

E. D. ROSE.  
RAILWAY SWITCH OPERATING MECHANISM.  
APPLICATION FILED MAY 14, 1909.

967,059.

Patented Aug. 9, 1910.

2 SHEETS—SHEET 1.

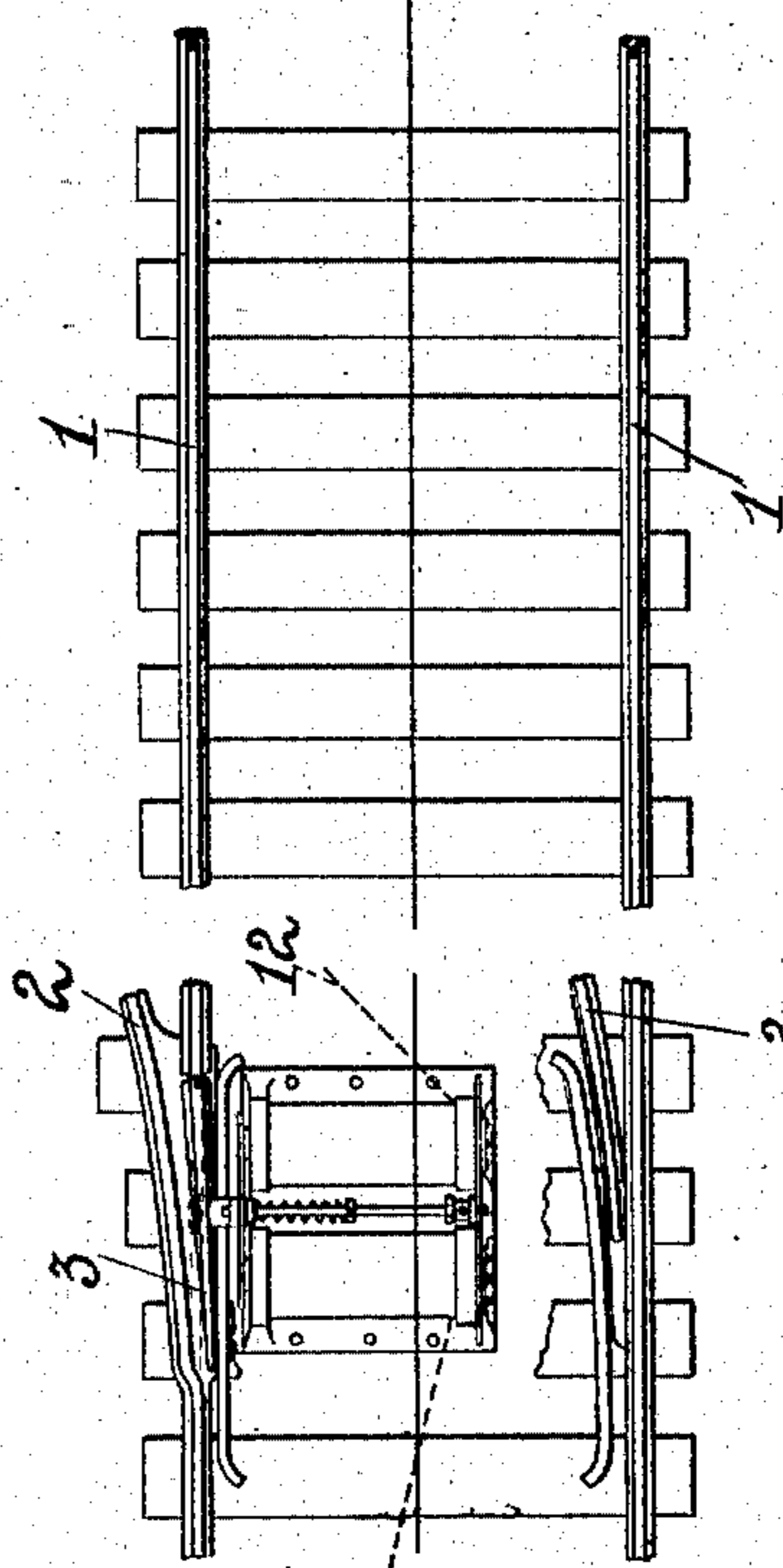
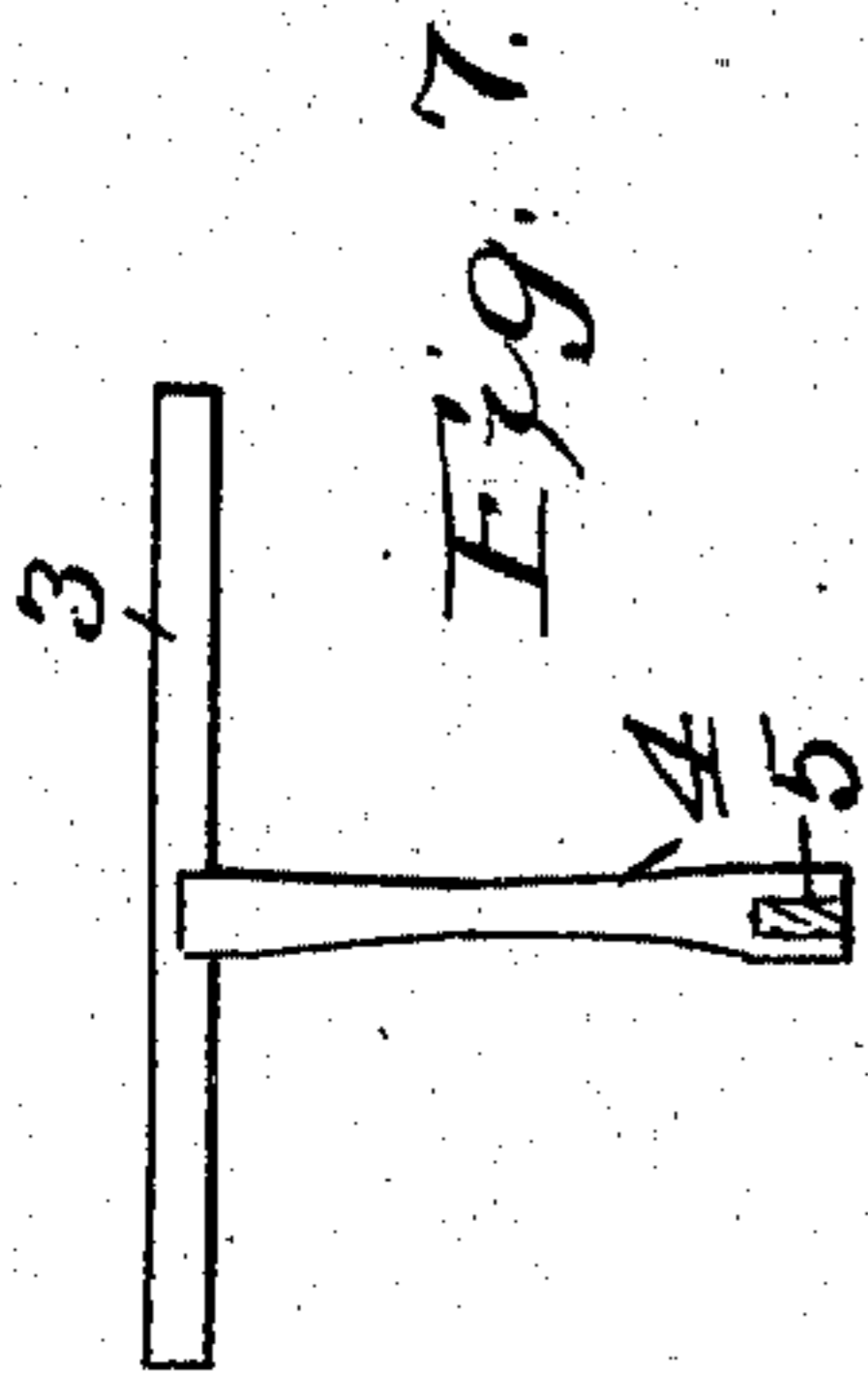
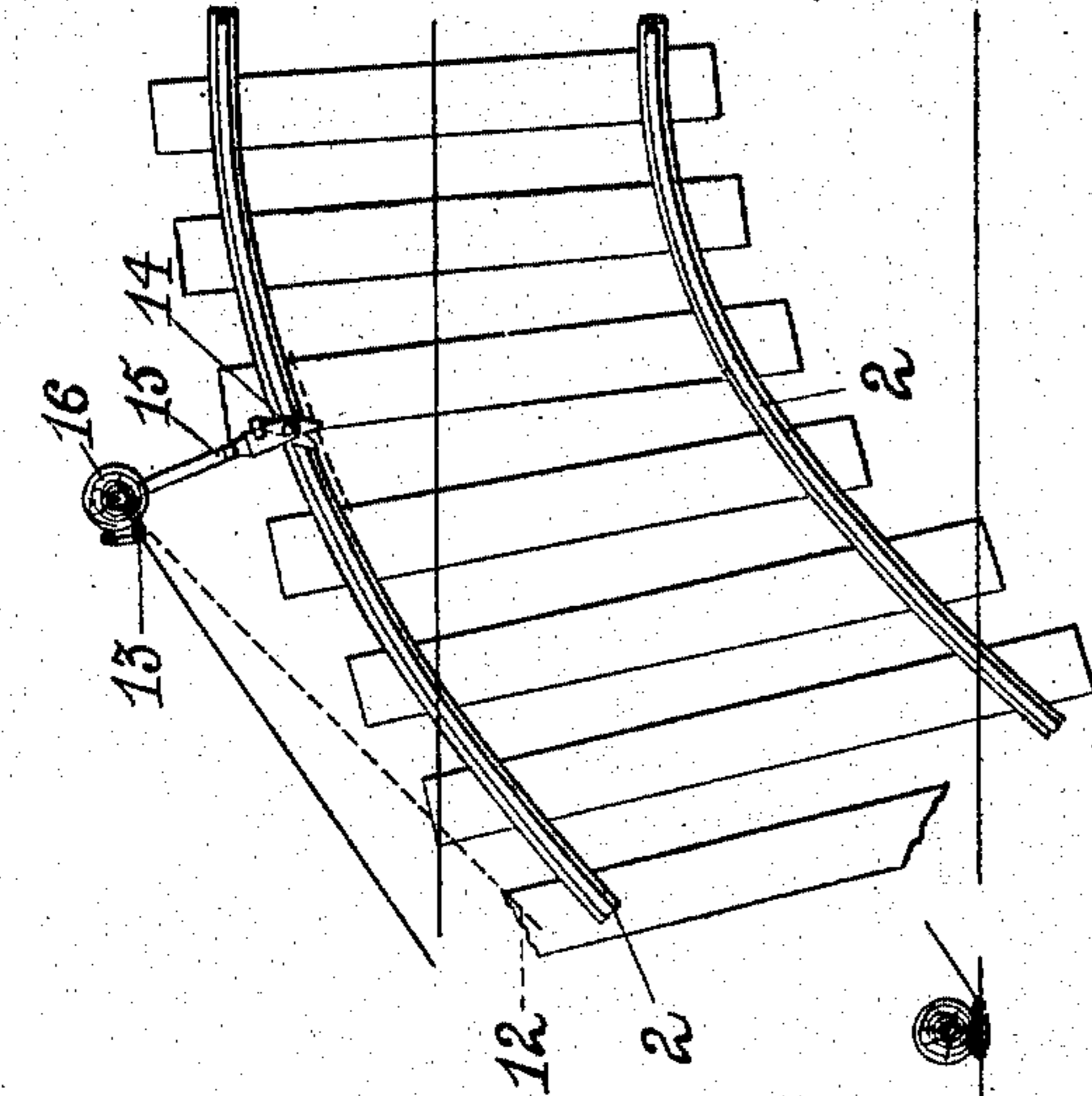
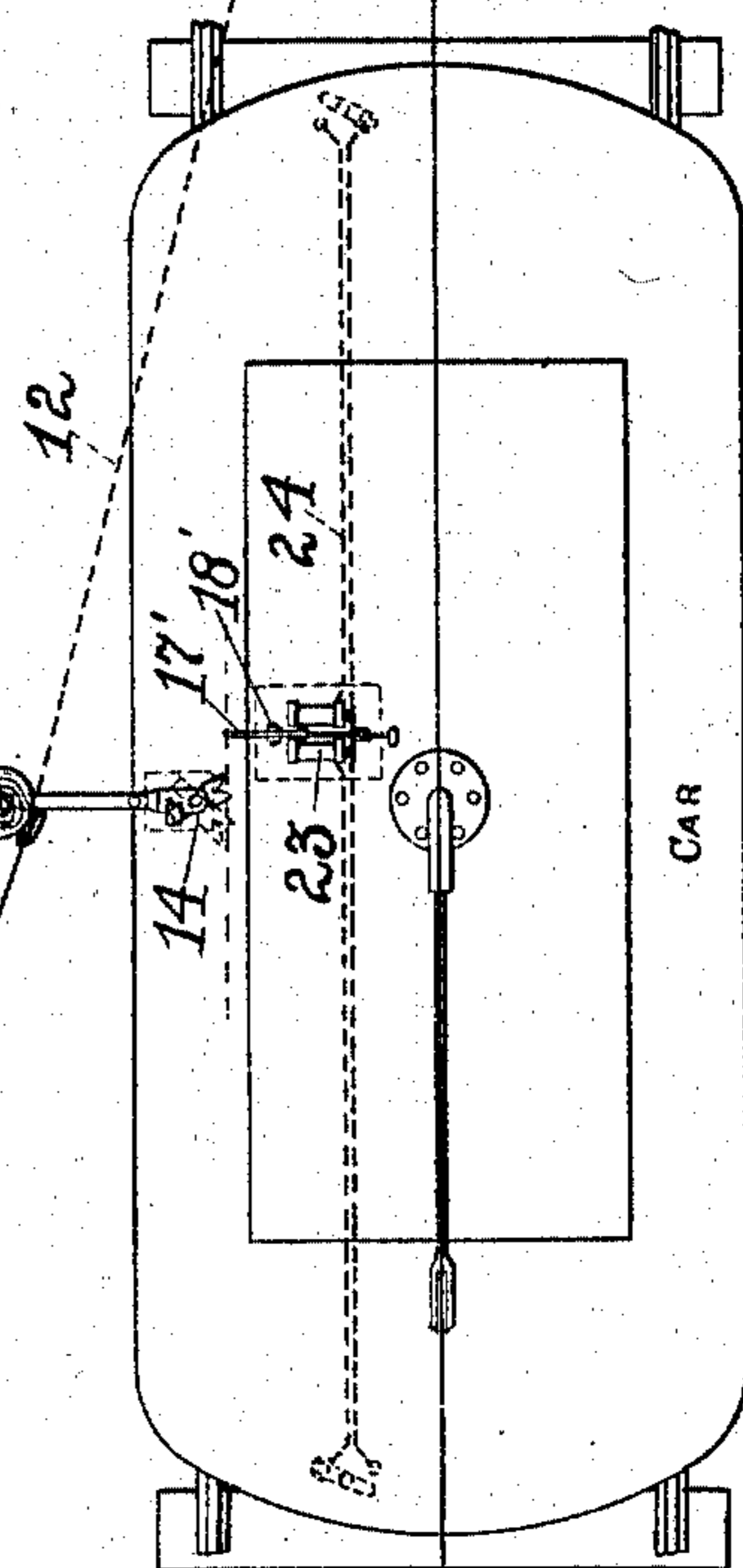


Fig. 1.



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Bent M. Stahl.

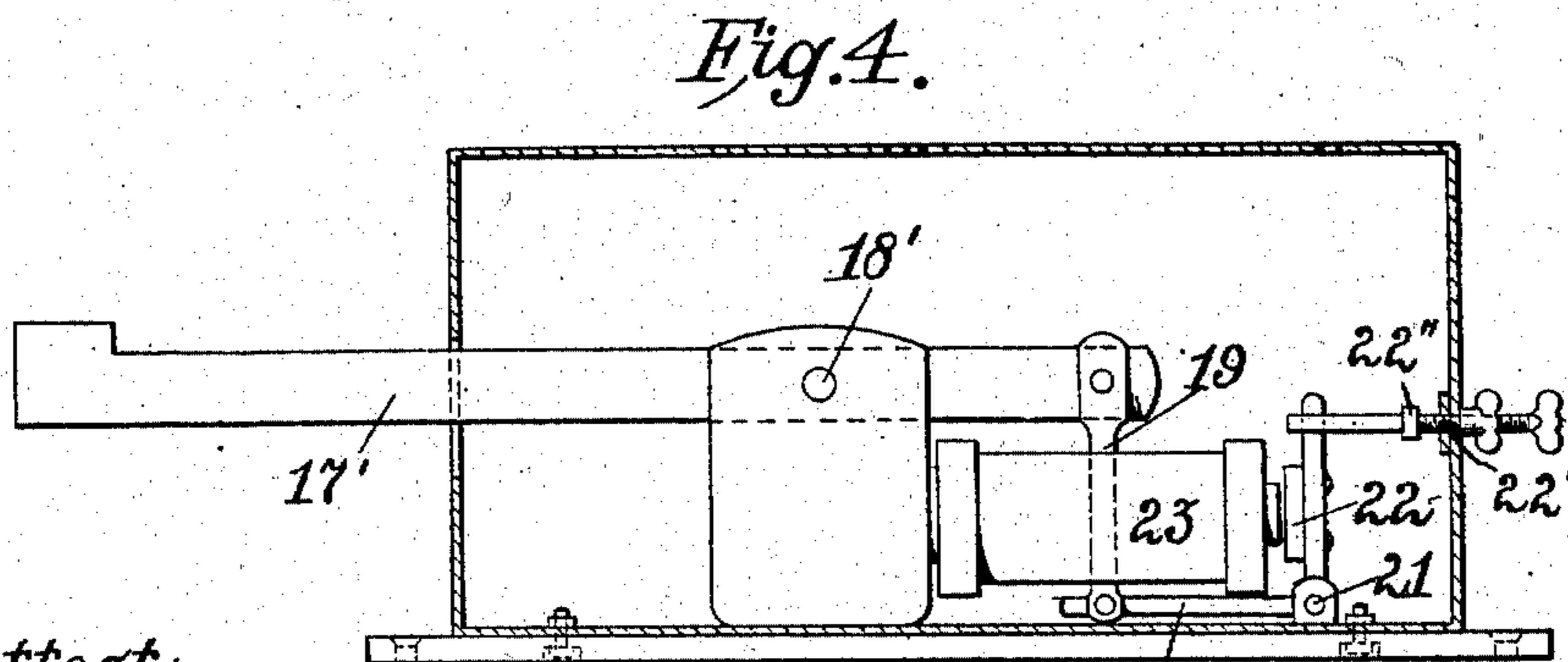
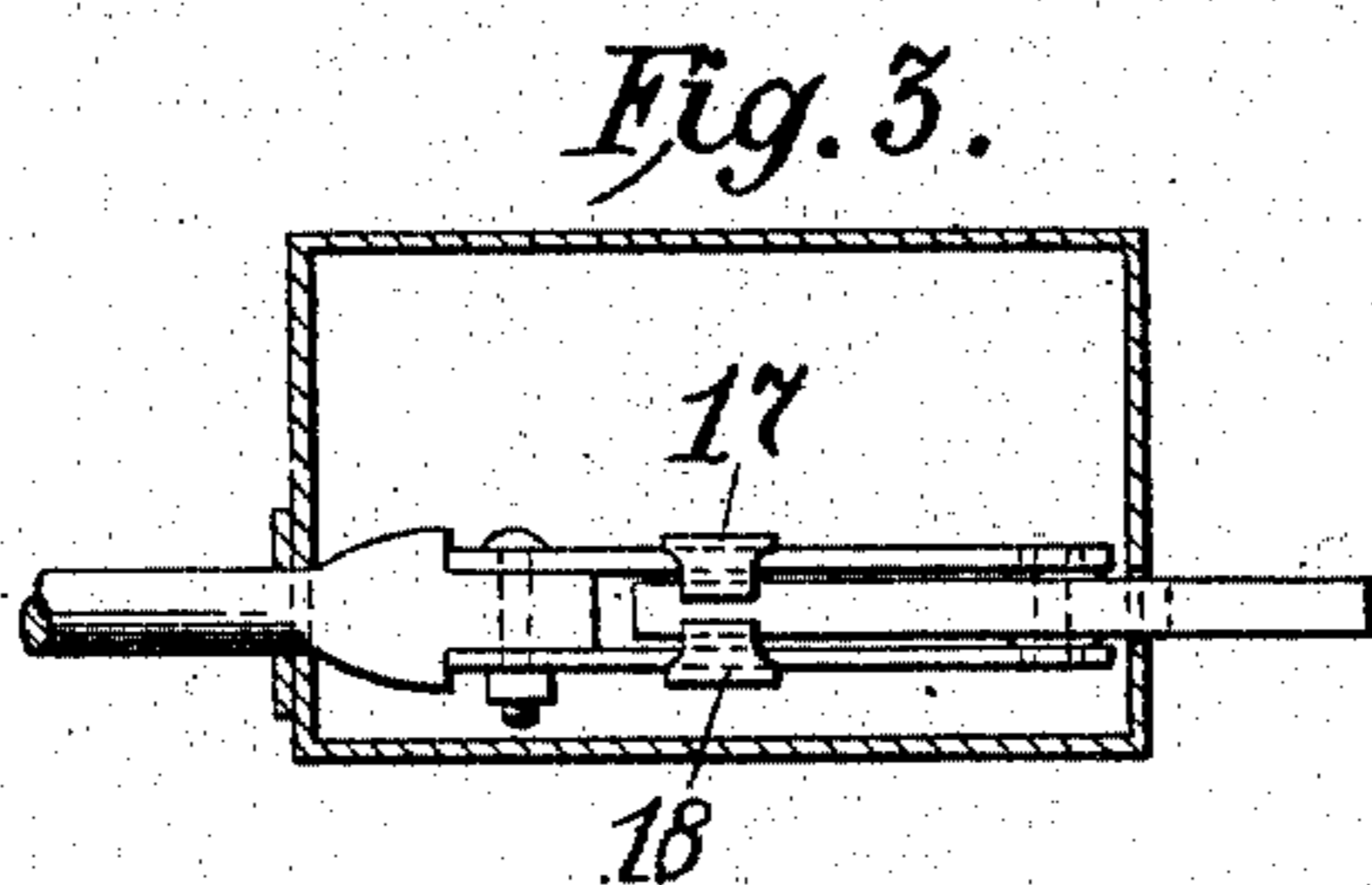
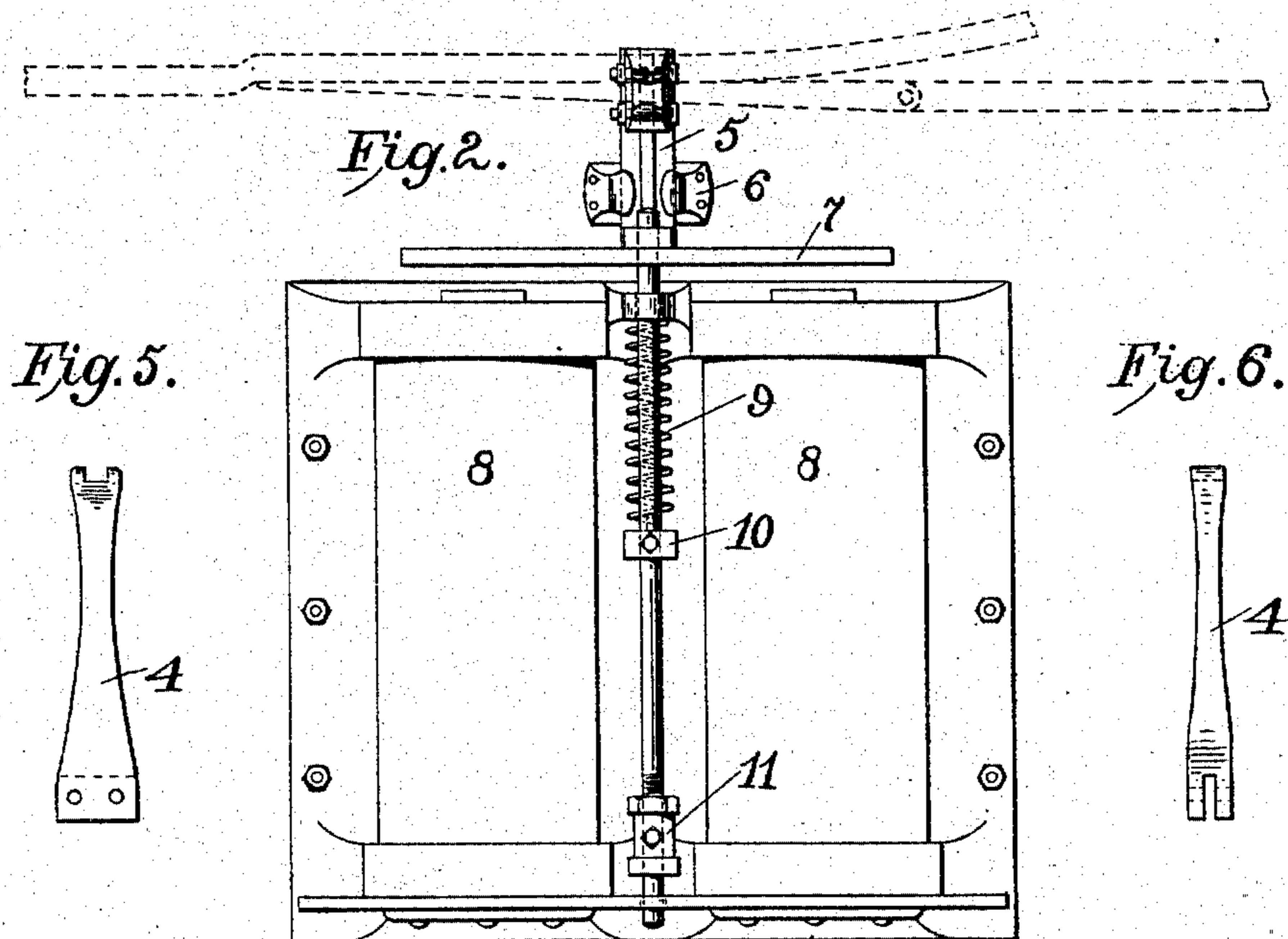
By Spear, Middleton, Donaldson & Spear  
Elmer D. Rose,  
Inventor.  
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2 SHEETS—SHEET 2.



Attest:

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Benjamin Stahl.

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# UNITED STATES PATENT OFFICE.

ELMER D. ROSE, OF MARSHBURG, PENNSYLVANIA.

RAILWAY-SWITCH-OPERATING MECHANISM.

967,059.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed May 14, 1909. Serial No. 495,977.

*To all whom it may concern:*

Be it known that I, ELMER D. ROSE, a citizen of the United States, residing at Marshburg, Pennsylvania, have invented certain new and useful Improvements in Railway-Switch-Operating Mechanism, of which the following is a specification.

My invention relates to means for operating railway switches controlled electrically and at the will of the motorman or one of the car attendants.

In carrying out the invention, I provide an electric device connected with the switch tongue for operating the same, and I provide upon the car certain controlling devices which are adapted to open and close a circuit in which the switch tongue operating device is located, so that this switch tongue may be operated from the car by the motorman.

The invention consists in the features and combination and arrangement of parts hereinafter described and particularly pointed out in the claims.

In the accompanying drawings Figure 1 is a diagrammatic plan view of the invention as applied to an electric railway; Fig. 2 is a plan view of the switch operating magnet; Fig. 3 is a sectional view through the casing of the circuit closer, the said circuit closer being shown in elevation; Fig. 4 is a side elevation through the casing of the operating device for the switch, parts being shown in elevation; Figs. 5 and 6 are views of details; Fig. 7 is a view of a detail showing the connection between the switch tongue and the operating mechanism.

In these drawings, the main line rails are indicated at 1 and the switch line rails at 2. The switch tongue is indicated at 3, this being connected through an arm 4 depending from the under side of the said tongue, and connected with a shift or switch rod 5. This is mounted to be reciprocated in a suitable bearing 6, and it carries an armature 7 under the influence of electro-magnets 8. These electro-magnets, when energized, will throw the switch open through the connections just described, and in order to close the switch a spring 9 is provided connected with the magnet supporting frame at one end and with a collar 10 on the operating rod at its other end. This operating rod has a stop 11 fixed thereto to limit the movement thereof under the influence of the magnet. This operating device, consisting of the electro-

magnets and the connection therefrom to the switch, is placed at a suitable distance under ground to afford proper connection with the switch tongue.

The electro-magnets are included in a circuit 12 connected with the main line at 13, and in this circuit 12 are included circuit closing devices consisting of forked levers 14 pivotally mounted in a bracket 15 supported by the posts 16 arranged alongside of the track. The forked arms are adapted to make contact with contact pieces 17, 18, carried by the brackets 15, one of said contacts being connected with the main line wire while the other contact is connected with the line wire 12. For forcing these circuit controlling levers into and out of position to close or open the circuit to the switch operating device, I provide an arm 17' pivotally mounted at 18' in a suitable frame supported on the roof of the car and connected by a link 19 with a right angular lever 20 pivotally mounted at 21 and carrying an armature 22. This armature is under the influence of a pair of magnets 23 mounted on the car roof, and which are included in a circuit 24 on the car extending to suitable controllers adapted to be operated by a switch of any suitable type at the will of the motorman. It will be seen that by energizing the magnets 23, the lever 17' will be raised at its outer end so as to engage the forked circuit closing lever 14 to operate the same either one way or the other, according to the direction of movement of the car. When the circuit is closed through the magnets 8, the switch 3 will be opened, and when the circuit is broken the spring 9 will return the switch to closed position. As the car which is to take the switch approaches the same, the operating lever 17' is set by the motorman to operate the circuit closer 14 so as to energize the magnets 8 and open the switch. The car having passed on to the switch, will now operate the circuit closing lever 14 at the second station, and the magnets 8 being demagnetized, will allow the spring to perform its function and close the switch. When the car passes from the switch onto the main line, the motorman can, through the operating device described, close the circuit closer adjacent the tracks of the switch, thus opening the railway switch, and having passed on to the main line track, the circuit closer here will be thrown open, al-

lowing the railway switch to be forced back to closed position by its spring. From the above it will be seen that the railway switch is under complete control of the motorman on the car.

22' is a screw to adjust the lever 20, and to keep the magnets from charging. The upper end of the L-shaped lever 20 works in a slot in the said screw 22', and at the point 22'' there is a swiveled joint to enable the screw to be turned for adjusting the lever.

I claim as my invention:—

1. In combination with a railway switch and with the main and branch lines, an electrically operated device for operating the switch, a circuit closing lever arranged alongside of the main line track, a circuit closing lever arranged alongside of the branch line track, an electric circuit including both said circuit closers and the electrically operated device at the switch, and a device on the car under the control of the operator for operating said circuit closing devices, substantially as described.

2. In combination with a railway switch and with the main and branch lines, an electrically operated device for operating the switch, a circuit closing lever arranged alongside of the main line track, a circuit closing lever arranged alongside of the branch line track, an electric circuit in-

cluding both said circuit closers and the electrically operated device at the switch, and a device on the car under the control of the operator for operating said circuit closing devices, said circuit closing levers being forked and each remaining in the position assumed by it when operated, substantially as described.

3. In combination with a railway switch and with the main and branch lines, an electrically operated device for operating the switch, a circuit closing lever arranged alongside of the main line track, a circuit closing lever arranged alongside of the branch line track, an electric circuit including both said circuit closers and the electrically operated device at the switch, and a device on the car under the control of the operator for operating said circuit closing devices, said operating device consisting of a lever 17', an armature connected therewith, electro-magnets for operating the armature, and circuit connections on the car under the control of the operator, substantially as described.

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

ELMER D. ROSE.

Witnesses:

KATHARINE BURKE,  
EDWIN E. TAIT.