

No. 735,792.

PATENTED AUG. 11, 1903.

C. F. MILLER.
AUTOMATIC TRAIN STOP.
APPLICATION FILED MAR. 11, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

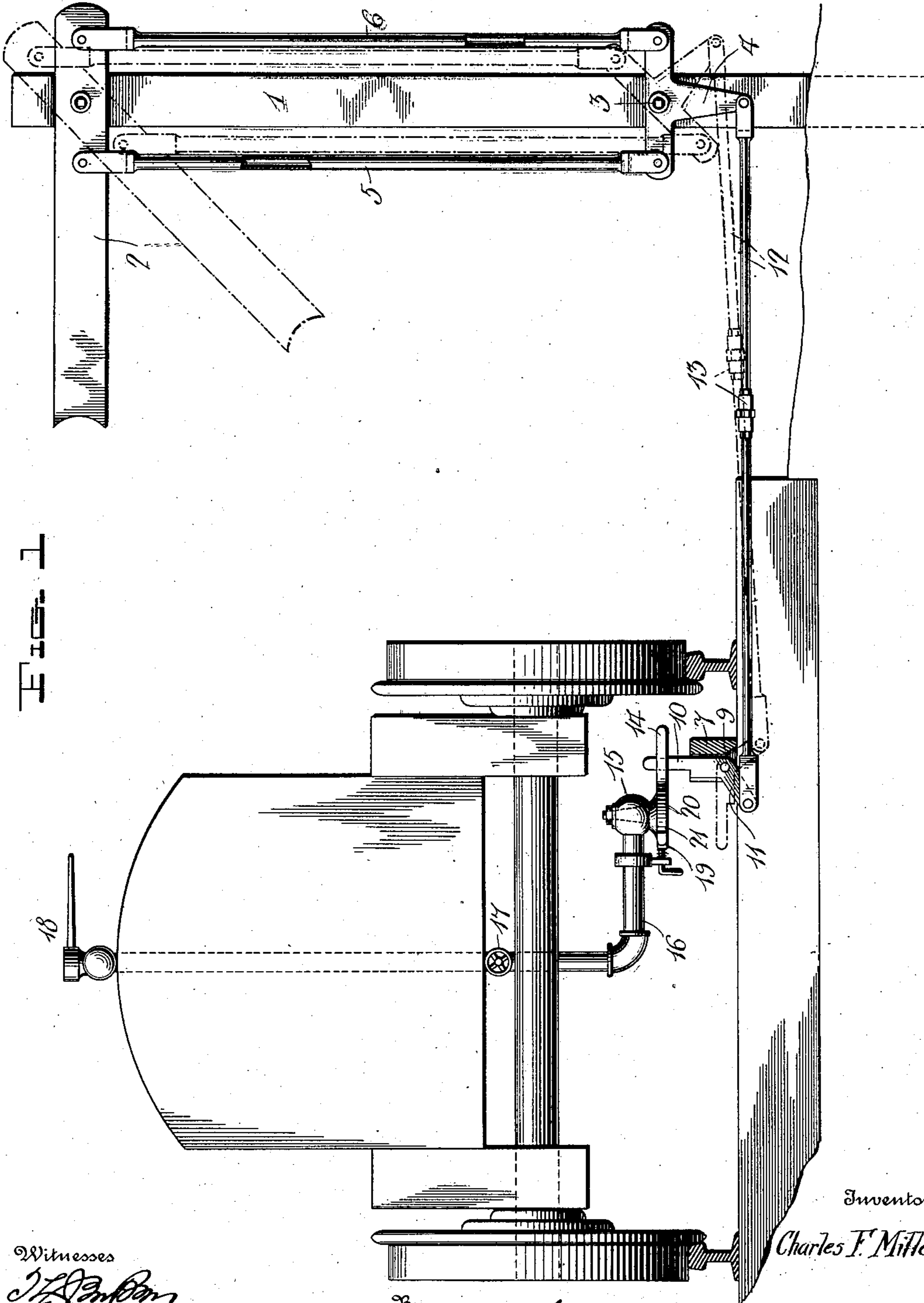


Fig. 1

Inventor

Charles F. Miller

Witnesses
J. J. [Signature]
C. H. [Signature]

By

A. W. Dudley & Co.

Attorneys

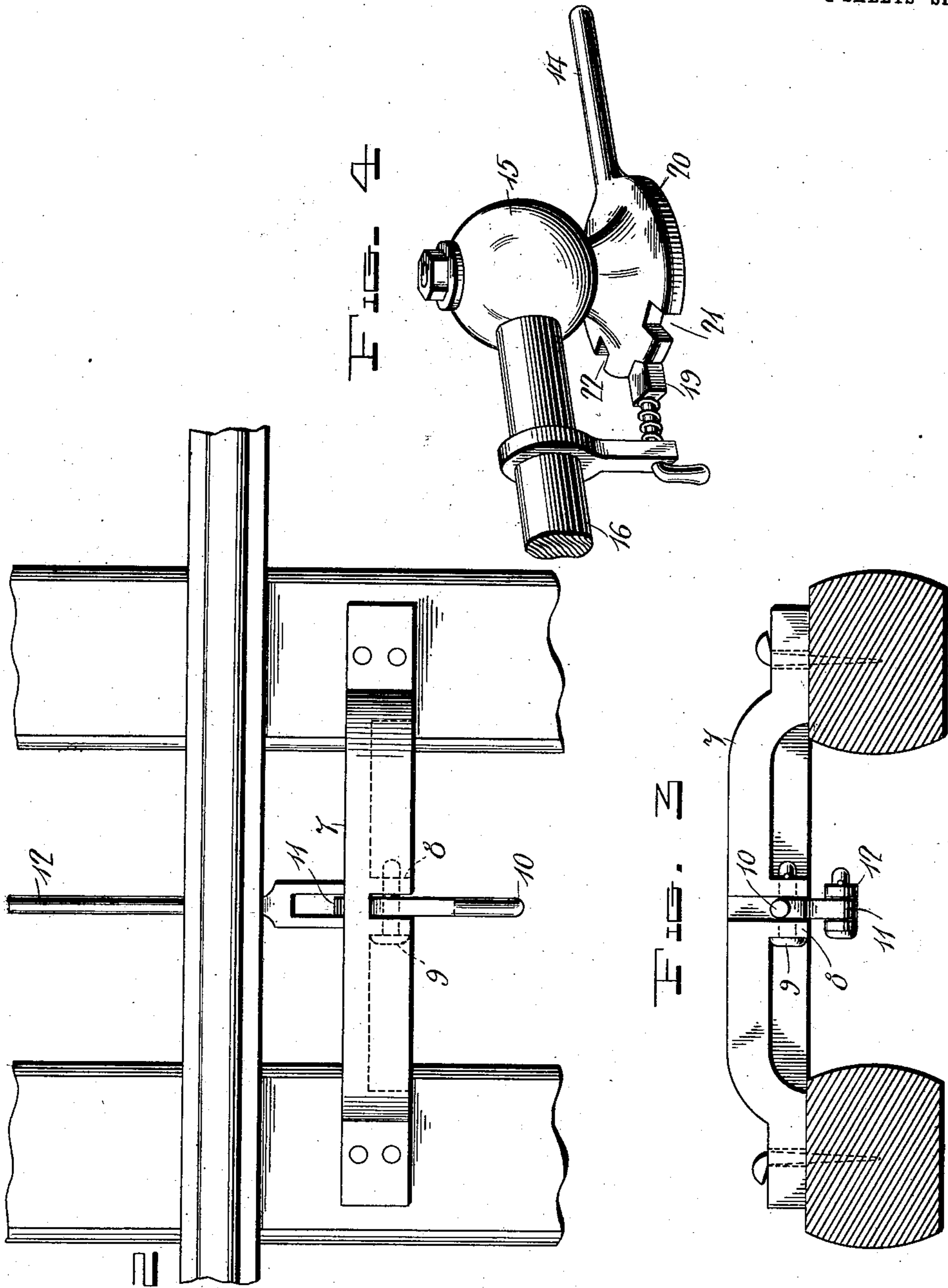
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2 SHEETS—SHEET 2.



Witnesses
J. L. [unclear]
C. H. [unclear]

Inventor
 Charles F. Miller

By *W. W. Dudley & Co.*
 Attorneys

UNITED STATES PATENT OFFICE.

CHARLES F. MILLER, OF POTTSVILLE, PENNSYLVANIA.

AUTOMATIC TRAIN-STOP.

SPECIFICATION forming part of Letters Patent No. 735,792, dated August 11, 1903.

Application filed March 11, 1903. Serial No. 147,214. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. MILLER, a citizen of the United States, residing at Pottsville, in the county of Schuylkill and State of Pennsylvania, have invented certain new and useful Improvements in Automatic Train-Stops; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to appliances for use in connection with steam and other railways for preventing collisions between trains, the invention consisting of an improved appliance adapted to effect automatically the stopping of a train through the medium of an air-brake valve located to be tripped when the train attempts to pass a danger-signal.

The nature of the invention will be readily comprehended, reference being had to the following detailed description and to the accompanying drawings, illustrating the invention in its preferred form of embodiment, it being understood that various modifications may be made therein without departing from the spirit of invention defined by the concluding claims.

In the drawings, Figure 1 is a view in elevation of an automatic train-stopping appliance embodying my invention. Fig. 2 is a plan view, and Fig. 3 is an elevation, of the support for the trip. Fig. 4 is an enlarged detail view of the air-brake valve.

Referring to the drawings by numerals, 1 denotes a semaphore-post erected at one side of the track and having a pivoted board 2, constituting the block-signal and moved by means manipulated from the house or tower, said means including a short shaft 3, mounted toward the base of the stand and to which is fixed a T-lever 4, connected at its upper arms by rods 5 6 to the board 2. The rods 5 6 are preferably of hollow construction to permit of the insertion of weights to exactly counter-balance the board and connections hereinafter described, whereby little power is necessary to move the parts. Such movement may be effected mechanically, electrically, or through the medium of a motive fluid.

At the inside of and adjacent to one of the track-rails is a bracket 7, having in its ends

spike-holes for convenience in securing it to the cross-ties, the bracket between its ends being arched and centrally slotted, and at the slot are depending ears 8 8, to which is pivoted, by means of a pin 9, a trip having an upper arm 10 and a lower arm 11, arranged at an obtuse angle to the arm 10 and connected by a rod 12 with the lower arm of the T-lever 4. The rod 12 is formed of two sections adjustably connected by a turnbuckle 13, whereby the throw of the trip is accurately governed. In the normal depressed position of the board 2 (which indicates a clear track) the trip-arm 10 assumes the horizontal position indicated by the dotted lines in Fig. 1; but when said board is raised to indicate that the block is closed the trip is moved to bring its arm 10 above the top of the bracket and in the path of an arm 14, carried by a valve 15 on the engine or motor-car. This valve is secured at the end of an extension 16 of the air-brake pipe and is normally closed, the arm 14 being positioned to move in a path into which the trip extends. By reference to Fig. 4 it will be observed that the valve is of the double-acting type, so as to effect the opening of the train-pipe whether the engine or motor-car is going forward or backward. If the trains are operated on a single track, I may employ right and left hand valves in connection with a single trip or I may employ a single valve with right and left hand trips.

Should the valve 15 become disordered or the extension become broken through derailment or other cause, the extension is closed by a specially-provided hand-valve 17. It will be understood that the valves 15 and 17 are independent of the usual hand-valve (shown at 18.)

In practice if an engineer or motorman attempts to pass a board in position indicating "danger" or an occupied block the valve is tripped and the brakes are automatically set, and owing to the location of the brake beneath the engine or car the engineer or motorman is compelled to leave the engine or car to close the valve, and this necessitates a complete stoppage of the train before access to the valve can be had. To prevent accidental opening of the valve through jar or other cause, I provide, as shown in Fig. 4, a spring-pawl 19, which frictionally engages a

V-notch in a disk 20, carried by the valve-stem. Other notches 21 22 in the disk are positively engaged by the pawl when the valve is opened, and said pawl must be moved 5 to unlock the valve by the engineer or motor-man.

The trip is, as shown, located opposite to the semaphore and connected by a single rod, thus obviating lost motion, which would occur 10 with the employment of a system of bell-cranks and rods.

I claim as my invention—

1. In combination, a post, a pivoted signal thereon, a T-lever, weighted counterbalancing 15 hollow rods connecting the lever and signal, a pivoted trip at the track-rail opposite to the post, a single rod connecting the T-lever and trip and adjustable as to length, and an air-brake-pipe valve adapted to be engaged 20 and opened by the trip when the signal is in danger position.

2. In combination, an air-brake pipe carried by an engine or motor-car, a pipe de-

pending from said main pipe and having a hand-valve the latter being located beneath 25 the engine or car, a pipe connected with and extending laterally from the depending pipe, a double-acting valve at the end of the lateral extension-pipe said valve having a horizontally-movable handle, and a vertically- 30 movable trip arranged to be thrown into the path of the last-named valve-handle to automatically open said valve.

3. In combination with a trip at the track-rail, an air-brake-pipe valve on the engine or 35 motor-car, a horizontally-movable handle on said valve, adapted to be engaged by said trip, and a spring-pawl adapted to frictionally hold the valve in closed position and to positively hold the valve in open position. 40

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

CHARLES F. MILLER.

Witnesses:

H. E. MUEHLHOF,

G. A. BERNER.