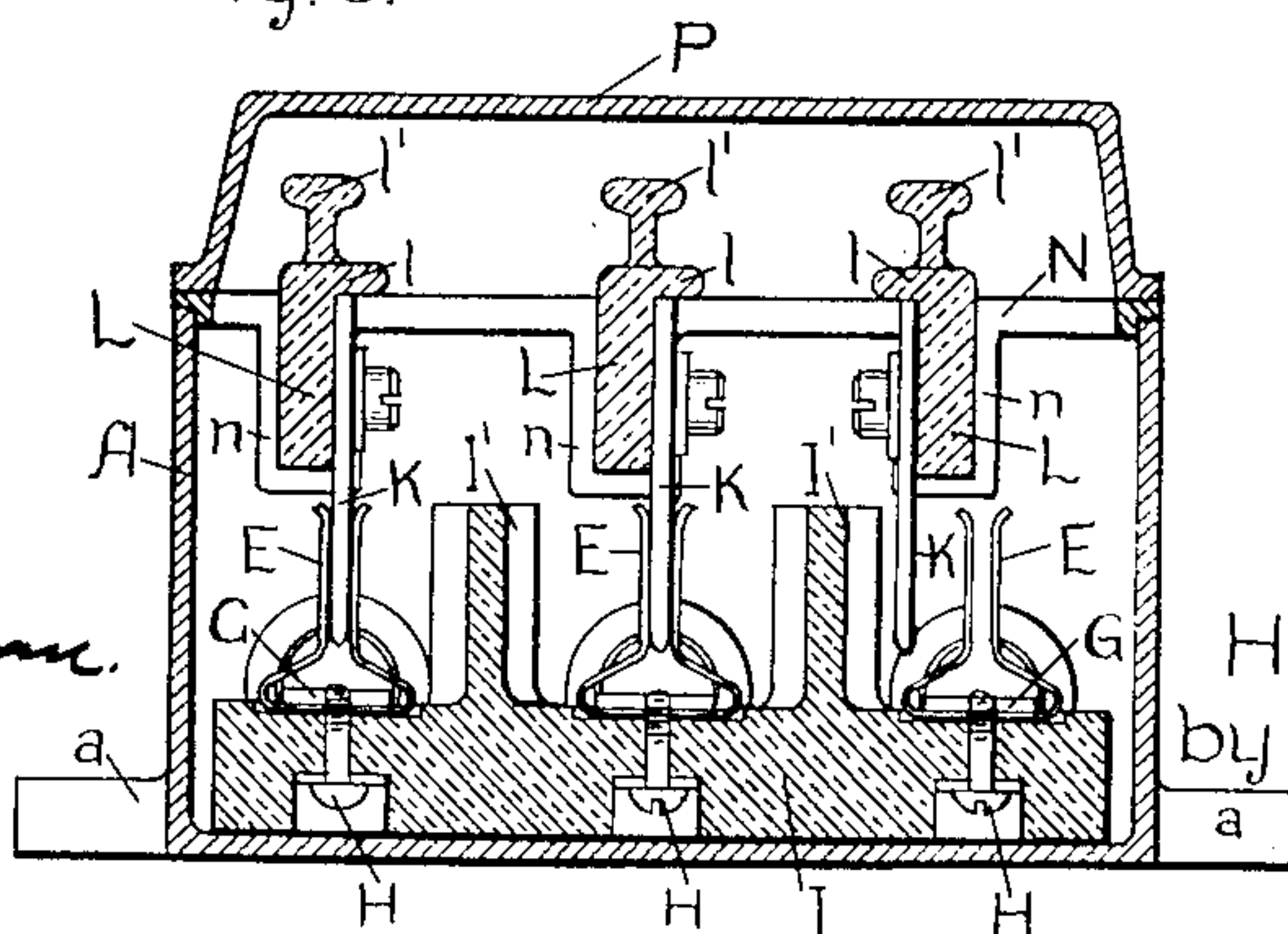
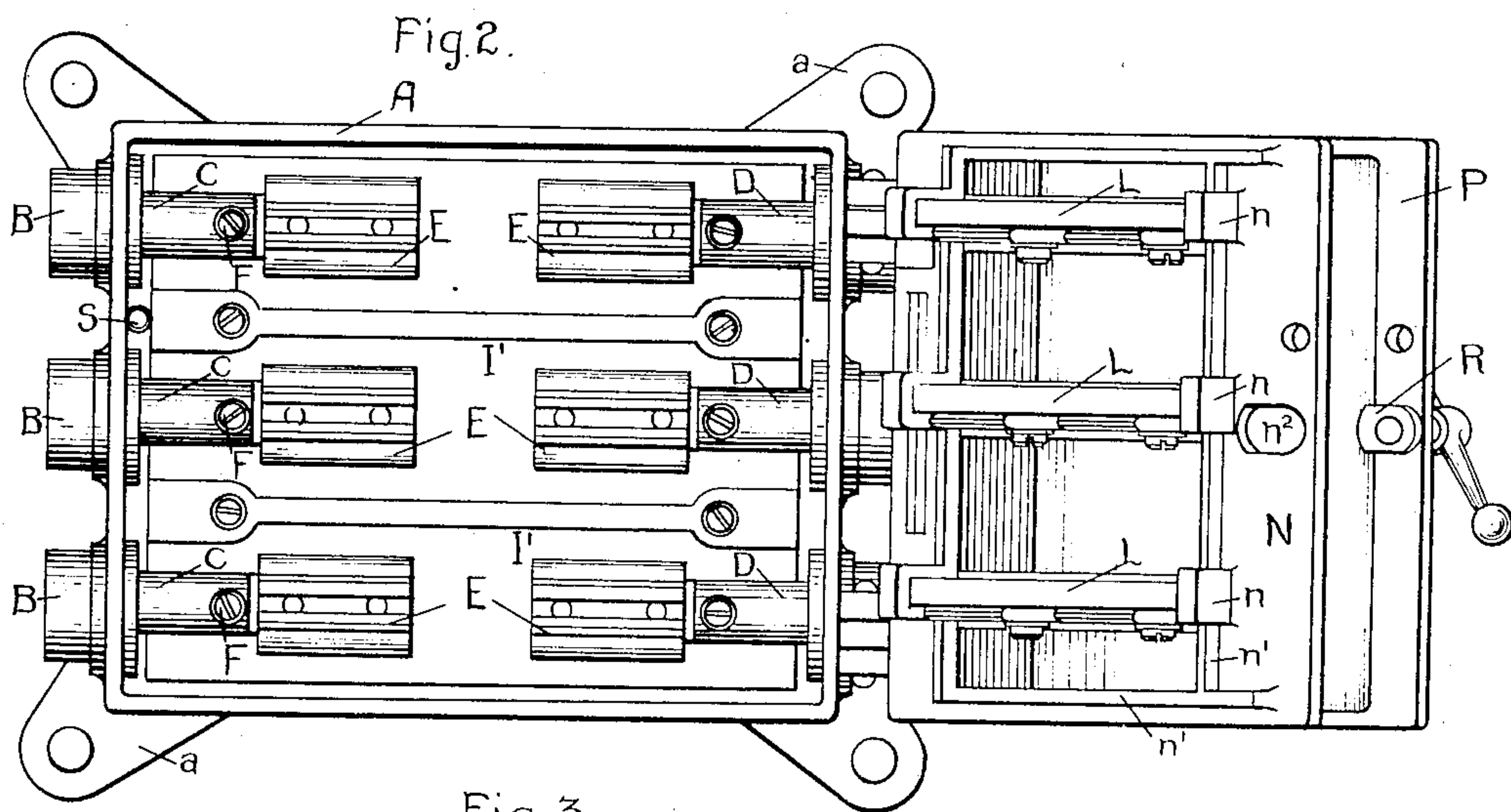
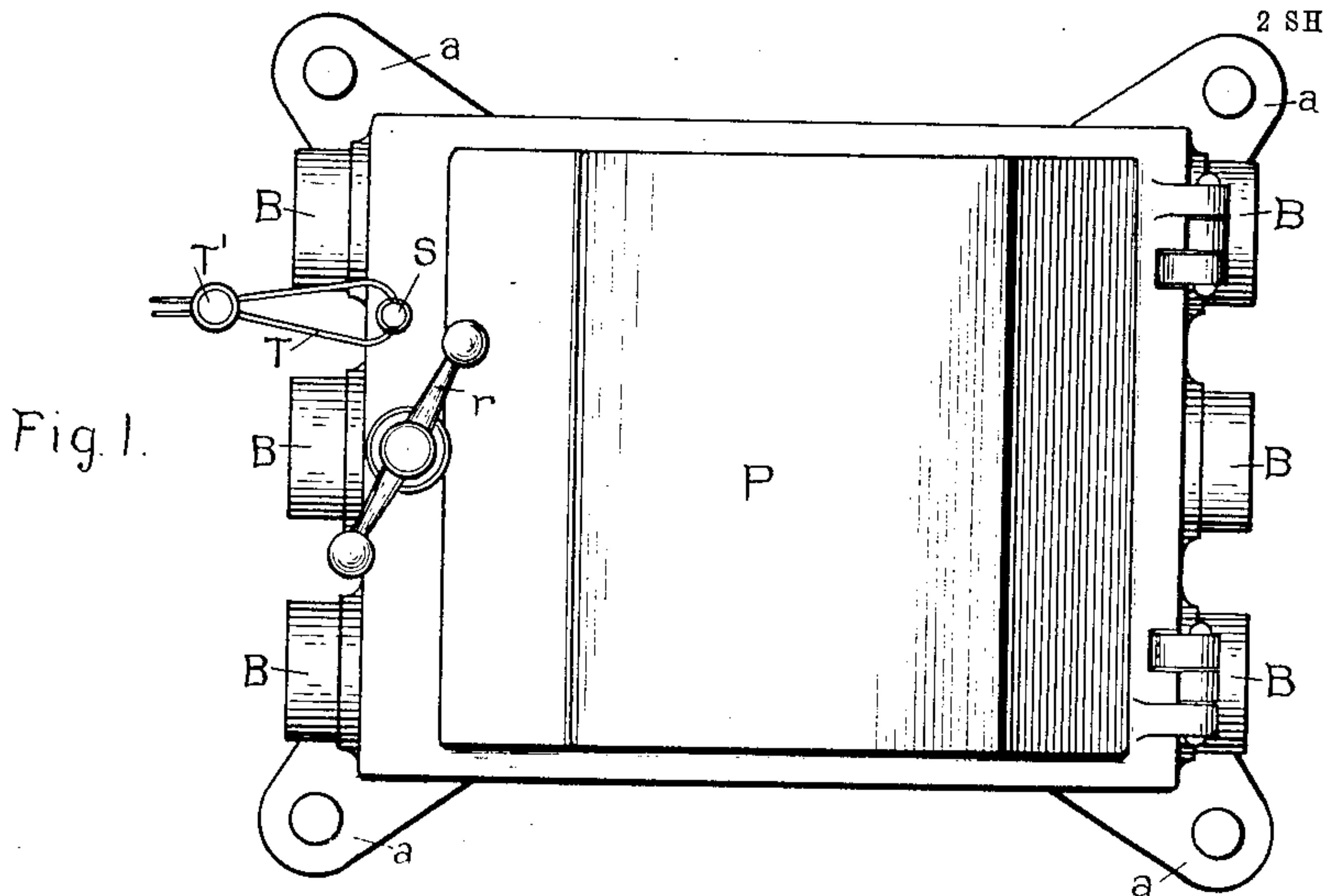


No. 842,978.

PATENTED FEB. 5, 1907.

H. R. SARGENT.
MULTIPOLAR SERVICE SWITCH.
APPLICATION FILED SEPT. 3, 1901.

2 SHEETS—SHEET 1.



Witnesses.

Robt. L. Chapman.
Brig. B. Kull.

Inventor.

Howard R Sargent

by *Albert E. Davis*

Atty

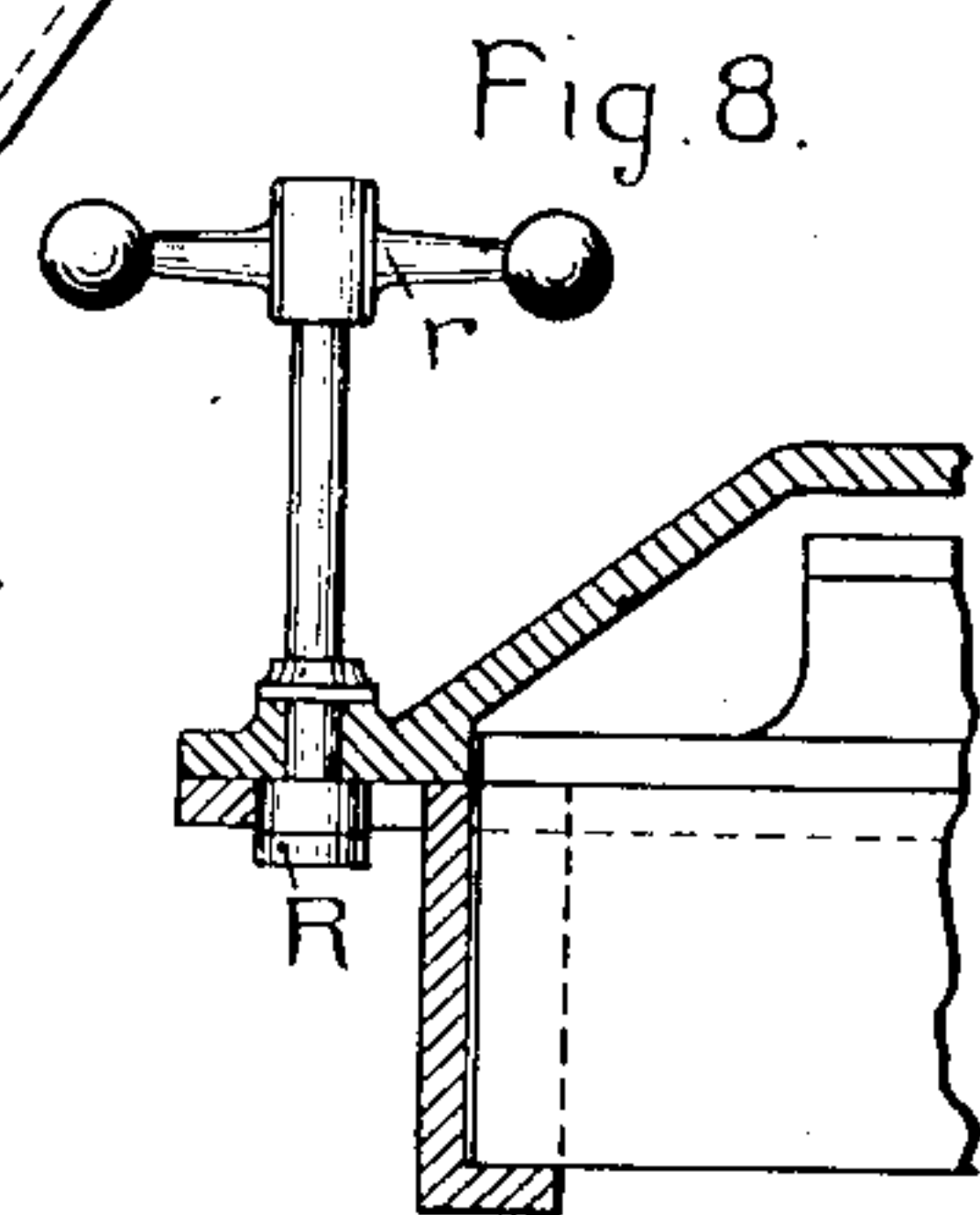
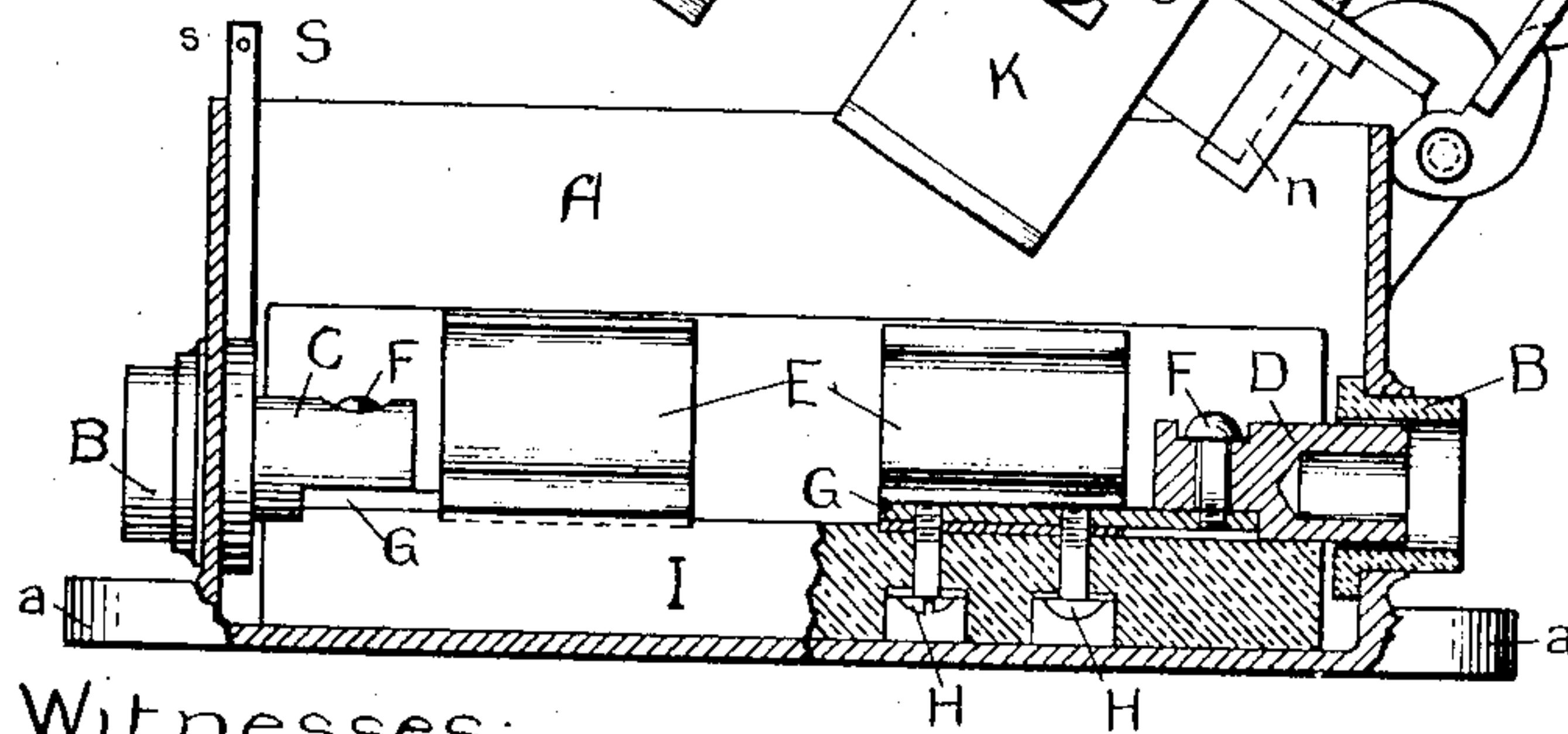
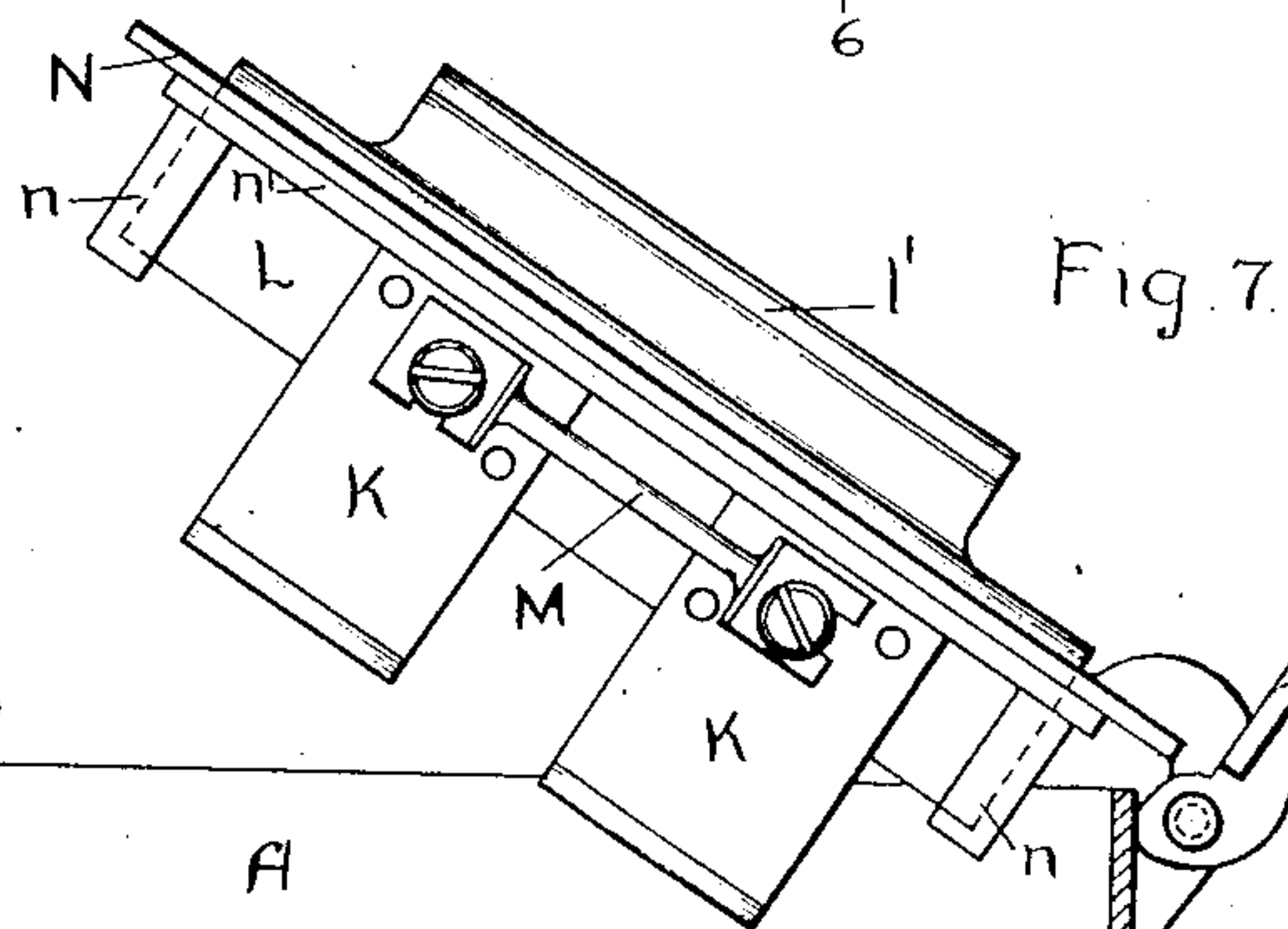
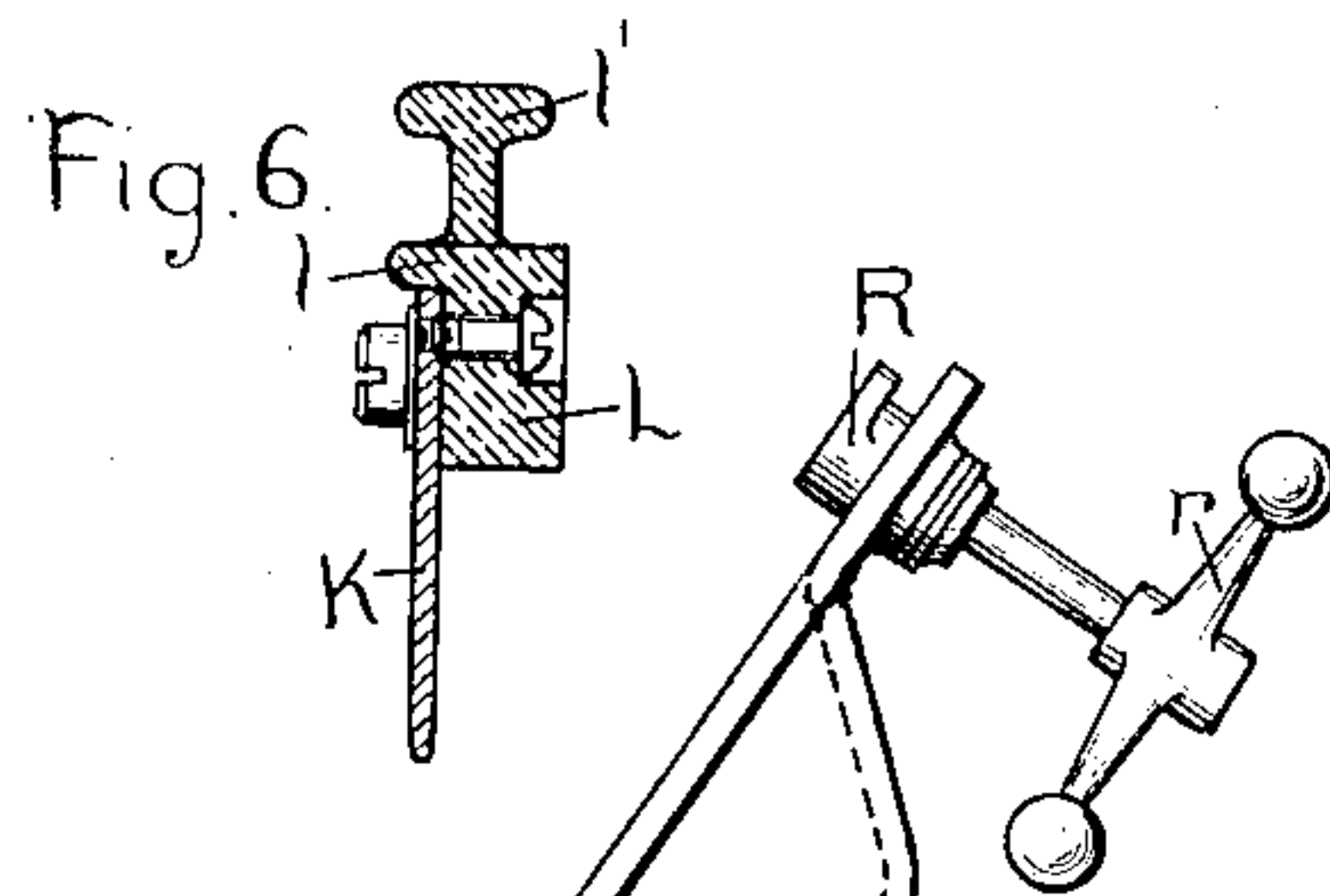
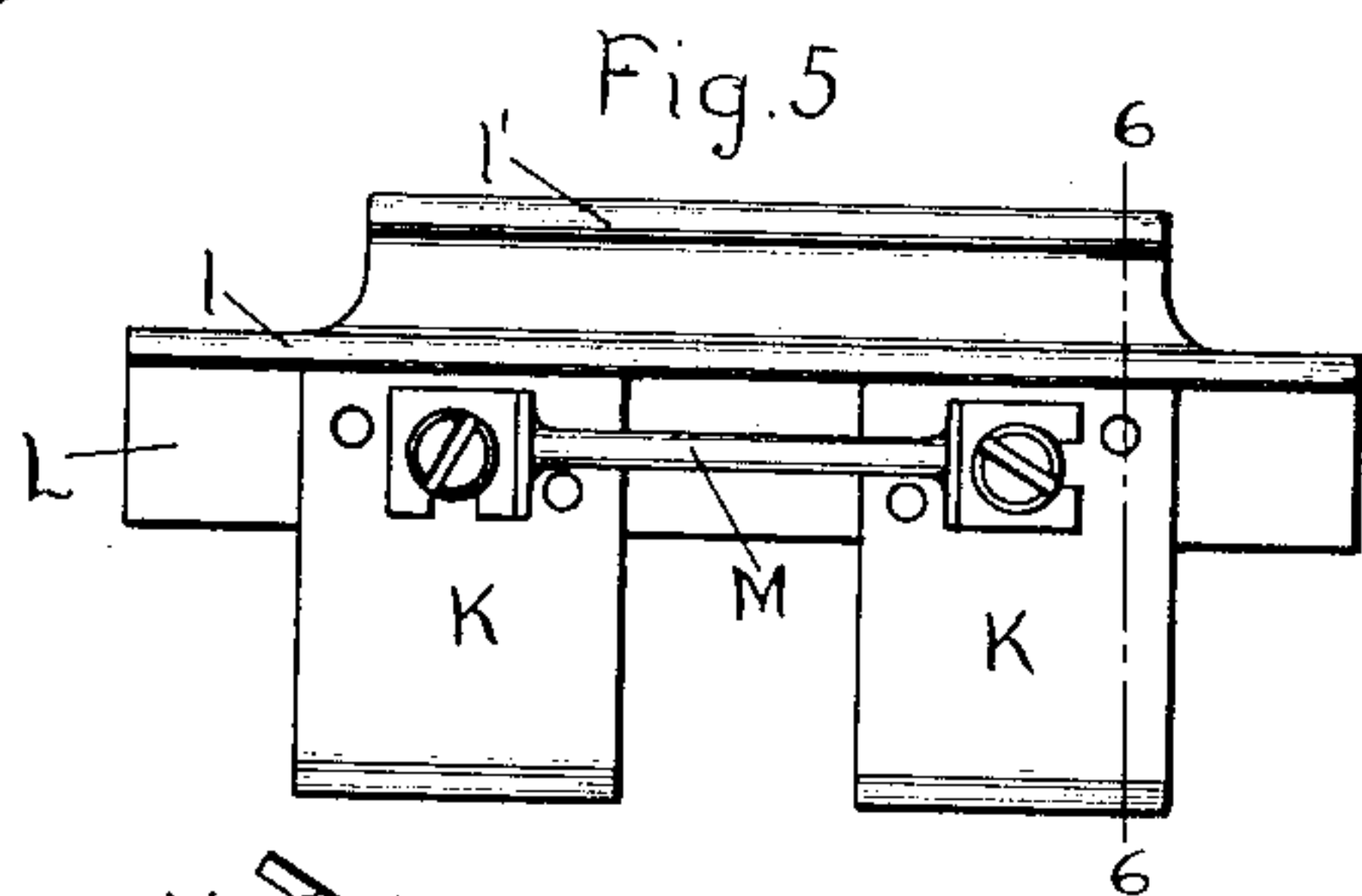
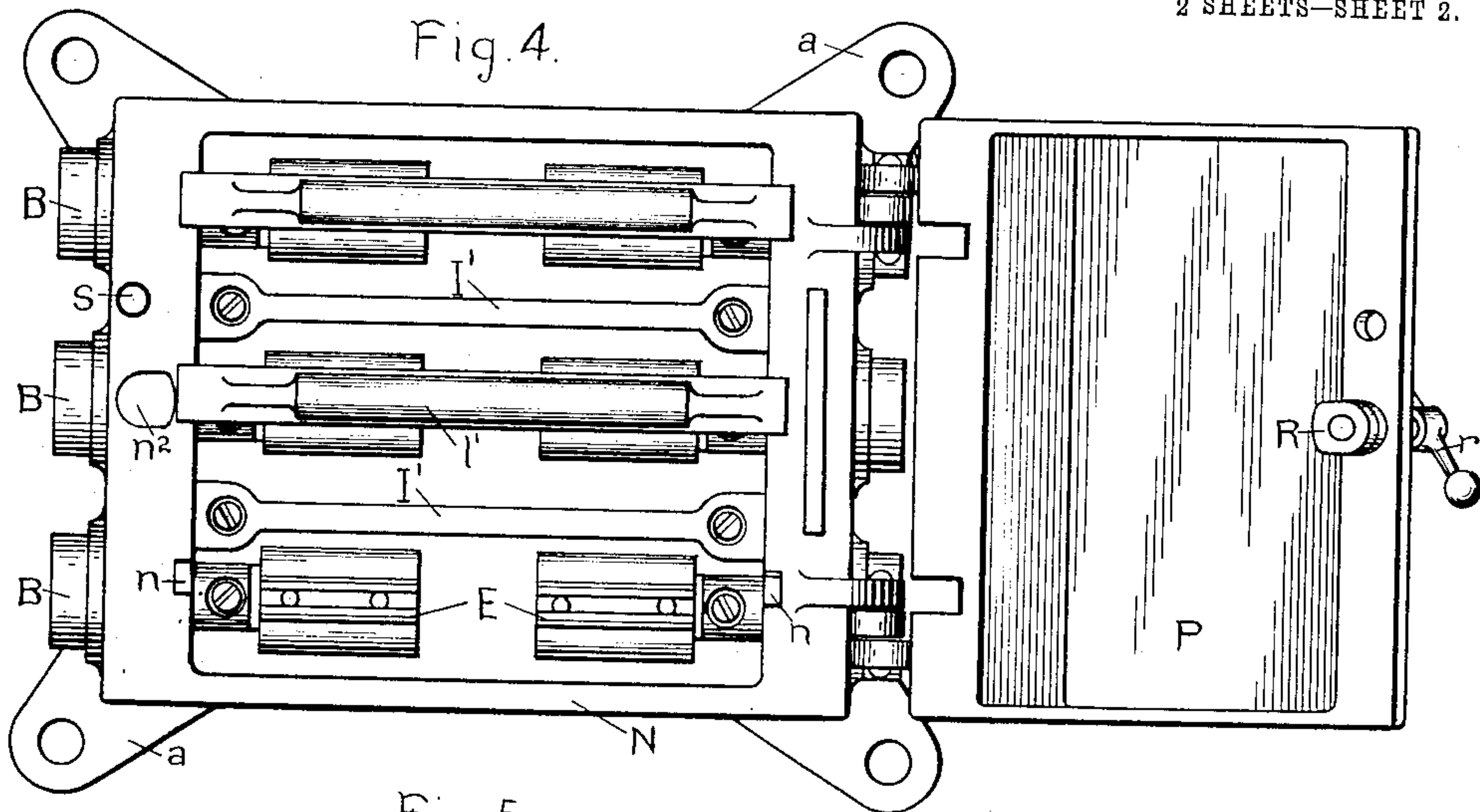
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H. R. SARGENT.
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APPLICATION FILED SEPT. 3, 1901.

2 SHEETS—SHEET 2.



Witnesses:

Benjamin B. Luce

Inventor:
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by *Alfred B. Davis*

Atty.

UNITED STATES PATENT OFFICE.

HOWARD R. SARGENT, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

MULTIPOLAR SERVICE-SWITCH.

No. 842,978.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed September 3, 1901. Serial No. 74,083.

To all whom it may concern:

Be it known that I, HOWARD R. SARGENT, a citizen of the United States, residing at Schenectady, in the county of Schenectady and State of New York, have invented certain new and useful Improvements in Multipolar Service-Switches, of which the following is a specification.

This invention relates to switches for controlling electric circuits; and its object is to provide a service-switch for distribution systems which will meet certain requirements.

A service-switch is used wherever wires from a central station enter a building in order that the entire system of wiring in said building may be controllable from one point. Such a switch should possess the following features: First, it must be sealed so that no power can be stolen; second, in case of fire it must be possible to break the seal and open the switch quickly; third, if a building is wired on the three-wire system of electric lighting the lights on one floor are usually on one side of the system, while those on the next floor are on the other side of the same. Now if the service on one floor gives out the lineman must be able to get at the switch without throwing the other floor into darkness in order to ascertain which fuse has blown. After finding out he must be able to pull that particular blade of the switch and re-fuse or replace it without being obliged to take hold of live metal. Furthermore, if one floor is unoccupied it must be possible to cut out that circuit without interfering with the other.

My invention aims to meet all these requirements and to furnish a reliable service-switch in a form which is compact and of low cost.

The invention consists in a plurality of switches inclosed in a metal box and operative either independently or simultaneously, as may be desired, each switch controlling one of the line-wires. In the box are a plurality of fixed contacts, such as metal clips insulated from said box. The movable switch-contacts are preferably blades to cooperate with said clips. They are supported in a suitable carrier, preferably an inner lid hinged to the box, and are preferably attached to free and independent bars of insulation removably resting in sockets in said lid. The bars can be separately manipulated to replace fuses. By mounting the blades on one side

of the bar any line can be cut out by simply reversing the bar end for end, so that the blades will not enter the clips. The box also has an outer lid, which when shut completely incloses all parts of the switch and can be sealed with a lead seal or otherwise. Means are provided for locking the two lids together, such as a button on the outer lid engaging with the inner one. When the outer lid only is opened, any particular bar can be removed without disturbing the other. By opening both lids at once the entire circuit is broken.

In the accompanying drawings, Figure 1 is a top plan view of my switch. Fig. 2 is a top plan view with both lids open. Fig. 3 is a cross-section showing both lids closed. Fig. 4 is a top plan view with the outer lid only open. Fig. 5 is a side view of one of the removable switch-blades. Fig. 6 is a cross-section of the same on the line 6 6 of Fig. 5. Fig. 7 is a longitudinal section showing the outer lid wide open and the inner lid partly open. Fig. 8 is a sectional elevation of the catch for locking the lids together.

The box A is made preferably of cast-iron, being provided with ears *a* for attaching-screws. In two opposite walls of the box are openings with insulating-bushings B. The terminals C of the service-wires are inserted through one set of openings and the terminals D of the house-wires through the other set, each terminal being electrically connected with a metal clip E, preferably by means of a screw F entering a metal plate G, which passes through the base of the clip and is secured thereto by the screws H, which fasten the clip to the insulating-plate I at the bottom of the box. The clips for corresponding terminals stand in line with each other, and between the several pairs of clips are barrier-walls I', of insulation.

The switch-blades are each composed of two separate plates of metal K, secured to one side of a bar of insulation L and connected by a fuse M. Each plate K is arranged to enter a clip E when the switch is closed. To enable a lineman to handle the bars without danger of touching live metal, each bar has a flange *l* projecting out over the upper ends of the plates K and the fuse M, and is also provided with a handle, such as a flanged web *l'*, rising from its upper surface.

The bars L rest in sockets n , formed in an inner lid or frame N, preferably hinged to the box at one end, as shown. The sockets preferably depend below the lid N to give a firm support to the bars, and the lid may be stiffened by ribs n' on its under side. When the lid is closed, as shown in Figs. 3 and 4, the bars rest in the sockets with the blades K in the clips, and the switch is closed. A lineman can easily remove any particular bar without disturbing the others. If he wishes to cut out any given wire, he can reverse the bar end for end, which will bring the switch-blade to one side of the clips, as shown at the right hand of Fig. 3, leaving that part of the circuit open. The outer lid P is also preferably hinged to the box on the same pintles as the inner lid. It is imperforate and has at one end a catch, such as a rotating button R, provided with a handle r . The button is on the inside of the lid P, and when the latter is closed the button passes through a hole n^2 in the inner lid. A turn of the handle engages the button with the lid N, so that on giving the handle a pull both lids will open together, bringing up all the bars, and thus opening all the circuits. A stud S on the box projects up through holes in the lids when they are closed. The stud has a hole s , through which a wire T can be passed, and when the ends are secured by a seal T' the switch cannot be tampered with without detection.

I have illustrated my invention as applied to a triple-pole switch for a three-wire system of lighting; but it is manifestly applicable to any multipolar switch for controlling a plurality of circuits.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A multipolar switch, comprising a plurality of fixed contacts, a plurality of free, independent contacts coöperating therewith, a single movable carrier in which said free contacts are removably mounted, and means for collectively securing said contacts to said carriers.

2. A multipolar switch, comprising a plurality of fixed contacts, a plurality of supports carrying movable contacts, a carrier having sockets in which said supports rest removably, and means for collectively securing said supports to said carrier.

3. A multipolar switch comprising a plurality of pairs of fixed contacts, a plurality of supports each carrying a pair of connected contacts, a carrier having sockets in which said supports rest removably, and means for collectively securing said supports to said carrier.

4. A multipolar switch comprising a plurality of pairs of fixed contacts, a plurality of insulating-supports each carrying a pair of contacts connected by a fuse, a carrier having sockets in which said supports rest remov-

ably, and means for collectively securing said supports to said carrier.

5. A multipolar switch, comprising a box containing a plurality of fixed contacts, an inner lid carrying the movable contacts, an outer lid, and means for locking it to the inner lid.

6. A multipolar switch, comprising a box containing a plurality of fixed contacts, an inner lid, a plurality of contacts removably supported by the inner lid, an outer lid, and means for locking it to the inner lid.

7. A multipolar switch, comprising a box containing a plurality of fixed contacts, an inner lid provided with sockets, a plurality of bars of insulation removably supported in said sockets, switch-blades on said bars, an outer lid, and means for locking the two lids together.

8. A multipolar switch, comprising a box containing a plurality of fixed contacts, a hinged inner lid carrying a plurality of removable contacts, a hinged outer lid, and a button on the outer lid adapted to engage with the inner lid.

9. In a switch-box, the combination with a base and a movable part forming a switch-arm, of metal contacts upon the base and electrical connections therefrom, a fuse and support therefor, a carrier in which said fuse-support rests removably and a device adapted to connect the carrier and the movable part which device may be released to leave the fuse-support in connection with the metal contacts.

10. In a switch-box the combination with a base and a movable part forming a switch-arm, of metal contacts upon the base and electrical connections therefrom, a fuse and support therefor, a carrier in which said support rests removably, and a device connected with the movable part and adapted to engage said carrier for clamping the fuse-support in relation to the movable part and which may be released to leave the fuse-support in connection with the metallic contacts.

11. In a multipolar switch, the combination with a pair of contact-clips, of a pair of sockets adjacent thereto, and a bar of insulation adapted to rest in said sockets and carrying switch-blades to coöperate with said clips in one position of the bar, and to stand at one side of the same when said bar is reversed end for end.

12. The combination with a three-wire system of wiring, of a switch-box provided with an inner lid and an outer lid, and means whereby the opening of both lids at once breaks the entire circuit.

In witness whereof I have hereunto set my hand this 29th day of August, 1901.

HOWARD R. SARGENT.

Witnesses:

BENJAMIN B. HULL,

MARGARET E. WOOLLEY.