

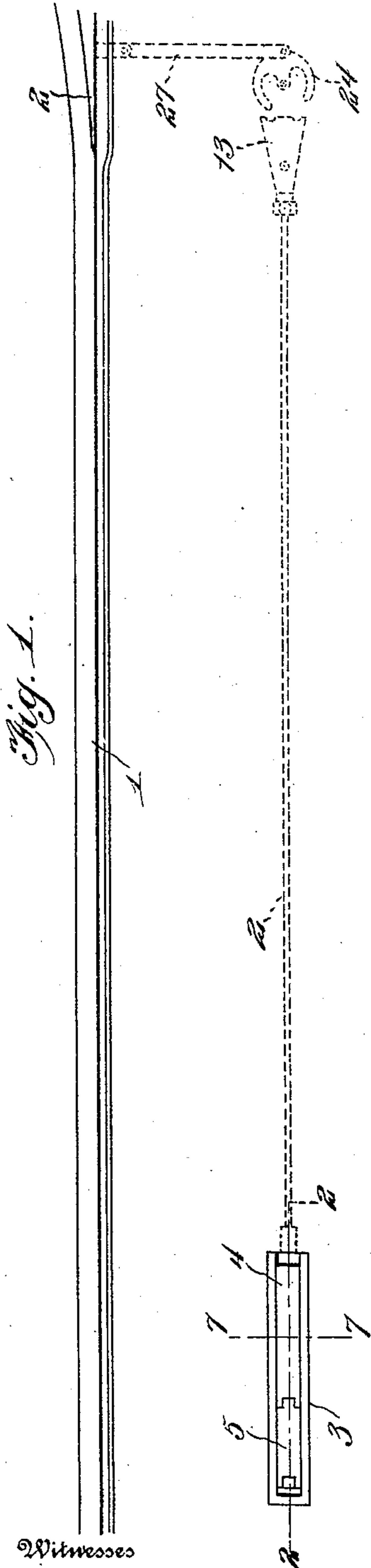
W. C. DUNN.
SWITCH.

APPLICATION FILED MAY 22, 1908.

917,564.

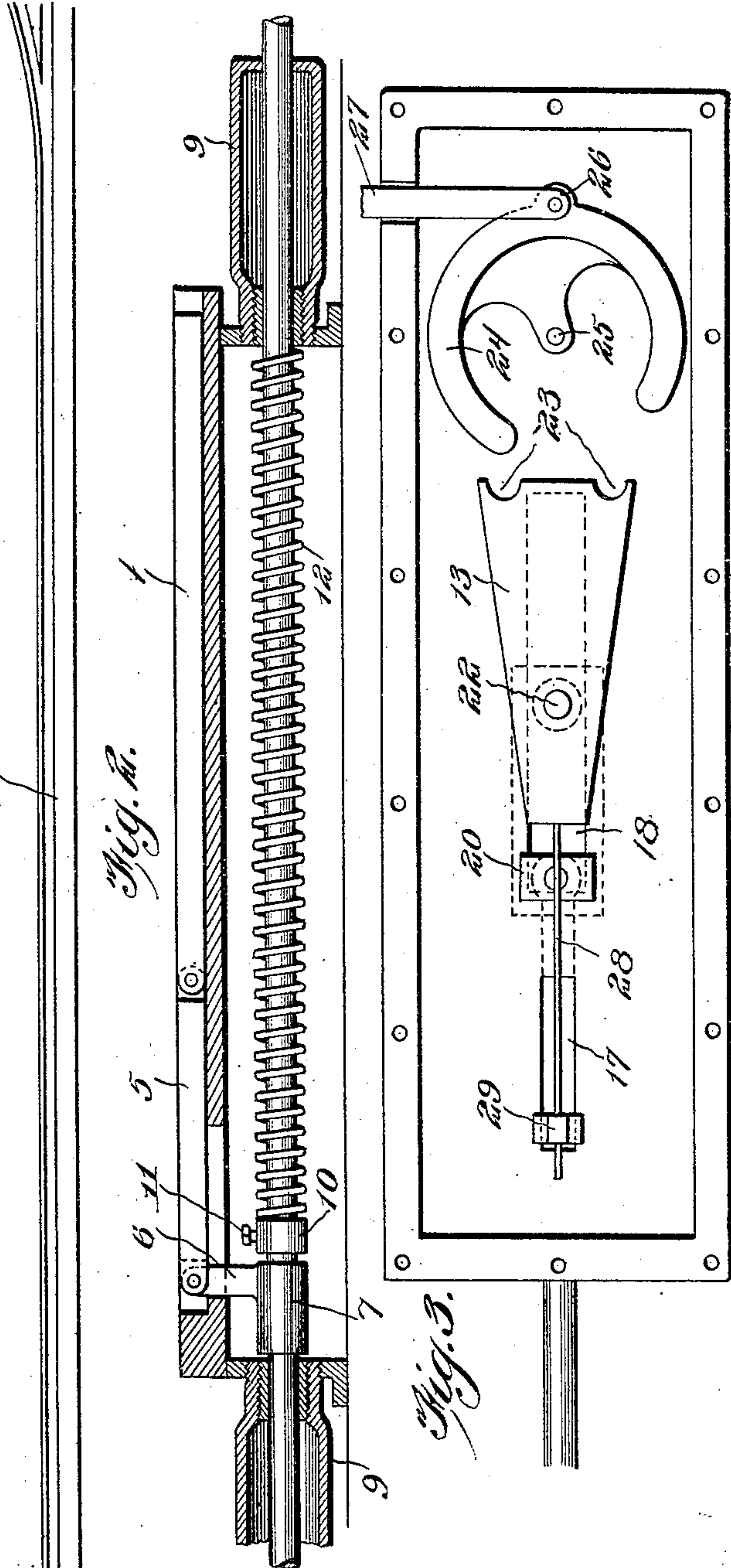
Patented Apr. 6, 1909.

2 SHEETS—SHEET 1.



Witnesses

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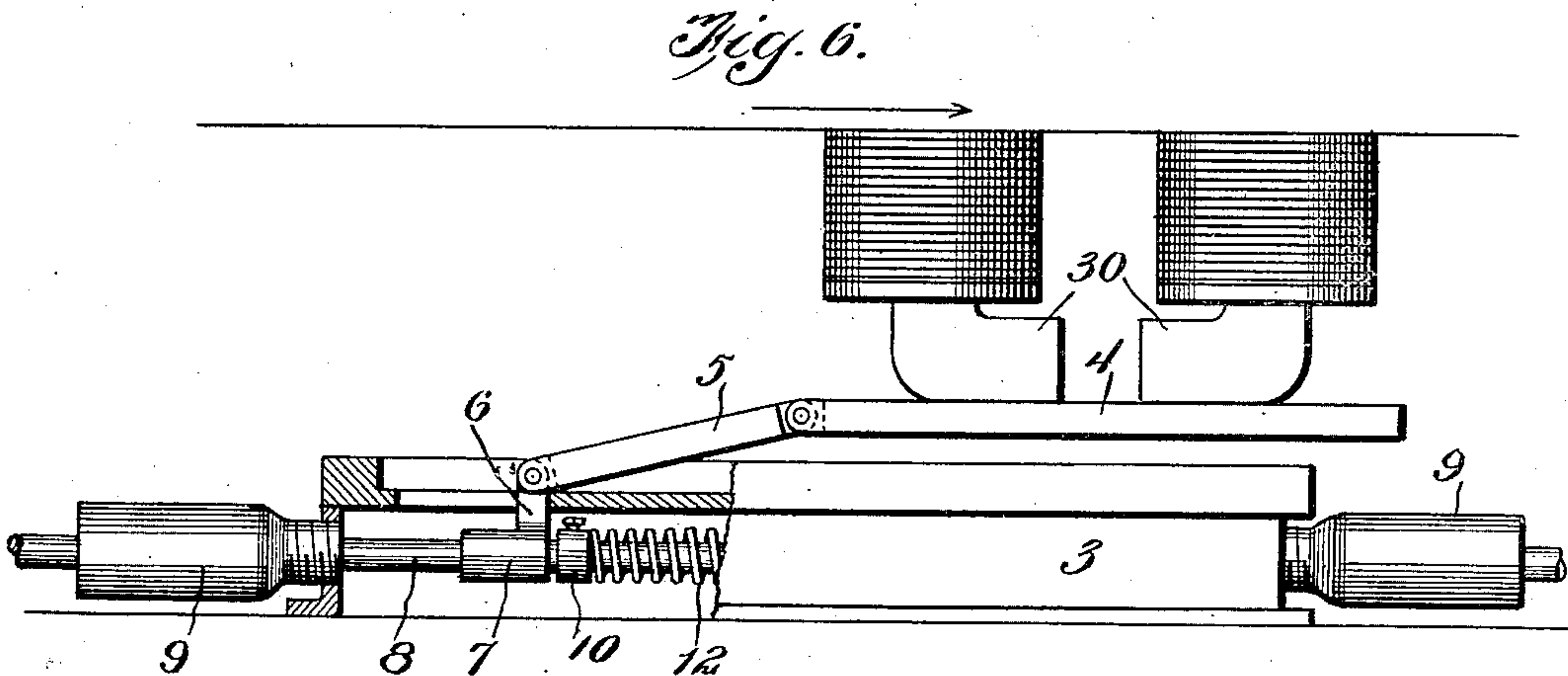
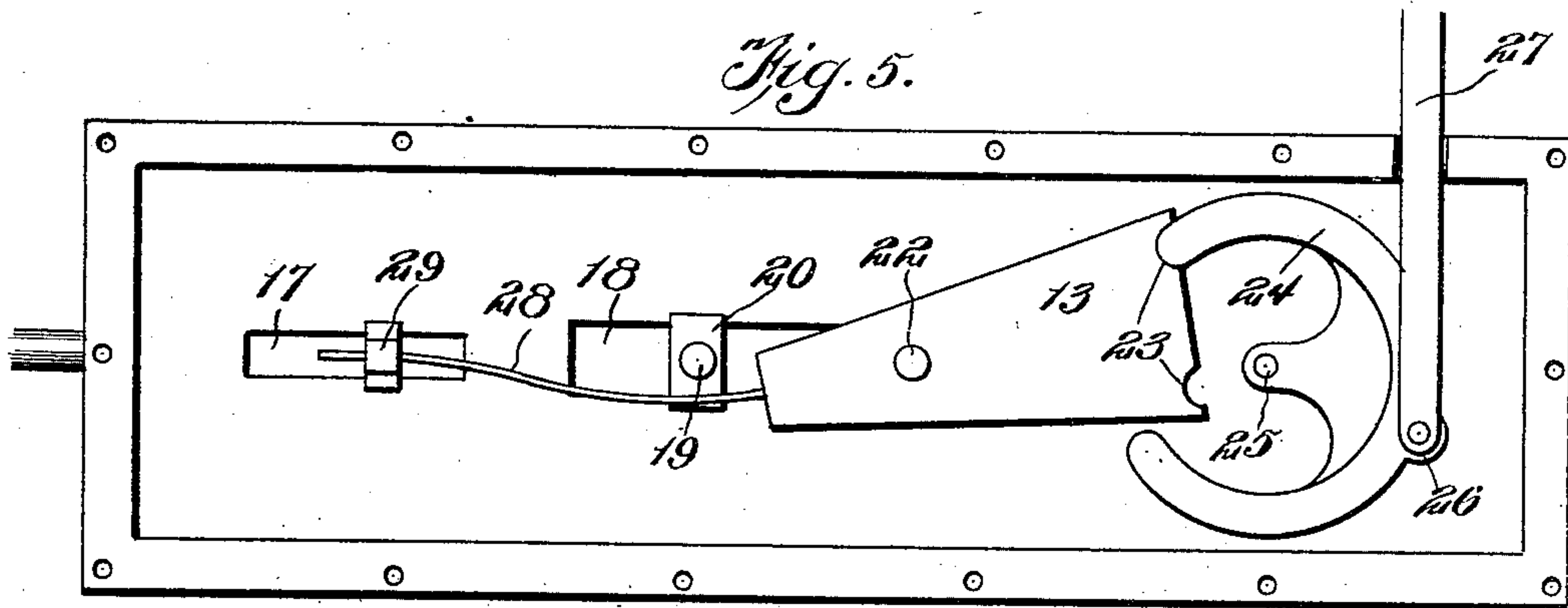
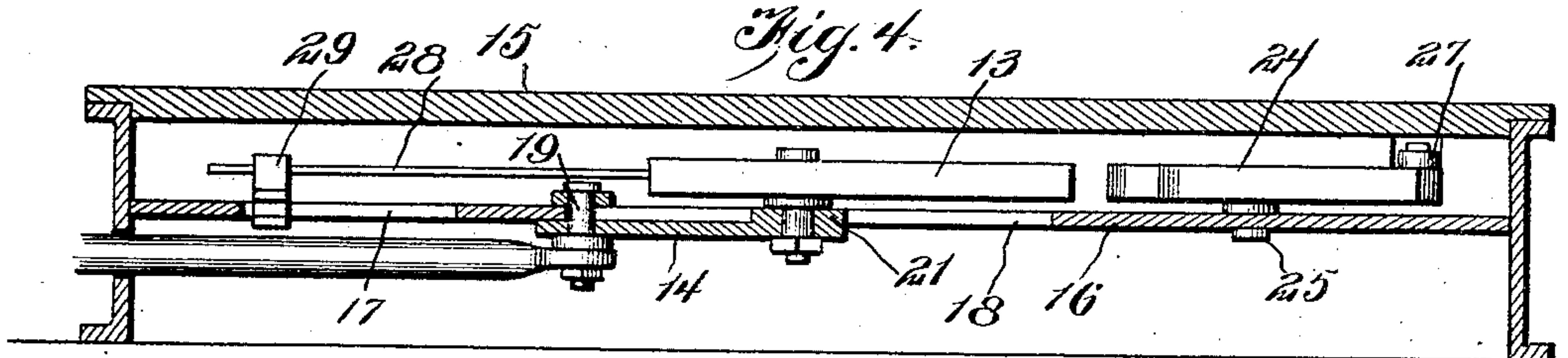
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[Signature]

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UNITED STATES PATENT OFFICE.

WILLIAM C. DUNN, OF LOGANSFORT, INDIANA.

SWITCH.

No. 917,564.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed May 22, 1908. Serial No. 434,406.

To all whom it may concern:

Be it known that I, WILLIAM C. DUNN, a citizen of the United States, residing at Logansport, in the county of Cass and State of Indiana, have invented new and useful Improvements in Switches, of which the following is a specification.

This invention relates to switches, and the object of the invention is to provide a switch throwing device having an armature adapted to be attracted by magnets provided upon cars, said armature being connected with a slidable rod having a throwing member adapted to contact a pivoted segment having arms and connected with a switch point, the rod being provided with a helical spring adapted to return the throwing member to place it in a position to act upon the second arm of the segment after the switch has been thrown in one direction.

With these and other objects in view the invention resides in the novel construction of elements and their arrangement in operative combination, hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a top plan view of a railway track provided with the improved switch throwing apparatus, parts of the device being illustrated in dotted lines. Fig. 2 is an enlarged sectional view upon the line 2—2 of Fig. 1. Fig. 3 is a top plan view of the housing containing the throwing point and pivoted segment connected with the switch point, the point and segment being out of engagement with each other. Fig. 4 is a longitudinal sectional view of Fig. 3, the cover of the housing being shown in position thereon. Fig. 5 is a similar view of Fig. 3, the throwing member being illustrated in engagement with the segment to throw the switch point. Fig. 6 is a side elevation, partly in section illustrating the magnets secured upon the car engaging the armature to throw the switch. Fig. 7 is an enlarged sectional view upon the line 7—7 of Fig. 1.

In the accompanying drawings the numerals 1 designate the rails of an ordinary railway. These rails 1 are provided with a switch point 2, which is adapted to be operated when the car upon the tracks is directed away from the straight line of the track.

Centrally positioned between the rails 1 is a boxing 3, having its upper portion adapted to project above the surface of the road bed

and provided with projecting flanges adapted for the reception of an armature 4. This armature 4 is constructed of some suitable soft metal and is pivotally connected with a link 5 having its opposite end bifurcated to provide a connection for a lug 6, secured upon a nipple 7, slidably positioned upon a throwing rod 8. This rod 8 is adapted to extend longitudinally beneath the road bed of the track and is slidably mounted in suitable bearings 9 positioned upon the ends of the boxing 3. The operating rod 8 is provided with a collar 10 slidably mounted thereon and adapted to be secured in a desired position by a retaining element 11. Interposed between the collar 10 and the opposite end of the boxing 3 is a helical spring 12, normally adapted to force the collar toward the rear end of the box and to retain the armature 4 and the link 5 in a flat position between the projecting portions of the boxing.

The rod 8 is extended a suitable distance beneath the road bed of the track and is adapted, to be secured to a throwing element 13 through the medium of a link 14. The element 13 and the link 14 are adapted to be positioned in a suitable housing 15. This housing 15 is provided with a longitudinally extending intermediate floor 16 provided with centrally arranged longitudinal slots or cut away portions 17 and 18. The member 13 is adapted to be of a width greater than the cut away portion 18 which it is adapted to overlie, and the connecting element 19, by which the rod 8 and the link 14 are connected, is provided with an elongated head 20, adapted to extend beyond the edges of the cut away portion 18, to provide a suitable guide whereby the member 14 is directed forward in a straight line when the armature 4 is contacted by suitable magnets hereafter to be described. The link 14 may be also provided with a head 21, of a width approximately equaling that of the cut away portion 18, and whereby the link 14 is retained between the walls of the cut away portion 18. The throwing member 13 is of an approximately V-shaped construction and is connected with the link 14 by the pivot member 22. The member 13 is provided upon one of its faces with suitable semi-cylindrical cut away portions 23, each of which being adapted to alternately engage one of the arms of the segment 24, pivotally secured upon the floor 16 of the boxing as at 25

and being provided with an ear 26 having suitable perforations adapted for the reception of a retaining element by which it is connected with a link 27 having its opposite end connected with a projection provided upon the switch point 2. The end of the throwing member 13 opposite that provided with the recesses 23 is provided with a flat spring member 28, having its opposite ends secured upon a slide 29 mounted upon the walls of the cut away portion 17 of the floor 16. This spring 28 is adapted to normally centralize the throwing element 13 in its position upon the floor 16 of the boxing 15.

The car adapted to operate the switch is provided with suitable magnets 30, and these magnets are adapted to be energized by the suitable switches provided upon both ends of the car.

The operation of the device is as follows: When the switch is to be thrown the magnets 30 are energized and passing over the armature 4 attract the armature and raising it carries it and the link 5 to which it is connected in a forward direction indicated by the arrow in Fig. 6. The link 5 being connected with the collar 7 which in turn is fast secured to the operating rod 8 and forces the rod forward under the compression of the helical spring 12. The forward motion of the rod 8 causes the link 14 to move the throwing member 13 into connection with one of the arms of the segment 24. It will be noted by reference to Fig. 3 of the drawings that one of the arms of the segment 24 is positioned directly in front of one of the semi-cylindrical cut away portions 23 of the throwing member 13, and that when the member 13 is forced forward the cut away portion 23 will engage this arm of the segment. As forward pressure is exerted, the segment 24 is caused to rotate upon its pivot 25 and moving the link 27 throws the switch 2. The forward movement of the throwing member 13 causes this member to rotate upon its pivot 22 and forces the slide 29 forward under the resistance of the spring 28. When the car has passed the switch and the magnets 30 have become disengaged from the armature 4 the spring 12 will force the rod 8 rearwardly to its normal position, causing the armature and link 5 to lie within the projecting portions of the housing 3, and the spring 28 connecting the slide 29 and member 13 will centralize the member to place the opposite edge of the V-shaped member to that adjacent the cut away portion 23 to contact the opposite arm of the segment.

Having thus fully described the invention what is claimed as new is:

1. The combination with a car having magnets and means for energizing the magnets, of a switch throwing device having an armature adapted to be attracted by the

magnet, said armature being connected with a slidable rod having a throwing member adapted to contact a pivoted segment connected with a switch point.

2. The combination with a car having a magnet and means for energizing the magnet, of an armature pivotally connected with a link secured upon a spring pressed rod, said rod being connected with a throwing member adapted to contact a pivoted segment connected with a switch when the armature is attracted by the magnet of the car.

3. The combination with a car having a magnet and means for energizing the magnet, of an armature connected with a link, a slide way for the armature and link, a connection between the link and a slidable rod, an expansion spring upon the rod adapted to normally retain the armature and link in the slide way, a throwing member connected with the rod, said member adapted to contact one of the arms of a pivoted segment connected with a switch point when the armature is attracted by the magnet.

4. The combination with a car having a magnet and means for energizing the magnet, of an armature connected with a slidable rod, a V-shaped throwing member connected with the rod, a pivoted segment having a pair of arms and being provided with a link connected with a switch point, the V-shaped throwing member adapted to contact either one of the arms of the segment to throw the switch when the armature is attracted by the magnet.

5. The combination with a car having a magnet and means for energizing the magnet, of an armature connected with a spring pressed rod, a link connected with the rod, a guide way for the link, a throwing member connected with the link, a resilient member connected with the throwing member; a slide for the resilient member mounted within a guide way, a segment having arms, a link provided upon the segment and connecting a switch point, the arms of the segment lying within the path of the throwing member, the throwing member adapted to contact one of the arms when the armature is attracted by the magnet to throw the switch.

6. The combination with a car having magnets and means for energizing the magnets, of a switch throwing device comprising an armature connected with a spring pressed rod, a link connected with the rod, a housing having a floor provided with longitudinally extending cut away portions, a projection upon the link within one of said cut away portions, a V-shaped throwing member pivotally connected with the projection of the link, the face of the throwing member being provided with semicylindrical recesses adjacent the edges of the member, the vertex of the member being provided with a flat resilient member

connected with a slide mounted in one of the
cut away portions of the floor, a segment hav-
ing arms pivoted to the floor, a link connected
with the segment and engaging a switch
5 point, both or either one of the arms of the
segment normally lying within the path of
one or the other of the semi-cylindrical cut
away portions of the face of the throwing
member and adapted to be contacted there-

by when the armature is attracted by the 10
magnet to throw the switch.

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

WILLIAM C. DUNN.

Witnesses:

JOSEPH H. NEFF,
JAMES M. CAMPBELL.