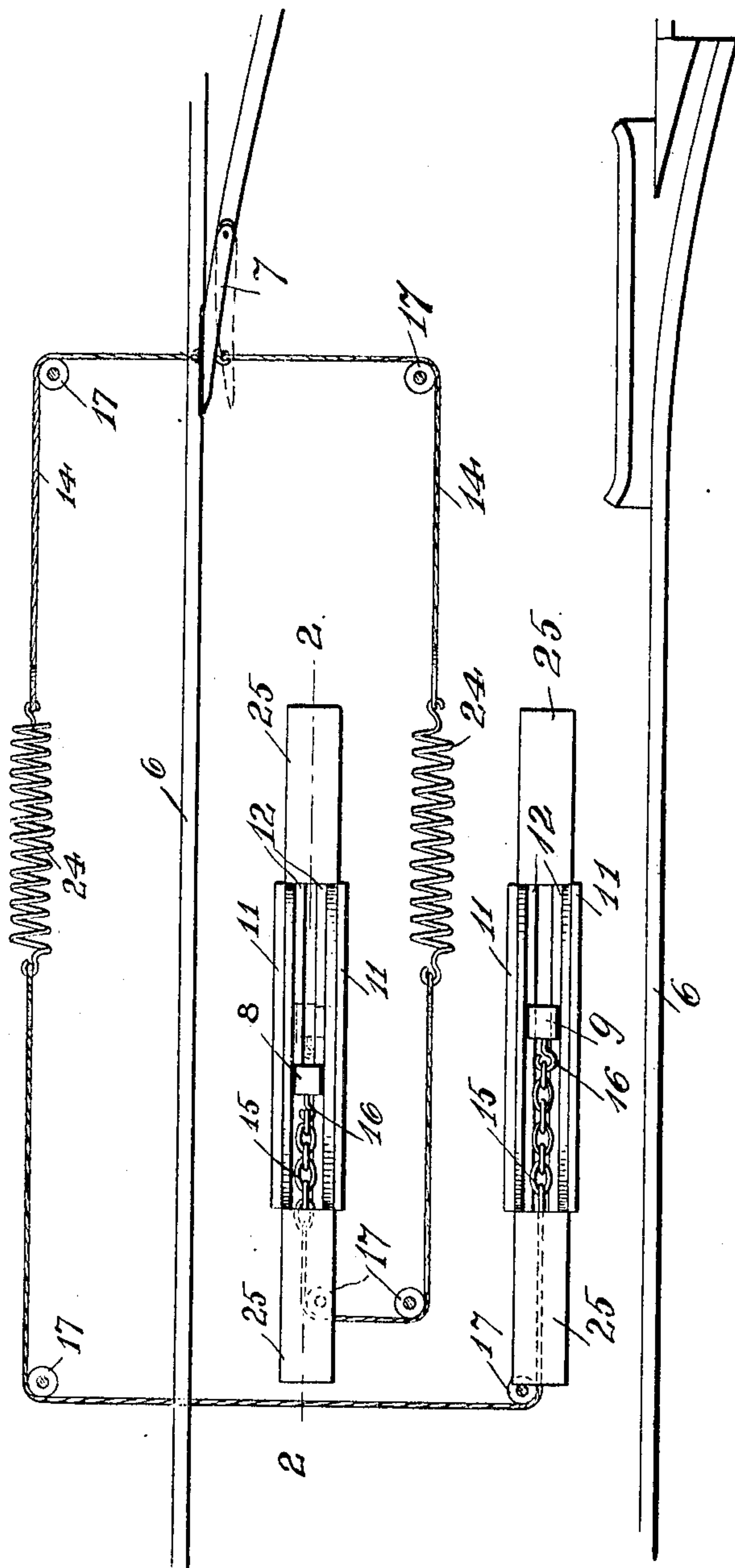


No. 887,426.

PATENTED MAY 12, 1908.

T. W. RICH.
SWITCH OPERATING DEVICE.
APPLICATION FILED JULY 9, 1907.

2 SHEETS—SHEET 1.



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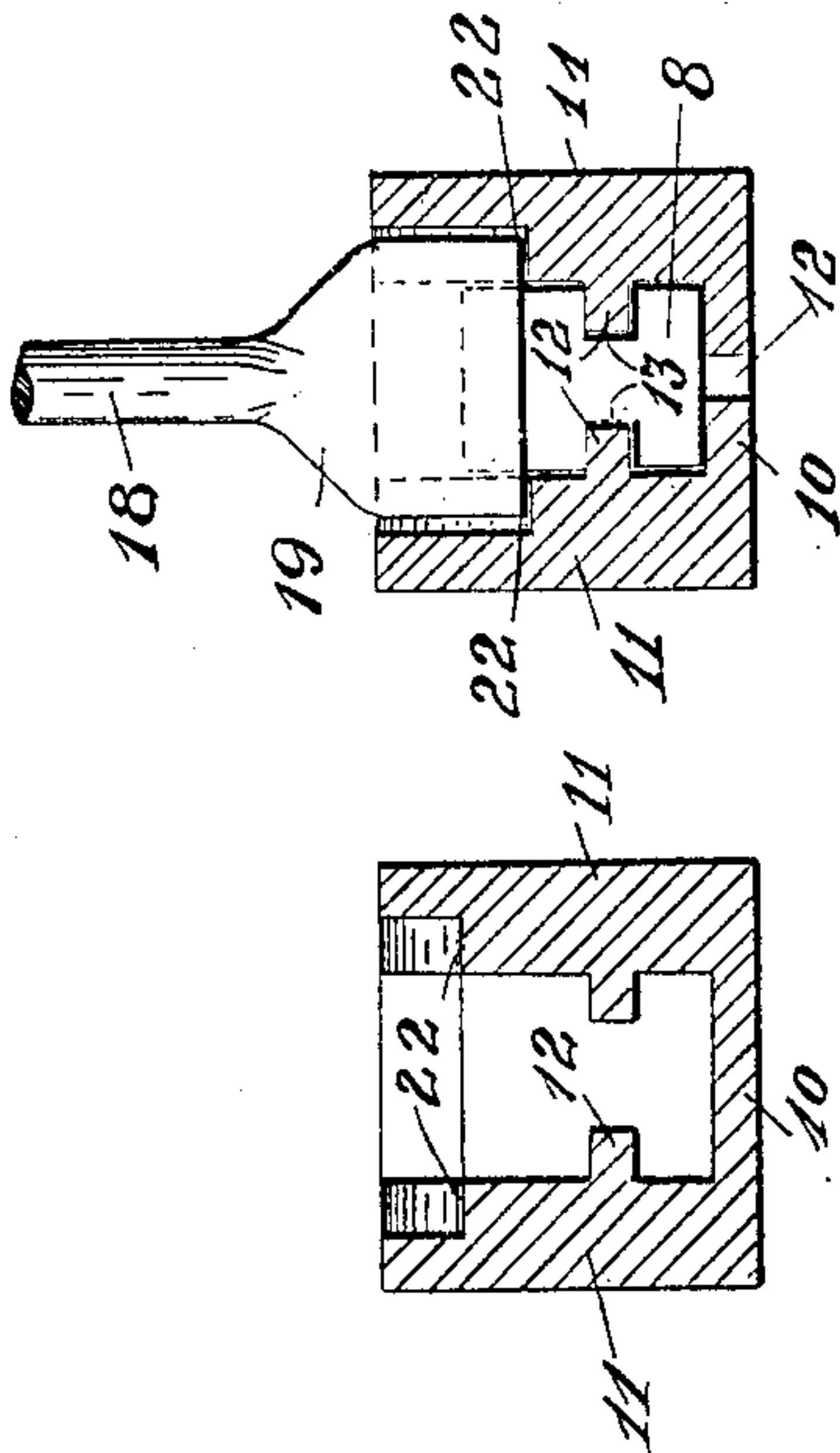


Fig. 3.

Fig. 4.

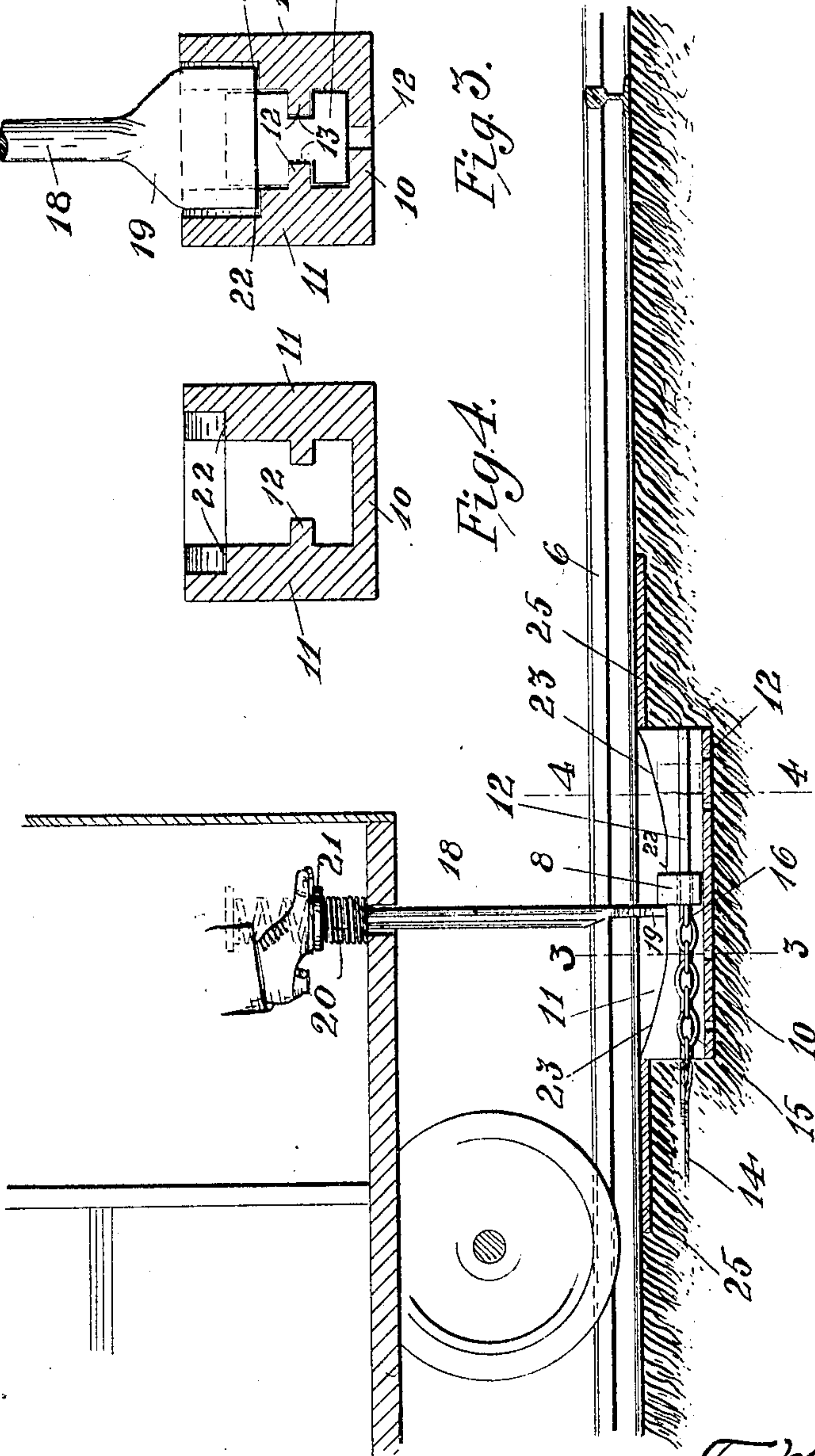


Fig. 2.

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UNITED STATES PATENT OFFICE.

THOMAS W. RICH, OF SAN DIEGO, CALIFORNIA.

SWITCH-OPERATING DEVICE.

No. 887,426.

Specification of Letters Patent.

Patented May 12, 1908.

Application filed July 9, 1907. Serial No. 382,926.

To all whom it may concern:

Be it known that I, THOMAS W. RICH, a citizen of the United States, residing at 408 Logan avenue, San Diego, in the county of San Diego and State of California, have invented certain new and useful Improvements in Switch-Operating Devices, of which the following is a specification.

This invention is a switch-operating device, and more particularly one for street railways in which a device on the car, and under control of the motorman, actuates a mechanism which is operatively connected to a pivoted switch-point, so that the switch can be thrown without stopping the car.

The object of the invention is to provide a switch-operating device of this kind which is simple in construction and reliable in operation, and which is so arranged that it offers no obstruction to ordinary street traffic.

In the accompanying drawing Figure 1 is a diagrammatic plan view of the invention. Fig. 2 is a longitudinal section on the line 2—2 of Fig. 1 showing the operation of the invention. Fig. 3 is a vertical section on the line 3—3 of Fig. 2. Fig. 4 is a vertical section on the line 4—4 of Fig. 2.

In the drawings, 6 denotes the track rails; and 7, the switch-point, which is pivoted in the usual manner. Adjacent the switch, a pit is made in the pavement or roadbed to receive guide-casings of longitudinally sliding blocks 8 and 9, respectively. The casings are trough-shaped and comprise a floor 10, and longitudinal side-walls 11. In the floor are openings 12 to discharge water. On the inside of the side-walls are longitudinal guide-ribs 12 which enter grooves 13 in opposite sides of the slide-blocks 8 and 9. The block 8 is operatively connected to one side of the switch-point, and the block 9 is operatively connected to the other side of the switch-point. Said connection is made by means of cables 14 connected at one end to the switch-point in any suitable manner, and at the other end the cables are connected to short lengths of chains 15 which are fastened to hooks 16 on one end of the slide-blocks. The chains are for the purpose of adjusting the length of the cables. The cables pass over the guide-pulleys 17 which are arranged in such a manner that when the block 8 is pushed forwardly in its guide-casing, the switch will be opened, and when the block 9 is pushed forwardly the switch will be closed.

The slide-blocks 8 and 9 are operated by

push-rods 18 which are carried by and depend from the car platform. At their lower ends the push-rods are enlarged to form a flat blade 19. The push-rods are mounted in openings in the platform and are movable vertically, and they are normally held elevated a suitable distance above the pavement by means of springs 20, said springs being coiled around the rods between the top of the car platform and foot-pedals 20 on the rods.

Above the guide-ribs 12, the side-walls 11 of the guide-casings are grooved as indicated at 22. Said grooves extend parallel to the guide-ribs for a short distance, and at the end of the casings the grooves are inclined and rise to the level of the pavement as indicated at 23. The blades 19 are wider than the slide-blocks 8 and 9 and are so located on the car platform that when they are depressed they enter the respective guide-casings and slide over the floor of the grooves 22. The slide-blocks extend above the floor of the grooves and are therefore in the path of the blades 19.

In use, when a car approaches the switch the motorman first ascertains the position of the switch-tongue. If the switch is closed as shown in Fig. 1, and the car is to continue on the main track, the push-rod for the slide-block 8 is depressed by the foot of the motorman so that its blade 19 will enter the guide-casing when it is reached. When the blade strikes the block 8, the latter is pushed forwardly, and as it is connected to the switch-point, the latter will be thrown to the position shown by dotted lines in Fig. 1. With the switch-point in this position, if a car is to take the branch-track, the block 9 will be operated by depressing the other push-rod 18, it being understood that a push-rod is provided for each slide-block. When the blade 19 reaches the incline 23, it rides up the same, and in so doing it passes over the top of the slide-block and is thus automatically disengaged therefrom. By properly locating the inclines according to the extent of swing of the switch-point, all danger of breakage from excessive movement thereof is prevented. The cables 14 are also provided with shock-absorbers 24 which are coiled springs. For a short distance at each end of the guide-casings, and in line with the openings therein, wear-blades 25 are mounted in the pavement to prevent injury to the latter by the blades 19 digging thereinto.

5 The parts herein described are simple in construction and reliable in operation and by placing them below the level of the pavement ordinary street traffic is not interfered with. The apparatus can be readily applied to a double switch by duplicating the parts. The cables connected to the switch-point will be suitably incased.

I claim:

10 A switch-operating device comprising a casing having guide-ribs and a groove extending parallel to said guide-ribs for a portion of their length and having inclines at its

ends, a block slidably mounted in the casing on the guide-ribs and extending above the straight portion of the grooves, a connection between said block and the switch-point, and a vertically movable push-rod carried by the car and slidable in the groove behind the block. 15 20

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

THOMAS W. RICH.

Witnesses:

R. H. McFADDEN,
E. L. RICHARDS.