

D. W. HEYDON.  
STREET RAILWAY SWITCH.  
APPLICATION FILED JUNE 4, 1908.

934,527.

Patented Sept. 21, 1909.

2 SHEETS—SHEET 1.

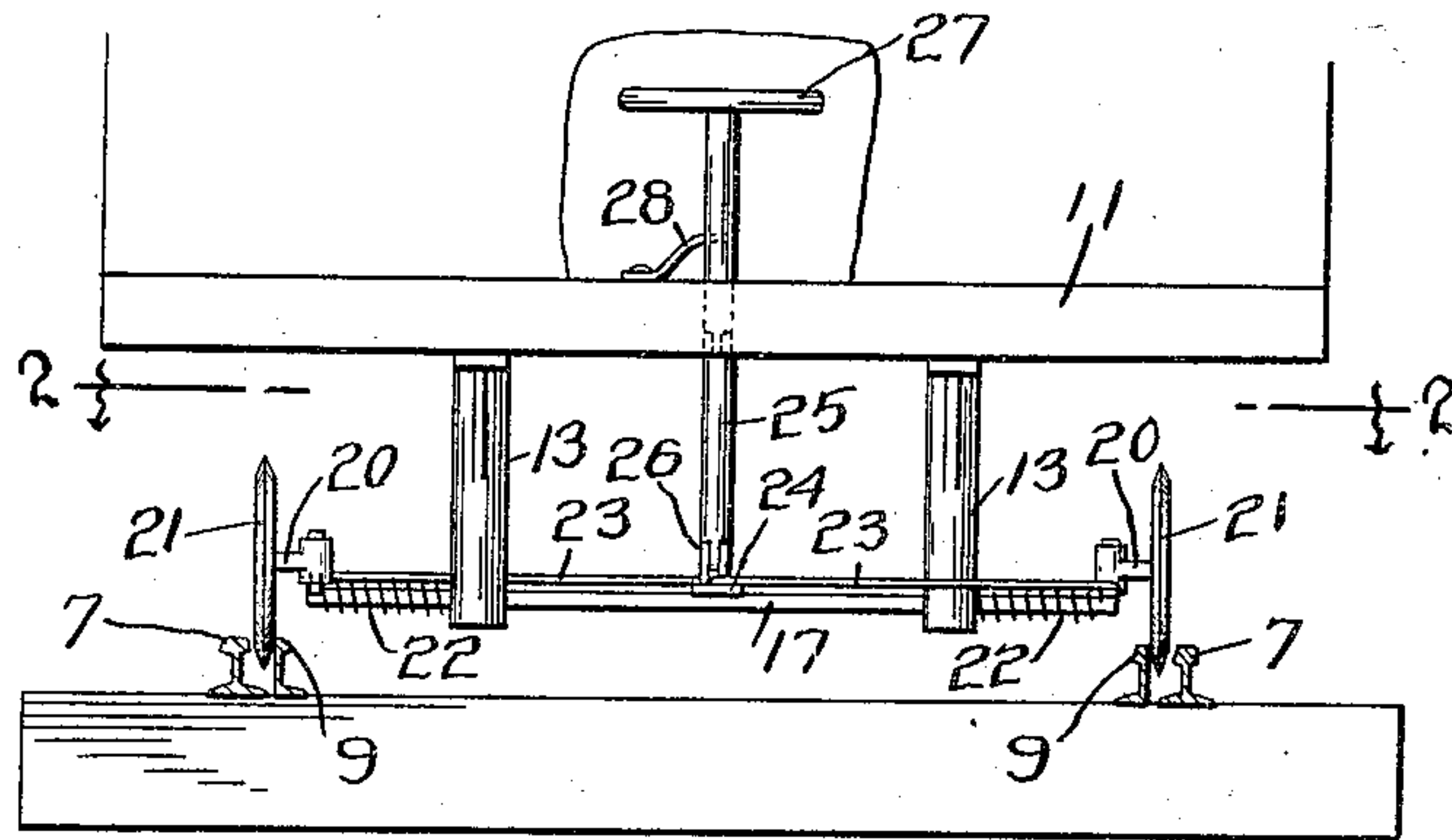


Fig. 1.

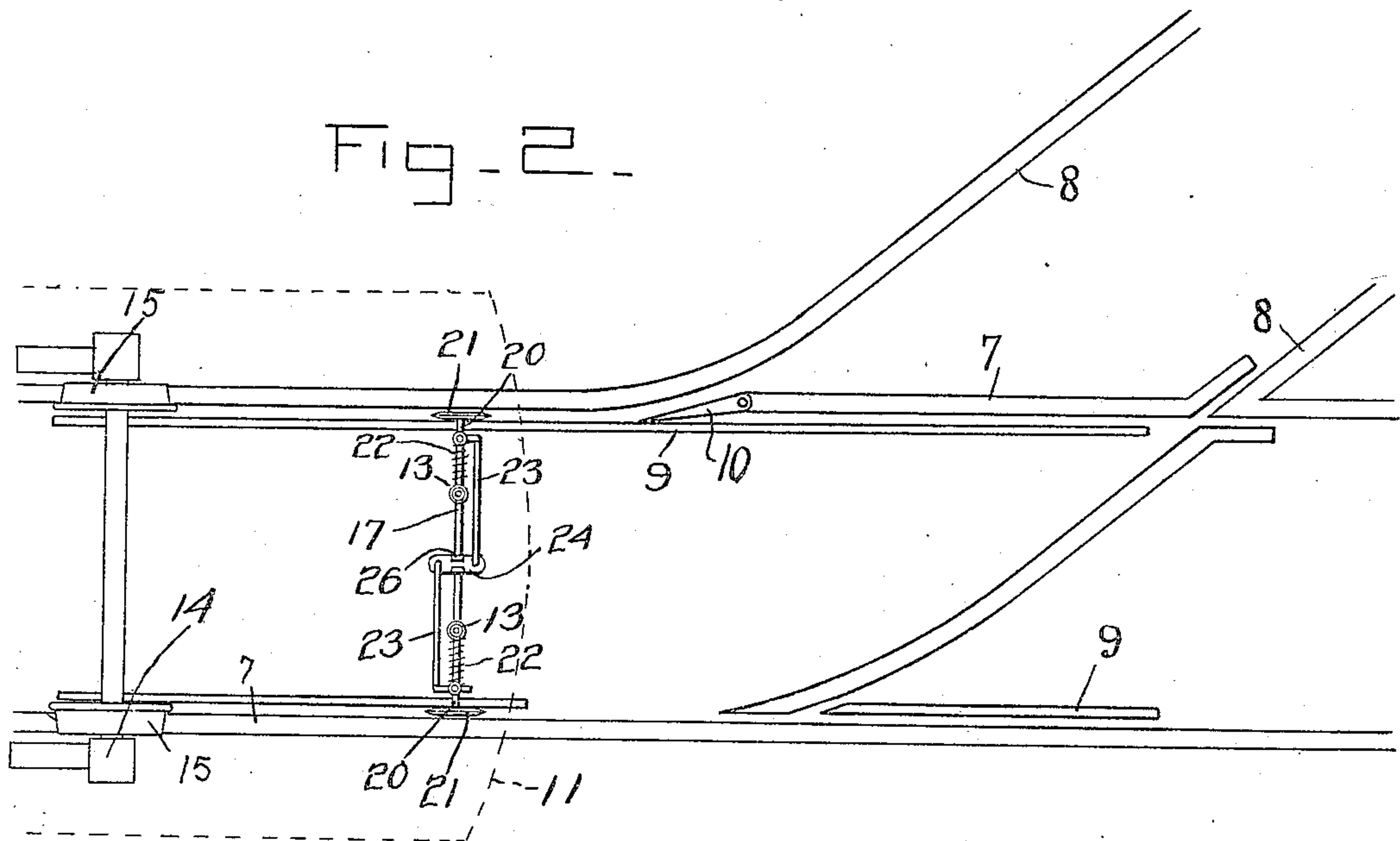


Fig. 2.

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Witnesses

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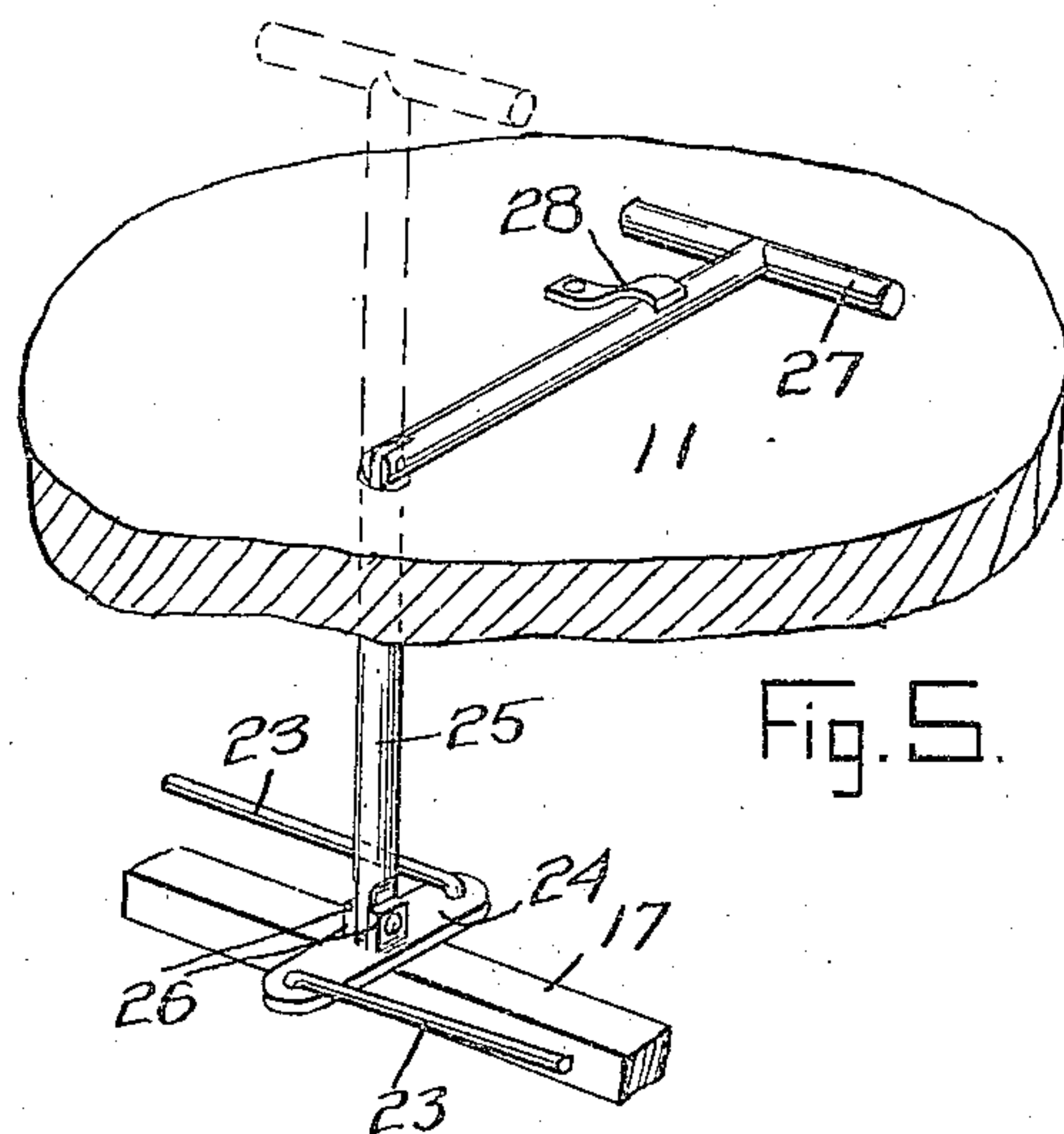
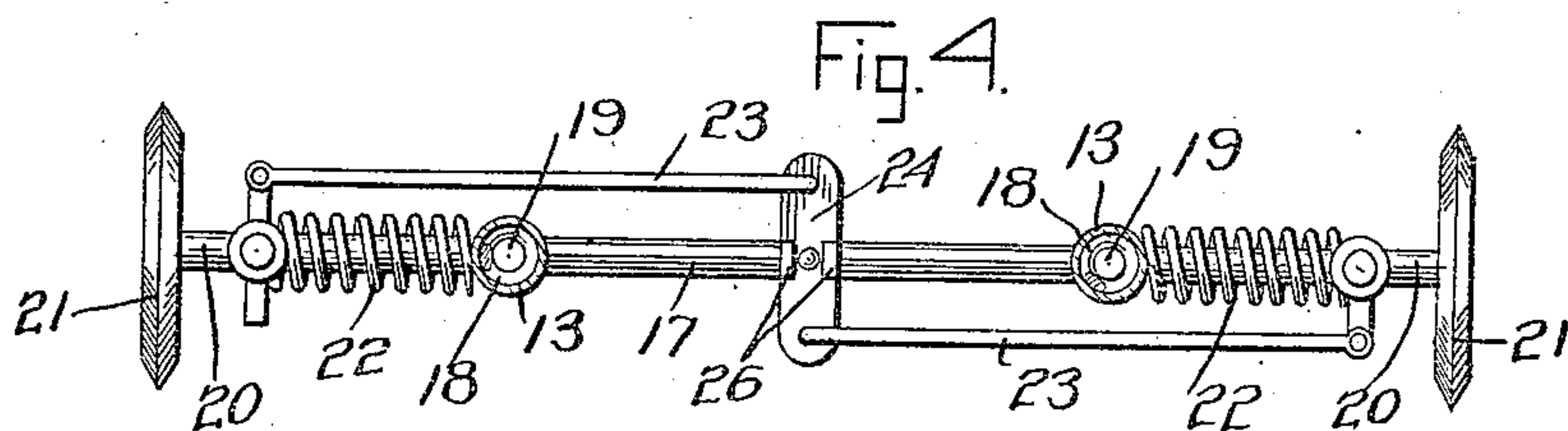
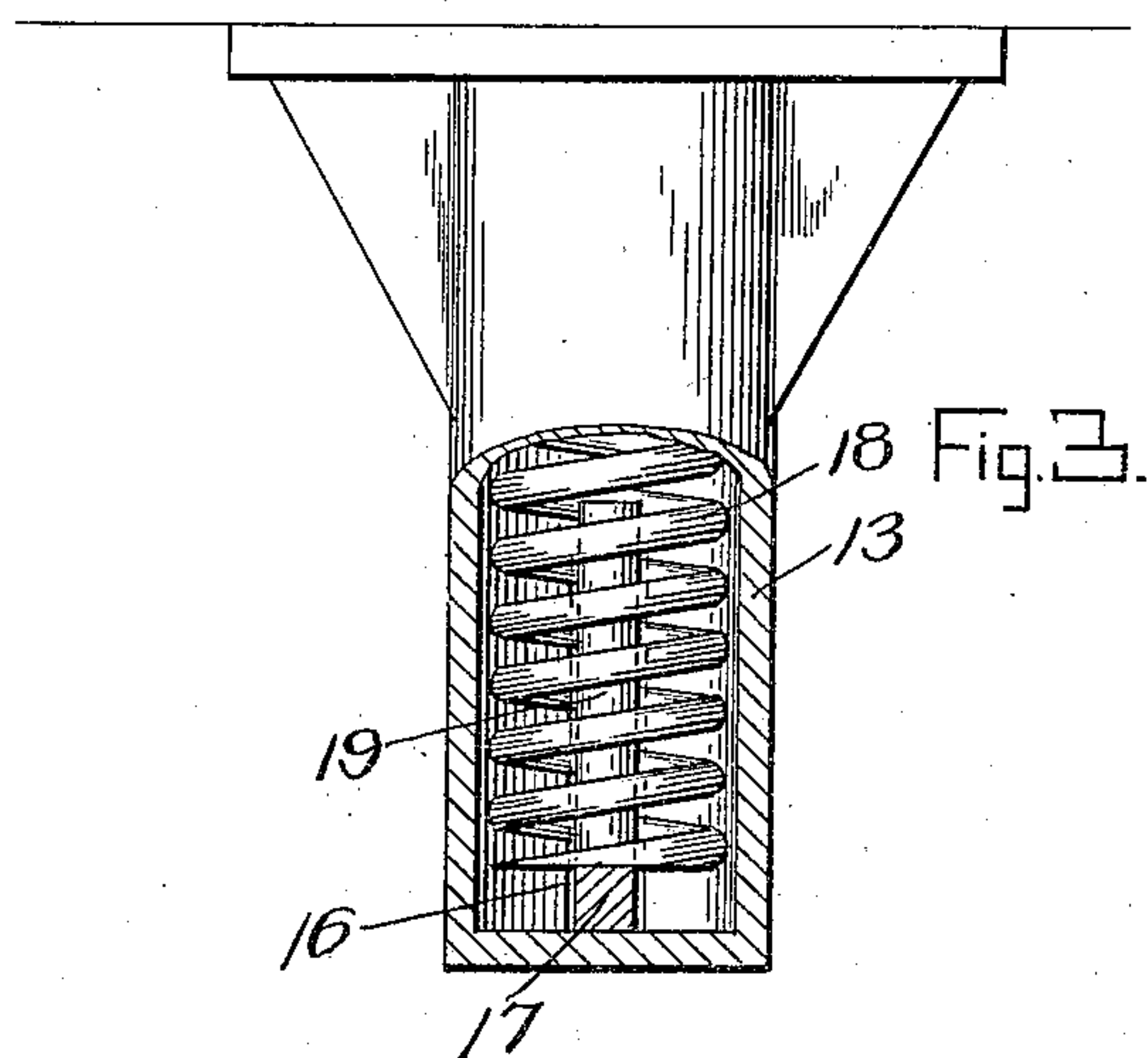
Attorneys.

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# UNITED STATES PATENT OFFICE.

DRURY W. HEYDON, OF SPOKANE, WASHINGTON.

STREET-RAILWAY SWITCH.

934,527.

Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed June 4, 1908. Serial No. 436,723.

*To all whom it may concern:*

Be it known that I, DRURY W. HEYDON, a citizen of the United States, residing at Spokane, in the county of Spokane, State of Washington, have invented certain new and useful Improvements in Street-Railway 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.

The present invention relates to improvements in street railway switches, and it has for its primary object the provision of an exceedingly simple and efficient mechanism which may be readily attached to the front platform of a car of any ordinary type for opening and closing the switches without necessitating the stopping of the car.

To this end, the invention, briefly described, comprises a shaft provided at each end with a swinging stub-axle upon which a wheel is rotatably mounted, the wheels being connected together for simultaneous movement by directing rods, after the manner of the front wheels of a motor car, and an actuating lever to which the inner ends of the rods are fastened, whereby movement of the lever in one direction or the other will shift the wheels correspondingly for engagement with the switch point, to swing the latter to one side or the other.

The particular construction of the wheel-carrying member, as a whole, the manner in which the same is supported, and the particular form of lever employed for shifting the wheels include the more important features of the invention.

The preferred embodiment of the invention is illustrated in the accompanying drawings, in which corresponding parts or features are designated by the same reference numerals throughout the several views.

Of the said drawings, Figure 1 is a front elevation of the complete invention. Fig. 2 is a horizontal section taken on the line 2—2 thereof. Fig. 3 is a side elevation, partly in section, of one of the supporting brackets for the wheel-carrying member. Fig. 4 is a plan view of the above-mentioned member. Fig. 5 is a detail view of the actuating lever.

Referring more particularly to the drawings, 7, 7 and 8, 8 designate respectively, the rails of the main track and the siding; 9, 9 the guard-rails; and 10 the switch point.

To the bottom of the front platform 11 of

the car are bolted a pair of depending tubular brackets 13 arranged in alinement with each other transversely of the car and in advance of the swinging front truck 14 which carries the wheels 15 and their axle. The above-mentioned brackets have their lower portions provided with pairs of diametrically-opposite vertical slots 16 through which project the ends of a square shaft 17, said shaft being forced yieldingly downward toward the rails by means of a pair of expansible coil-springs 18, which are disposed within said brackets and embrace a pair of vertical fingers 19 preferably formed integral with the shaft. The upper ends of the springs bear against the under face of the platform and their lower ends against the shaft.

Each end of the shaft has pivoted thereto a swinging stub-axle 20 which carries a rotatable wheel 31 normally held at right angles to the shaft owing to its connection with a retractile coil-spring 22. To each stub-axle is pivotally connected the outer end of a rod 23 whose inner end is pivoted to the adjacent end of a transversely-disposed strap 24 pivoted centrally to the shaft intermediate the ends of the latter, the rods being disposed upon opposite sides of said shaft, as shown in Fig. 4. The arrangement of the various members of the wheel-carrying member, as a whole, with respect to each other, is thus similar in the main, to that of the various members of the front wheel-carrying member of a motor car.

The strap 24 is swung in one direction or the other upon its pivot by means of an actuating lever 25, comprising a pair of arms which are pivoted together at their mutually-adjacent inner ends, the free outer end of the lower arm being pivoted between a pair of ears 26 formed centrally upon said strap, such arrangement permitting a slight endwise movement of the shaft and its attendant parts in either direction when the car is traveling around a curve. The upper arm or handle portion of the lever extends vertically through an opening formed in the platform and terminates at its upper end in a transversely-disposed handle proper 27, which permits the lever to be turned in either direction, thus rocking the strap 24 upon its pivot and setting the wheels 21 at the proper angle to the shaft. The provision of the handle also permits the shaft 11 to be raised bodily against the action of the springs 18,



to dispose said wheels above and out of contact with the track rails, the shaft being retained in such position by means of the engagement of the handle portion with a hook 28 with which the front wall of the car is provided.

In operation, as the car approaches a switch, the handle of the lever is released by the motor-man from engagement with the hook 28, whereupon the shaft and its attendant parts are free to move downward under the action of the springs 18, the wheels 21 fitting loosely between the track and guard rails. The switch may then be opened by merely turning the lever handle in the proper direction, so as to dispose the wheels at the necessary angle to the shaft, the passage of the adjacent angled wheel between the main track rail and the switch-point moving the latter inwardly toward the adjacent guard-rail, thus permitting the car to pass onto the switch-rails. When, however, the switch is open, and the car is to continue to travel upon the main track, the lever is turned in the opposite direction, whereupon the operating wheel will pass between the guard-rail and the switch-point, which latter is thus forced toward the adjacent switch-rail, as will be apparent. As soon as the shaft wheels have passed beyond the switch-point, the pressure upon the lever is relieved, whereupon the wheels are returned to their normal position at right angles to the shaft by the action of the springs 22. The shaft is then raised bodily, and the lever handle engaged with the hook 28.

What is claimed is:

1. In a switch-operating mechanism, the combination, with a horizontal shaft, and a swinging stub-axle pivoted to each end thereof, of a wheel carried by each stub-axle; means for normally holding said shaft and wheels in lowered position; a strap pivoted centrally to said shaft; a pair of oppositely-extending rods each pivoted at one end to one end of the strap and at the other end to the adjacent stub-axle; and a lever connected at one end to said strap, for swinging the latter in either direction upon its pivot, to angle said wheels simultaneously.

2. In a switch-operating mechanism, the combination, with a pair of tubular vertical brackets provided adjacent their lower ends with alining longitudinal slots, of a horizontal shaft having its opposite ends projecting through said slots; a wheel pivotally connected with each end of the shaft; means located within said brackets and bearing against said shaft, for normally holding the latter in position at the lower ends of said slots; and means for angling said wheels simultaneously in the same direction when said shaft is in such position.

3. In a switch-operating mechanism, the combination, with a pair of tubular vertical

brackets provided adjacent their lower ends with alining vertical slots, of a horizontal shaft having its opposite ends projecting through the slots; a wheel pivotally connected with each end of the shaft; means located within the brackets and bearing against said shaft, for normally holding the latter in position at the lower ends of said slots; a lever connected with said wheels for angling the same simultaneously when said shaft is in its lowered position, and for raising said shaft bodily against the action of said means; and means arranged for engagement with the lever when the latter is in its raised position.

4. In a switch-operating mechanism, the combination, with a pair of tubular vertical brackets provided adjacent their lower ends with alining vertical slots, of a horizontal shaft having its opposite ends projecting through the slots; a wheel pivotally connected with each end of the shaft; means located within the brackets and bearing against said shaft, for normally holding the latter in position at the lower ends of said slots; a strap pivoted centrally to said shaft; a pair of oppositely-extending rods each pivoted at one end to one end of the strap, and connected at the other end with the adjacent wheel; and a lever connected at one end to said strap, for swinging the latter in either direction upon its pivot, to angle said wheels simultaneously.

5. In a switch-operating mechanism, the combination, with a pair of tubular vertical brackets provided adjacent their lower ends with alining vertical slots, of a horizontal shaft having its opposite ends projecting through the slots; a wheel pivotally connected with each end of the shaft; means located within the brackets and bearing against said shaft, for normally holding the latter in position at the lower ends of said slots; a strap pivoted centrally to said shaft; a pair of oppositely-extending rods each pivoted at one end to one end of the strap, and connected at the other end with the adjacent wheel; a lever connected at one end to said strap, for swinging the latter in either direction upon its pivot, when said shaft is in its lowered position, to angle said wheels simultaneously, and for raising said shaft bodily against the action of said holding means; and means arranged for engagement with the other end of said lever, when the same is in its raised position.

6. In a switch-operating mechanism, the combination, with a pair of tubular vertical brackets provided adjacent their lower ends with alining longitudinal slots, of a horizontal shaft having its opposite ends projecting through said slots; a wheel pivotally connected with each end of the shaft; means located within said brackets and bearing against said shaft, for normally holding the



latter in position at the lower ends of said slots; means connected with said wheels for normally holding the same in inoperative position; and means for simultaneously moving said wheels in the same direction into operative position, against the action of the last-mentioned means.

In testimony whereof, I affix my signature, in presence of two witnesses.

DRURY W. HEYDON.

Witnesses:

D. B. FULLER,  
W. A. BROWN.