

No. 762,414.

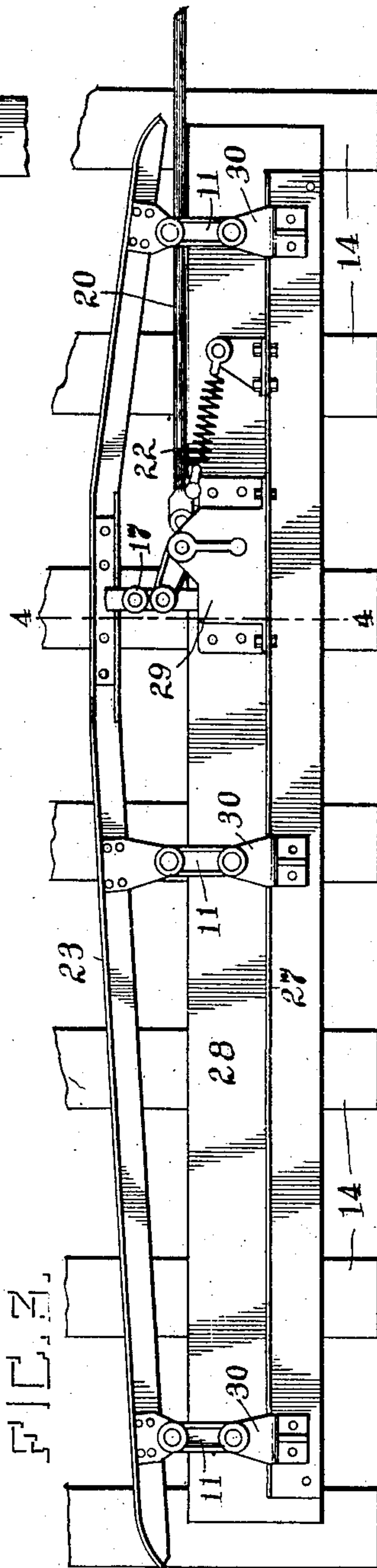
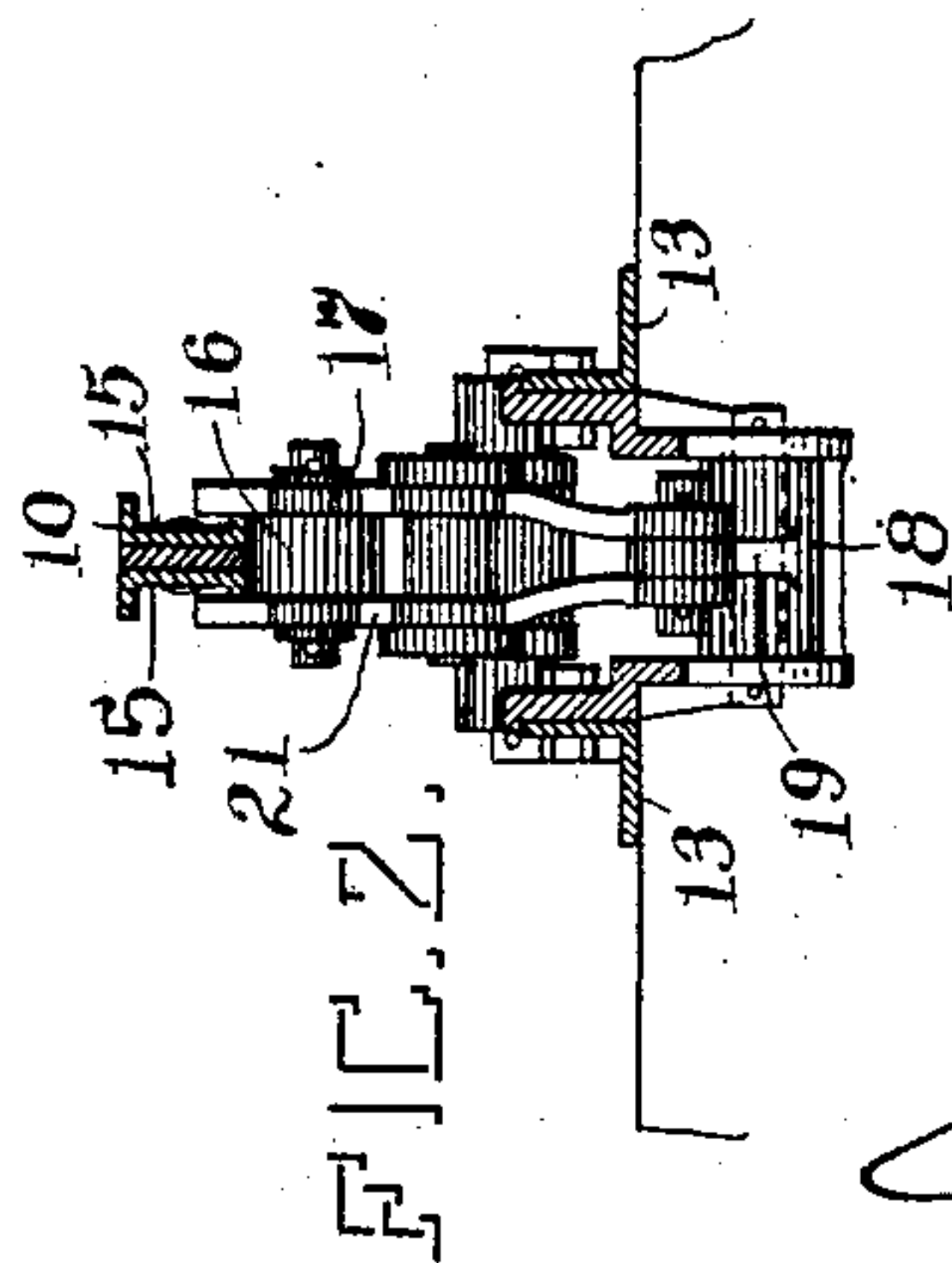
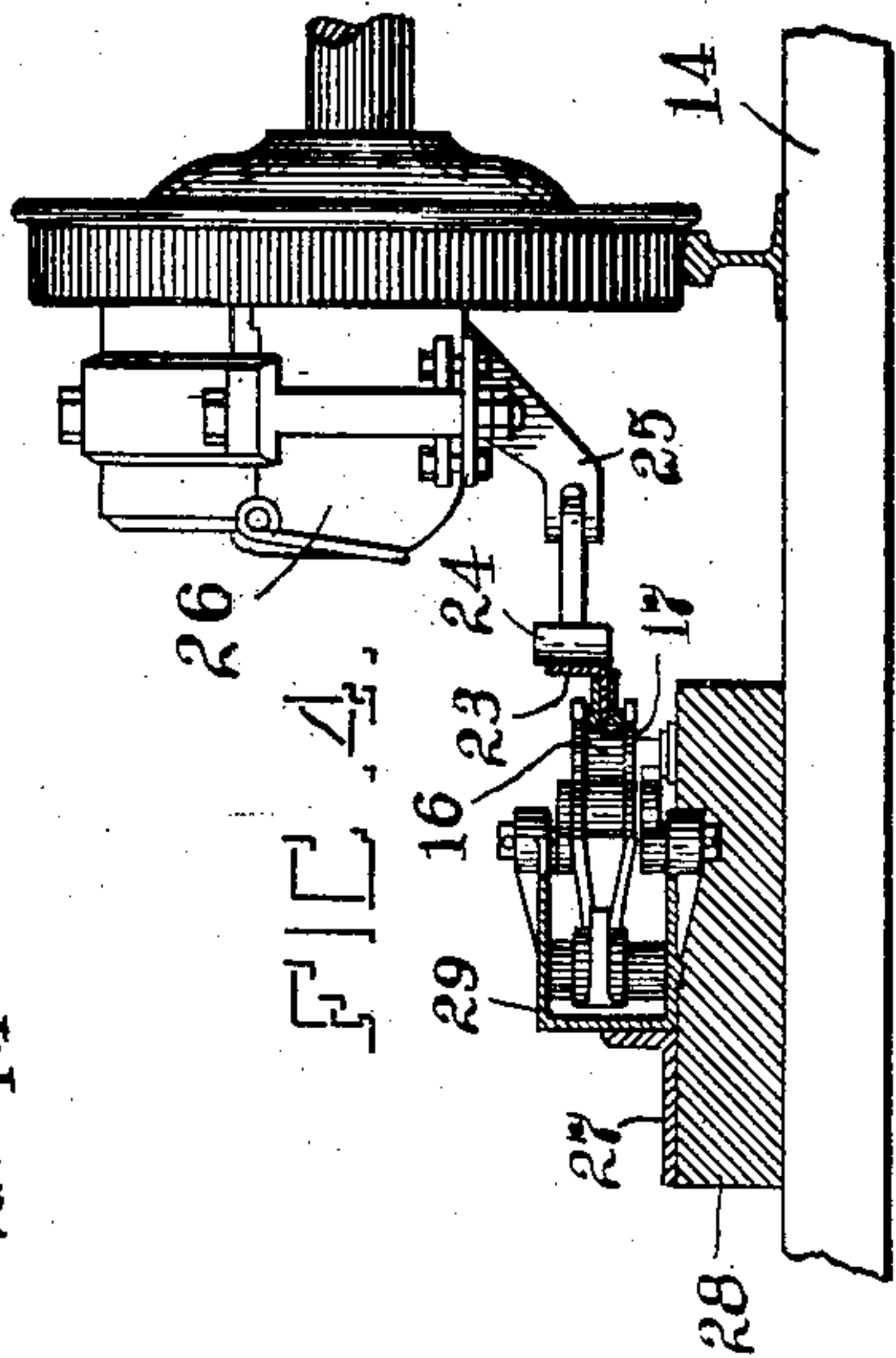
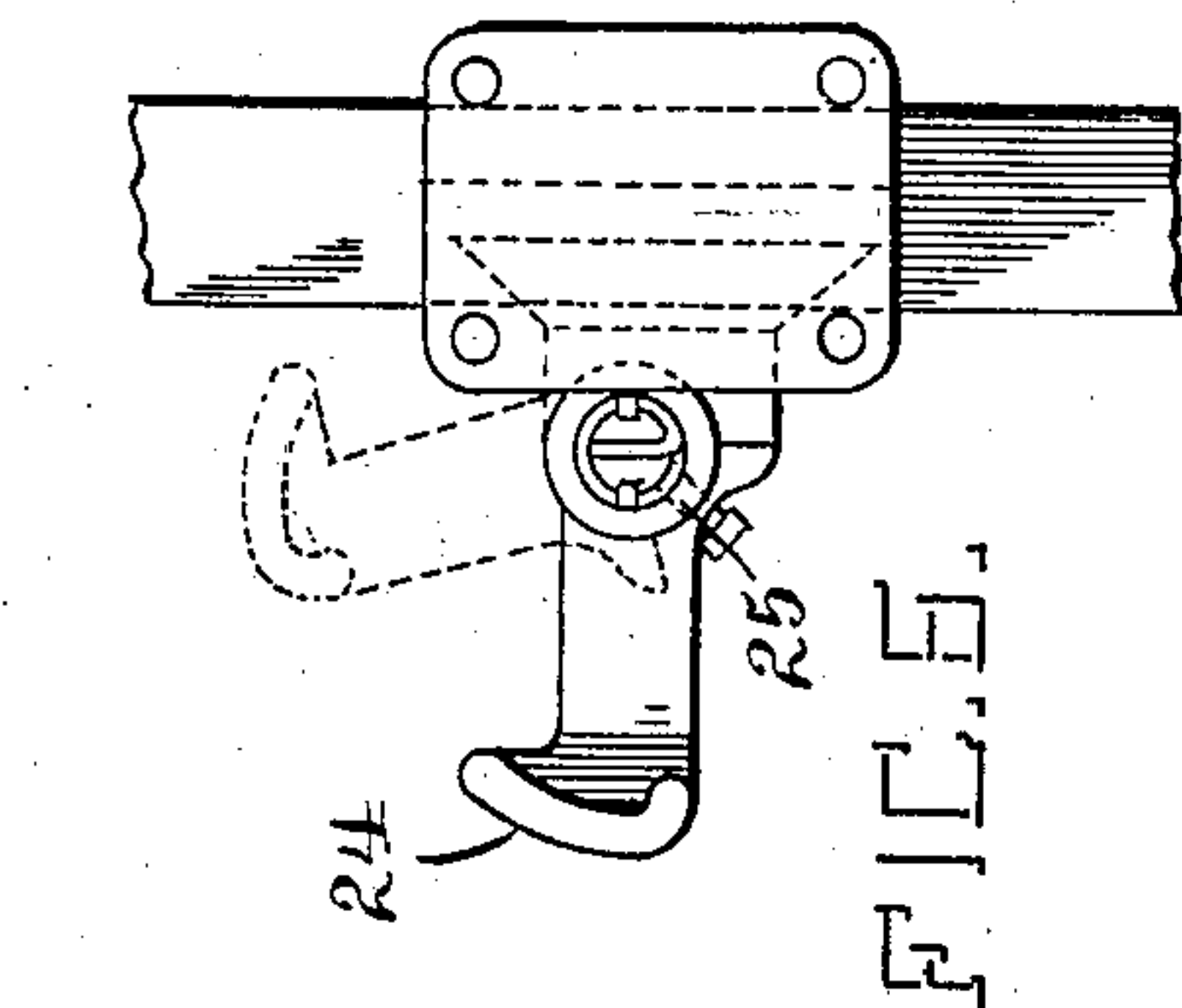
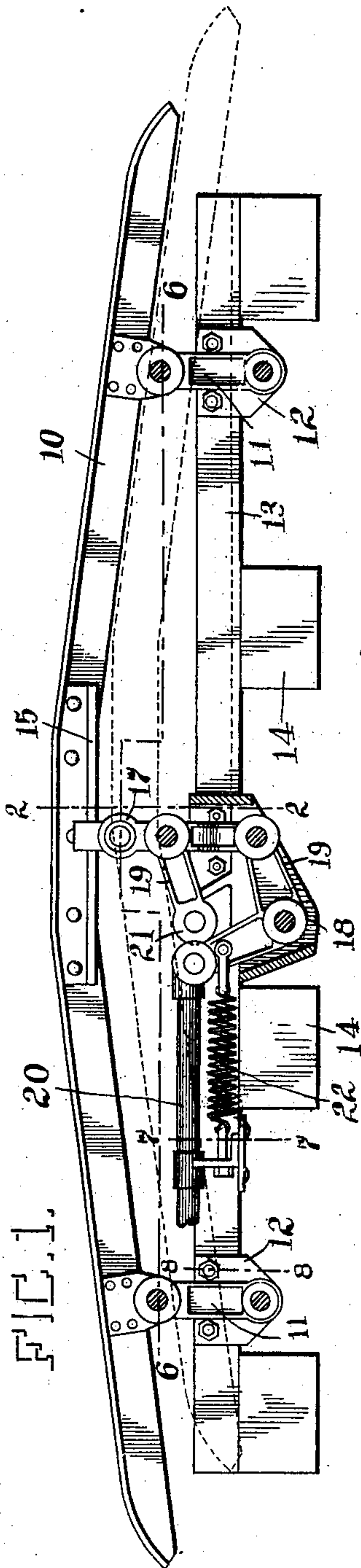
PATENTED JUNE 14, 1904.

C. M. HURST.  
SWITCH AND SIGNAL TRACK TRIP.

APPLICATION FILED DEC. 24, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



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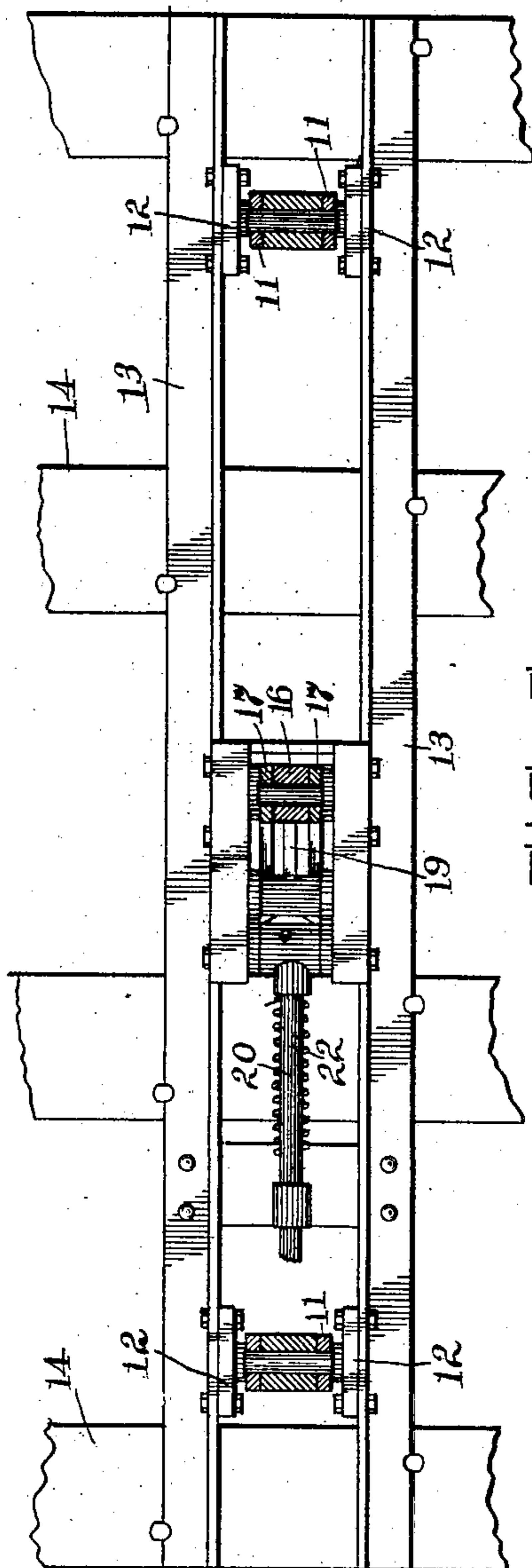


FIG. 6.

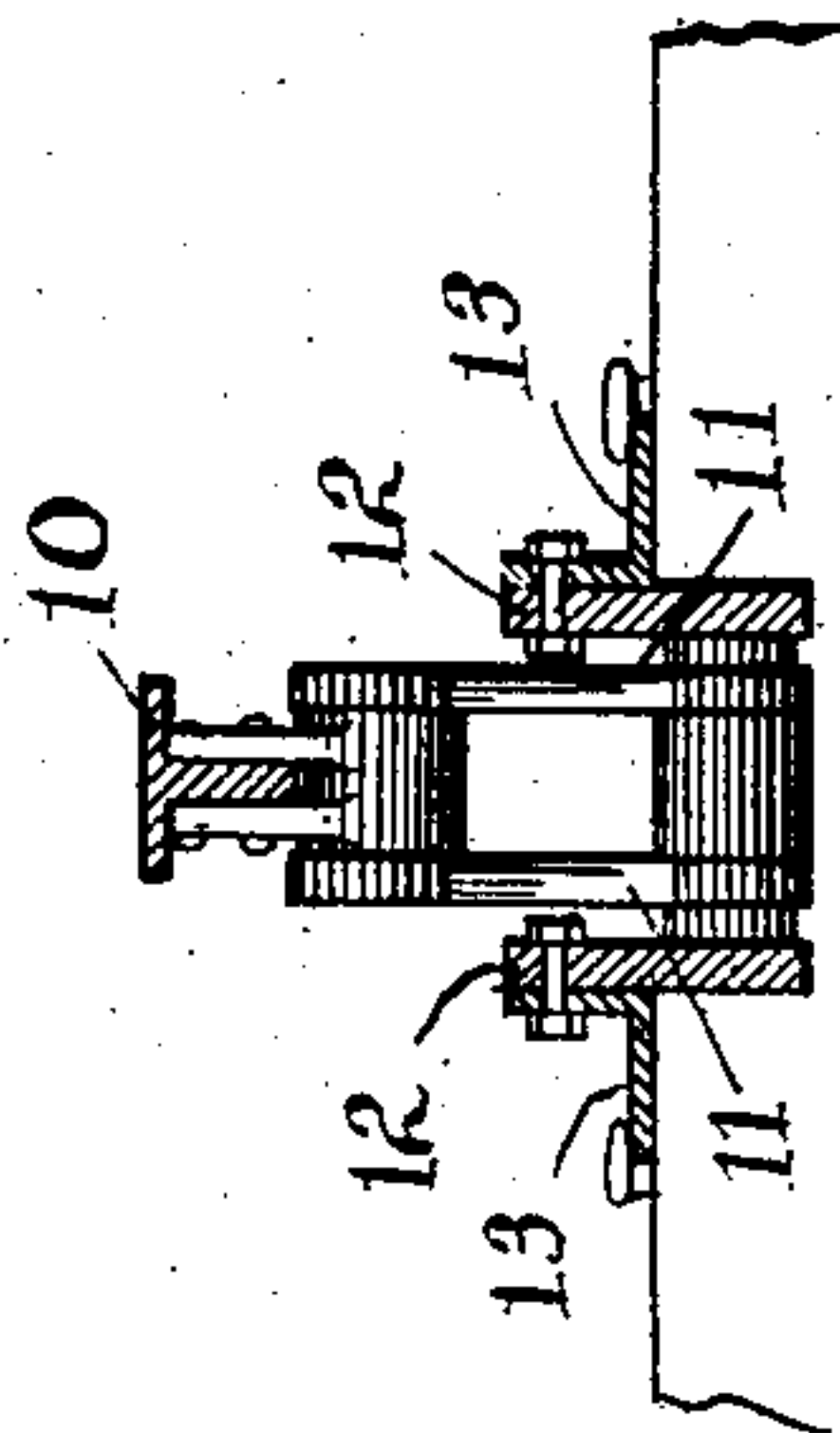


FIG. 7.

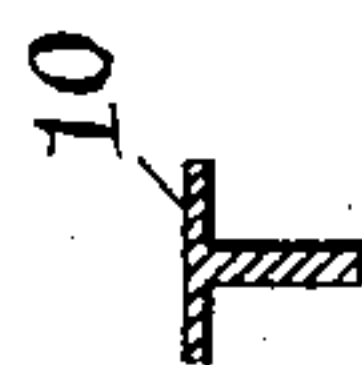


FIG. 8.

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# UNITED STATES PATENT OFFICE.

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## SWITCH AND SIGNAL TRACK-TRIP.

SPECIFICATION forming part of Letters Patent No. 762,414, dated June 14, 1904.

Application filed December 24, 1903. Serial No. 186,495. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES M. HURST, a citizen of the United States, and a resident of Rawlins, county of Carbon, and State of Wyoming, have invented certain new and useful Improvements in Switch and Signal Track-Trips, of which the following is a specification and which are illustrated in the accompanying drawings, forming a part thereof.

This invention relates to that class of tripping devices used in connection with railway switches and signals which are adapted for engagement by passing trains for the purpose of actuating the switch or signal. Its object is to provide for a comparatively easy tripping action, relieving the device from the violent shock to which such devices are ordinarily subjected, yet providing for positive action.

The invention consists, broadly, in an inclined apron having a longitudinal and vertical movement, a vertically-movable thrust-bar controlled by the apron, a lever, and rod devices actuated by the thrust-bar.

The invention consists in further details of construction, all as hereinafter fully described and as illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of one form of the device, partly in section. Fig. 2 is a sectional view on the line 2 2 of Fig. 1. Fig. 3 is a plan view of a modified form of construction. Fig. 4 is a sectional view on the line 4 4 of Fig. 3, showing also a detail of an engine or car. Fig. 5 is a further detail of the car, showing a tripping-shoe. Fig. 6 is a plan section on the line 6 6 of Fig. 1; and Figs. 7 and 8 are vertical sections taken on the lines 7 7 and 8 8, respectively, of Fig. 1.

The apron 10 is preferably formed of a T-bar bent intermediate of its ends so as to form double inclines. This apron being located adjacent to the track, a shoe carried by an engine or car may ride up onto it from either direction. The apron is carried by a pair of links 11 11, pivotally mounted in bracket-plates 12 12, secured to chair-rails 13 13, preferably in the form of angle-bars bolted to the cross-ties 14.

A pair of angle-bars 15 15 are bolted to the

sides of the flange of the T-rail, of which the apron is formed at its middle portion, one leaf of each bar projecting laterally from the web of the apron, as shown in Fig. 2, the lower faces of the bars 15 forming a straight bearing-surface resting upon a roller 16, carried by the two member plungers 17, the lower end of which is pivotally attached to one arm of a bell-crank 18, pivoted to a hollow bracket-casting 19, secured to the chair-rails 13, the other arm of the bell-crank 18 being connected with the switch or signal rod 20.

The upper ends of the two members of the plunger 17 are shown as projecting somewhat above the pivot of the roller 16, so as to engage the side edges of the outstanding leaves of the bars 15, thereby preventing any lateral displacement of the members.

In order to maintain the plunger 17 in vertical position, a link 21 is attached to it intermediate of its ends and is also pivoted to the bracket-casting 19. A spring 22 is provided for holding the plunger in its upper position, and, as shown, this spring is attached to one arm of the bell-crank 18 and to a suitable bracket secured to the chair-rails 13, though obviously it may be variously mounted.

As the apron is engaged by an appurtenance of a passing train it is moved longitudinally, the links 18 swinging on their lower pivots and necessarily carrying the apron down. As the apron is thus moved the bars 15 run on the roller 16 and by its downward movement depresses the plunger 17 and rocks the bell-crank in opposition to the spring 22. This spring is of sufficient strength to restore all of the parts, including the apron, to their normal position. Assuming that the train approaches from the left, considering now Fig. 1, its contact with the apron will carry the latter to substantially the position shown by the dotted lines.

For some purposes it may be preferred to turn the device over upon its side, so that its movement will be horizontal instead of vertical. Such form of construction is illustrated in Figs. 3 and 4 and is particularly adapted as an emergency switch-controlling device and as such would be required to operate in one direction only. For this reason the apron



23 is shown as having but one long incline, which will be directed toward the approaching train. The other end of the apron may terminate more abruptly, as the shock of release is but slight. In this construction the face of the apron is vertical and will be engaged by a shoe, as 24, swinging from a bracket 25, which may, if desired, be secured to the lower face of a car journal-box 26, the shoe, if desired, being so arranged that it will fold backwardly in one direction, as indicated by the dotted lines, Fig. 5.

The construction of the trip mechanism is essentially the same as that shown in Fig. 1, except that the movement is horizontal. The chair 27 is shown as an angle-bar bolted to a sleeper 28, secured to the ties 14. The brackets 29 for carrying the bell-crank and its appurtenances and 30 for carrying the apron-supporting links 11 are attached to the upstanding leaf of the chair 27. The action of this modified form of construction is the same as in that previously described, with the single exception of the horizontal instead of the vertical movement.

I claim as my invention

1. In a switch and signal track-trip, in combination, a rigid oscillating apron, and a

spring-retained plunger bearing against the apron. 30

2. In a switch and signal track-trip, in combination, a rigid double-incline oscillating apron, and a spring-retained plunger bearing against the apron.

3. In a switch and signal track-trip, in combination, an apron, swinging links supporting the apron, and a spring-retained plunger bearing against the apron. 35

4. In a switch and signal track-trip, in combination, a bed-plate, an inclined apron, links connecting the bed-plate and apron, and a spring-retained plunger bearing against the apron. 40

5. In a switch and signal track-trip, in combination, a bed-plate, a bell-crank, a switch or signal rod attached to the bell-crank, a plunger connected with the other arm of the bell-crank, a guide-link connecting the plunger and the bed-plate, an apron bearing against the end of the plunger, links connecting the apron and bed-plate, and a spring forcing the plunger against the apron. 50

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