

No. 835,353.

PATENTED NOV. 6, 1906.

R. FLEMING.
CUT-OUT.

APPLICATION FILED APR. 30, 1903.

2 SHEETS—SHEET 1.

Fig. 1'

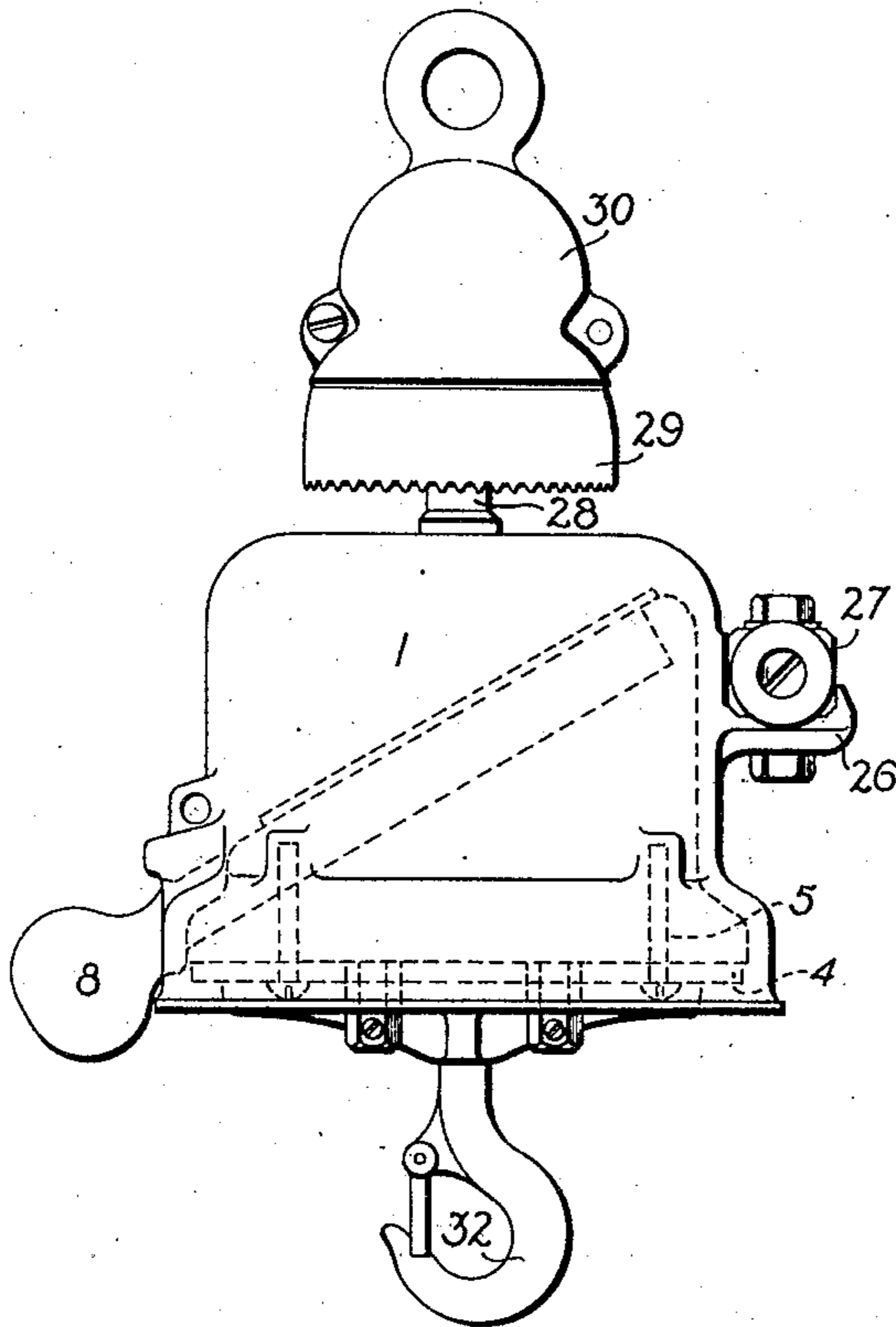
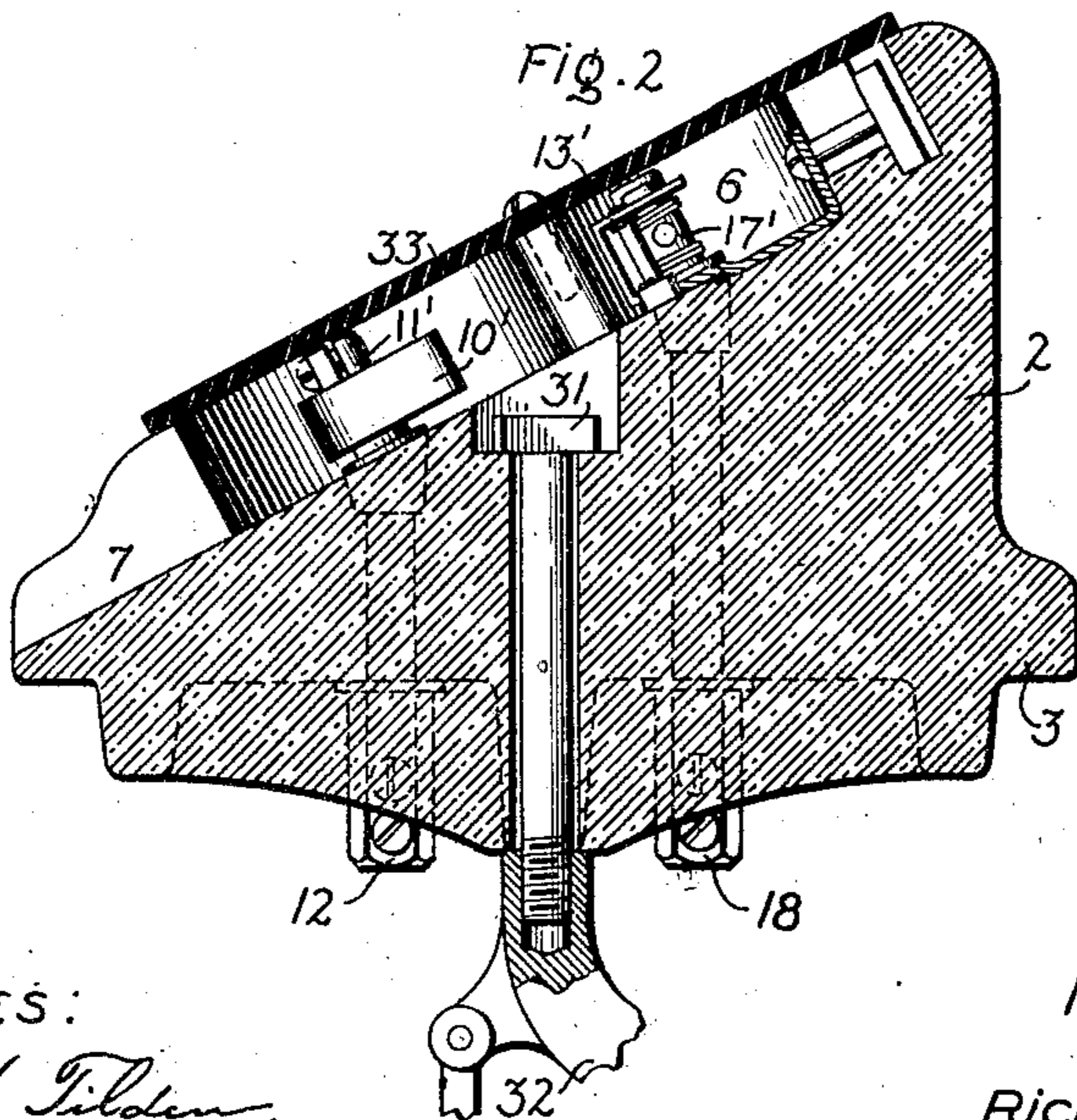


Fig. 2



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2 SHEETS—SHEET 2.

Fig. 3.

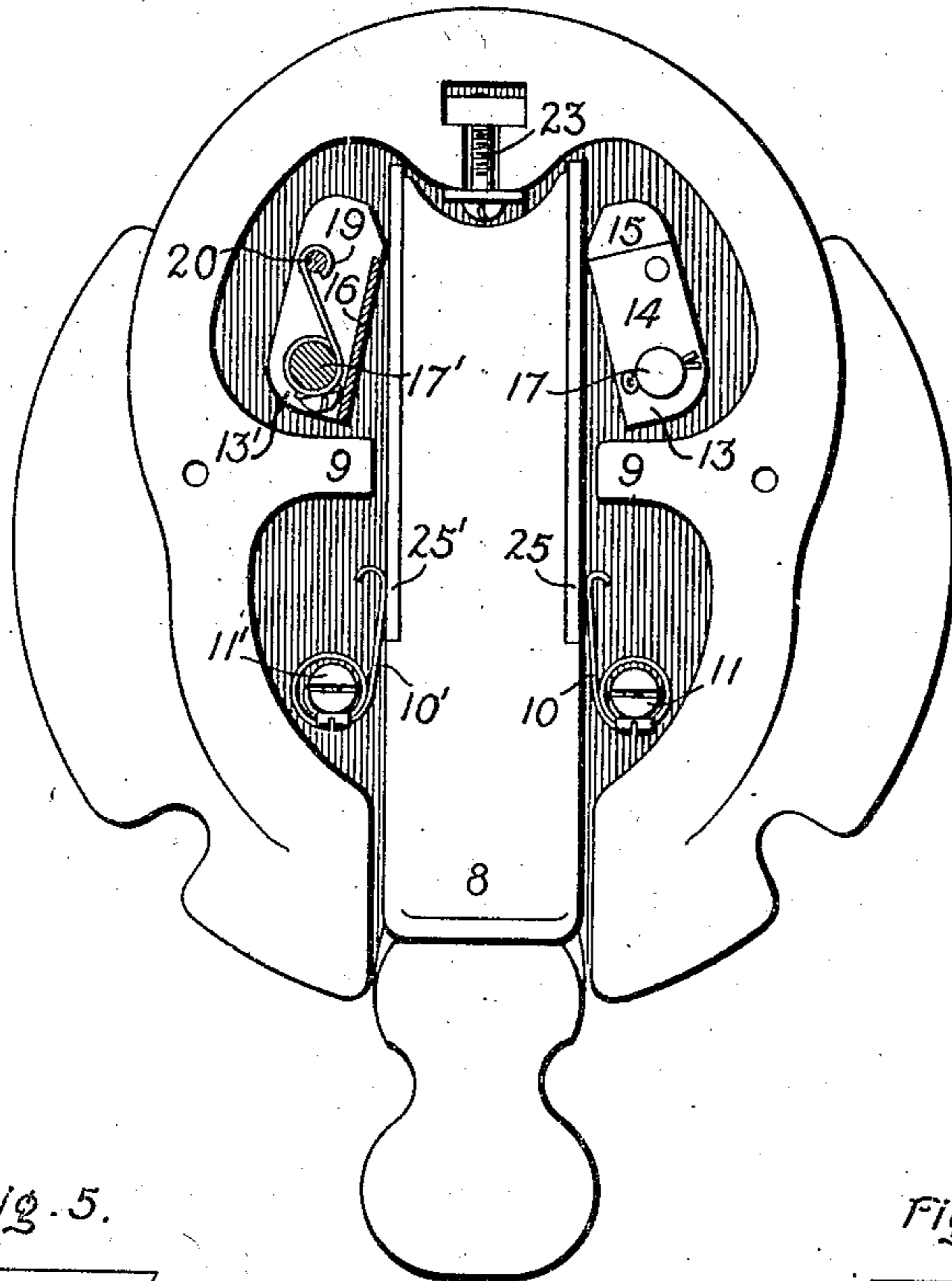


Fig. 5.

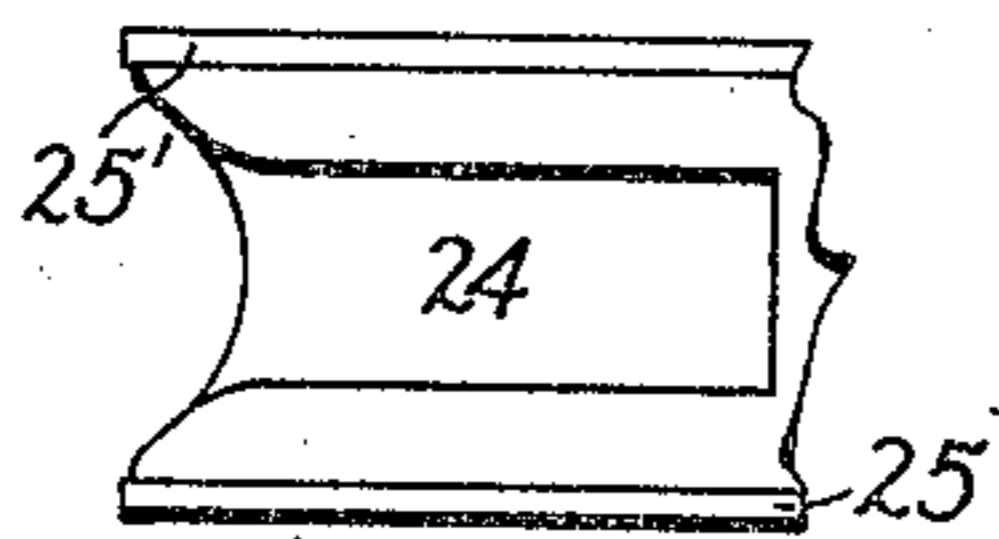
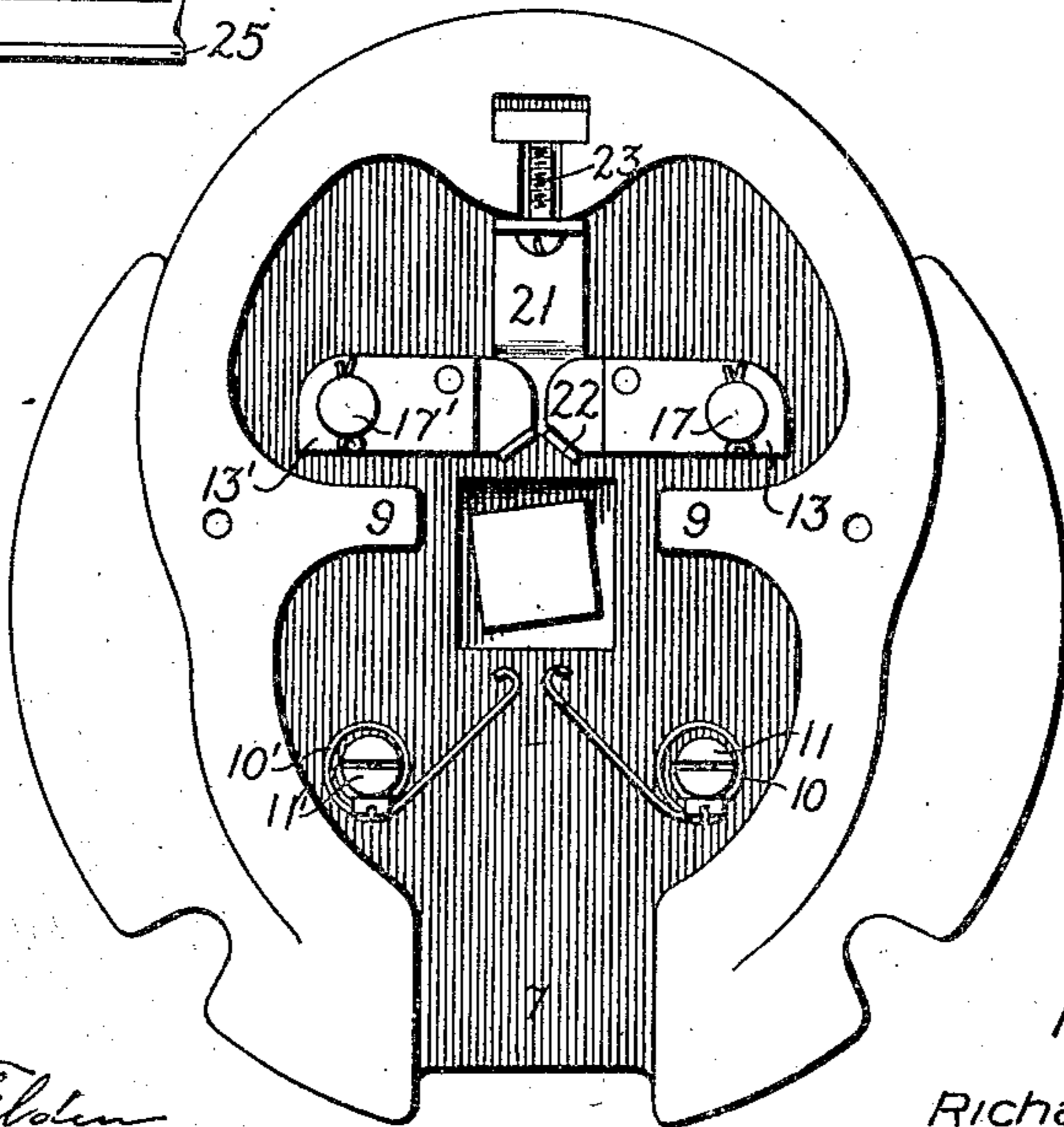
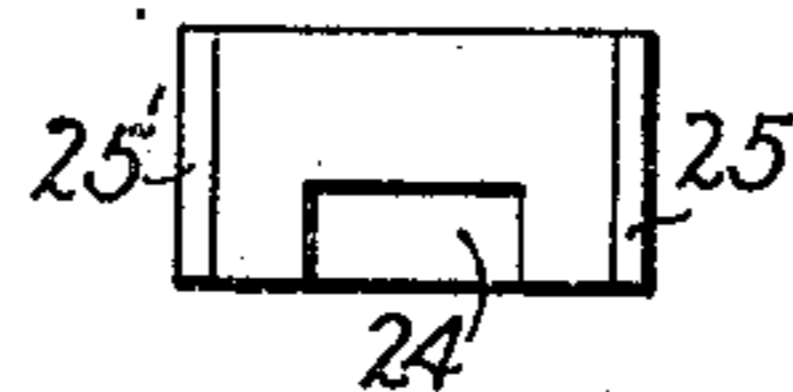


Fig. 4

Fig. 6.



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UNITED STATES PATENT OFFICE.

RICHARD FLEMING, OF LYNN, MASSACHUSETTS, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

CUT-OUT.

No. 835,353.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed April 30, 1903. Serial No. 154,959.

To all whom it may concern:

Be it known that I, RICHARD FLEMING, a citizen of the United States, residing at Lynn, county of Essex, State of Massachusetts, have invented certain new and useful Improvements in Cut-Outs, of which the following is a specification.

The present invention relates to cut-out devices for electric circuits, and more especially to such as are adapted for use in connection with arc-lamp hangers.

The object of the invention is to provide a simple and highly-efficient cut-out device which may be used upon high-potential circuits and operated with entire safety and in which the several parts are so arranged that atmospheric moisture cannot lodge between them.

The invention will be readily understood upon reference to the following description, taken in connection with the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an elevation of an arc-lamp hanger provided with a cut-out embodying one form of my invention. Fig. 2 is an enlarged vertical section of the insulating hanger-block. Fig. 3 is a top plan of the hanger-block with the cut-out parts shown in closed position thereon. Fig. 4 is a similar view with the switch-plug removed and Figs. 5 and 6 are side and end views of the inner switch-plug.

In the application of my invention shown in the accompanying drawings a metallic bell-shaped holder 1 is provided in which the parts of the cut-out and their insulating-base 2 are housed. The insulating-base or hanger-block 2 is preferably of a single piece of porcelain having a circular shoulder 3 near its lower end which is adapted to engage a retaining-ring 4, held in the lower end of the bell-shaped holder 1 by screws 5. The upper surface of the block 2 is in a plane at an angle of about thirty degrees to the plane of the shoulder 3 and is provided with a recess 6 of substantially uniform depth and opening outwardly at the lowermost point 7 thereof for the reception of the switch-plug 8 and the contact parts. A plate of insulation 33 is secured to the upper surface of the block 2 by screws, so that the current-engaging parts are completely surrounded by insulation. The opening 7 between the opposite

walls of the cavity 6 is made wide enough to permit the plug 8 to be passed therethrough with a certain amount of clearance, and at about the middle of the cavity the side walls project inwardly at 9 9, partially dividing the cavity into two compartments.

In the lower compartment of the cavity 6 are located the spiral-spring contacts 10 10' of the lamp-circuit, which are carried at the upper ends of angularly-displaced rods 11 11', extending vertically through the block 2 and provided at their lower ends with binding-posts 12 for the branch wires.

In the upper compartment of the cavity 6 are located the spring-pressed contacts 13 13' of the main circuit. These contacts are formed by longitudinally bending sheet-metal punchings into U shape, so that each contact comprises two blades 14 and 15, connected at one side by a vertical web 16, and they are pivoted at their lower ends on angularly-displaced rods 17 17', extending vertically through the block 2 and provided with binding-posts 18 for the line-wires. The actuating-springs 19 are attached at one end to and surround the ends of the rods 17 17' between the blades 14 and 15 and are connected at the opposite ends to pins 20, carried by the blades 14 and 15 near their free ends. The lower blades 15 are somewhat longer than the upper blades 14 and are arranged to make contact with a stationary metallic strip 21, lying at the bottom of the cavity 6 and provided at its lower end with stops 22 for blades 13 and 13' and bent up at its upper end and connected by a screw 23 to the wall of the recess.

The switch-plug 8 is a bar of insulation of rectangular section provided at its outer end with a handle or knot and at its inner end with a transverse groove to clear the head of the screw 23 and engage the wall of the cavity on both sides thereof and a shallow longitudinal groove 24 on its under side to clear the strip 21 and stops 22, and on its opposite edges are secured metallic contact-plates 25 25'.

The bell-shaped holder 1 is provided with a suitable aperture at one side near its lower edge for the passage therethrough of the plug 8, as indicated in Fig. 1, on its opposite side with a bracket 26, to which is connected the cross-arm 27, and at its top is a supporting-bolt 28, provided with an insulator 29 and

clamp 30. The block 2 is provided with an axial aperture for a bolt 31, which supports the lamp-hook 32.

When the switch-plug 8 is withdrawn, the parts will assume the position indicated in Fig. 4, with the line-contacts 13 and 13' in electrical contact with each other through the stationary strip 21, while the lamp-contacts 10 10' remain out of contact. When the plug 8 is inserted, it engages the contacts 10 10' and forces them outwardly against the tension of their springs, and as it is forced home it engages the line-contacts 13 13' and forces them outwardly against the tension of their springs, breaking the electrical connection between them and completing the lamp-circuit through its side-plates 25 25' and contacts 10 10', and at the same time the plug, being of a thickness equal to the depth of the cavity 6, serves as a barrier, extending the length of the cavity between the line-contacts.

It is to be noted in the construction herein described that in case an arc should form between the line-contacts on making or breaking the circuit it would be prevented by the insulating-walls of the nearly-inclosed cavity from reaching the metal holder, and by reason of the distance of the line-contacts from the plug-aperture it cannot reach the operator when the plug is withdrawn. Moreover, by mounting the switch parts upon the sloping surface of the block any moisture that might be driven into the lower end of the plug-opening will run down and out instead of lodging between the contact parts.

I do not desire to restrict myself to the particular construction or arrangement of the

parts shown in the drawings, for it is evident that they may be changed and modified without departing from my invention.

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

1. The combination of a base, a pair of branch contacts, a contact-strip and a pair of line-contacts normally in engagement with said contact-strip mounted on said base, and a switch-plug having contact-plates secured to two of its faces adapted to be inserted between the respective members of both pairs of contacts.

2. The combination of a base provided with a cavity in its upper surface, a pair of normally closed line-contacts and a pair of branch contacts mounted therein, and a switch-plug comprising a bar of insulation with contact-plates secured to two of its faces adapted to be inserted between the respective members of both pairs of contacts to close the circuit through the branch and provide a barrier between the line-contacts.

3. The combination of a supporting-shell provided with an aperture near its lower edge, an insulating-base supported within said shell and having its upper surface at an oblique angle to its axis, electric contacts mounted upon the upper surface of said base, and a switch-plug adapted to be thrust through said aperture and into engagement with said contacts.

In witness whereof I have hereunto set my hand this 28th day of April, 1903.

RICHARD FLEMING.

Witnesses:

DUGALD McK. McKILLIP,
JOHN A. McMANUS.