

No. 671,093.

Patented Apr. 2, 1901.

M. ROBINSON.
SWITCH AND OUTLET BOX.

(Application filed Jan. 31, 1901.)

(No Model.)

2 Sheets—Sheet 1.

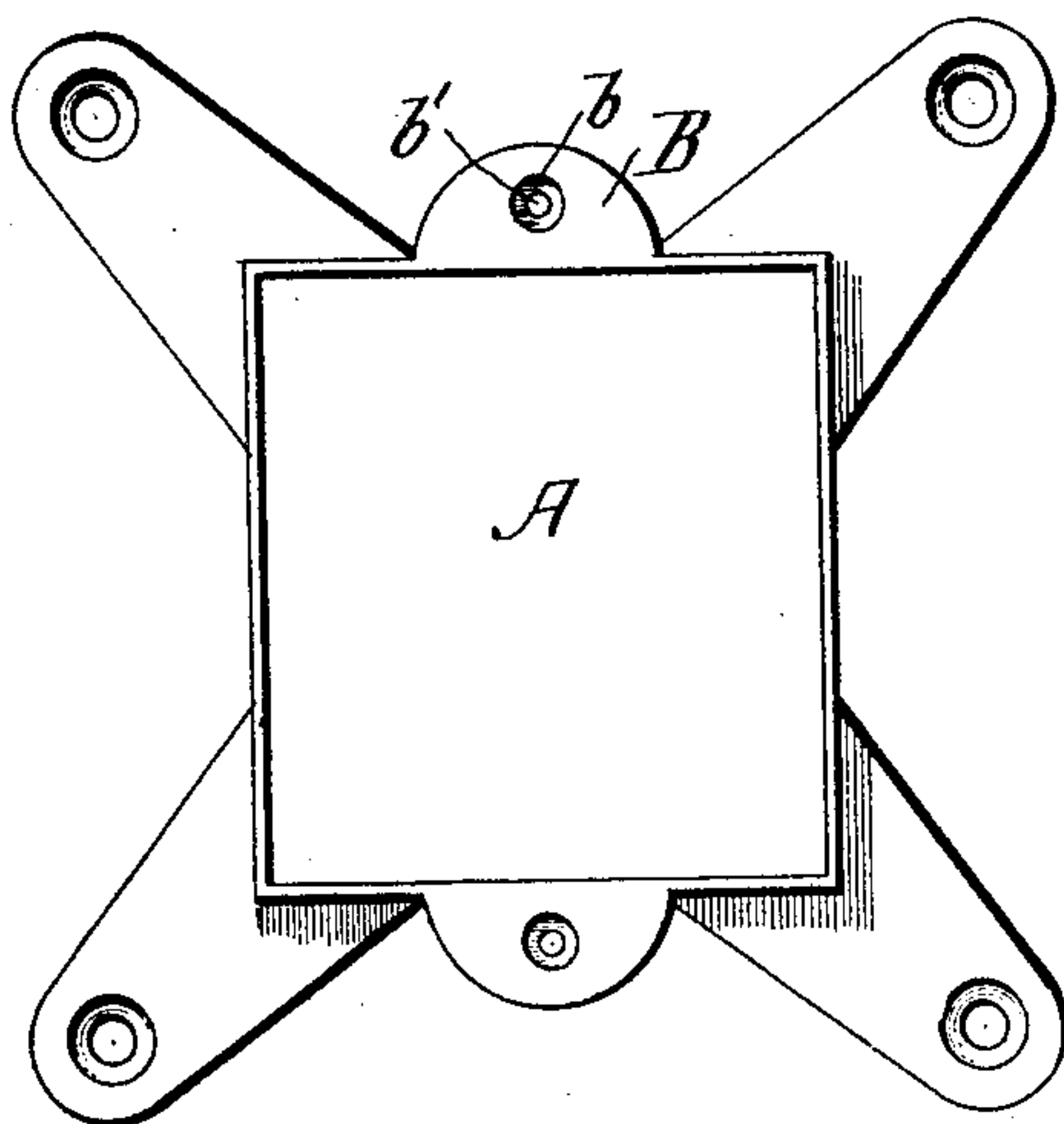


Fig. 1.

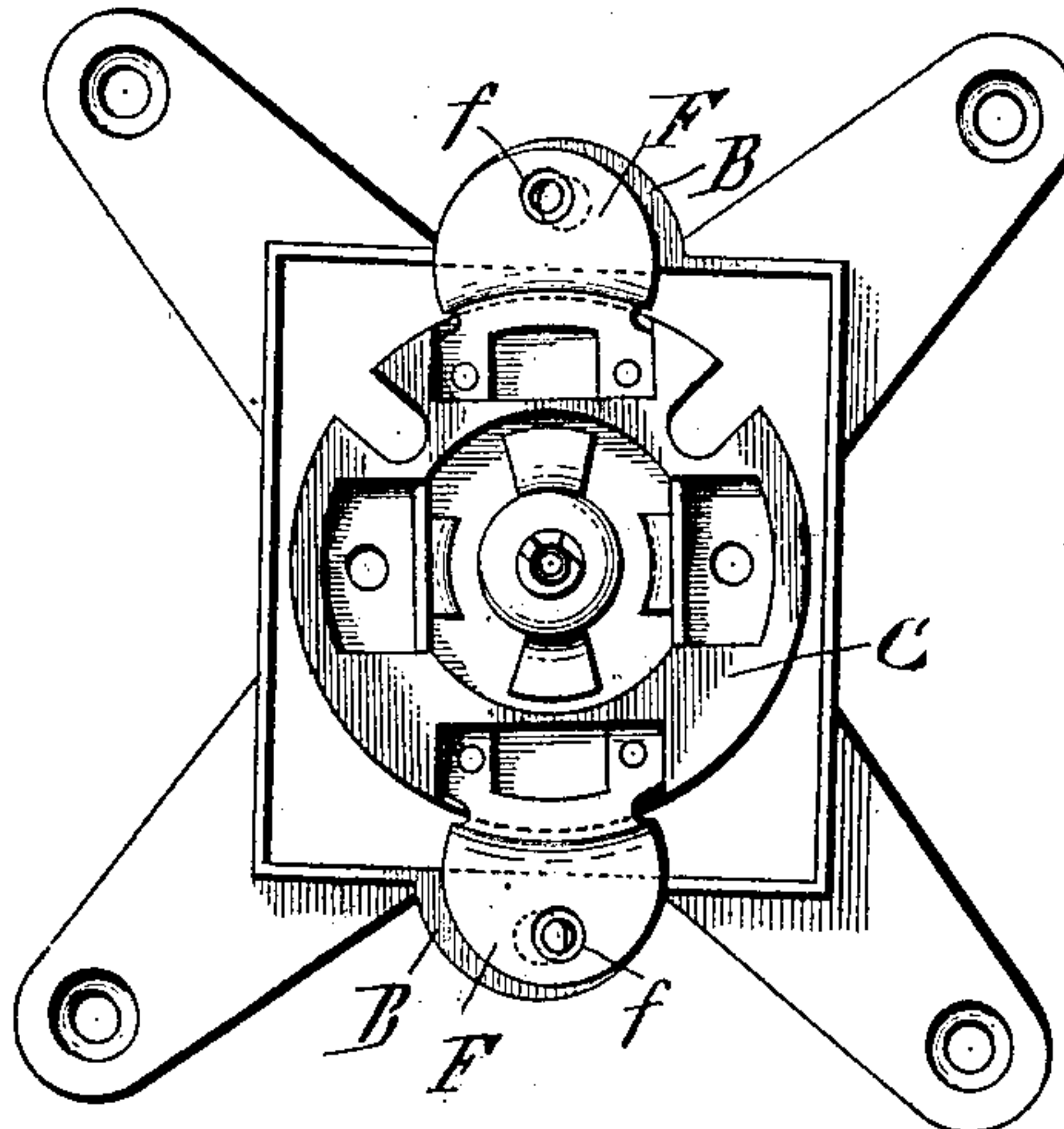


Fig. 2.

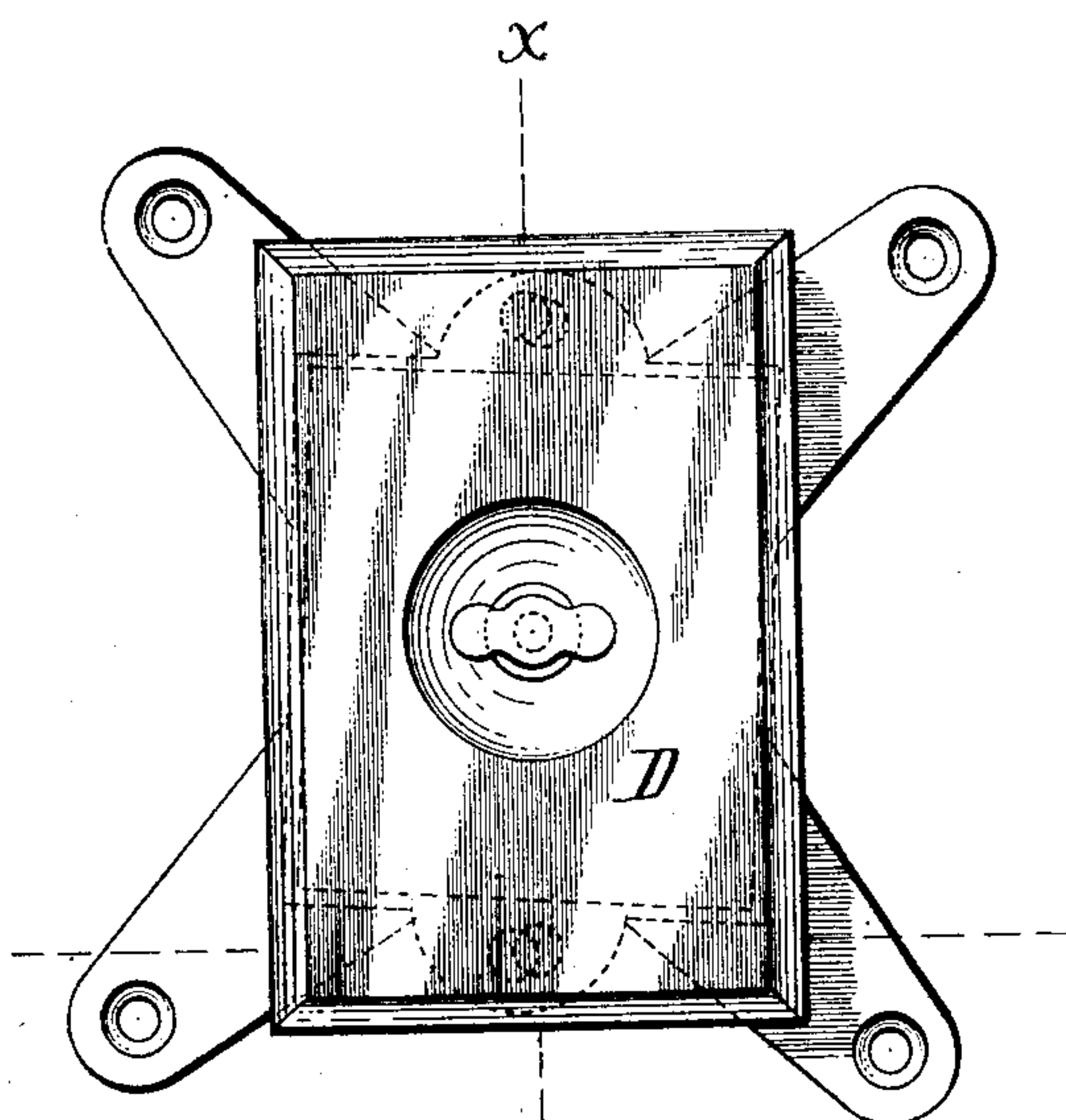


Fig. 3.

X

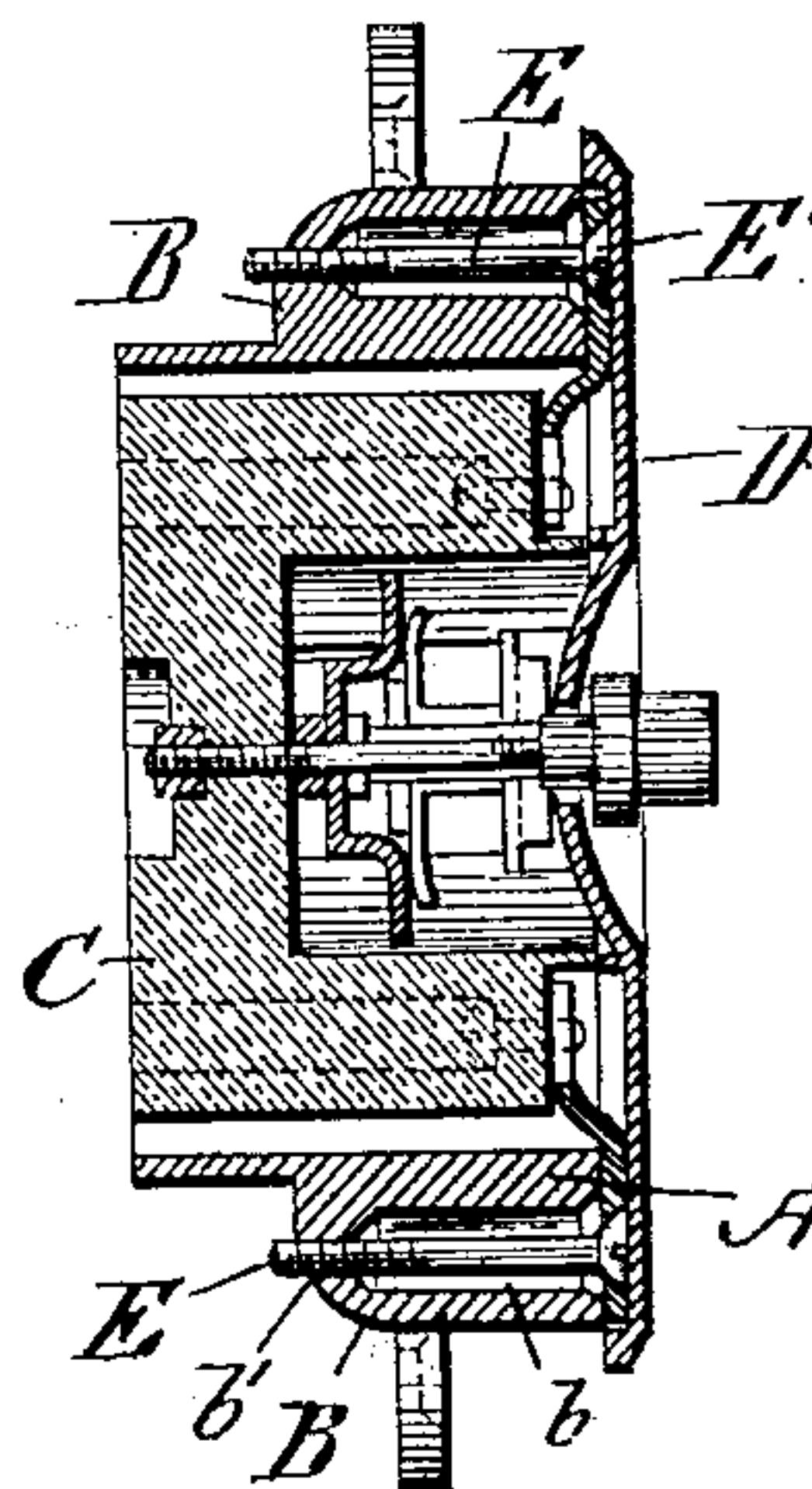


Fig. 4.

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INVENTOR=

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2 Sheets—Sheet 2.

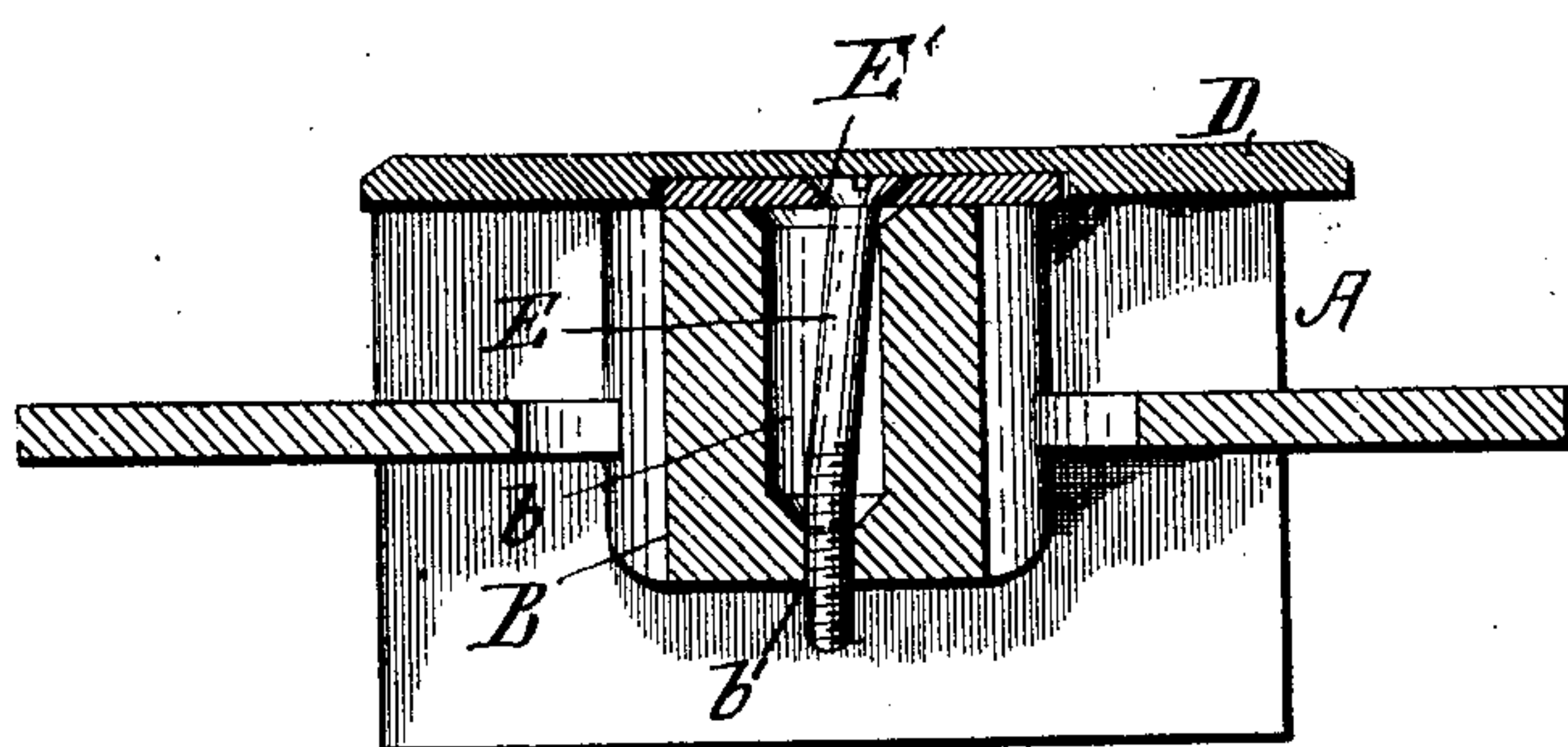


Fig. 5.

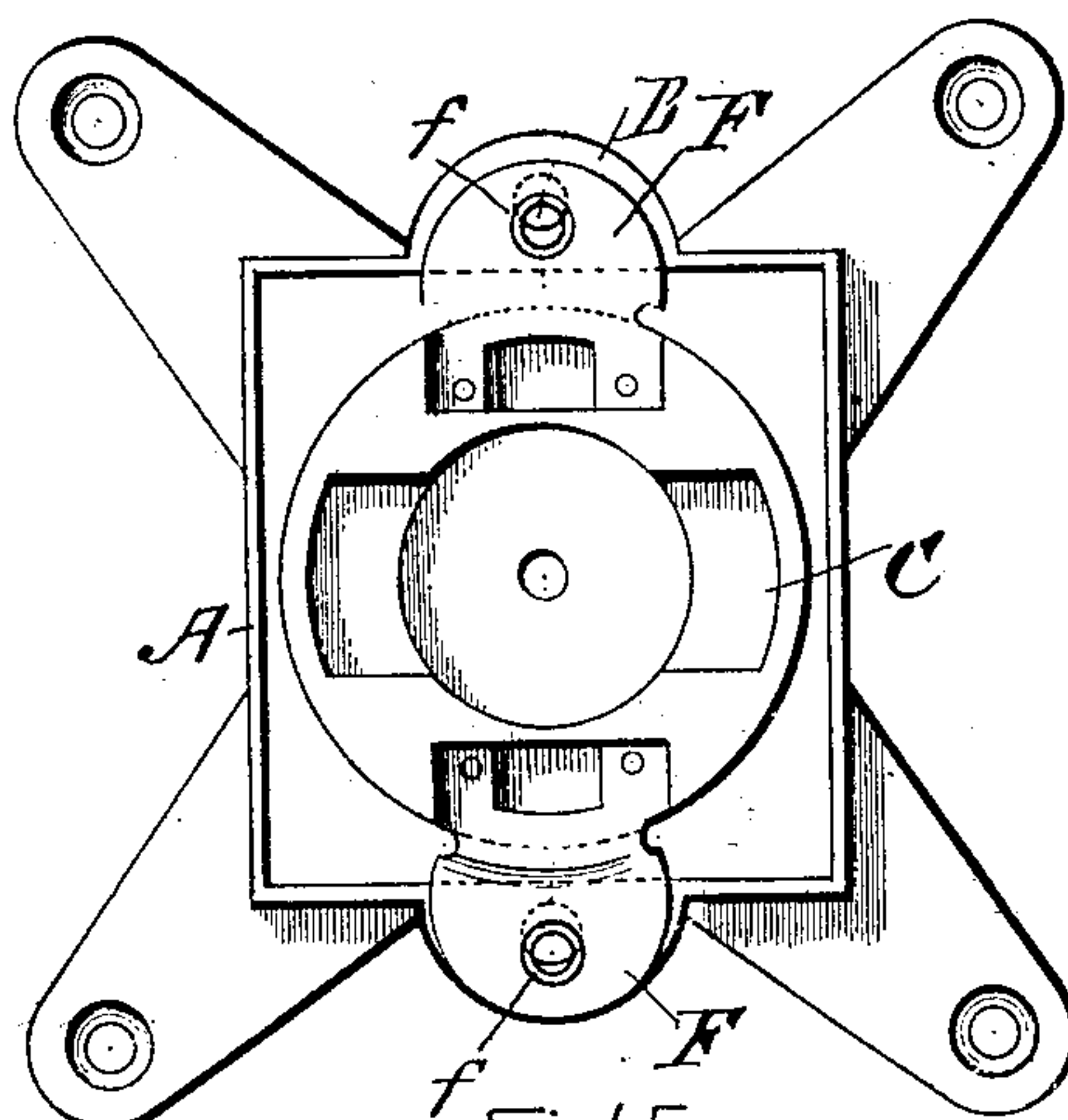


Fig. 6.

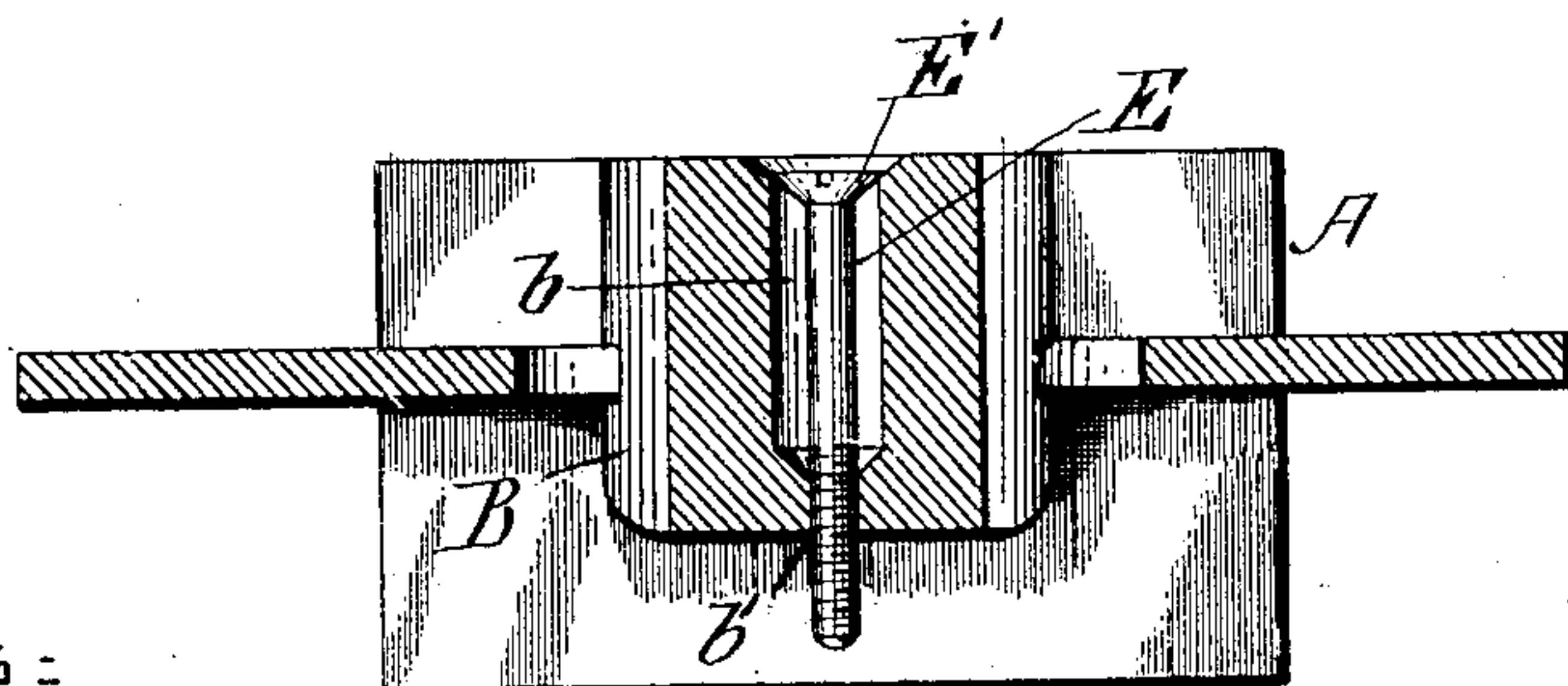


Fig. 7.

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UNITED STATES PATENT OFFICE.

MINER ROBINSON, OF NEWTON, MASSACHUSETTS.

SWITCH AND OUTLET BOX.

SPECIFICATION forming part of Letters Patent No. 671,093, dated April 2, 1901.

Application filed January 31, 1901. Serial No. 45,436. (No model.)

To all whom it may concern:

Be it known that I, MINER ROBINSON, of Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Switch and Outlet Boxes, of which the following is a specification.

The object of my invention is to provide a universal box which will accommodate all the principal makes of switches, receptacles, &c., and also to allow of a universal adjustment of the switch or receptacle in case the iron box was not set plumb in the wall. At present it is necessary to have a special-make box for each distinct make of switch or receptacle. Also in the old-style box the screws for attaching the switch, &c., are so placed in the box that they do not allow of any appreciable adjustment of the switch in the box or of attaching any other than the particular make of switch specially designed for it. I have found in the different makes of switches that the holes in the binding-ears of the switch usually vary, some being farther apart and some nearer together, and in order to make a universal box which will compensate for this difference in distance in different makes of switches, as well as to admit of the above-mentioned adjustment, I remove the threaded screw-hole in the receiving-box as far back from the front plane of the box as practicable, and by so doing I am enabled to move the switch in the box in any direction within reasonable limits and to securely fasten the same in that position by tightening the screws. This result is due to three reasons. First, the lost motion usually existing between the screw and its threaded hole, which is multiplied the farther away the head of the screw is from the threaded hole; second, the spring of the metal is greater in a longer than in a shorter screw, and, third, a less permanent set or bend in the metal is necessary in a longer than in a shorter screw, and therefore with less danger of weakening the screw.

Referring to the drawings, Figure 1 is a plan view of my improved box. Fig. 2 shows in plan view a switch with cover removed, simply set into the box, showing how the screw-holes in the ears of the switch may not be concentric with those in the box, the switch being twisted sidewise. Fig. 3 is a similar view

with the plate in position, showing how the plate may be level even though the box is out of plumb. Fig. 4 is a vertical section on line *xx*, Fig. 3. Fig. 5 shows in section an extreme position which the attaching-screw may assume as may be found necessary either in truing up the switch or accommodating switches with varying distances between the holes in the attaching-ears. Fig. 6 shows a switch in place in the box, the distance between the holes of its attaching-ears varying considerably with that of the box. Fig. 7 shows the normal position of the screw in the box as shipped.

In order to carry out my invention, I drill two holes *b b*, considerably larger than the body of the binding-screws *E*, about three-fourths of an inch deep, more or less. At the bottom of these smooth holes I make the threaded holes *b'* for receiving the attaching-screws, the bottom of the larger holes *b* being preferably left funnel-shaped by the drill, thereby facilitating the sliding of the screws into the threaded holes. I consider this method preferable, as the metal around the large hole protects the screw from mechanical injury and at the same time acts as a guide when inserting the screws. I find by this arrangement that the different makes of switches are readily interchangeable in this box, even though the distance between the holes *f* in the "switch-ears" *F* varies considerably from the distance between the threaded holes *b'* in switch-box, as shown in Figs. 2, 3, and 6, the screws and peculiarly arranged receiving-holes accommodating the difference in dimensions in the manner described above. Furthermore, should the switch-box *A* not be set level in the plastered wall the switch may afterward be readily trued up when put in the box, so as to have the covering-plate *D* perfectly level. This is accomplished by loosening the attaching-screws *E E* until they are loose in the holes *f* in the switch-ears and then holding the switch in the proper position to have the plate *D* level. Screwing the binding-screws down hard will be found to securely fasten the switch in that position.

As all outlet-boxes must be set in position in a building during construction where the old-style boxes are used, great care must be

taken that they are exactly plumb and securely fastened in that position; otherwise when the switch is put on during the process of finishing it is then too late without considerable trouble and expense to plumb the switch-plate. It is often found that either through carelessness in originally setting or by subsequent accident, even if properly set at first, the box is out of plumb after it has been plastered in, a defect which is very apparent when only slightly out of true when the final finish of the house is put in, since the switches are usually placed near door-casings, moldings, and straight fresco-lines, with which the slightest irregularity may be compared.

In order to prevent the larger guiding-hole *b* from becoming filled with plaster or other material during the process of construction of the building, I have made it slightly smaller in diameter than the head of the screw *E'*, as shown in Fig. 7, so that when the screw is in place it does not leave any opening around its head for the entrance of foreign materials.

In order to allow of a forward and back adjustment, which would be necessary in case the box should be buried below the plaster-line, I make the "switch-attaching" screws *E* of extra length.

The advantages of my invention may be stated briefly as follows: It is unnecessary at the time of wiring to decide upon the particular make of switch, as with the old style of box. Less care is required in setting the box, and therefore a saving of labor. The possibility and ease of adjustment at the time of put-

ting on the switch and switch-plate, and the great ease with which a switch and switch-plate may be adjusted when finishing, permitting of equally good work being done by less skilled labor.

It is my intention to adapt this invention to several different-sized boxes, known as "gang-boxes," where two or more switches are grouped together under one plate.

What I claim is—

1. A universal switch-box with holes for receiving the switch-attaching screws having the threaded portion of the holes at considerable distance back from the switch-ears when the switch is in place, whereby a considerable discrepancy may exist between the position of the holes in the switch-ears and the threaded holes in the box, and be compensated for and at the same time allow of a universal adjustment of the switch in the box, in the manner described.

2. An outlet-box *A* provided with screw-receiving holes having the enlarged guiding portions *b b* and the threaded portions *b' b'* in combination with a switch with ears *F F* and binding-screws *E E* arranged whereby any discrepancy in position of the holes in the switch-ears and the outlet-box is compensated for, substantially as and for the purposes described.

In testimony whereof I have affixed my signature in presence of two witnesses.

MINER ROBINSON.

Witnesses:

ALBERT E. LEACH,
G. GUNTHER.