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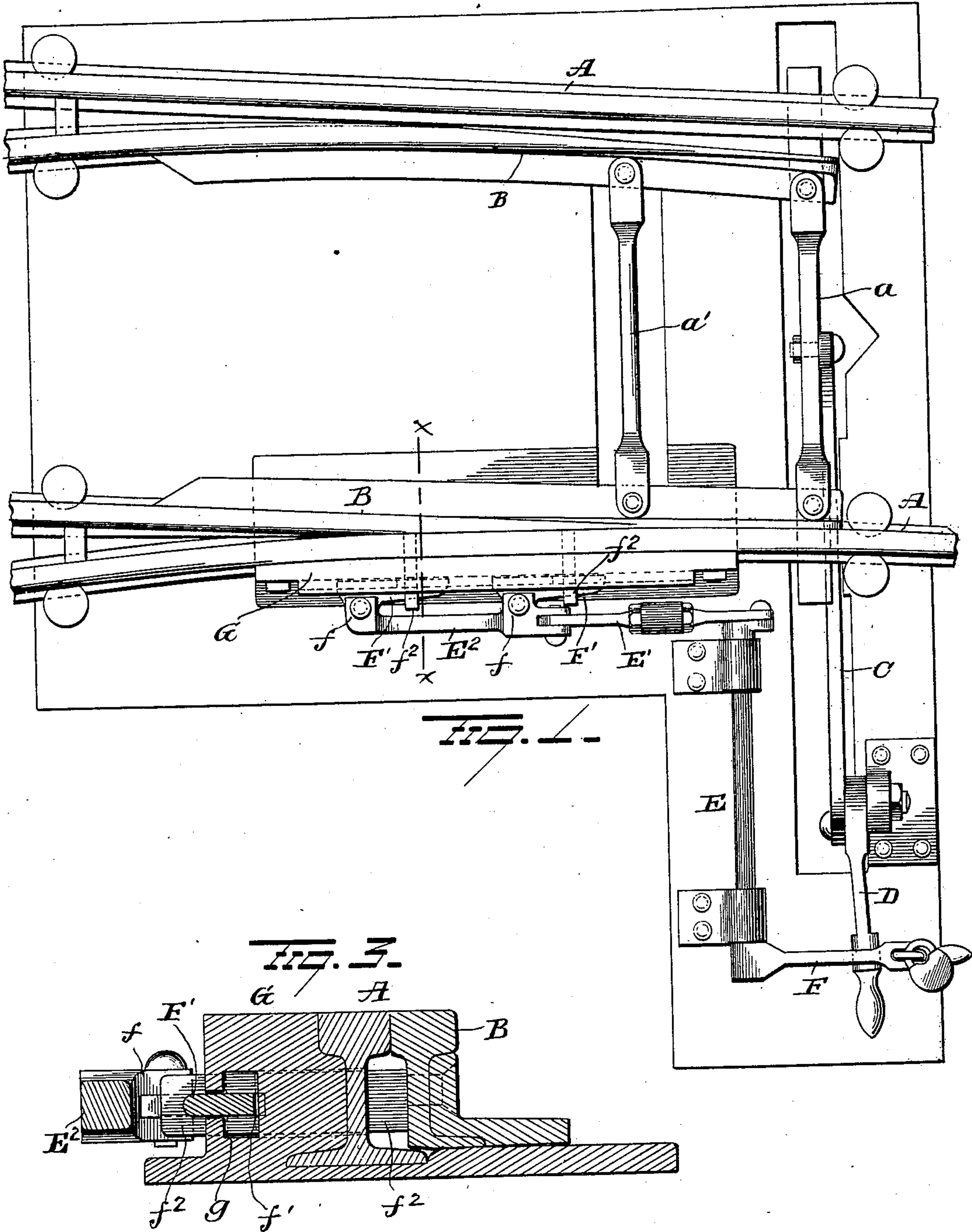
Patented May 7, 1901.

C. H. ANDRUS.
LOCKING MECHANISM FOR SWITCHES.

(Application filed Jan. 23, 1901.)

3 Sheets—Sheet 1.

(No Model.)



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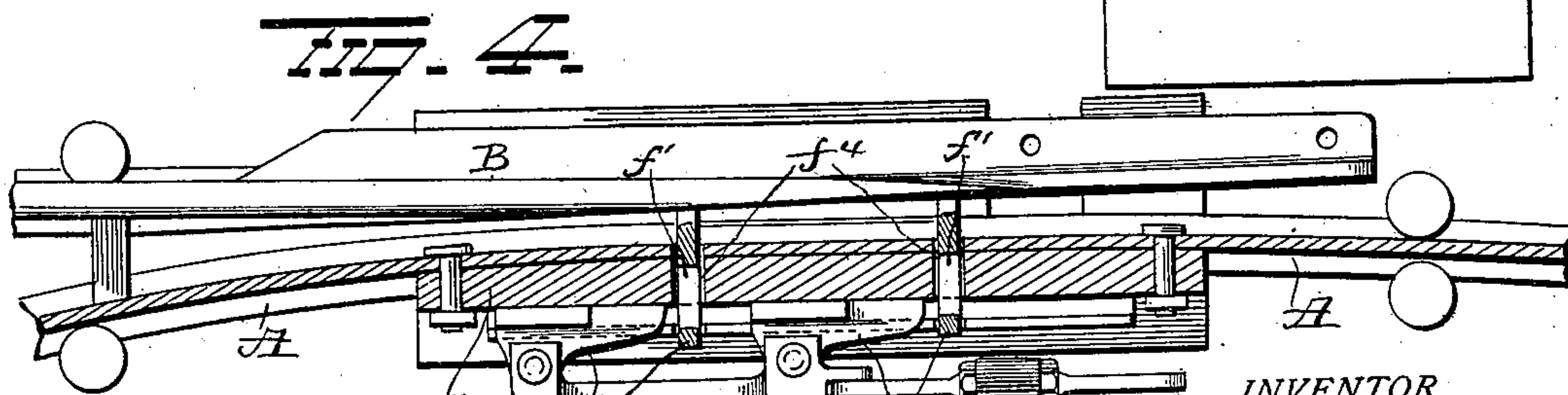
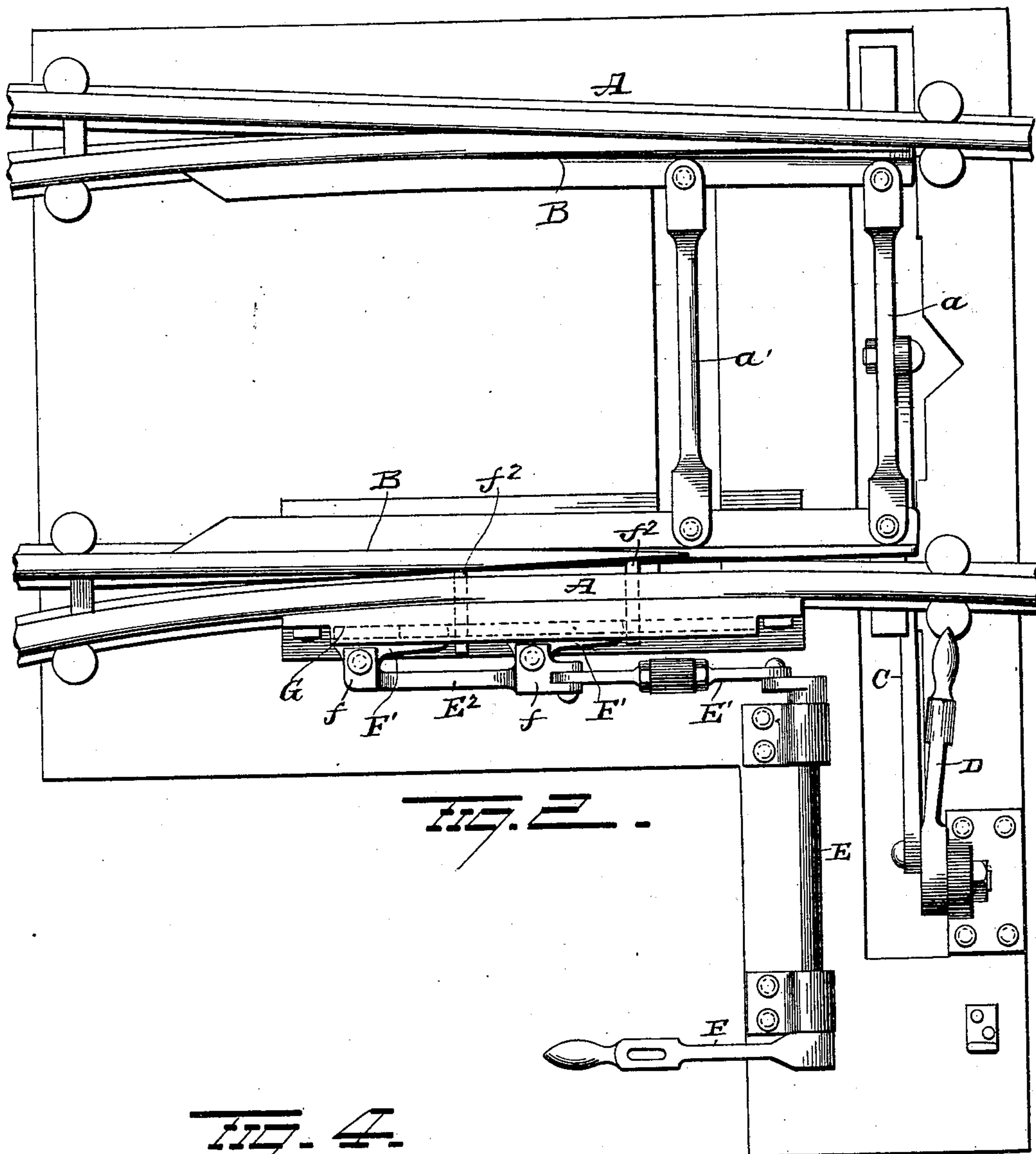
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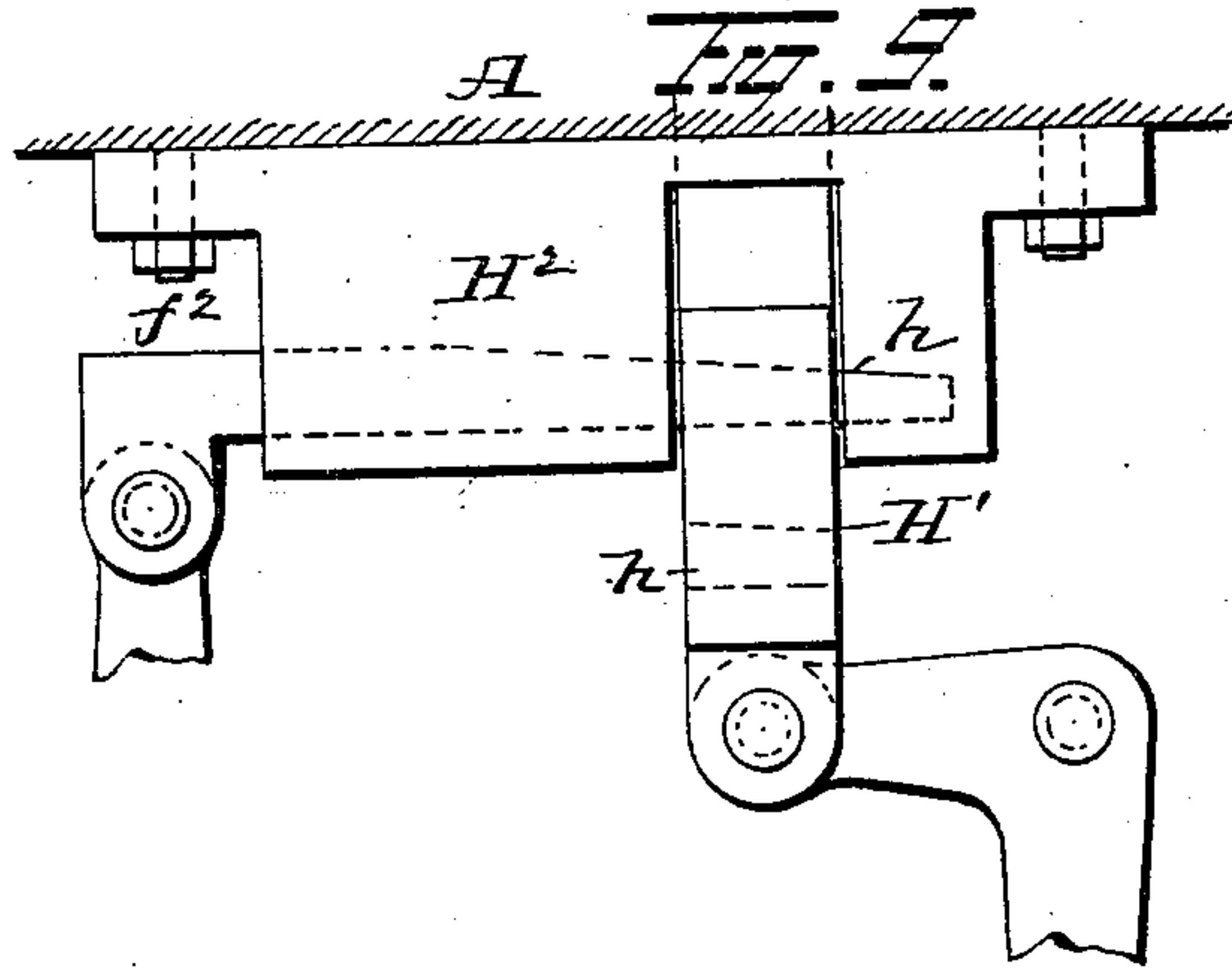
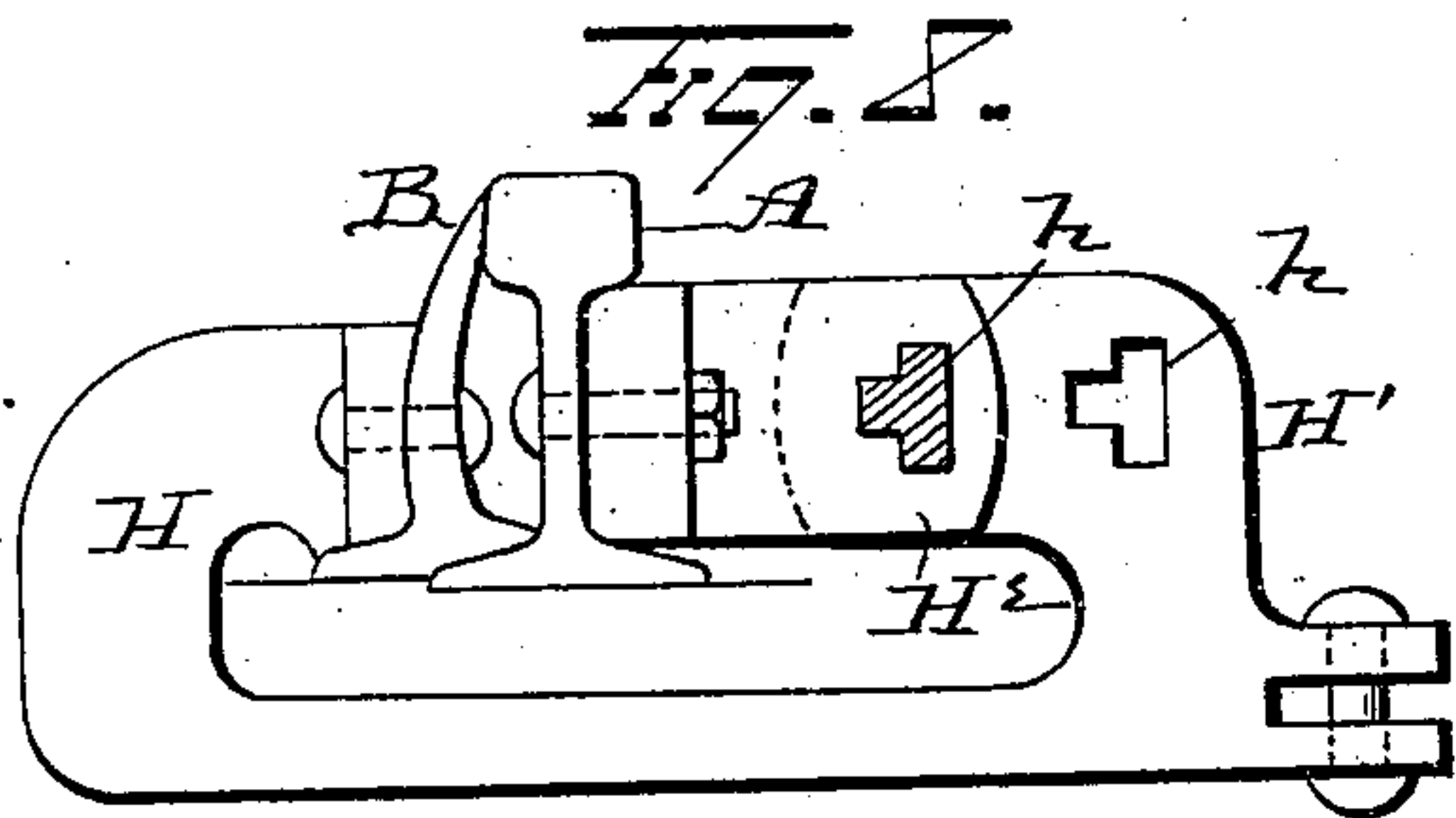
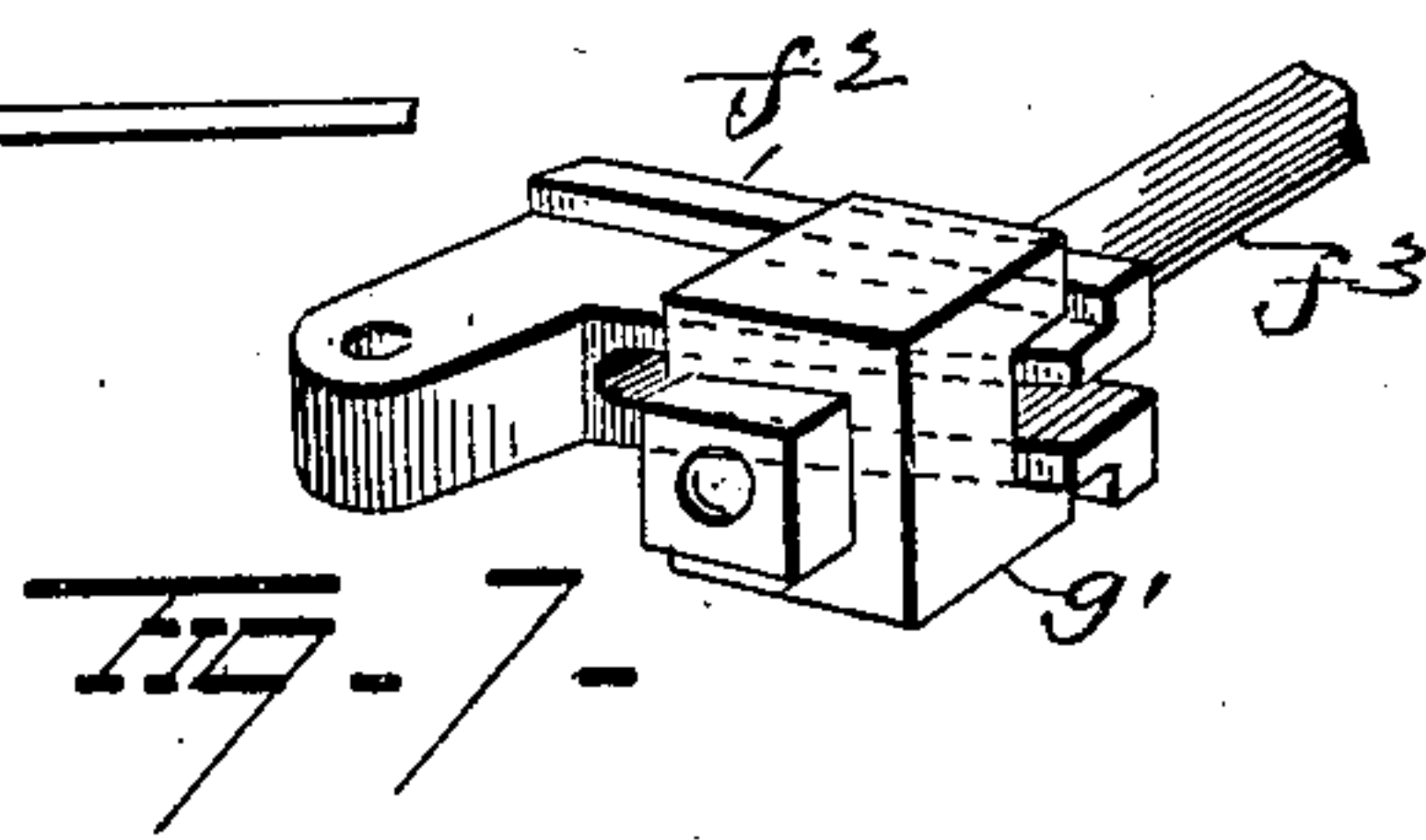
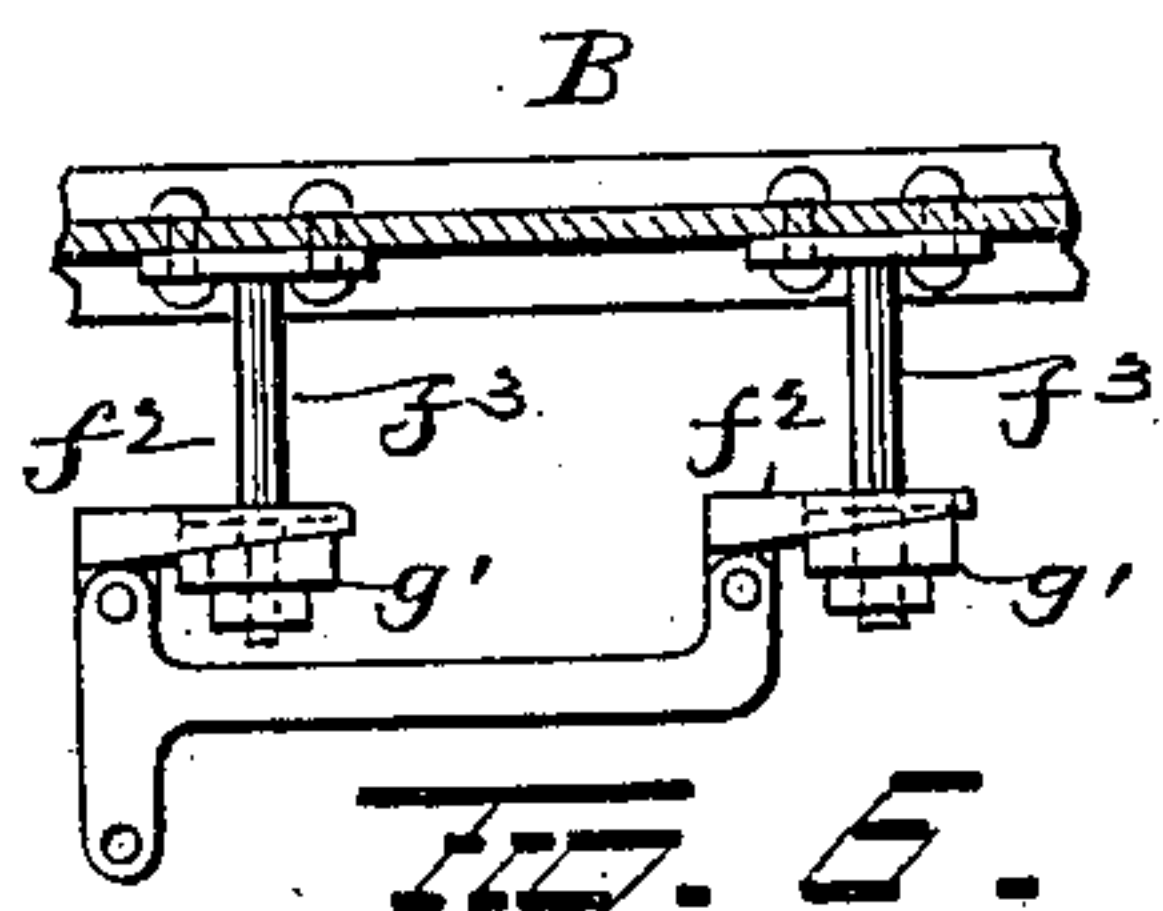
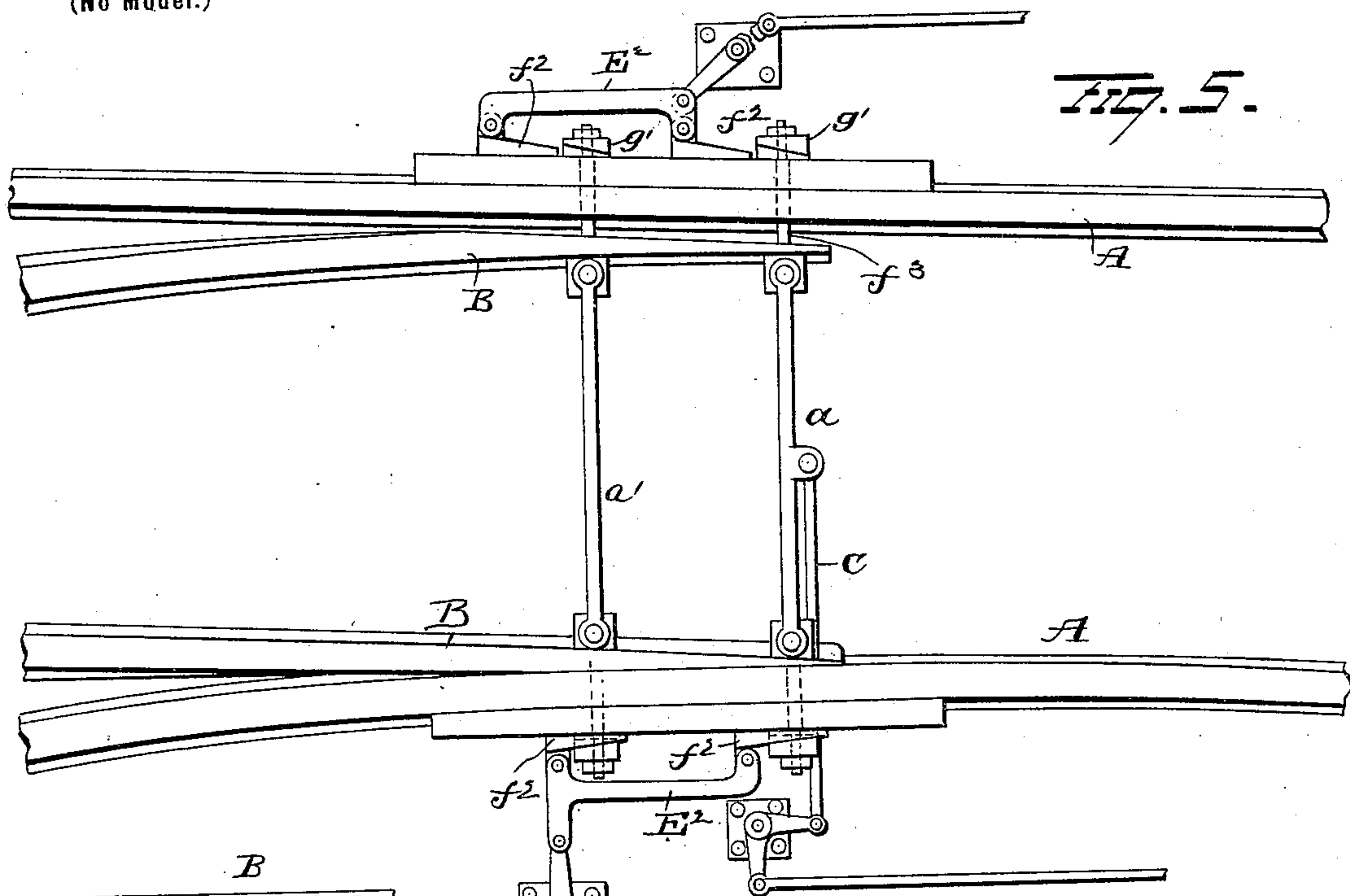
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UNITED STATES PATENT OFFICE.

CHARLES H. ANDRUS, OF READING, PENNSYLVANIA.

LOCKING MECHANISM FOR SWITCHES.

SPECIFICATION forming part of Letters Patent No. 673,673, dated May 7, 1901.

Application filed January 23, 1901. Serial No. 44,453. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. ANDRUS, of Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Locking Mechanism for Switches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in railroad-switches, the object of the invention being to provide means for absolutely preventing any movement or separation of the point-rail from the main rail when the switch is set for the main line and also, if desired, for similarly locking the point-rail when the switch is set for the siding; and with these ends in view my invention consists in the parts and combinations of parts, as will be more fully explained, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in elevation, showing the main track open and the point-rails locked. Fig. 2 is a similar view showing the siding open. Fig. 3 is a transverse sectional view on the line $x-x$ of Fig. 1. Fig. 4 is a horizontal sectional view through the rails and locking mechanism. Fig. 5 is a plan view showing means for locking both rails, combined with the interlocking arrangement now commonly employed; and Figs. 6, 7, 8, and 9 are views of modified forms.

A represents the main rails, and B the point or switch rails, the latter being coupled together by the rods a and a' , which latter are pivotally connected at their ends to flanges on the point or switch rails. Pivotally connected to the rod a is the pitman C, the outer end of which is secured on a wrist-pin carried by the lever D. Hence it will be seen that by throwing the lever D from the position shown in Fig. 1 to that shown in Fig. 2 the point or switch rails will be moved to a position to close the main track and open the siding.

E is a rock-shaft located at right angles to the track and provided at its outer end with a lever F, which latter when the point or switch rails are in a position to close the siding rests over the point-rails-actuating lever

D, and if the lever F be locked by a hasp and lock or any other locking device it absolutely locks the point-rails-actuating lever against movement.

The rock-shaft E is provided on its inner end with a crank, on which the pitman-rod E' is mounted at one end. This rod is preferably made in sections adjustably secured together, so that the several parts of the rail-locking mechanism to be hereinafter described may be adjusted for smooth and accurate working after all the parts thereof have been assembled.

Pivotally secured to the rear end of the pitman-rod E' is the locking-bar E^2 , which latter is provided with one or a series of bifurcated bosses f , each of which carries a locking-wedge F' , adapted to pass through a slot f' , formed in the stud f^2 , carried by the switch or point rail. While I have shown two slotted studs with a locking-wedge for each, I would have it distinctly understood that I may use but one stud and wedge or more than two, the number employed being immaterial.

The studs f^2 are rigid with the point or switch rail B and pass through slots f^4 in the fixed rail A and also through corresponding slots in the slotted wedge-carrying block G. This block G is secured solidly in position against the outside of the rail A and is provided on its outer face with a longitudinal dovetail groove adapted to receive the sliding wedges F' , which, as before stated, are connected to and actuated by the locking-bar E^2 . These wedges are shaped to correspond with the cross-section of the groove g in block G, so as to prevent outward displacement of the wedges, and the latter are made tapering or wedge-shaped, as their name implies, so that by their engagement with the slotted studs f^2 they will gradually and forcibly draw the point or switch rail B against the fixed rail and hold it immovably in position.

To throw the switch, the lever actuating the locking-bar is first thrown to disengage the wedges F' from the slotted studs f^2 , which movement also carries said lever away from the lever for actuating the point or switch rails, thus permitting the latter to be moved. With the construction shown it will be perceived that the lever for throwing the switch-

rails cannot be moved until the lever for actuating the wedges has been moved to disengage the wedges from the slotted stud, thus absolutely preventing any injury to the parts due to attempts to throw the switch-rails before they are unlocked.

In the construction shown in Figs. 5 and 6 I have dispensed with the slotted studs and employ in lieu thereof round studs f^3 , having heads g' , which latter are beveled on their inner faces, as shown, and are engaged by the outer faces of the slotted wedges F^2 , the slots in the latter being of a width sufficient to readily admit the round studs.

In the construction shown in Figs. 8 and 9 I have provided the point or switch rail B with a yoke H, which latter is secured to the inner face of the rail and passes downwardly and outwardly under the switch-rail and main or fixed rail and then bends upwardly, as shown at H' , and inwardly, the inwardly-projecting end having two slots h formed therein. This inwardly-projecting end rests in line with a slot or recess in the wedge-carrying block H^2 , which latter is secured to the outer face of the fixed rail. The mechanism for moving the point or switch rails is connected to this yoke, and the two slots in the latter are so arranged as to aline with the wedge F^2 when the point or switch rail is in one or the other of its two positions. Hence with this construction the point or switch rails will be locked when the latter are moved to open the main track and also when they are shifted to open the siding.

In the construction shown in Fig. 5 I have applied the locking devices to both point-rails and shown the movable parts coupled up with the interlocking mechanism now in general use on many of the railroads.

It is evident that many slight changes might be resorted to in the relative arrangement of parts herein shown and described without departing from the spirit and scope of my invention. Hence I would have it understood that I do not wish to restrict myself to the exact construction herein shown and described; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a switch, the combination with fixed and point rails, of means carried by said rails for locking the point-rails immovably in the position in which they are set and means for positively locking said locking means.

2. In a switch, the combination with fixed rails and point-rails, the latter being connected so as to move together, of means for moving said point-rails, means carried by said rails and cooperating with one of the point-rails to lock it immovably in position against a fixed rail, and means cooperating with the moving means and the locking means to lock them both positively against operation.

3. In a switch, the combination with fixed rails and point-rails, of an engaging device

carried by one of the point-rails, an engaging device carried by one of the fixed rails, said engaging devices cooperating to positively lock the point-rail rigidly and immovable against the fixed rail, manually-operated means for actuating the engaging device on the fixed rail, and means for positively locking said manually-operated means.

4. In a switch, the combination with a movable rail carrying a stud and a fixed rail having a slot therein for the passage of the stud, of a sliding locking device mounted on a fixed rail and held against lateral displacement and engaging said stud to hold the point-rail immovably against the fixed rail, and means for locking said locking device against movement.

5. In a switch the combination with a movable rail carrying a stud and a fixed rail having a slot for the passage of the stud, of a sliding wedge located on the outer side of the fixed rail and engaging the stud.

6. In a switch the combination with a movable rail carrying a slotted stud, and a fixed rail, of a sliding wedge located to the outer side of the fixed rail and adapted to enter the slot in the stud for locking the fixed and movable rails together.

7. In a switch the combination with a fixed rail having a slot therein and a movable rail carrying a stud, the latter resting within the slot in the fixed rail, of a sliding wedge located to the outside of the fixed rail and adapted to engage the stud and lock the movable rail against movement.

8. In a switch the combination with a fixed rail, a grooved block on the outside of the fixed rail, the said rail and block being slotted transversely, and a movable switch-rail carrying a stud adapted to pass through the slots in the rail and block, of a sliding wedge mounted in the groove in the block and engaging the stud for locking the movable rail against the fixed rail.

9. In a switch, the combination with fixed and movable rails, of a shifting lever, connecting devices between said lever and movable rails, means carried by said rails for positively locking the movable rails to a fixed rail, a lever for operating said locking means and normally disposed horizontally across the shifting lever and means for locking said locking operating lever.

10. The combination with the fixed rail having a slot therein, a grooved and slotted block to the outside of said rail and a movable rail carrying a slotted stud, of a sliding wedge mounted in the groove in the block and adapted to enter the slot in the stud and means for moving said wedge.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHARLES H. ANDRUS.

Witnesses:

ELMER W. DECK,
G. W. SCHWENK.