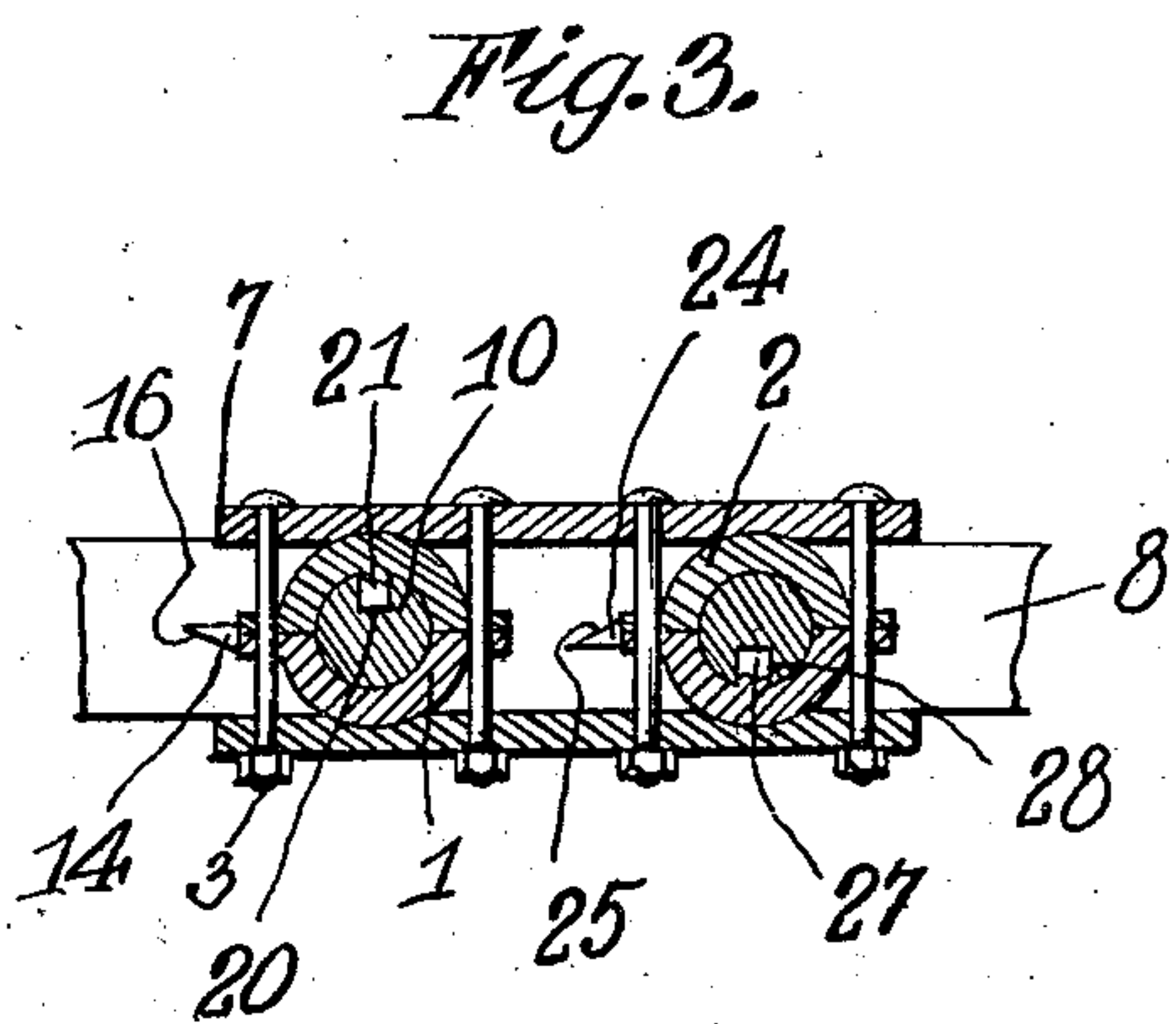
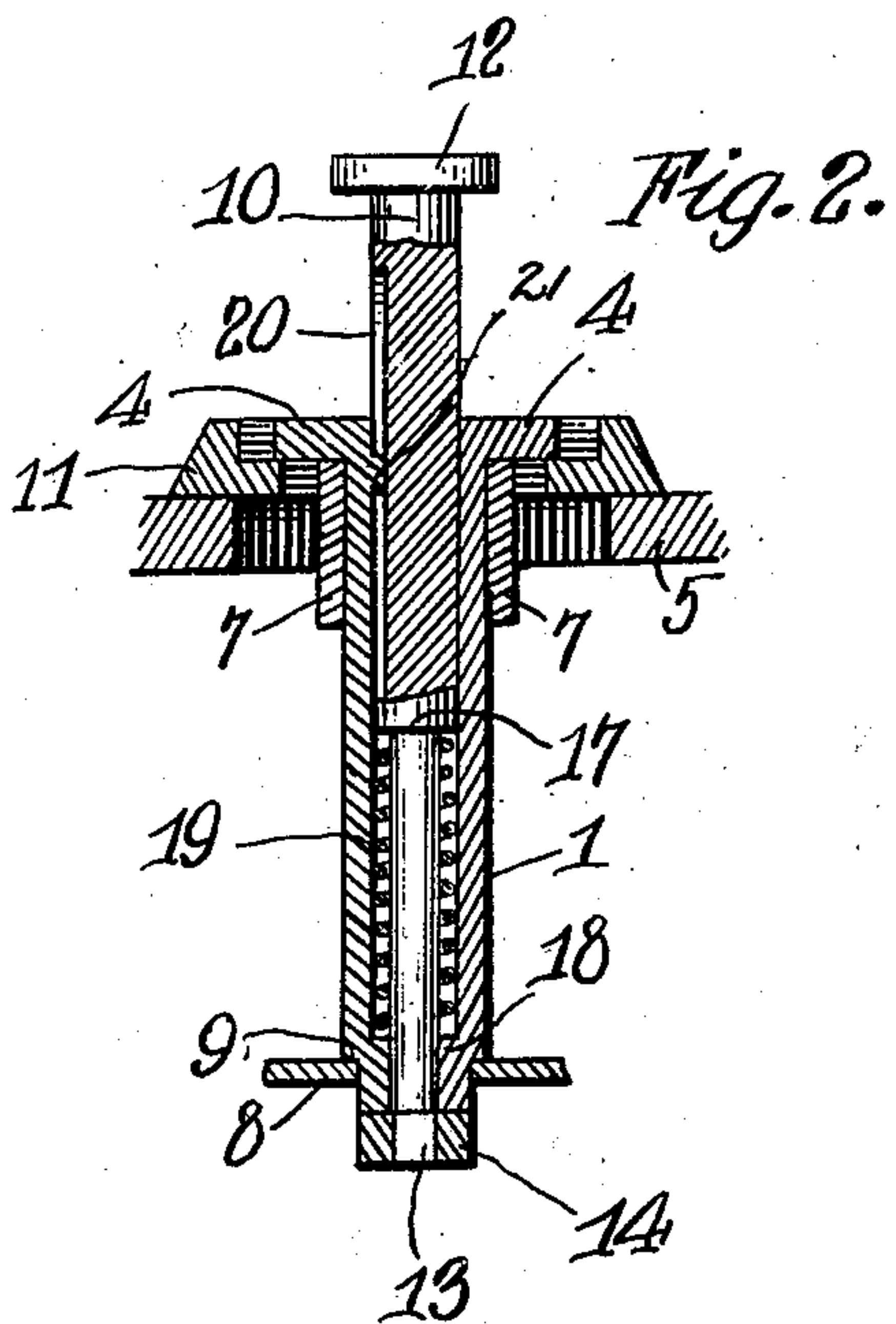
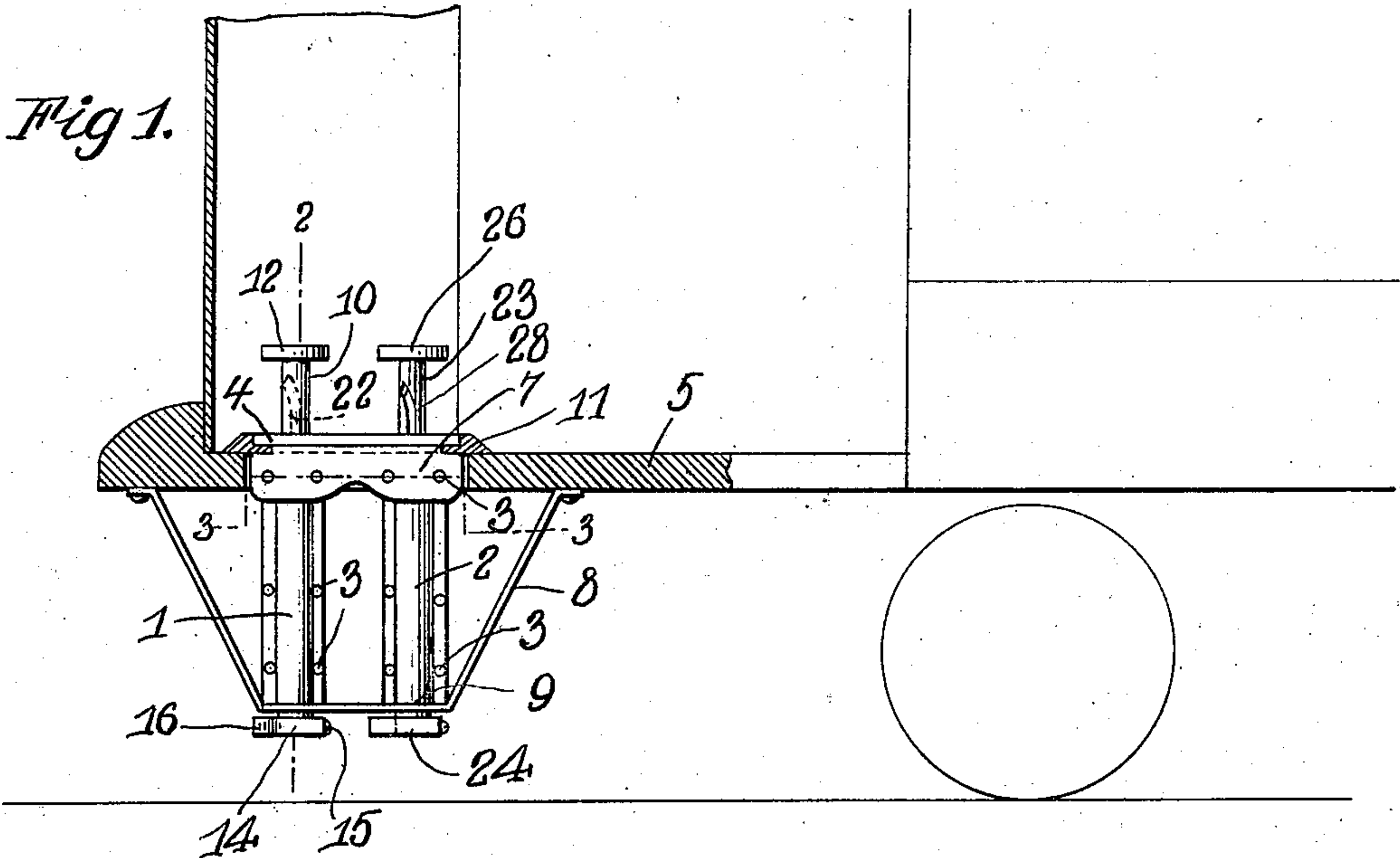


No. 857,201.

PATENTED JUNE 18, 1907.

L. Z. PRESTON.
SWITCH OPERATING DEVICE.
APPLICATION FILED APR. 12, 1907.

2 SHEETS—SHEET 1.



Leonard J. Preston
Inventor

Witnesses

C. E. Smith
M. A. Schmitt

By *M. W. Swanson*

Attorney

No. 857,201.

PATENTED JUNE 18, 1907.

L. Z. PRESTON.
SWITCH OPERATING DEVICE.
APPLICATION FILED APR. 12, 1907.

2 SHEETS—SHEET 2.

Fig. 4.

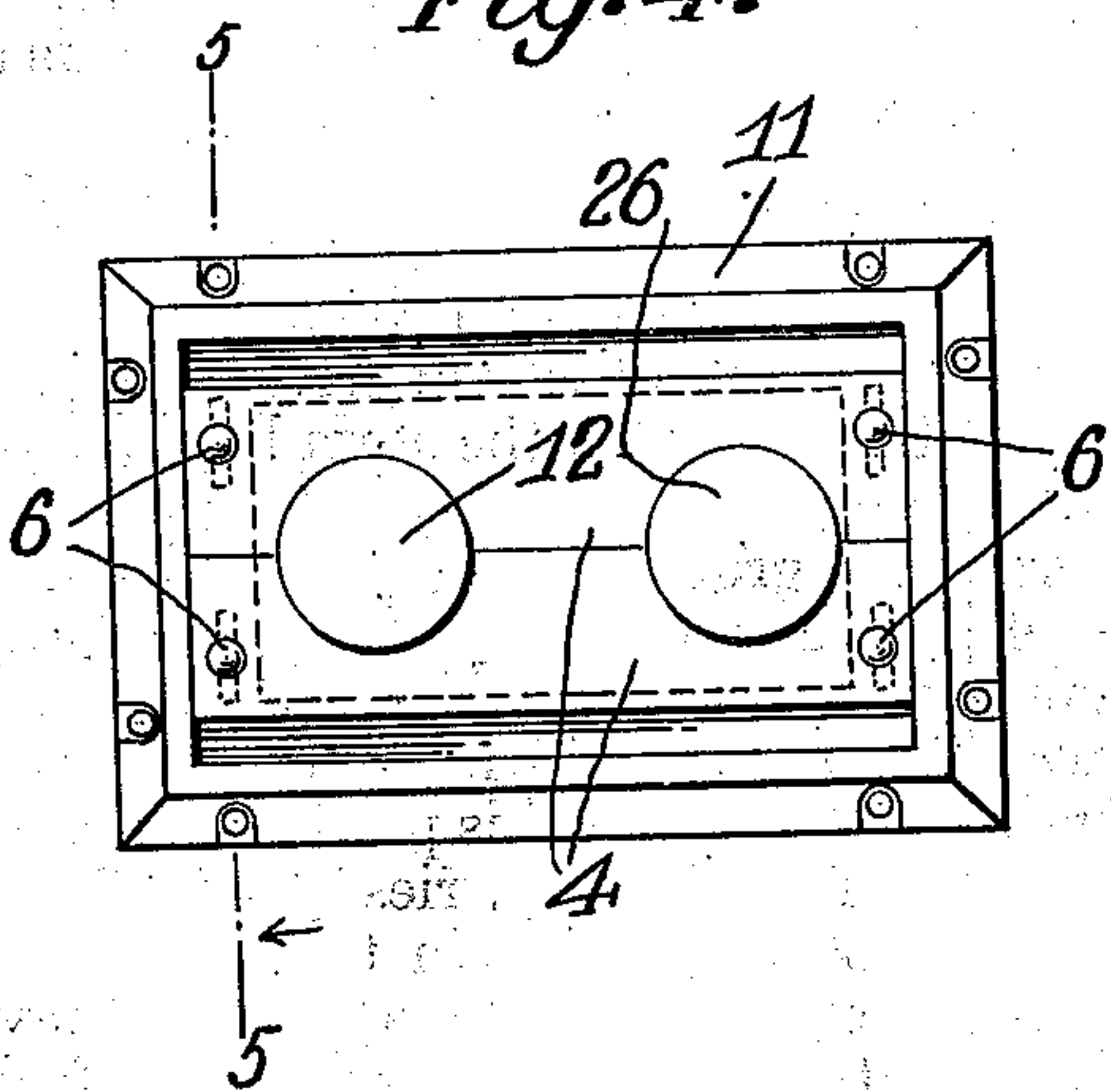


Fig. 5.

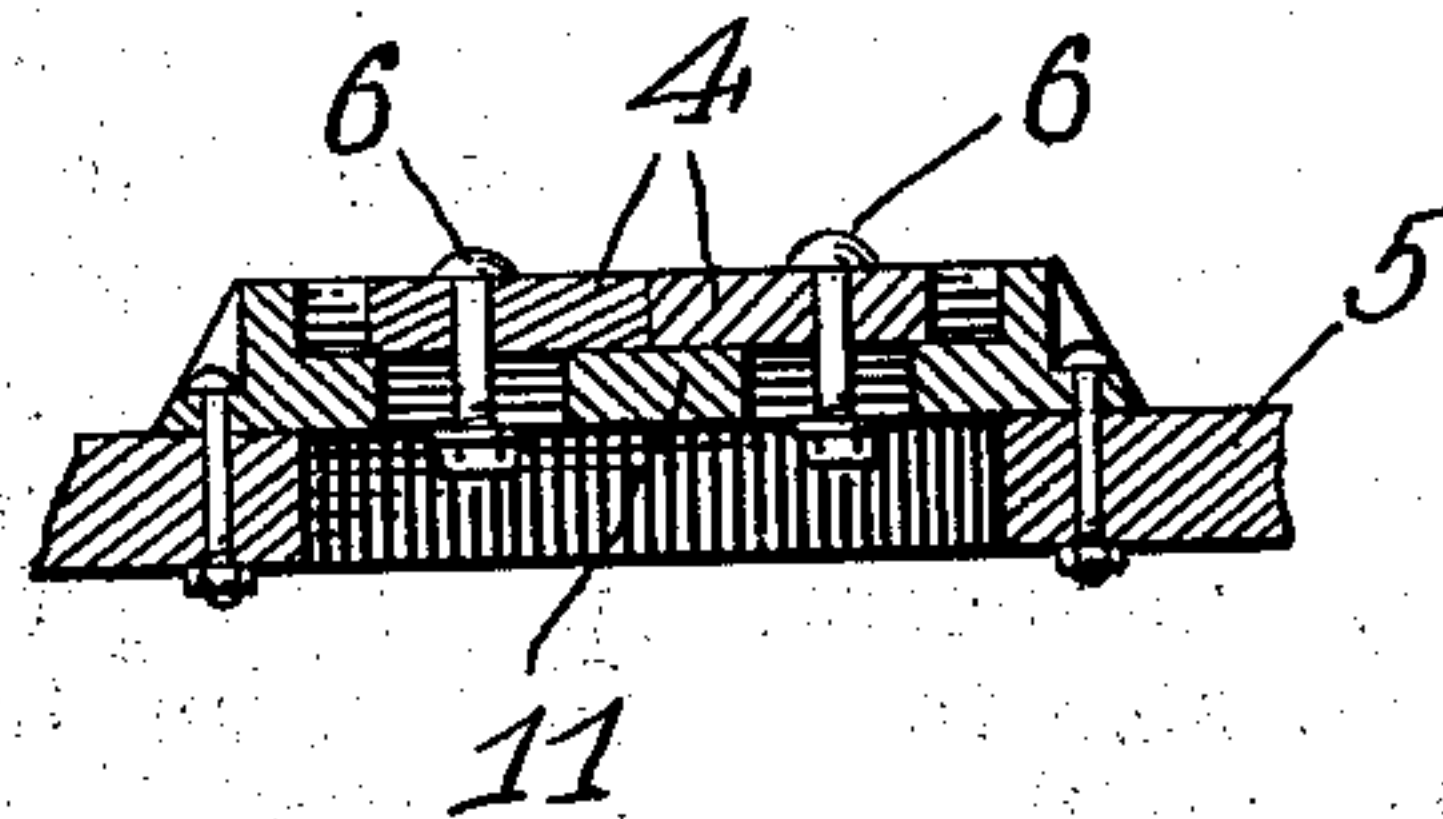


Fig. 6.

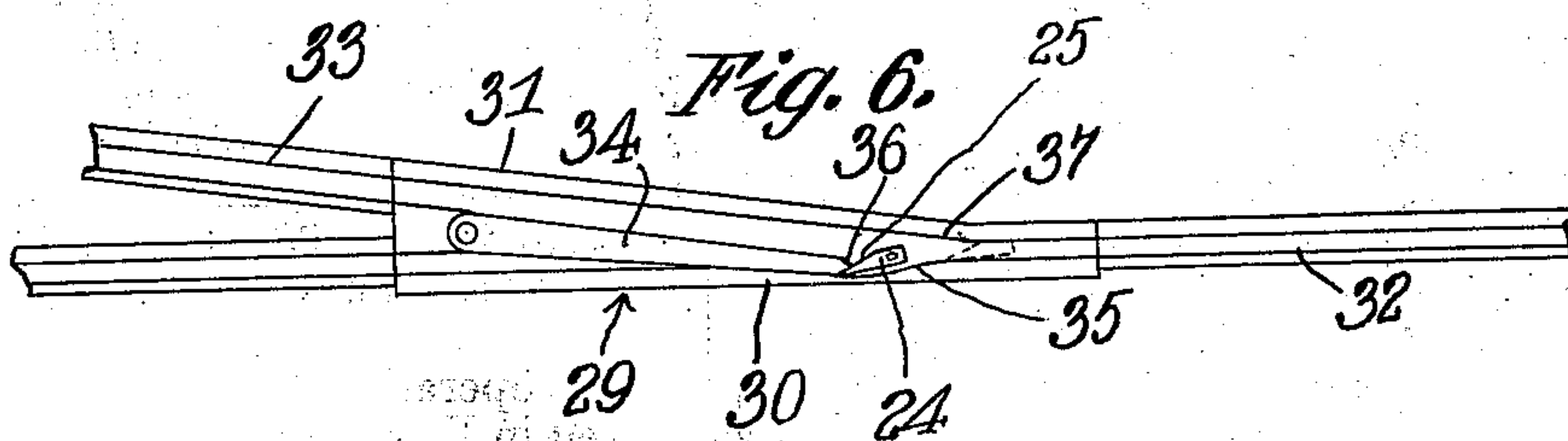
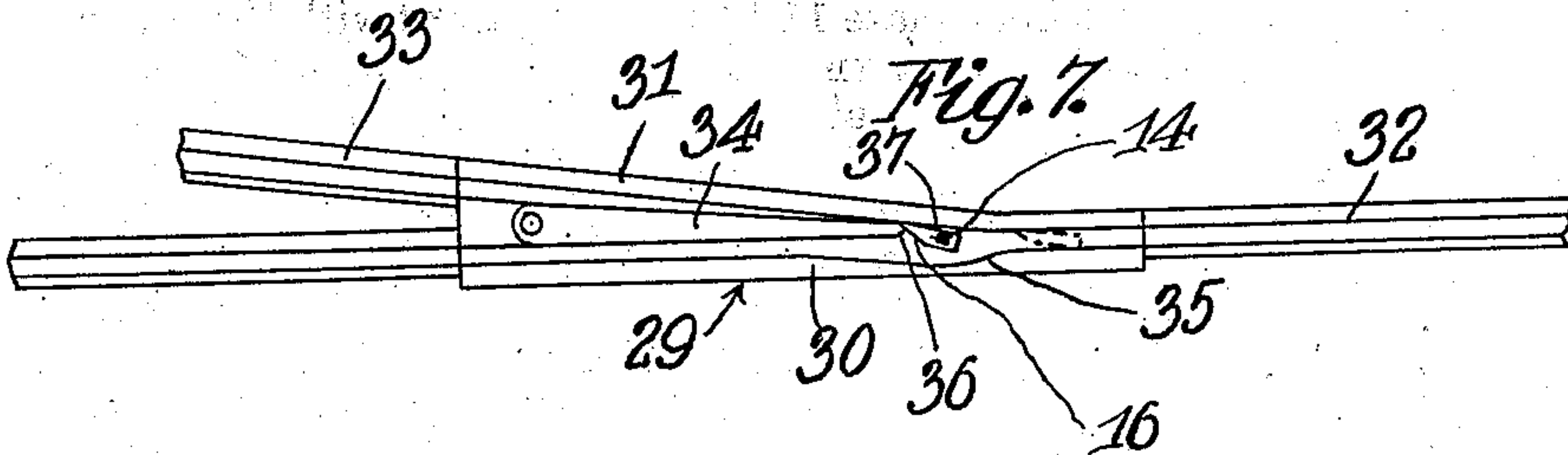


Fig. 7.



Leonard Z. Preston
Inventor

Witnesses

C. E. Smith.
M. A. Schmidt

By

M. B. Thomas
Attorney

UNITED STATES PATENT OFFICE.

LEONARD Z. PRESTON, OF SCOTTSVILLE, KANSAS.

SWITCH-OPERATING DEVICE.

No. 857,201.

Specification of Letters Patent.

Patented June 18, 1907.

Application filed April 12, 1907. Serial No. 367,781.

To all whom it may concern:

Be it known that I, LEONARD Z. PRESTON, a citizen of the United States, residing at Scottsville, in the county of Mitchell and State of Kansas, have invented certain new and useful Improvements in Switch-Operating Devices, of which the following is a specification.

This invention is a device for operating street railway switches, and more particularly that kind comprising a switch-point thrower carried by the car and under the control of the motorman or the conductor.

The object of the invention is to simplify the construction of the device so that there will be no complicated parts to get out of order; and also to provide means to facilitate and insure the engagement of the thrower with the switch-point so that the device will be at all times reliable in operation.

In the accompanying drawings, Figure 1 is a side elevation partly in section of a portion of a car platform showing the application of the invention. Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 1. Fig. 3 is a horizontal section on the line 3—3 of Fig. 1. Fig. 4 is a plan view. Fig. 5 is a vertical section on the line 5—5 of Fig. 4. Figs. 6 and 7 are diagrams showing the operation of the invention.

Referring specifically to the drawings, the housing of the thrower comprises cylindrical tubes 1 and 2, respectively, which are halved, the halves or sections being connected by bolts 3 or in any other suitable manner. At the top of the tube sections are flanges 4 whereby they are fastened to a floor plate 11 of the car platform 5 by bolts 6 or otherwise. The floor plate and platform have suitable openings to receive the parts and the bolts 6 pass through slots in the plate to permit lateral adjustment of the device on the car with respect to the switch. The top ends of the tubes are also connected on opposite sides by plates 7 bolted thereto. The lower ends of the tubes are supported in a hanger 8 secured to the bottom of the platform, said ends passing through openings in the hanger and also being reduced to form shoulders 9 which engage the hanger.

In the tube 1 is mounted to slide up and down therein a stem 10 which projects from both ends thereof. The upper end of the stem is fitted with a foot-pedal 12. The lower end of the stem, outside the tube, is squared as indicated at 13 and fitted with a shoe 14

which is fastened to the squared portion of the stem by a set-screw 15. One side of the shoe is beveled as indicated at 16, and its front end is pointed for a purpose to be hereinafter described. Inside the tube the stem has a reduced portion which forms a shoulder 17, and the inside of the tube is also reduced to form a shoulder 18. Around the reduced portion of the stem between the shoulders 17 and 18 is coiled a spring 19 which serves to normally hold the stem elevated whereby the shoe 14 is rendered inoperative. Above the spring 19 the stem has a groove 20 which receives a stud 21 projecting from the tube 1. The groove is vertical or parallel to the axis of the stem, with the exception of its upper end which is made slanting as indicated at 22 by reason of which the stem will be turned axially when it is pushed down the tube.

The tube 2 carries a stem 23 which is fitted with a shoe 24 in the same manner as the stem 10. The shoe 24 is also beveled as indicated at 25 and has a pointed front end. The beveled portions 16 and 25 of the shoes are oppositely presented. The stem 23 also carries a foot-pedal 26 and is fitted with a spring for holding it normally elevated. A stud 27 and groove 28 for turning the stem is also provided. The slanting portions of the grooves 20 and 28 are oppositely presented so that the stem will turn axially in opposite directions.

The operation of the device is clearly illustrated in Figs. 6 and 7 in which 29 denotes a switch-base having the usual guard portion 30 and tread portion 31, the latter connecting the main rail 32 with the branch rail 33. The switch-base is grooved as usual in which groove the switch-tongue 34 works. That portion of the guard 30 against which the switch-tongue abuts when it is set for the branch track is recessed as indicated at 35, and the point of the tongue is beveled on both sides as indicated at 36 so that it will be spaced slightly from the guard. That part of the tread 31 against which the switch-tongue abuts when it is set for the main line is also recessed as indicated at 37. This arrangement is to insure the engagement of the shoes 14 and 24 with the switch-tongue.

With the switch tongue in the position shown in Fig. 6, if the car is to continue on the main line, the motorman places his foot on the pedal 26 and presses the stem 23 until the shoe 24 enters the groove of the rail 32. The turning movement of the stem heretofore

described presses the point of the shoe tightly against the wall of the groove so that when the recess 35 is reached the point springs into the space between the switch-tongue point and the guard 30, thus insuring the engagement of the shoe with the switch-tongue. As the shoe continues to travel forwardly its beveled side 25 forces the switch-tongue over against the tread portion 31, thus enabling the car to continue on the main line. If the switch-tongue is already in the latter position the device need not be thrown into operation. After the switch-tongue is thrown, the motorman removes his foot from the pedal 26 whereupon the spring elevates the stem and withdraws the shoe 24 from the rail groove. In elevated position the shoe will be a sufficient distance above the rail to clear obstructions. The slanting portions of the grooves 20 and 28 will be so located that the turning movement of the shoe does not commence until it has reached the rail groove or the groove of the switch-base.

When the switch is set for the main track and the car is to take the siding the shoe 14 will be brought into action in the same manner as the shoe 24. As the beveled portions of the shoes are oppositely presented the

shoe 14 will throw the switch-tongue in the opposite direction to that it was thrown by the shoe 24. The device therefore requires no attention other than taking care that the proper stem is depressed after the position of the switch-tongue is observed.

The device is reliable in operation and as its parts are few and simple it is not liable to get out of order.

I claim:—

The combination with a switch comprising a base having a guard and a tread, and a pivoted switch-tongue engageable with the guard and tread, and having its point spaced therefrom, of a switch operating device carried by the car comprising a pair of shoes having pointed ends and beveled on opposite sides, and means for throwing said pointed ends into the space between the point of the switch-tongue and the guard and tread, respectively.

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

LEONARD Z. PRESTON.

Witnesses:

B. R. WERTS,
GEO. W. TOLER.