

No. 878,016.

PATENTED FEB. 4, 1908.

W. C. PATTERSON

AUTOMATIC BRAKE OPERATING ATTACHMENT FOR SIGNALS.

APPLICATION FILED MAR. 26, 1907.

2 SHEETS—SHEET 1.

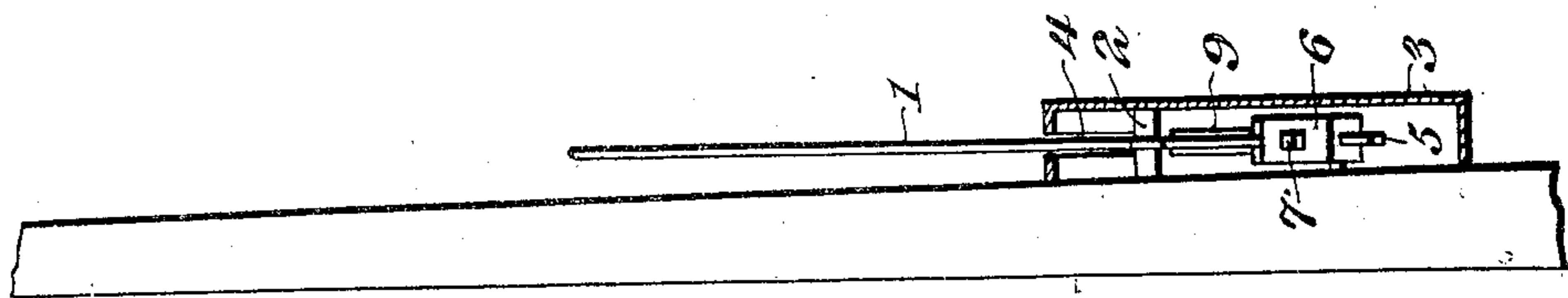


Fig. 2.

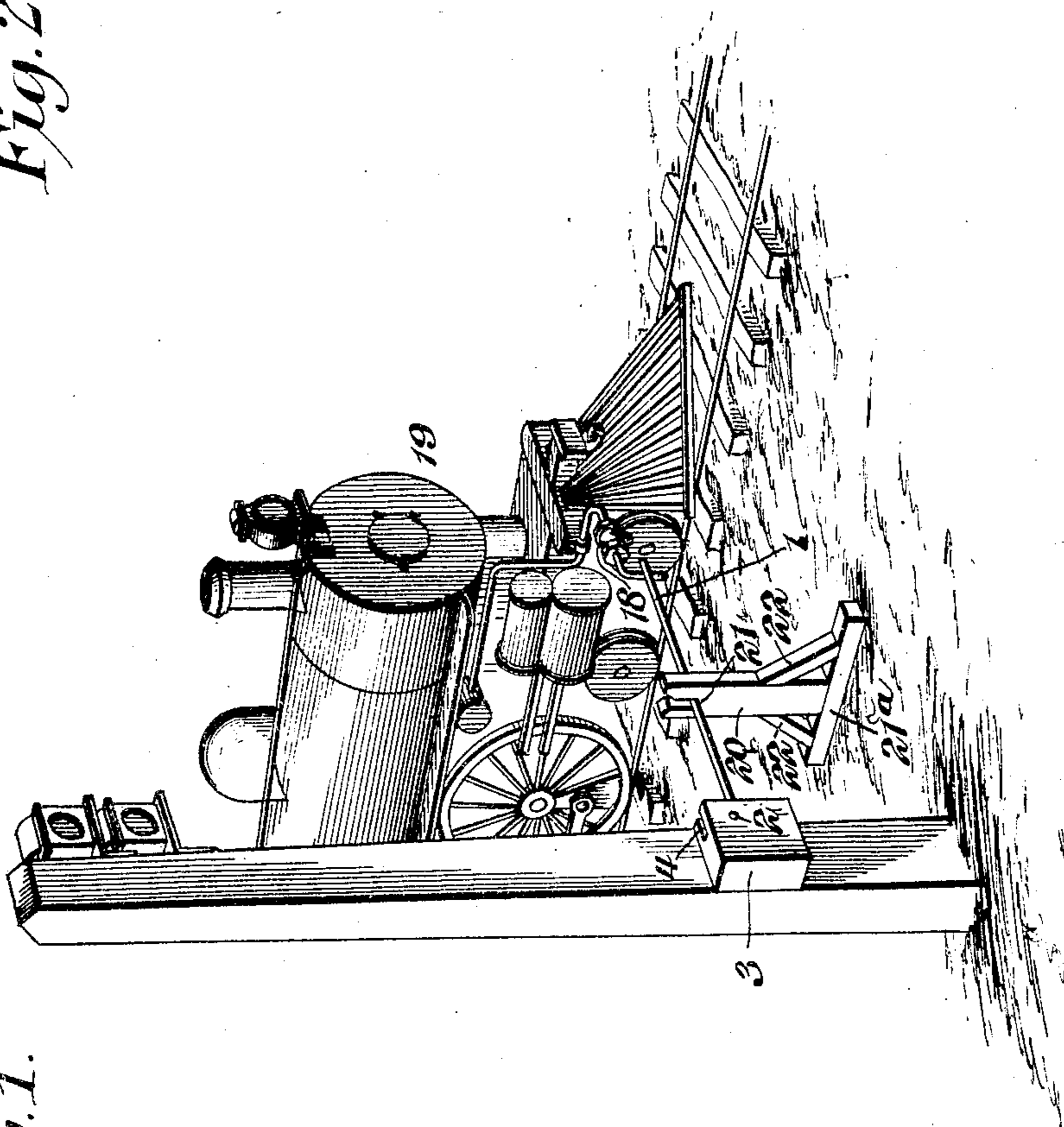


Fig. 1.

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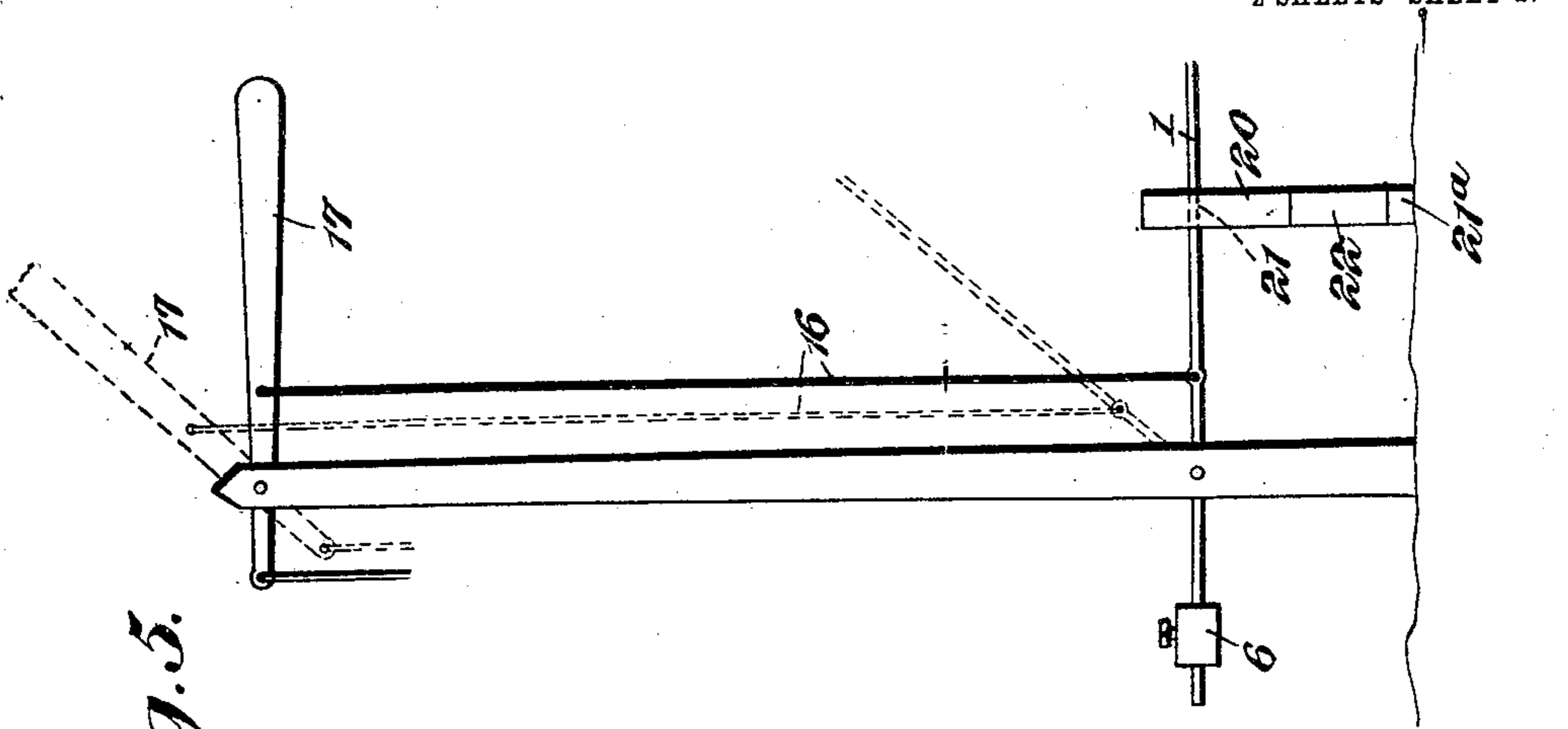


Fig. 5.

Fig. 4.

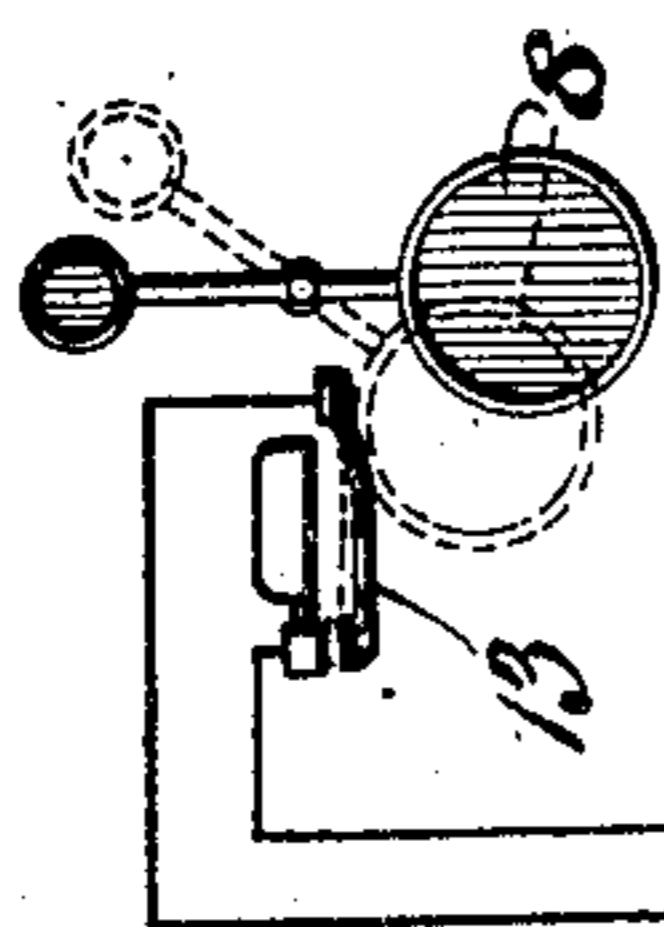
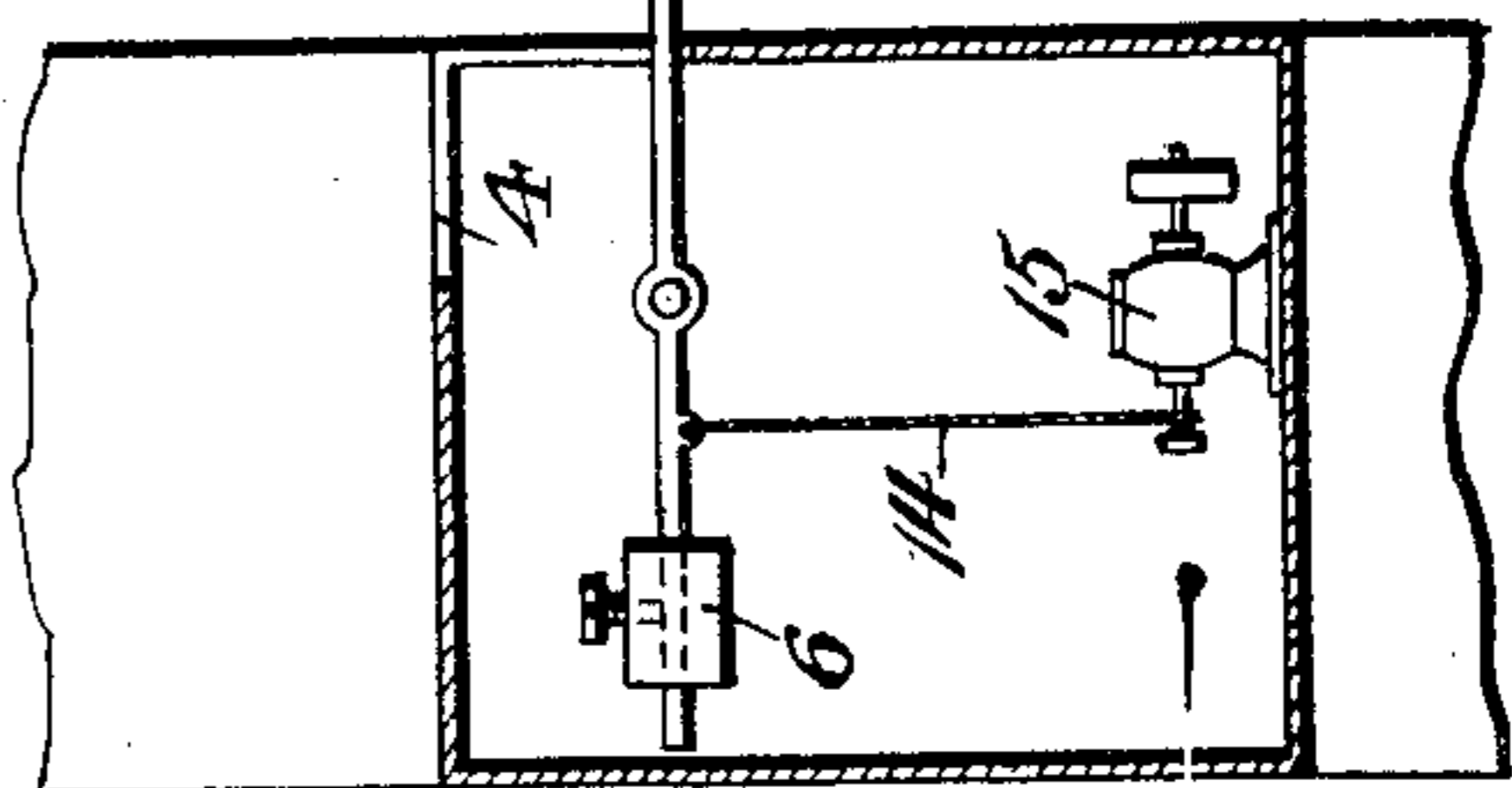
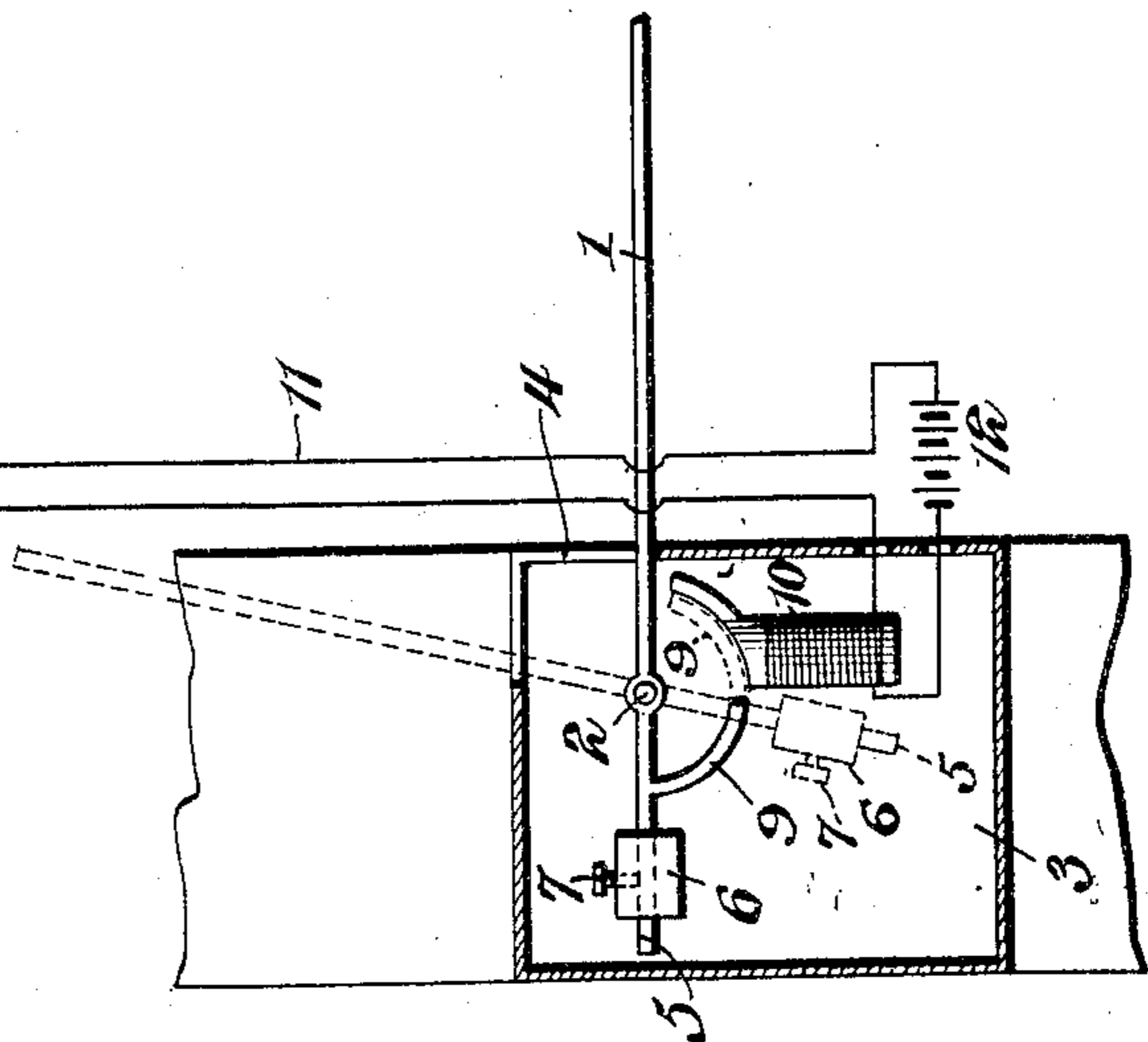


Fig. 3.



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UNITED STATES PATENT OFFICE.

WARREN C. PATTERSON, OF TAMAQUA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO
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AUTOMATIC BRAKE-OPERATING ATTACHMENT FOR SIGNALS.

No. 878,016.

Specification of Letters Patent.

Patented Feb. 4, 1908.

Application filed March 26, 1907. Serial No. 364,691.

To all whom it may concern:

Be it known that I, WARREN C. PATTERSON, a citizen of the United States, residing at Tamaqua, in the county of Schuylkill and State of Pennsylvania, have invented a new and useful Automatic Brake-Operating Attachment for Signals, of which the following is a specification.

The invention relates to an automatic air brake operating device for signals.

The object of the present invention is to provide a simple, inexpensive and efficient device of great strength and durability, designed for use on various kinds of railways, either steam or electric, and adapted to be automatically operated by various kinds of signals, and capable of positively causing a train to stop.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims here-to appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a perspective view of an air brake operating device, constructed in accordance with this invention. Fig. 2 is a vertical sectional view, illustrating the manner of mounting the air brake operating bar or member. Fig. 3 is a diagrammatic view, showing the device applied to an electric signal. Fig. 4 is a sectional view, showing a motor connected with the air brake operating bar or member. Fig. 5 is an elevation showing the device applied to a semaphore.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates an air brake operating bar or member, preferably consisting of a metallic rod, pivoted at an intermediate point to a suitable support by means of a pin 2, or other suitable fastening device, and having its inner portion preferably arranged within a metallic casing 3, which constitutes the support for the brake operating bar or member. The casing is rectangular in section and is

provided at its upper portion with a slot 4, through which the brake operating bar or member extends. The inner arm 5, which is shorter than the outer arm of the brake operating bar or member, is provided with an adjustable counter-balancing weight 6, having an opening to receive the arm, and secured to the same by a set screw 7, or other suitable fastening device. The weight 6 is adapted to partially counter-balance the outer arm, which is adapted to swing downward to a horizontal position by gravity, when released.

In Fig. 1 to 3 inclusive, the air brake operating bar or member is electrically operated, and is designed to operate automatically in connection with a block signal 8, but it may be employed in connection with any form of signal, either electrically or mechanically operated. The short arm 5 is provided with a curved armature 9, which is arranged to be actuated by an electro magnet 10 for holding the outer arm of the brake operating bar or member normally in the elevated or inoperative position, illustrated in dotted lines in Fig. 3 of the drawings. The electro magnet is arranged in a circuit 11, having a suitable battery 12 and provided with a circuit-breaker 13, arranged to be held closed by the block signal 8, and adapted to automatically open, when the said block signal 8 swings to danger. When the block signal 8 swings to danger and releases the circuit-breaker, the electro magnet 10 is deenergized, and the air brake operating bar or member swings downward by gravity from the elevated position shown in dotted lines in Fig. 3 to the operative position illustrated in full lines in the said figure. Instead, however, of employing a supplemental circuit, as illustrated in Fig. 3, the air brake operating bar or member may be connected with the circuit (not shown) for actuating the block signal 8.

As shown in Fig. 4, the short arm 5 of the brake operating bar or member may be connected by a cord 14 with a motor 15, adapted when the circuit is closed, to wind up the cord and hold the arm in an elevated position. When the circuit is broken, the motor shaft will be rotated by the weight of the outer arm of the brake operating bar or member, which will swing downward to a horizontal or operative position.

The brake operating bar or member may, as illustrated in Fig. 5, be connected by a rod 16, or any other suitable means with a semaphore 17, or other form of mechanically operated signal, such as an order signal.

The air brake operating bar or member is adapted to extend into the path of a cock or valve 18, arranged at the front of an engine 19, on one or both sides of the same, and connected with the air brake system. The cock or valve 18, which may be also mounted on the tender of the engine for operation, when running backward, has a depending arm adapted to be oscillated by the air brake operating bar or member, which extends into the path of the arm and which may be arranged to engage the same at different points from the center of the cock or valve to secure the desired reduction of pressure in the train pipe. When the cock or valve 18 is opened, the pressure within the train pipe is reduced, and the air brakes are applied in the usual manner. This will not only stop the train but it will be necessary for the engineer or fireman to leave the cab and reset the cock or valve 18.

The air brake operating bar or member is supported in a horizontal, or approximately horizontal position by a vertical standard 20, having a crotch or recess 21 at its upper end, which forms a seat for the outer arm of the air brake operating bar or member. The standard 20, which is mounted on a base 21^a, is supported by opposite braces 22, and is designed to be constructed of different lengths to arrange the crotch or seat at the proper height to suit the character of the place where the signal is erected, so that the air brakes may be applied with a greater or less reduction of pressure. The same result may,

however, be obtained by a vertically adjustable standard.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a device of the class described, the combination with an air brake valve, of a pivotally mounted operating arm arranged to swing downward to a position for operating the said valve, and means arranged to receive the arm at a point intermediate of the ends thereof for supporting the same when the said arm is in position for operating the valve.

2. In a device of the class described, the combination with an air brake valve, of a pivotally mounted air brake bar or member, and a support provided with a vertical standard having a crotch to receive the bar or member at a point intermediate of the ends thereof, a horizontal base supporting the standard, and inclined braces mounted on the base and located at opposite sides of the standard.

3. In a device of the class described, the combination with an air brake valve, of an oscillatory air brake operating bar or member pivotally mounted at an intermediate point and provided at one of its arms with a weight for counter-balancing the other arm, a standard having a fork arranged to receive the latter arm, a signal, and means operated by the signal for automatically swinging the bar or member to and from the standard.

In testimony, that I claim the foregoing as my own, I have hereunto affixed my signature in the presence of two witnesses.

WARREN C. PATTERSON.

Witnesses:

JOHN H. BORNSCHIER,

JOHN H. ICHTER.