

E. M. HEWSON, JR.
AUTOMATIC TRAIN STOP.
APPLICATION FILED JULY 12, 1919.

1,329,709.

Patented Feb. 3, 1920.

2 SHEETS—SHEET 1.

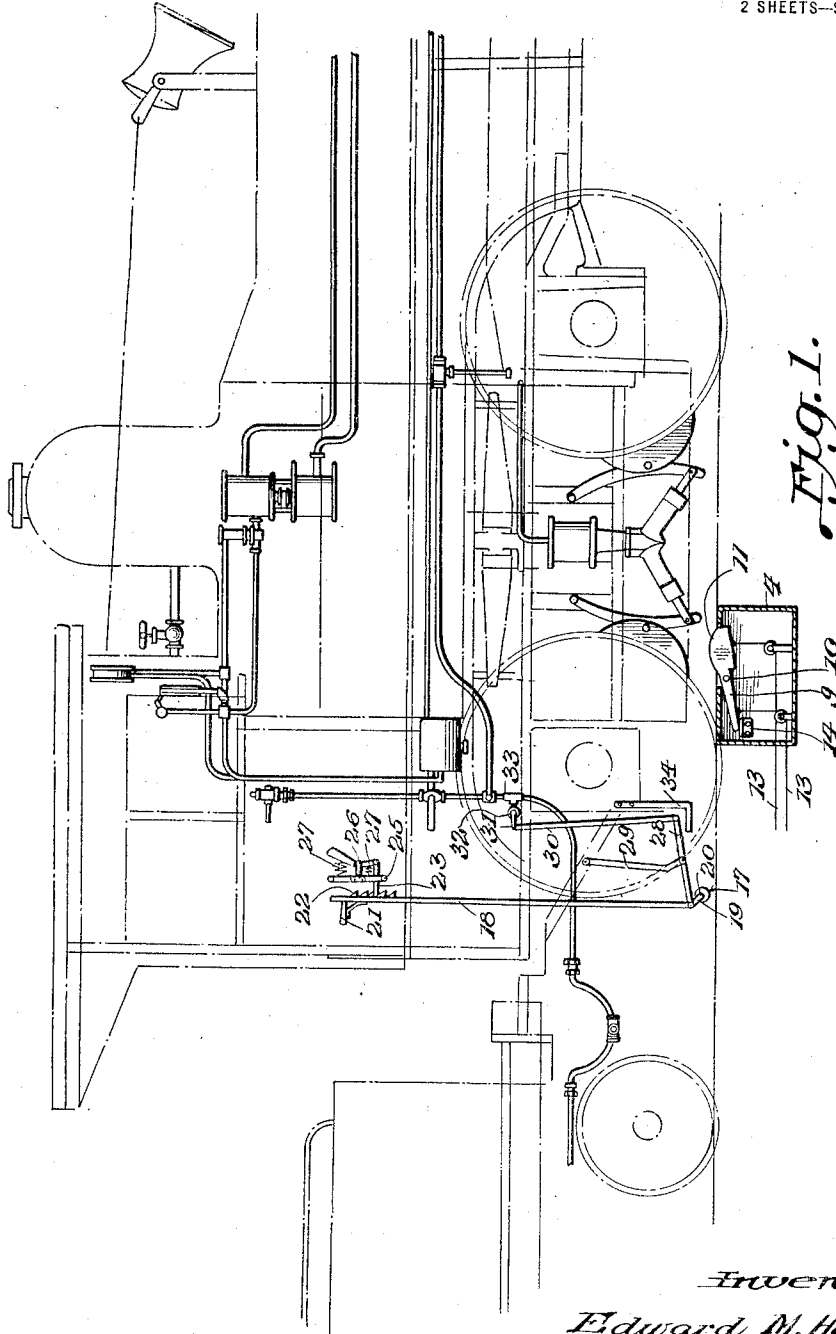


Fig. 1.

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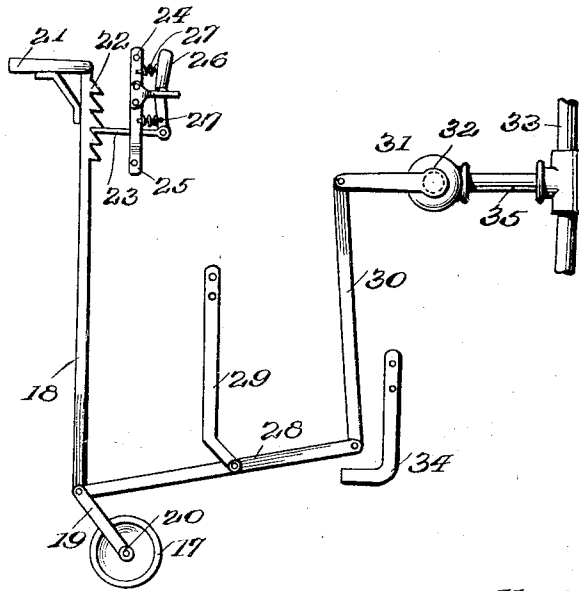


Fig. 2.

Fig. 3.

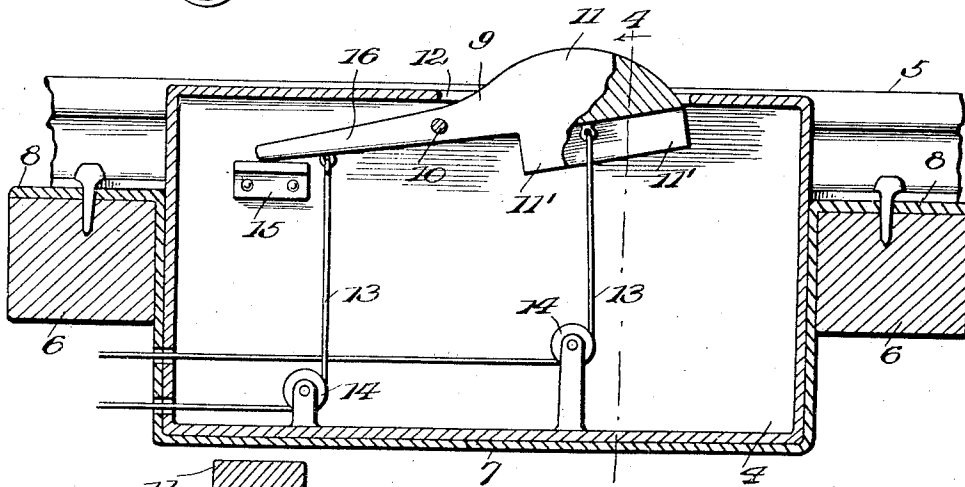
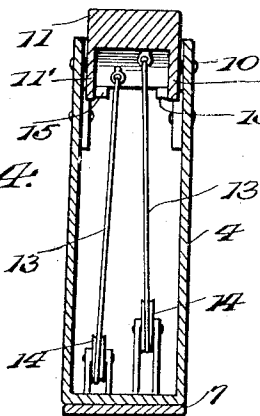


Fig. 4.



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 Attys.

UNITED STATES PATENT OFFICE.

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AUTOMATIC TRAIN-STOP.

1,329,709.

Specification of Letters Patent.

Patented Feb. 3, 1920.

Application filed July 12, 1919. Serial No. 310,294.

To all whom it may concern:

Be it known that I, EDWARD M. HEWSON, Jr., a citizen of the United States, residing at Waterford, in the county of Saratoga and State of New York, have invented certain new and useful Improvements in Automatic Train-Stops, of which the following is a specification.

The primary object of my invention is to prevent a train from running past a danger signal should the operating engineer fail to stop his train.

A further object is to provide means, adapted to be set in position whenever a danger signal is set in its danger-indicating position, to actuate a lever on the train adapted to release the air to cause the brakes to set and stop the train.

A further object is to provide means adapted to be set in position along the track at the setting of the danger signal to actuate an air brake setting lever, the lever being normally set in position to be actuated by said track actuating device.

With the above and related objects in view, this invention comprises the construction, combination and arrangement of parts hereinafter described, a preferred embodiment whereof is illustrated in the accompanying drawings, and embraced within the scope of the appended claims.

In the said drawings:

Figure 1 is a side elevation of my invention shown in connection with a cab portion of an engine;

Fig. 2 is a diagrammatic view of the air valve operating means;

Fig. 3 is a sectional elevation of the track device;

Fig. 4 is a transverse section on line 4—4 of Fig. 3.

Referring more particularly to the drawings, a box or casing 4 is mounted alongside a track rail 5 between ties 6. The box 4 may be secured in place in any convenient manner and is illustrated as resting in a bracket or strap 7 having its intermediate portion forming a U-shaped seat fitting between two adjacent ties, the ends 8 of the strap being turned over the tops of the ties and secured rigidly thereto. A trip 9 is fulcrumed between its ends on a rod 10 disposed transversely in the box and fitted at its ends in the side walls thereof. On the upper side of the trip at one end thereof, is a convex

projection 11 which may extend through an opening 12 in the top of the box to assume a projection beside the track 5 in which it may be engaged by a brake applying member on a passing locomotive or car, the convex surface of the projection serving to avoid an abrupt contact with said member which might damage some of the parts. The trip is set in operative position or withdrawn therefrom by cables 13 secured to the under side of the trip; at opposite sides of the fulcrum or pivot thereof, and extending under guide pulleys 14 in the box 4 and thence out to and into the signal tower, not shown, where they are under the control of the tower man and arranged to be operated simultaneously with the semaphore. Within the box are stops or brackets 15 adapted to limit the rocking movement of the trip by extending into the path of the end 16 thereof, the upper face of said end impinging against the top wall of the box to limit the movement of the trip as it swings to inactive position. At its opposite end the trip is provided with depending flanges 11' which serve as guides for the trip in its rocking movement and, by engaging the side walls of the opening 12, prevent lateral play of the trip which might cause it to get out of proper position relative to the track.

The engine is equipped with a roller 17 carried by a rod 18 from the lower end of which extend arms 19 constituting bearings for the axle 20 of said roller. The rod 18 is projected through the floor of the engineer's cab in such position that the roller will be in alinement with the trip 9. The rod 18 is provided at its upper end with a handle 21 and with serrations or teeth 22 normally engaged by a latch or rod 23 slidably supported in a bracket 25. The latch 23 is pivotally connected with a handle 26 fulcrumed on an arm of the bracket 25 and connected therewith by springs 27 above and below its fulcrum. A lever 28, fulcrumed on a bracket or hanger 29 fixed on the locomotive frame, is pivotally connected at one end with the rod 18 and at its opposite end with the lower end of a link 30. The upper end of the link 30 is pivotally connected with a crank handle 31 extending from the stem of a valve 32 fitted in the end of a branch 35 of the air pipe 33 connecting the train pipe with the usual engineer's valve. A stop bracket 34 is secured on the locomotive

frame and projects under the lower end of the link 30 to prevent the opening movement of the valve 32 being carried so far that the valve can not easily be again closed.

5 The parts are illustrated in the positions assumed when the signal is set in the danger position. Should the engineer, for any reason, fail to apply the brakes the train would obviously continue its progress past
10 the danger signal but the forward travel of the locomotive will bring the roller 17, projecting from under the floor of the engineer's cab, onto the projection 11 of the trip 9 and said roller with its link 19 will
15 thus be forced upwardly. The upward movement of the roller causes the lever 28 to rock and pull downwardly upon the link 30, the link transmitting the motion to the crank 31 and causing it to swing down-
20 wardly and open the valve 32. The opening of the valve, obviously, exhausts the train pipe so that the brakes are applied and the train stopped.

To reset the device, the engineer rocks the
25 handle 26 so as to withdraw the latch 23 from the teeth 22 whereupon the weight of the bar 18 will cause the same to drop and impart a reverse movement to the connected parts and close the valve 32. By grasping
30 the handle 21, while holding the latch released, the roller 17 may be accurately set. It will be noted that the teeth 22 have their upper sides inclined and their under
35 sides disposed horizontally so that while the teeth may readily ride upward past the latch, downward movement of the latch and the bar 18 will be effectually resisted by the
40 engagement of the teeth with the latch. The roller 17, consequently, can not drop so low that it is apt to strike the end of the box 4 and be broken off while movement of the parts to open the valve 32 will be unimpeded. The valve 32 may be of any construction and, as it is located at the end of
45 a branch pipe, the passage from the train pipe to the engineer's valve is clear so that

there is no interference with the normal operation of the brakes. It is to be understood that the position of the trip 9 corresponds, at all times, to the position of the danger signal, and when the signal indicates a clear track the trip will be housed within the box 4. It is also to be understood that the use of the flexible connections 13 is not obligatory and electrical, pneumatic or other connections which will synchronize the trip and the danger signal may be employed.

Having thus described the invention, what is claimed as new is:

60 1. In an automatic train stop, the combination of a support adjacent the railroad track, a lever fulcrumed on said support and provided at one end with a projection to extend above the support, means on the lever
65 to engage the support and guide the lever in its setting movement, means for setting the lever, and means on the support to be engaged by one end of the lever to limit the setting movement, and a brake-applying
70 member on a locomotive to be actuated by said lever.

2. In an automatic train stop, the combination of a train pipe, a branch leading laterally therefrom, a valve in the end of
75 said branch, a crank on the stem of said valve, a rocking lever below said valve, a link connecting one end of said lever with said crank, a setting rod rising from the opposite end of said lever, a contact device
80 carried by the latter end of the lever, a latch adjacent the upper end of the setting rod, a plurality of teeth on the rod arranged to ride under the latch on upward movement of the rod and engage the latch on at-
85 tempted downward movement of the rod, and a track device to be engaged by the contact device on the lever and thereby actuate said lever.

In testimony whereof I affix my signature. 90

EDWARD M. HEWSON, JR. [L. S.]