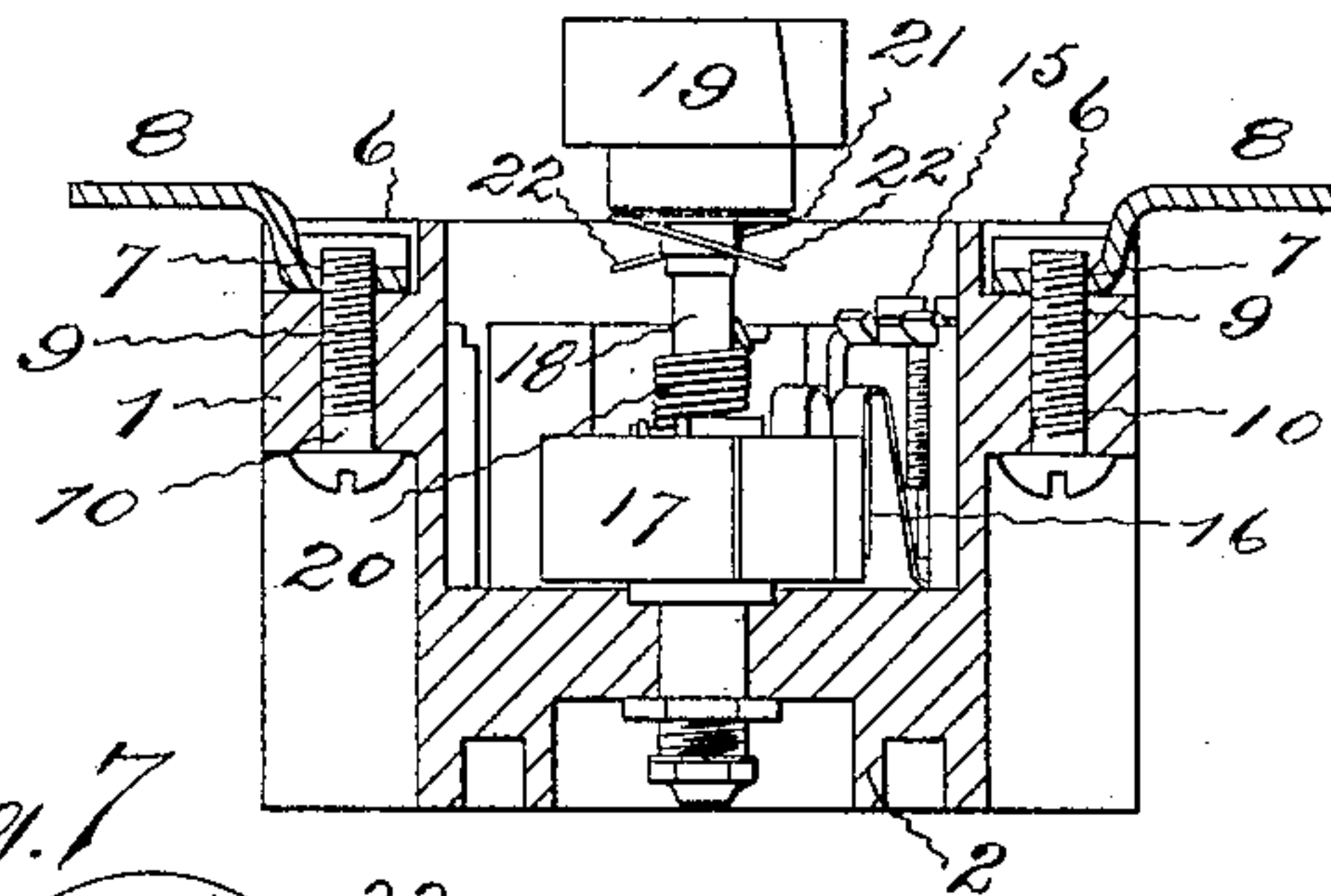


Fig. 7

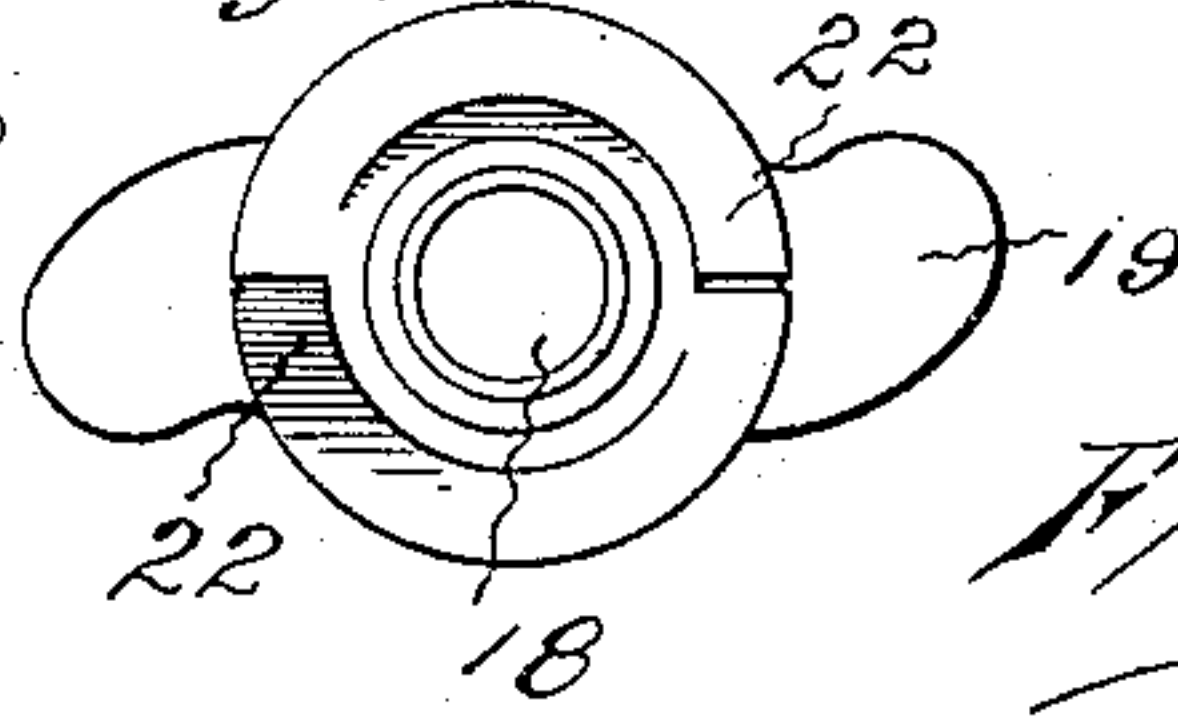


Fig. 4

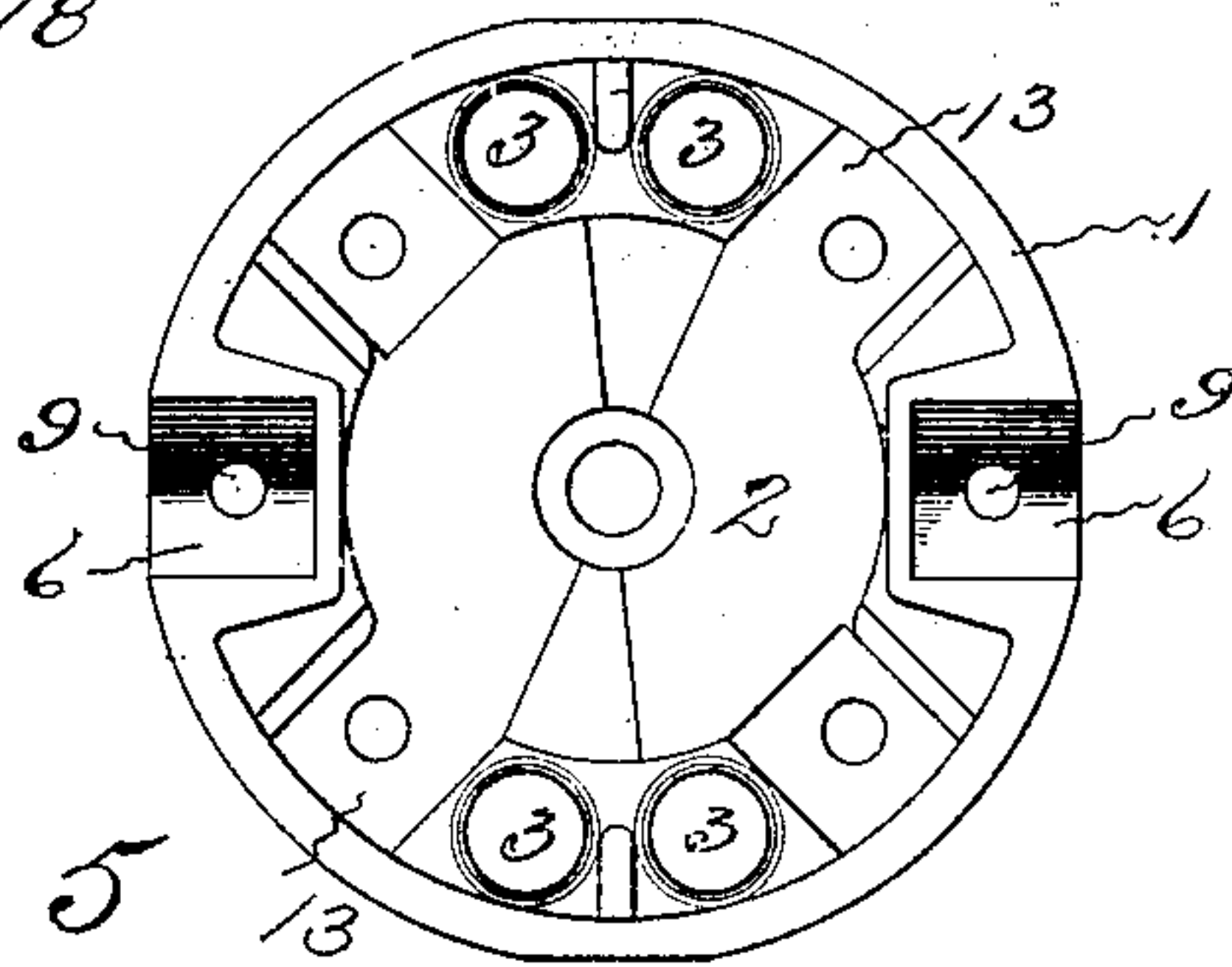


Fig. 5

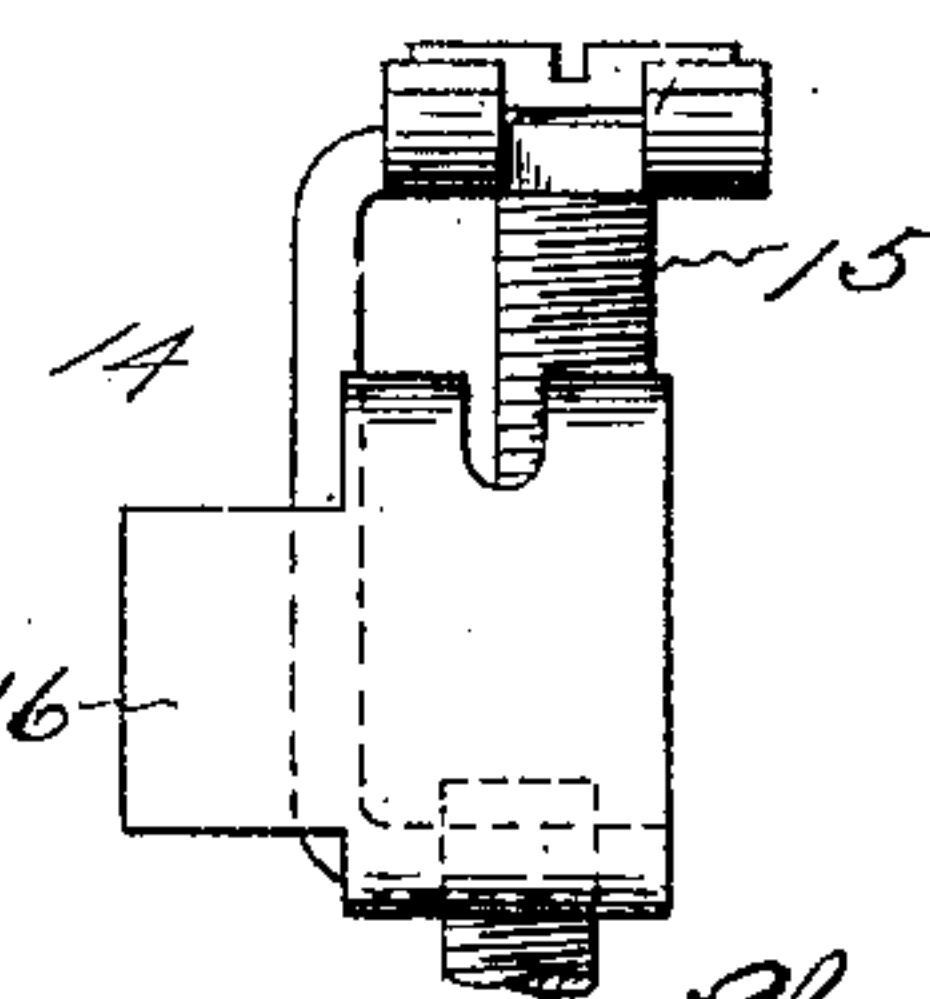


Fig. 6

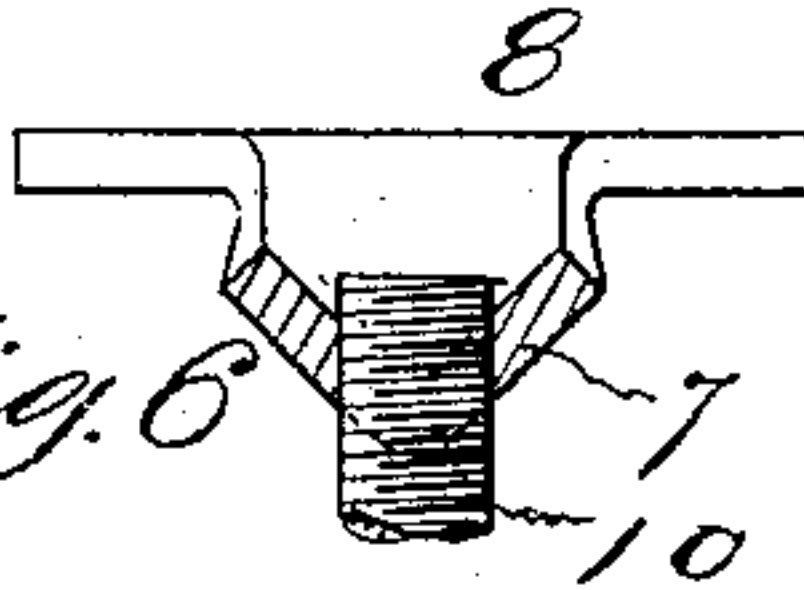
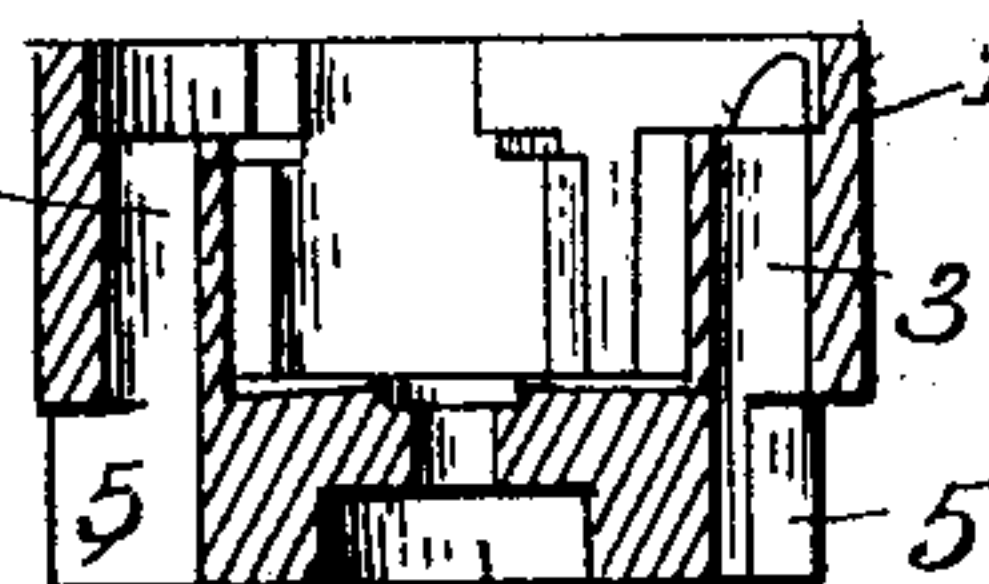


Fig. 8



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UNITED STATES PATENT OFFICE.

CHARLES G. PERKINS AND JOHN TREGONING, OF HARTFORD, CONNECTICUT, ASSIGNORS TO THE PERKINS ELECTRIC SWITCH MANUFACTURING COMPANY, OF SAME PLACE.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 637,892, dated November 28, 1899.

Application filed June 2, 1899. Serial No. 719,143. (No model.)

To all whom it may concern:

Be it known that we, CHARLES G. PERKINS and JOHN TREGONING, citizens of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Electric Switches, of which the following is a specification.

This invention relates to the construction of the receptacles of rotary snap-switches, the method of securing the receptacles to their supports, the provisions for the entrance into the receptacles and the connection therein of the circuit-wires, and means for holding the cover-plates in position over the receptacles.

The object of the invention is to so shape the receptacles that they may be wired easily and safely, to so arrange the connections that the receptacles may be quickly and firmly secured to their supporting plates or boxes in a simple manner, and to so form the washer between the key and the plate that the latter will be tightly held in place in a desirable manner.

Of the accompanying drawings, which illustrate an embodiment of the invention, Figure 1 shows a plan of a gang flush-switch with the cover-plate omitted. Fig. 2 shows a side elevation of one of the receptacles. Fig. 3 shows a vertical section of one of the receptacles, the movable parts of the switch being represented in side elevation. Fig. 4 shows a plan of one of the receptacles with the mechanisms removed. Fig. 5 shows an enlarged front view of one of the binding-posts. Fig. 6 shows an enlarged view of one of the attaching-plates with part broken away. Fig. 7 shows a bottom view of one of the keys and the washer that is placed between the key and the cover-plate, and Fig. 8 is a sectional view of the receptacle on the plane indicated by the line *xx* of Fig. 4.

The circular cups or receptacles, in which the moving parts of the switches are located, preferably are formed of porcelain, with side walls 1 and a bottom or end wall 2. On the interior the receptacle-walls on diametrically opposite sides are thickened, and through each of these portions two perforations 3 are

made, so as to provide four insulated passages through the bottom and along the sides nearly to the top edge of the receptacle, Fig. 4. The side walls for a short distance and a little of the bottom wall are cut away on the outside of these perforations, forming recesses 5, into which the circuit-wires, which are led through these perforations, may be easily bent, Fig. 2.

The receptacle-walls on diametrically opposite sides of the interior, between the portions that are thickened for the wire-perforations, are thickened, and in the top of these thickened portions sockets 6 are made. The bottoms of these sockets are formed tapering or V-shaped for receiving the V-shaped shanks 7 of the holding-lugs 8. Perforations 9 are made through the latter thickened portions at the bottom of the V-shaped sockets for the passage of screws 10, provided for holding the lugs 8 in place, Fig. 3. The outer ends of these lugs are perforated, and by screws 11 are held to the wall-plate 12, which may be shaped for a single switch or for a gang, as illustrated. The lugs are preferably secured to the wall-plates diagonally, so that the plate may be made as narrow as possible, Fig. 1. Between the thickened portions of the walls that are perforated for the passage of the circuit-wires and the thickened portions of the walls that are socketed for the supporting-lugs are recesses 13, in two or more of which are located binding-posts 14. These posts are provided with the customary binding-screws 15 and the spring conducting-arms 16, Fig. 5, arranged to be engaged by the conducting portion of the rotary commutator-block 17, that is mounted upon the actuating-spindle 18, Fig. 3. The spindle is supported by the bottom of the receptacle and is provided with a turning key 19 and with the usual actuating-spring 20, that is made tense by the turning of the key and that is released by throwing the commutator-block when sufficiently tight, Fig. 3. On the actuating-spindle beneath the key is a spring-washer. This washer has an annular part 21 and outwardly-projecting arms 22, that are designed to rest upon the outer sur-

face of the face-plate and hold that plate tightly in position when the switch is located for service, Fig. 7.

The circuit-wires are easily bent and passed 5 through the insulated passages provided for them in the walls of the receptacle and that are absolutely insulated from each other in these passages and held from contact with any undesired parts of the switch. The binding-posts are simple and cheap in construction 10 and arranged in insulated recesses in such manner that they will not facilitate any short-circuiting of the current. The inner ends of the attaching-lugs are insulated from the parts that form the paths for the current 15 through the switch, and they are easy to form and inexpensive to apply, for by a single screw each V-shaped shank is drawn into a corresponding V-shaped socket and held so that the receptacle will be firm and have no looseness. The wall-plates with receptacle-lugs arranged in this manner may be narrow, and this results in a saving of metal, and it reduces the extent of metallic surface of the 20 face-plate necessary to cover the wall-plate. These plates are held in place in a simple manner, so that they will not shake or rattle when located in position for service.

We claim as our invention—

30 1. A receptacle for an electric switch formed of insulating material with a circular side wall having four inwardly-extending thickened portions, perforations formed through two of the thickened portions of the side wall from 35 top to bottom for circuit-wires, outwardly-opening sockets made in the top edges of two other of the thickened portions of the side wall for plate-holding lugs, and recesses in the interior between the thickened portions for 40 stationary contacts, substantially as specified.

2. In an electric switch, in combination, a receptacle, stationary and movable contacts 45 within the receptacle, sockets with V-shaped bottoms made in the side walls of the receptacle, a wall-plate, and holding-lugs secured to the wall-plate and having V-shaped shanks

that are fastened in the V-shaped sockets in the walls of the receptacle, substantially as specified.

3. An electric switch having a receptacle 50 formed of insulating material, the insulating side wall of the receptacle having four inwardly-extending thickened portions, two passages for the entrance of circuit-wires entirely surrounded by insulation formed side by side 55 in each of two diametrically opposite thickened portions of the side wall, a socket for the shank of a holding-lug formed in each of two intermediate portions of the side wall, stationary and movable contacts within the receptacle, 60 holding-lugs with their shanks fastened in the sockets, and a wall-plate secured to the holding-lugs, substantially as specified.

4. In an electric switch, in combination, a receptacle, stationary and movable contacts 65 within the receptacle, the side walls of the receptacle having inwardly-extending portions, insulated passages for the reception of circuit-wires formed in two of the thickened portions 70 of the side walls, insulated sockets for the shanks of the holding-lugs formed in two other of the thickened portions of the side walls, recesses for the stationary contacts between the thickened perforated and socketed portions of the side walls, holding-lugs with their shanks 75 secured in the sockets, and a wall-plate secured to the holding-lugs, substantially as specified.

5. An electric switch having a receptacle formed of insulating material with sockets 80 having V-shaped bottoms formed in the top edges of the side walls of the receptacle, lugs having V-shaped shanks fastened in said sockets, a single screw for securing each shank in its socket, a holding-plate secured to the lugs 85 and stationary and movable contacts within the receptacle, substantially as specified.

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