

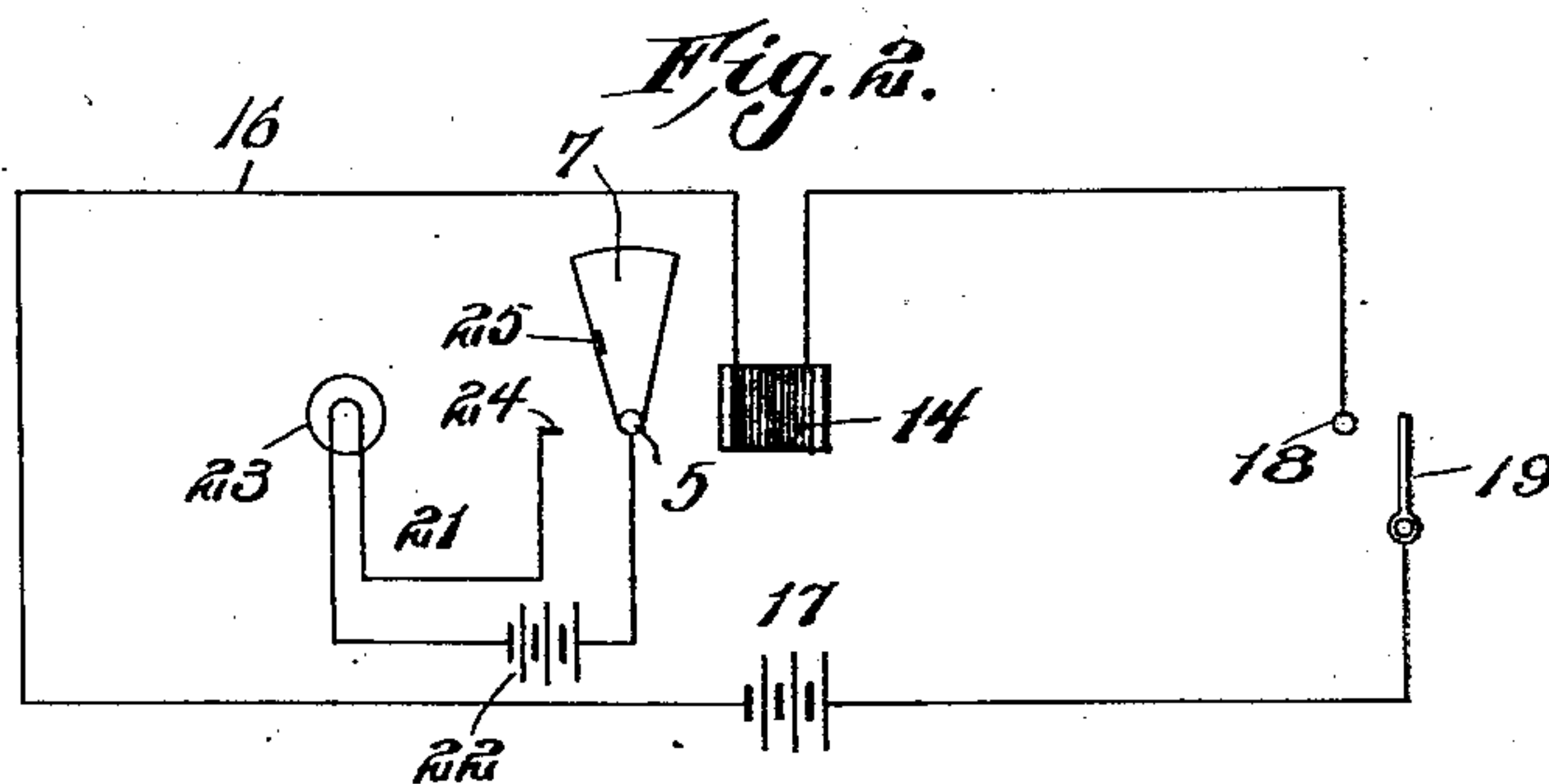
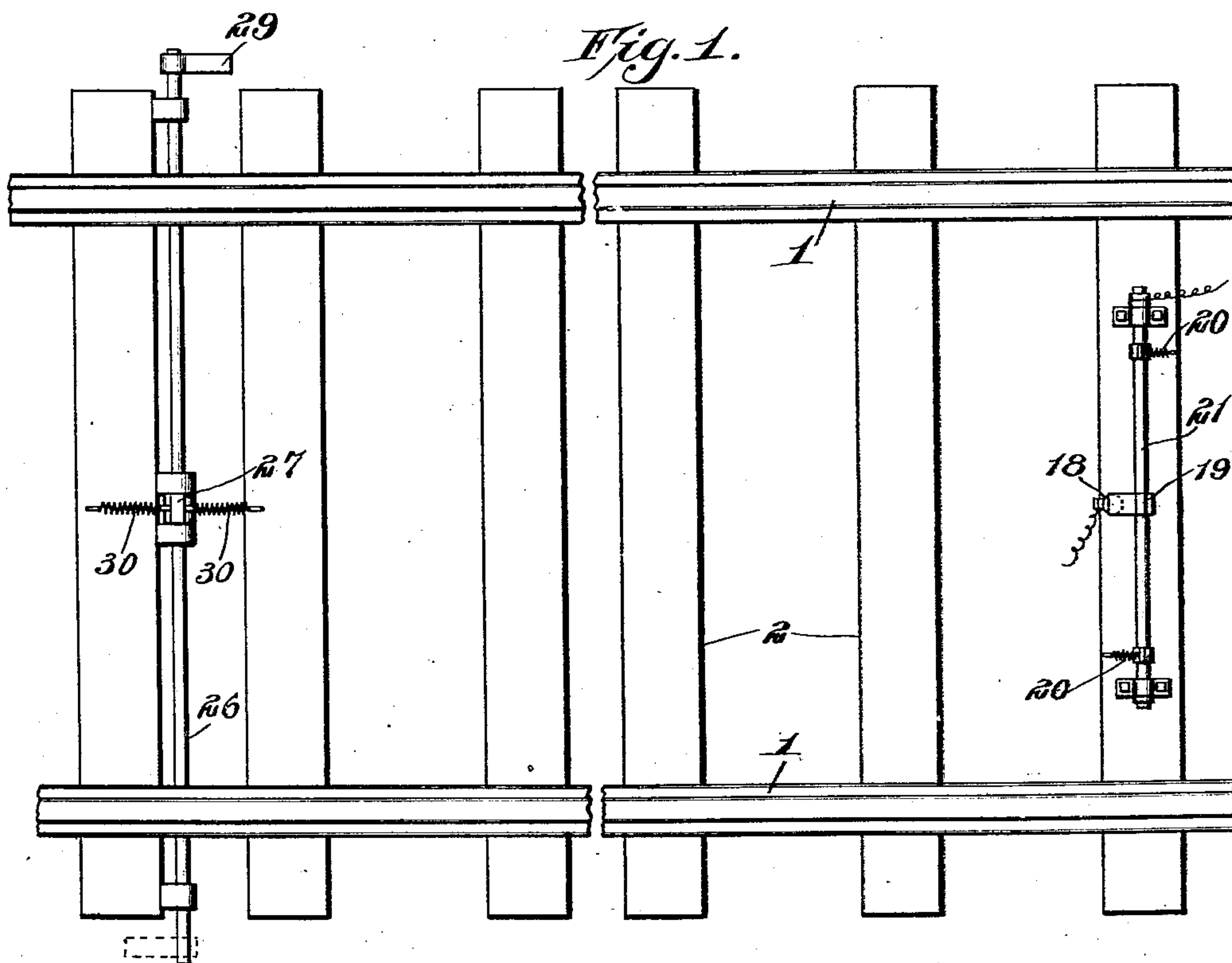
No. 824,580.

PATENTED JUNE 26, 1906.

C. C. PHILLIPS.  
SIGNALING DEVICE.

APPLICATION FILED MAR. 29, 1906.

2 SHEETS—SHEET 1.



Witnesses

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Inventor

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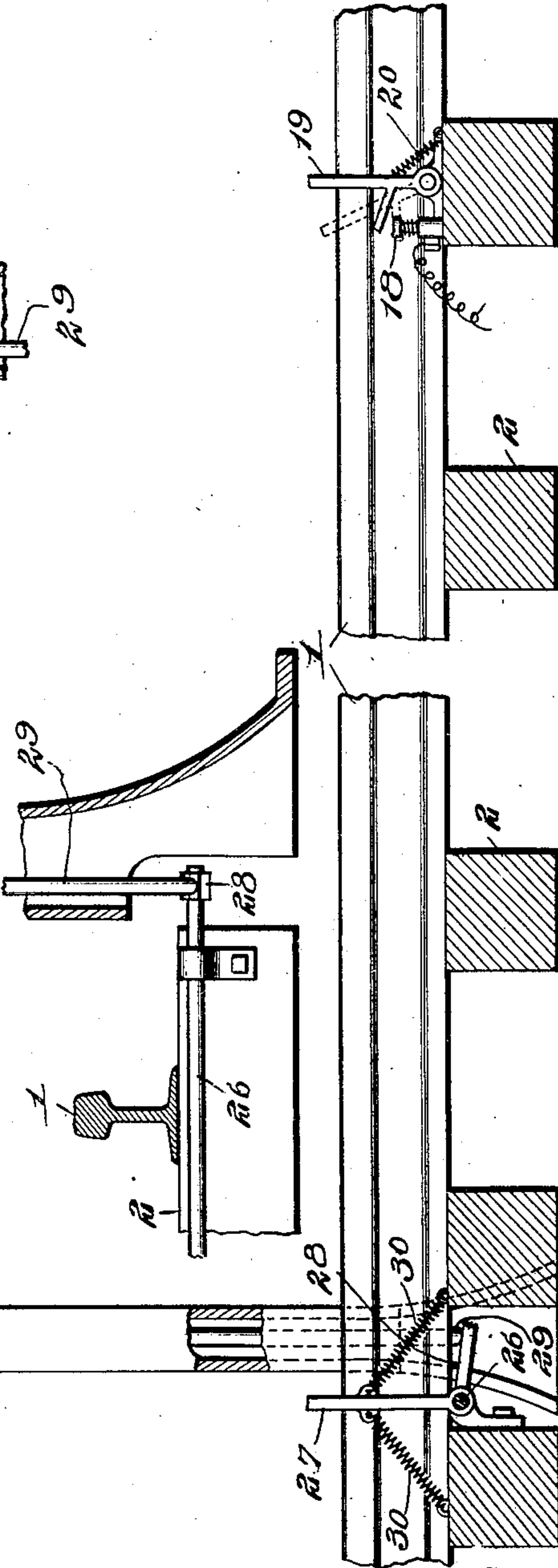
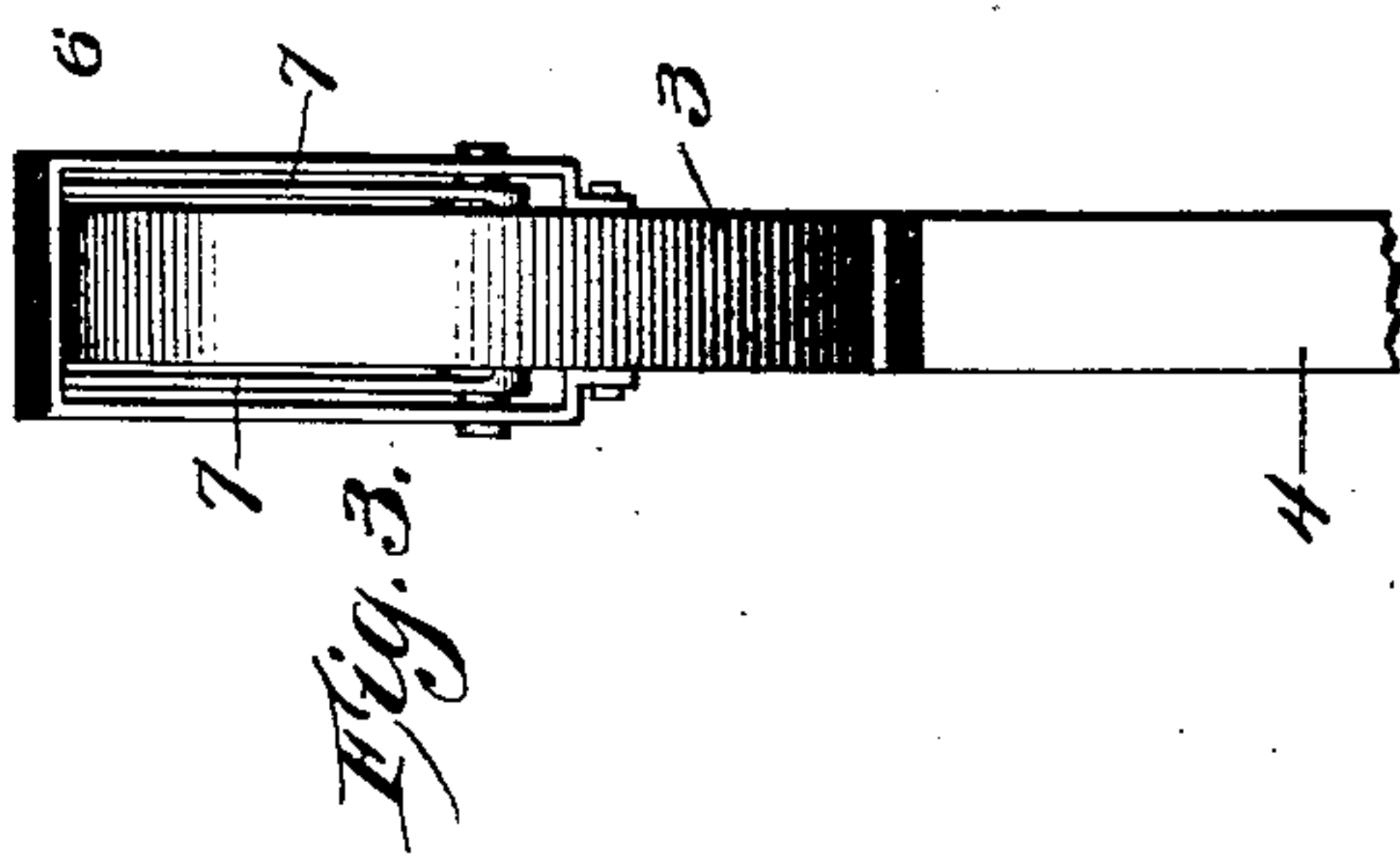
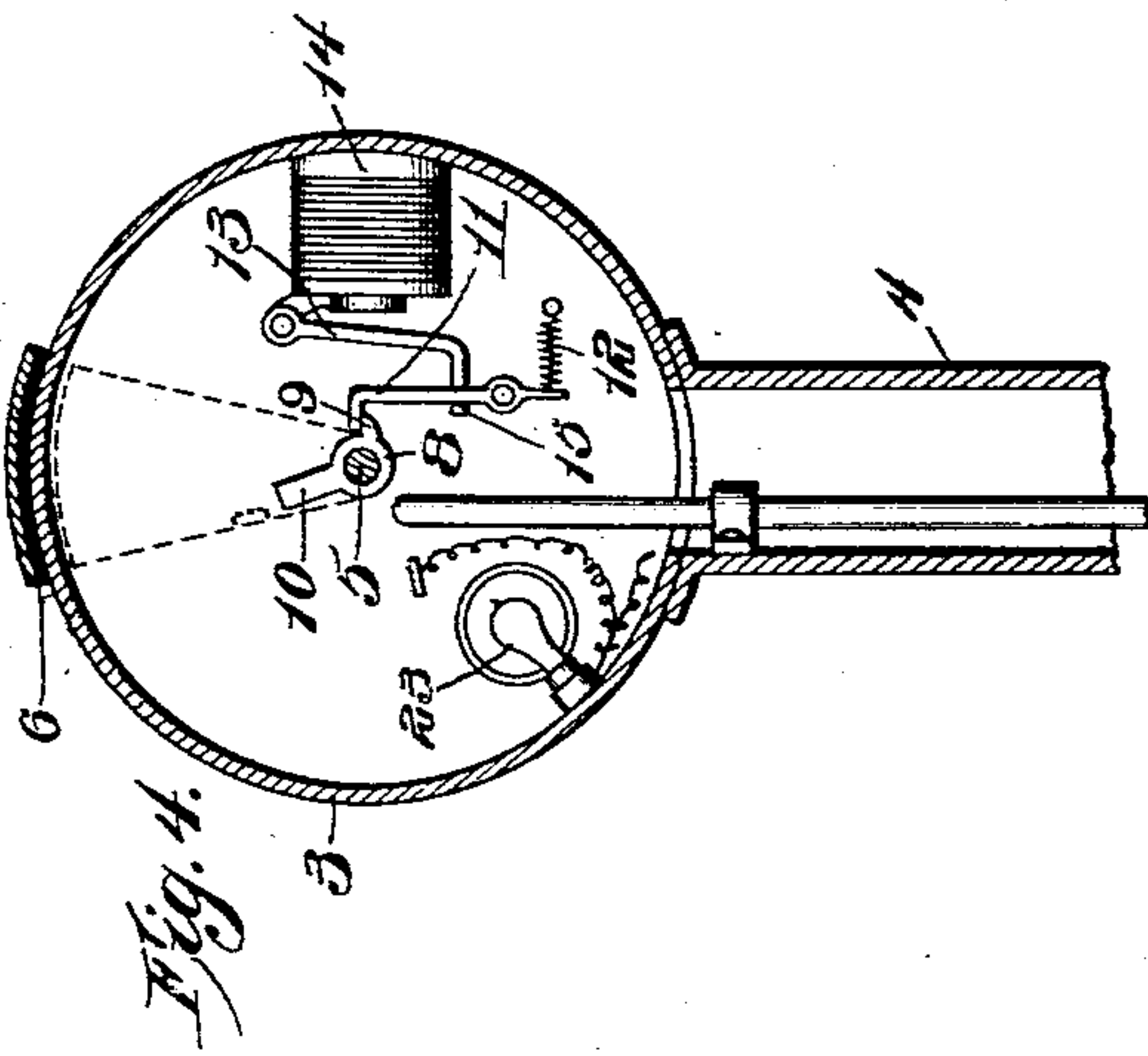
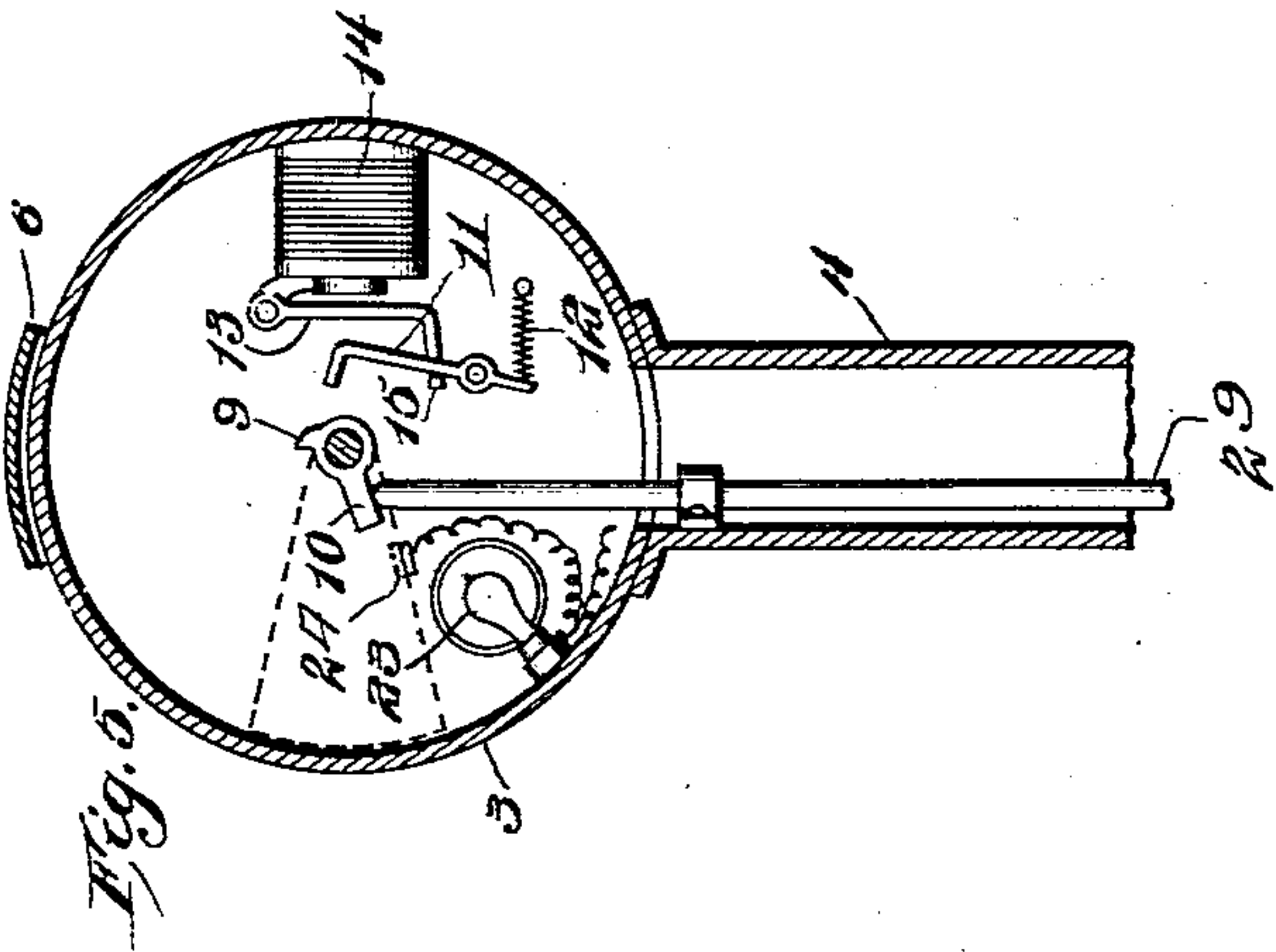
Attorney

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2 SHEETS—SHEET 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

CHARLES C. PHILLIPS, OF OWENSBORO, KENTUCKY, ASSIGNOR OF ONE-HALF TO JAMES R. TENNELLY, OF OWENSBORO, KENTUCKY.

## SIGNALING DEVICE.

No. 824,580.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed March 29, 1906. Serial No. 308,771.

*To all whom it may concern:*

Be it known that I, CHARLES C. PHILLIPS, a citizen of the United States of America, residing at Owensboro, in the county of Daviess and State of Kentucky, have invented new and useful Improvements in Signaling Devices, of which the following is a specification.

This invention relates to railway-signals designed for use on electric or steam roads and of the type embodying an automatic electrically-operated signaling mechanism, and has for its objects to produce a comparatively simple device of this character which may be inexpensively installed for use, one wherein a signal will be displayed at a signaling-station or other desired point in advance of a car or train for giving due notice of the approach of the same toward the signal-station and one in which the signal is automatically controlled through the medium of track devices actuated by the car-wheels.

With these and other objects in view the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a top plan view of a section of a track, showing the signal operating and resetting devices of the system. Fig. 2 is a diagram of the electric circuit. Fig. 3 is a longitudinal section through the track, showing the operating and resetting devices and the signal mechanism. Fig. 4 is a cross-section through the signal mechanism, showing the signal in normal non-danger position. Fig. 5 is a similar view showing the signal set to danger position.

Referring to the drawings, 1 designates the rails, and 2 the ties, of a track. Alongside the track at a point in proximity to the block or other signaling station is arranged a casing 3, supported by a hollow standard 4. The sides of this casing face in opposite directions along the track may be composed of or provided with glass or other transparent panels. A shaft 5 is journaled in the sides of the casing or in the arms of a yoke-shaped shield 6 and carries at each end a signal-arm or semaphore 7, said signal-arms being rigidly mounted upon the shaft for movement therewith and adapted to drop by gravity from their normal or non-danger position to the danger position, (indicated by dotted lines.) The

shield 6 has its side portions extending down on opposite sides of the casing and may be constructed and secured thereto in any preferred manner.

On the shaft 5 is a detent 8, having a catch-hook 9 and an engaging arm 10, said hook being adapted to be engaged by the hooked end of a pivoted latch 11, normally held projected by a spring 12. The latch is adapted to be retracted by a pivoted armature 13, controlled by an electromagnet 14, said armature having a hooked end 15 to engage the latch.

The electromagnet is arranged in a normally open circuit 16, containing a battery 17 and including a pair of contact-pieces 18 19, of which the latter is in the form of a track-lever, disposed adjacent one of the rails for operation by the wheels of a passing car and normally held out of contact with the piece 18 for maintaining the circuit open by means of a spring 20, while a second normally open circuit 21, containing a battery 22, includes the shaft 5 and arms 7, carried thereby, and also a lamp 23, disposed in the casing and having one of its wires leading to a contact-piece 24, adapted to connect with a contact point or button 25 on each of the semaphore-arms to complete the lamp-circuit when the arms swing to danger position, this circuit being maintained in normally open condition through engagement of latch 11 with hook 9.

In practice as a train approaches the signal-station where the box 3 is situated the lever 19, which it will be understood is located at a point suitably remote from such station, will be operated by one of the car-wheels or in other suitable manner from the locomotive or one of the cars for movement into engagement with the contact-piece 18, thereby closing the circuit 16 to energize the magnet 14, thereby attracting the armature 13 for moving the latch member 11 out of engagement with the keeper 9, whereupon the arm or arms 7 will fall by gravity to danger position and the contact-piece 25 connect with contact 24 for closing the lamp-circuit and causing the lamp to glow, it being understood that as soon as lever 19 is released it will be returned to normal position by the spring 20. As the train passes the signal-station the semaphore-arms will be returned to normal position and the lamp-circuit



again opened through the medium of resetting mechanism now to be described.

The signal-resetting mechanism comprises a rock-shaft 26, journaled in bearings on the track and provided with a trip-arm 27 and an operating-arm 28, the latter being arranged to engage the lower end of a rod 29, slidably mounted in the standard 4, the upper end of the rod being disposed to engage the engaging portion or arm 10 of the shaft 5, whereby upon the upward movement of the rod the semaphores will be returned to normal non-danger position and locked in such condition through engagement of the latch 11 with keeper 9, it being obvious that the latch will as soon as the lever 19 is moved by spring 20 to normal position for breaking the circuit 16 be moved under the influence of spring 12 to engaging position. The lever 27, which is operated either by the wheels of one of the cars or by a fixed arm on the car or locomotive, is after such operation returned to and maintained in normal position through the medium of springs 30.

The operation of the mechanism will be readily understood from the foregoing description, and it will be seen that a simple and effective signaling apparatus for the purpose set forth is provided. When the system is employed on double-track roads, it will of course be understood that the signaling devices are duplicated alongside each track. In single-track systems the parts will be properly arranged for the control of the semaphores and lamps by trains passing in both directions.

Having thus described my invention, what I claim is—

1. A signaling system of the type described comprising a normally open circuit including

a lamp and a movable contact member for completing the circuit to light the lamp, a latch member arranged for holding the contact member in normal position with the circuit open, a second normally open circuit including a magnet adapted to be energized when the circuit is closed, an armature engaged with the latch member and operable by the magnet for moving the latter to releasing position and permitting the movable contact to close the first-named circuit, an automatically-operable track device for closing the second circuit, and means for returning the movable contact member to normal position.

2. A signaling system of the type described comprising a normally open circuit including a lamp and a contact-piece, a movable signaling-arm included in said circuit and having a contact portion adapted to connect with the contact-piece for completing the circuit to light the lamp, a latch member for holding said arm in normal position with the circuit open, a second circuit including a magnet adapted to be energized when the circuit is closed automatically, operable track devices for closing the second circuit, means operated by the magnet when energized for moving the latch member to release the signaling-arm and close the first-named circuit, and automatically-operable track devices for resetting the mechanism and returning the signaling-arm to normal position.

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

CHARLES C. PHILLIPS.

Witnesses:

JOHN L. FLETCHER,

ADDIE A. EGE.