

No. 709,614.

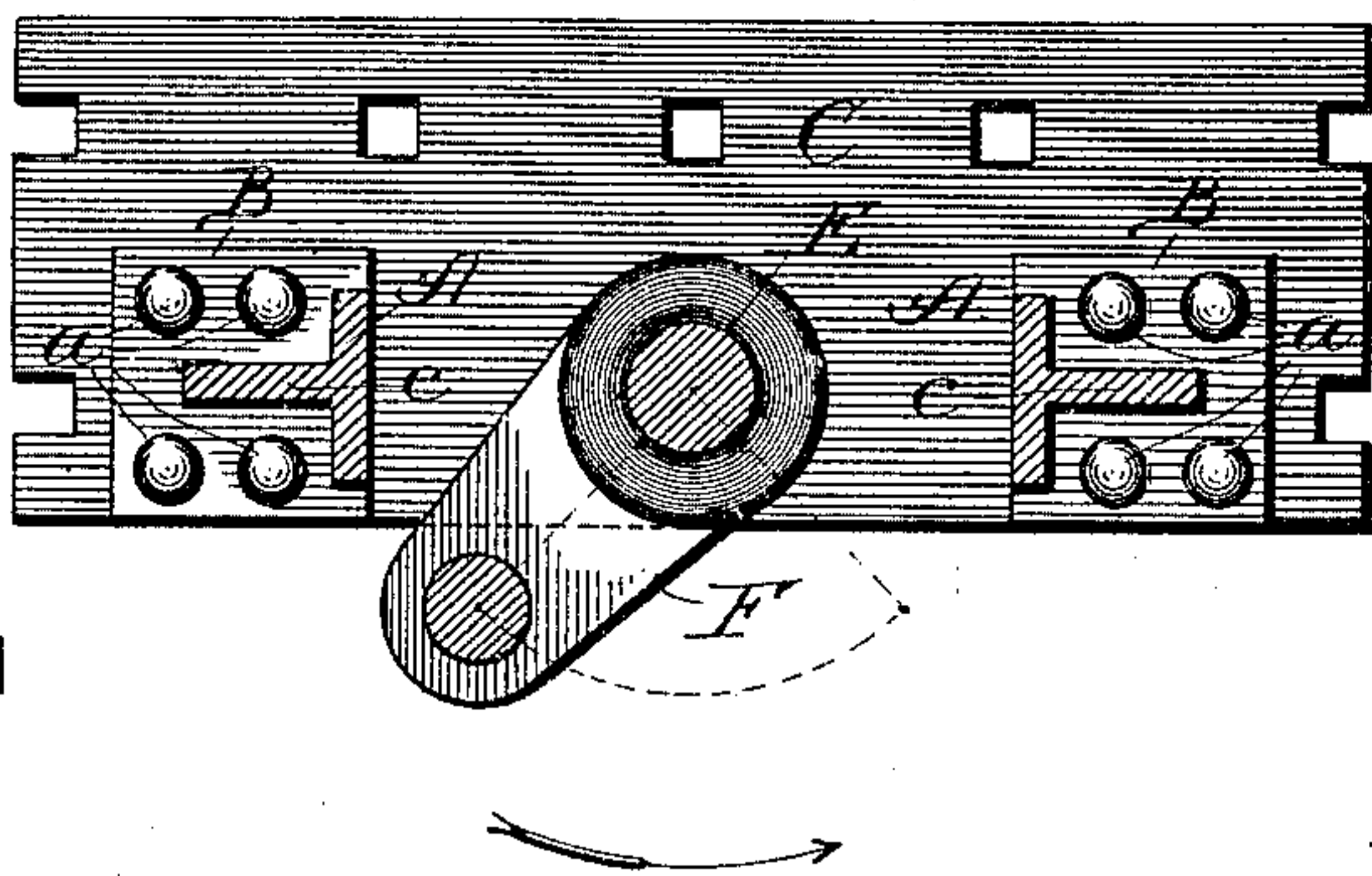
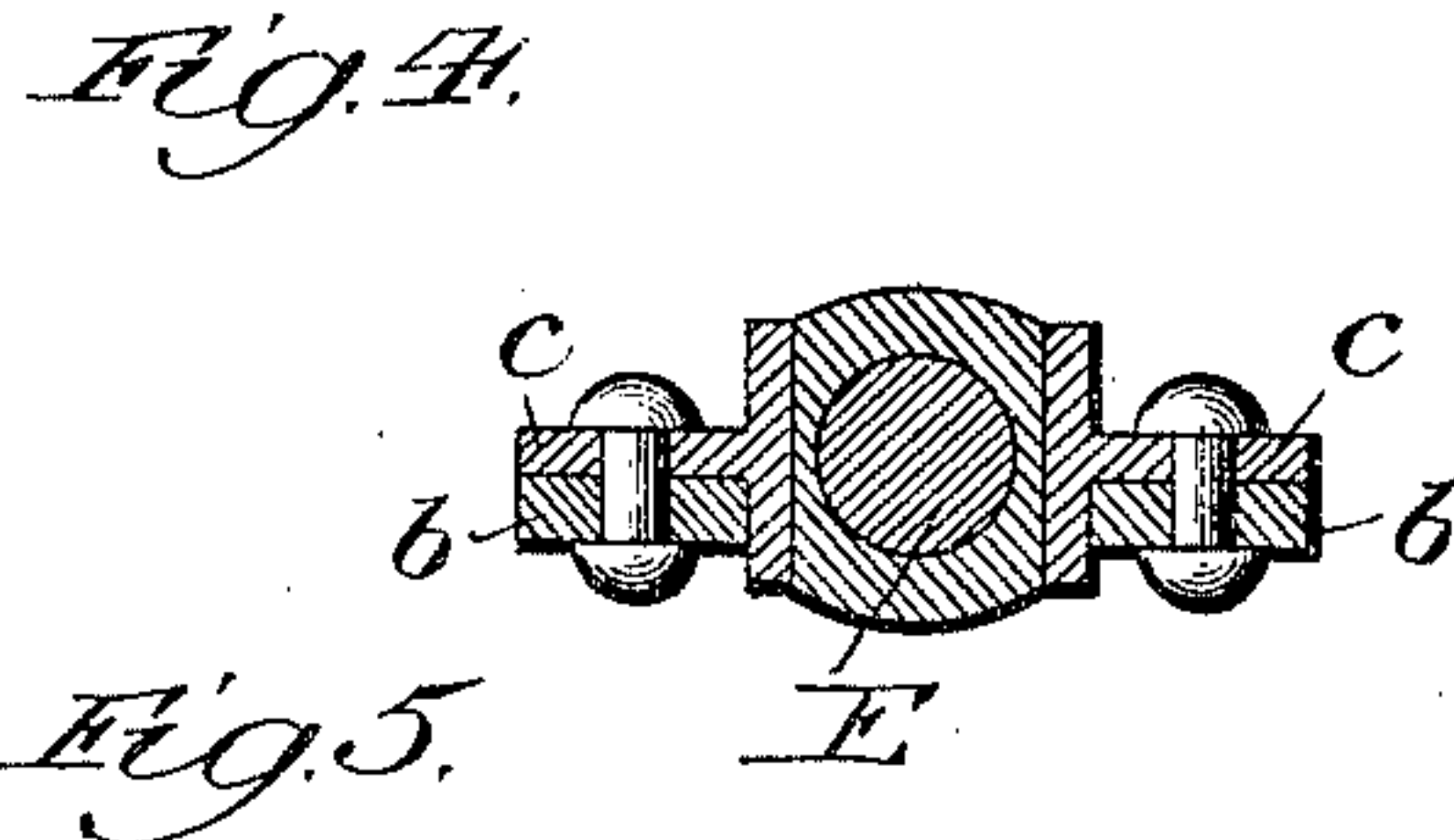
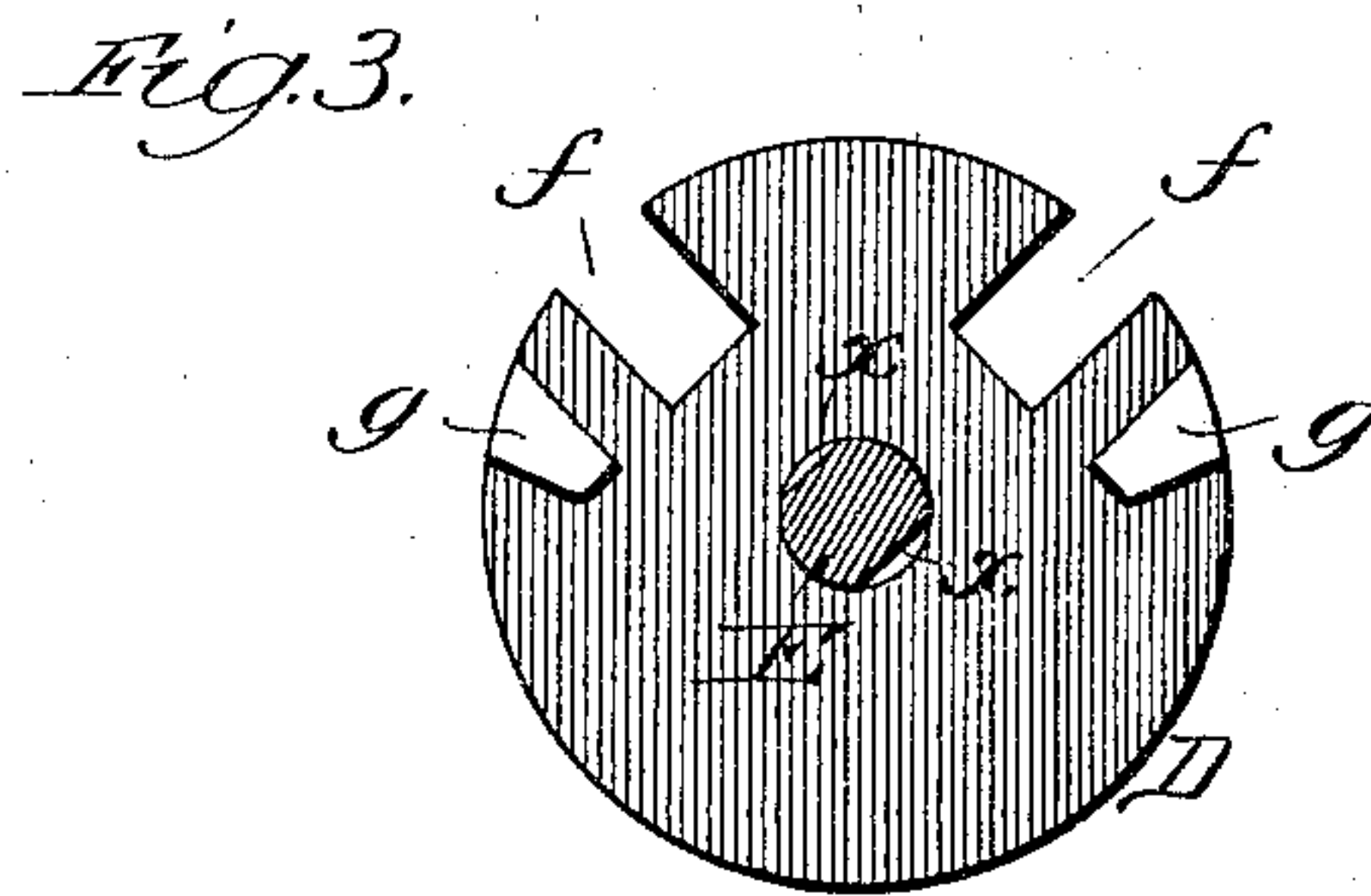
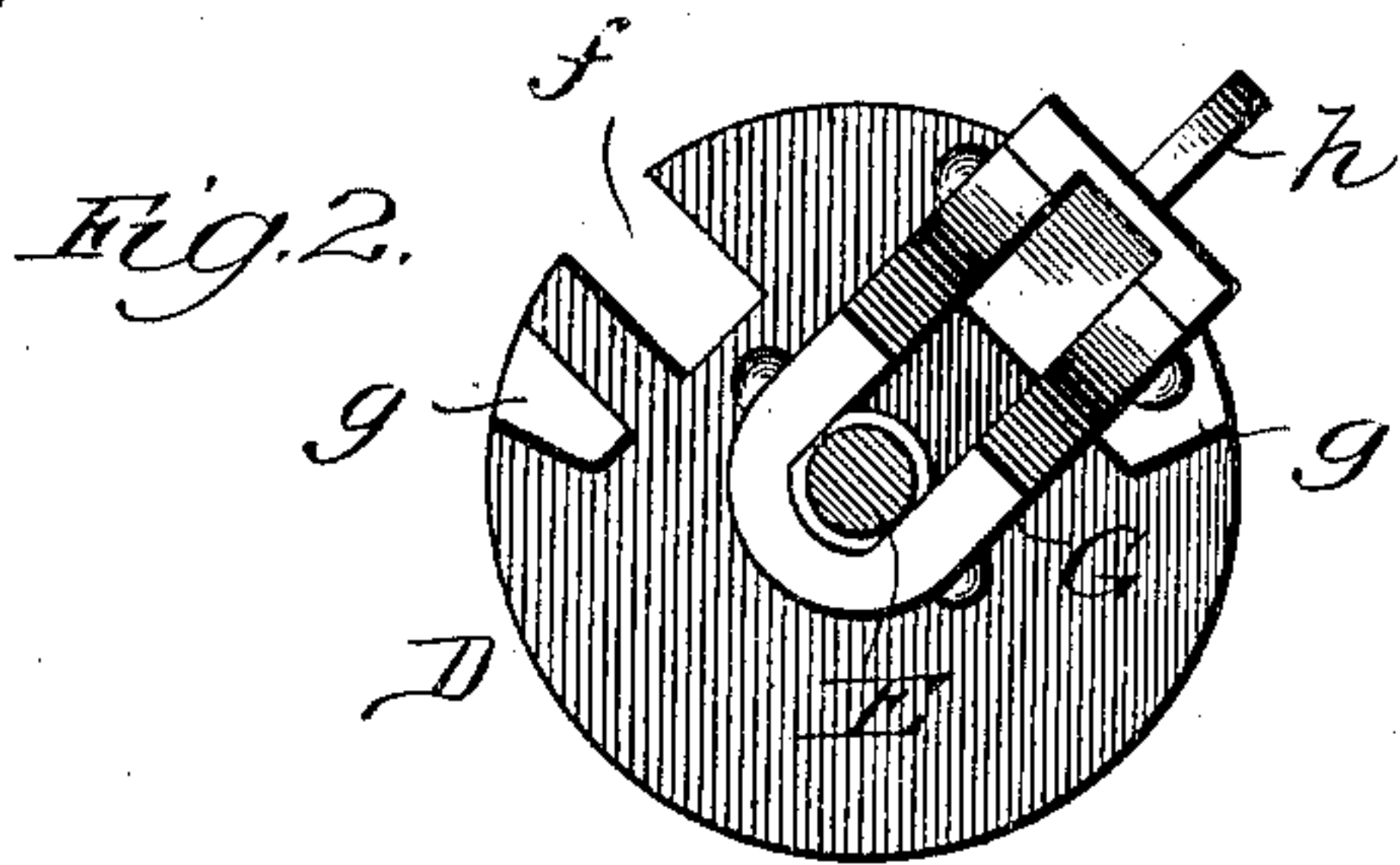
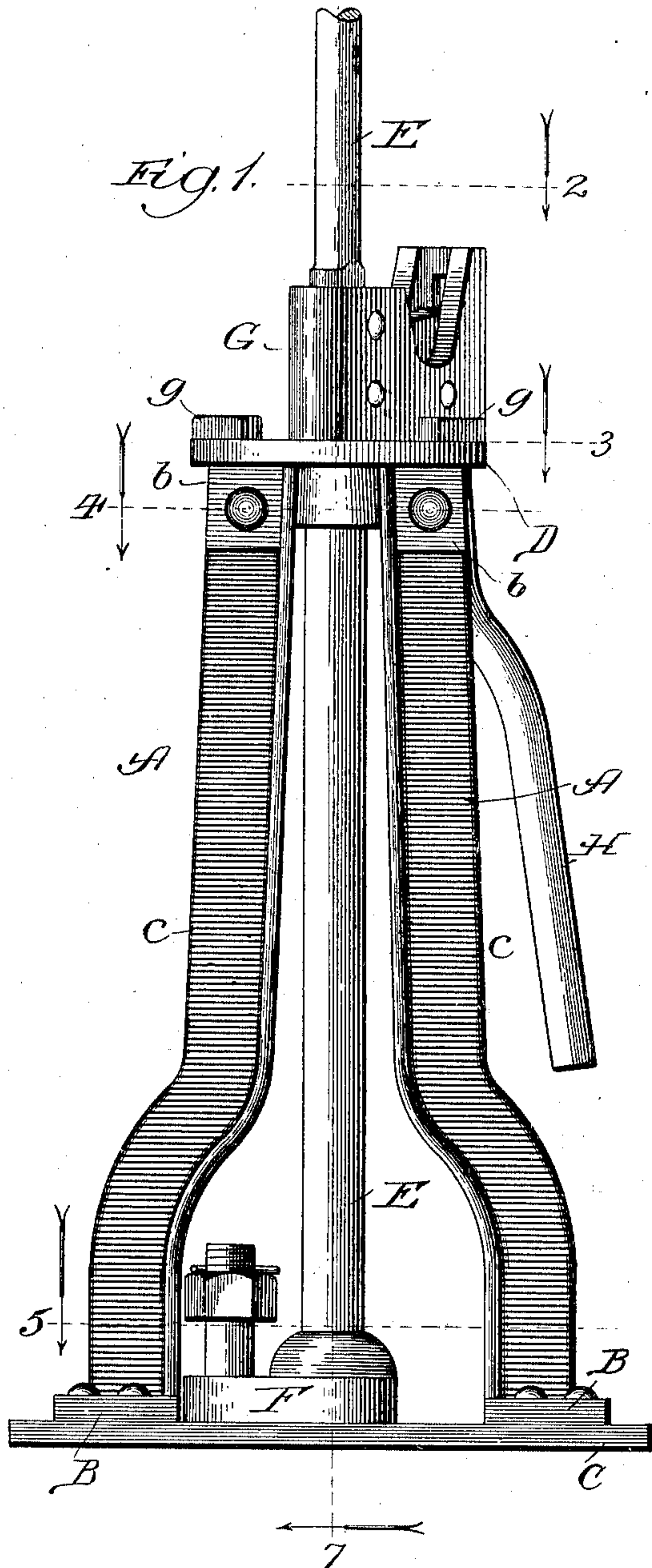
Patented Sept. 23, 1902.

A. A. STROM.
SWITCH STAND.

(Application filed July 15, 1902.)

(No Model.)

2 Sheets—Sheet 1.



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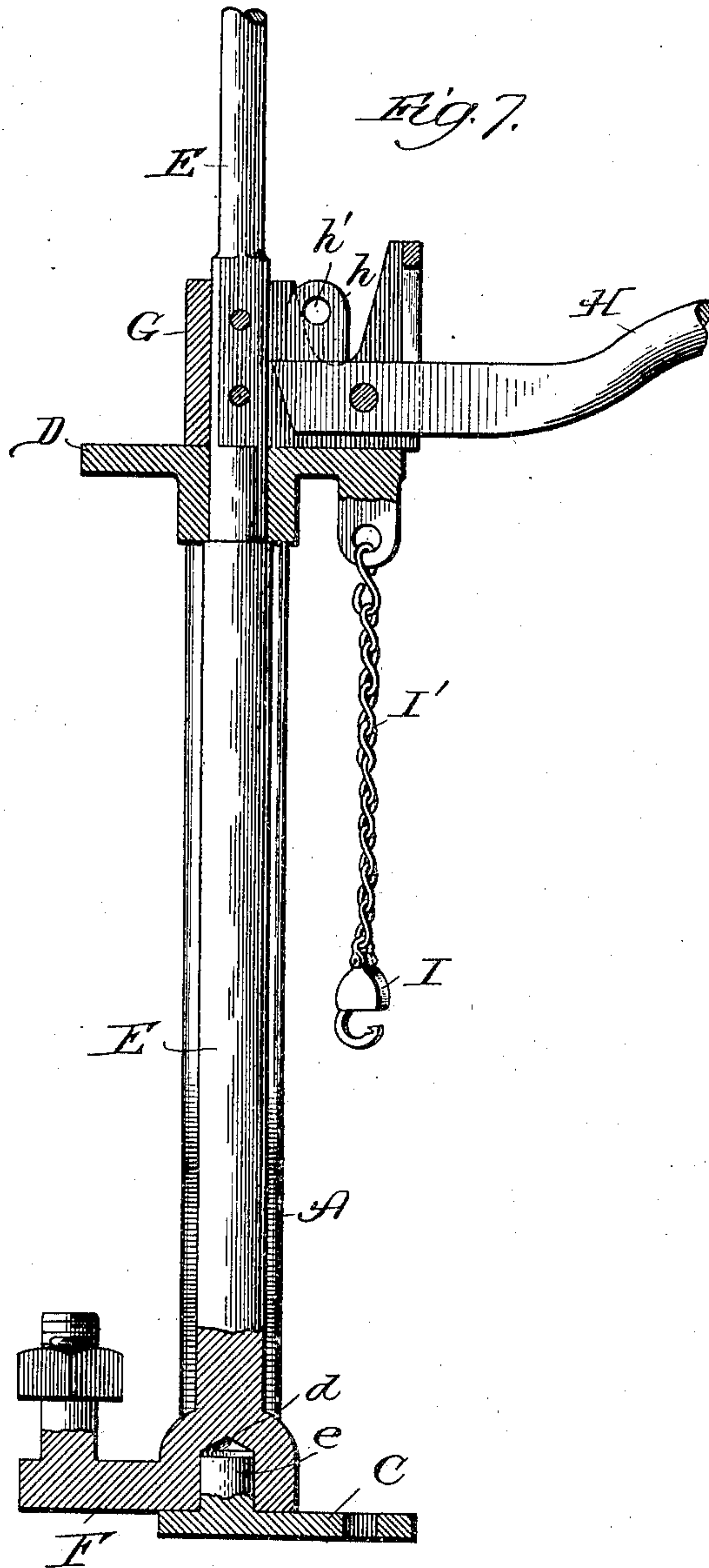
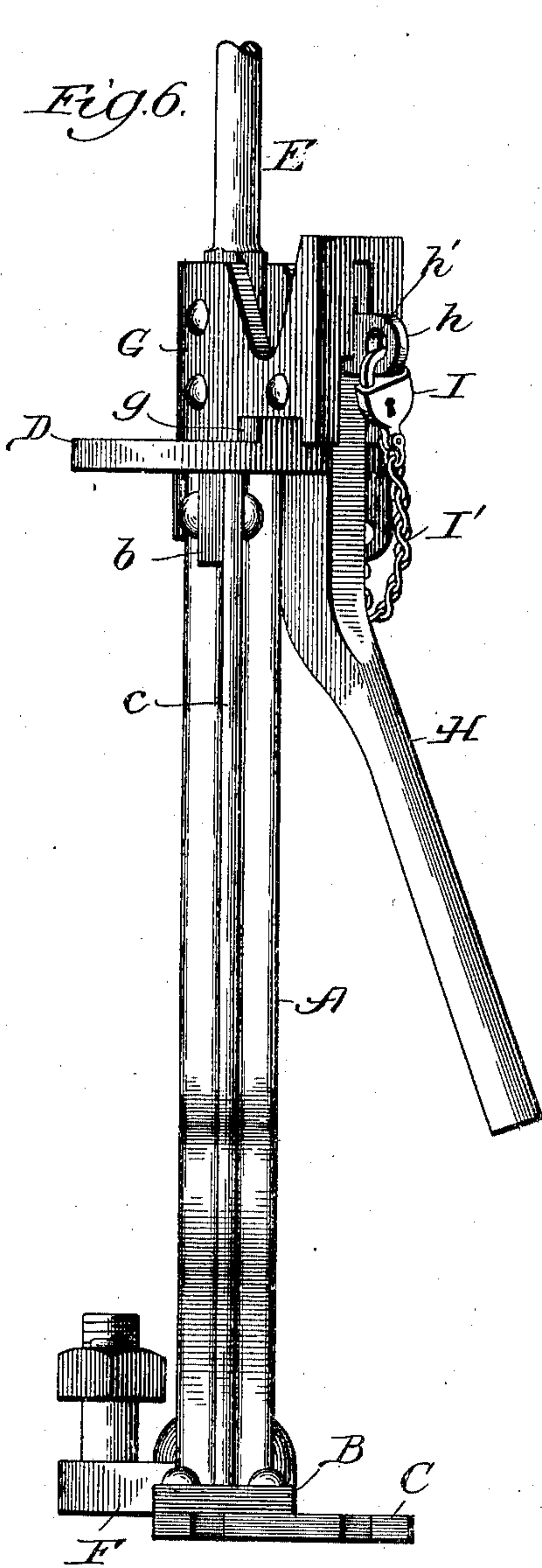
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(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

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SWITCH-STAND.

SPECIFICATION forming part of Letters Patent No. 709,614, dated September 23, 1902.

Application filed July 15, 1902. Serial No. 115,715. (No model.)

To all whom it may concern:

Be it known that I, AXEL A. STROM, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Switch-Stands, of which the following is a specification.

The primary objects of my invention are to reduce the weight of a railway-switch stand, thereby to save in material employed in its construction and in the cost of shipment, to render the structure of the stand compact, and to form the lower journal-bearing of the rotary spindle in a manner that shall reduce to the minimum torsional strain upon the crank.

Referring to the accompanying drawings, Figure 1 shows my improved switch-stand by a view in front elevation with the operating-lever in its locked position at one end of the throw of the crank. Figs. 2, 3, 4, and 5 are sectional views taken, respectively, at the lines 2, 3, 4, and 5 on Fig. 1 and viewed in the direction of the arrows. Fig. 6 shows the switch-stand by a view in side elevation; and Fig. 7 is a section taken at the line 7 in Fig. 1 and viewed in the direction of the arrow, but showing the operating-lever raised and in the position with the crank midway between the ends of the ninety-degree throw of the latter.

The frame of the switch-stand is formed of the commercial article known as "structural metal" or "structural iron" of any suitable one of the various shapes in cross-section in which that article is furnished. As shown, the frame comprises the two similar sides A A, each composed of a T-bar, having on one end a base B integral with the bar, being formed thereon by upsetting while hot a section of the end of the bar by forging it in a suitable die, whereby the substance of all the webs of the forged section is consolidated into the base, which extends at a right angle to the bar and is provided with holes *a*, through which to rivet it to a bed-plate C. It is due to my discovery that it is practically feasible to provide structural metal with an integral head or base by thus consolidating therein the substance of the webs of an end portion of the bar that I am enabled to employ this

commodity in the construction of a switch-stand frame with its advantages of lightness, strength, and comparative cheapness, for unless the base, which is necessary as the medium through which to rivet or bolt the frame in position, be thus integral with the frame the latter would be so lacking in strength and durability as to be practically unfit for service, whereas with the integral base the frame, besides being comparatively light, is adequately strong and durable and would comply with these particulars if composed, as it might be, of a single upright bar of the structural metal provided with the integral base.

D is the slotted table surmounting the frame, to which it is fastened by riveting-ears *b*, depending from it to the webs *c* of the bars.

E is the oscillating switch-spindle extending through the center of the table and carrying on its lower end the crank F for connection with a switch in the usual manner through the medium of the "connecting-rod." (Not shown.) In the lower end of the spindle, which should be expanded, as represented, is provided a central socket *d*, Fig. 7, to extend, preferably, to or beyond the plane of the top of the horizontal arm of the crank, and this socket receives a journaling-stud *e*, projecting upward from the bed-plate. By this construction of the journal for the lower end of the spindle the stud projects sufficiently far into the socket to bring the crank and journal practically into the same plane instead of their being in oblique relation to each other, as is the usual construction, and thus in turning the spindle there is practically no torsional strain exerted against the crank.

G is the yoke upon the spindle above the table for pivotally connecting with the latter the operating-lever H, which is adapted to be lowered on its pivotal support at the ends of its throw into one or the other of the slots in the table, adjacent to which are the usual stop-lugs *g* for limiting the throw of the lever, and in either of its lowered positions the lever may be secured by a padlock I on a chain I' in the ordinary manner by adjusting the padlock in the eye *h'* of a lug *h*, projecting from the lever through the slotted end of

the yoke. The yoke G is of peculiar construction, being entirely open between its end, which is riveted to the spindle, and its extended slotted end, through which the operating-lever projects, and the inner sides of the yoke are flat and conform to the flattened sides x of the spindle, where the yoke embraces it, thereby facilitating the turning of the spindle through the medium of the yoke. By thus forming the yoke open between its ends space is afforded between the side of the spindle facing the lever and the slotted end of the yoke for the pivotal movement of the shorter arm of the lever, which must find adequate abutment bearing against the yoke sides to avoid undue strain upon the lever-fulcrum in turning the spindle, and the inner end of the lever may extend quite close to the spindle, thereby enabling the width of the table and yoke to be reduced, with the advantage of reducing the dimensions of the switch-stand and lending to it the appearance of compactness.

As will be understood, the several improvements herein described relating to the frame, the spindle-journal, and the yoke, while all useful in the same switch-stand, are not interdependent, but each may be used to advantage without the other, though when used together they all contribute to the accomplishment of my primary objects of lightness and compactness.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a switch-stand, the combination with a bed-plate, of the frame formed of structural metal of the character described, having formed upon one end, integral therewith, a base B provided with openings through which to secure the frame to the bed-plate.

2. In a switch-stand, the combination with a bed-plate, of the frame formed of structural-metal bars of the character described, each bar having formed upon one end integral with it, a base B provided with openings through which to secure it to the bed-plate.

3. In a switch-stand, the combination with a bed-plate, of the frame formed of structural-metal bars of the character described, each bar having formed upon one end, integral with it, a base B provided with openings through which to secure it to the bed-plate, and a table having depending ears through which it is fastened to webs of said bars.

4. In a switch-stand, the combination of the rotary spindle provided with a crank on its lower end and having in said lower end a socket, and a bed-plate having a journaling-stud projecting into said socket sufficiently far to bring said stud and the crank into the same horizontal plane, substantially as and for the purpose set forth.

5. In a switch-stand, the combination with its frame, its rotary spindle provided with a crank and the table surmounting the frame, of a yoke embracing and secured to the spindle above the table and open between its ends to form an unobstructed space between the extremity of the extended end of the yoke and the side of the spindle facing it, and an operating-lever fulcrumed between the sides of said yoke in said extended end and working at its shorter arm in said space, substantially as and for the purpose set forth.

6. In a switch-stand, the combination with its frame and the table surmounting it, of a rotary crank-carrying spindle projecting through said table and flat-sided above the same, a yoke embracing and secured to the flat-sided section of the spindle and open between its ends to form an unobstructed space between the extremity of the extended end of the yoke and the side of the spindle facing it, and an operating-lever fulcrumed between the sides of the yoke in said extended end and working at its shorter arm in said space, substantially as and for the purpose set forth.

AXEL A. STROM.

In presence of—

ALBERT D. BACCI,
JOHN H. LEE.