

A. M. JONES.
RAILWAY SAFETY DEVICE.

APPLICATION FILED NOV. 18, 1911. RENEWED FEB. 21, 1913.

1,058,437.

Patented Apr. 8, 1913.

2 SHEETS—SHEET 1.

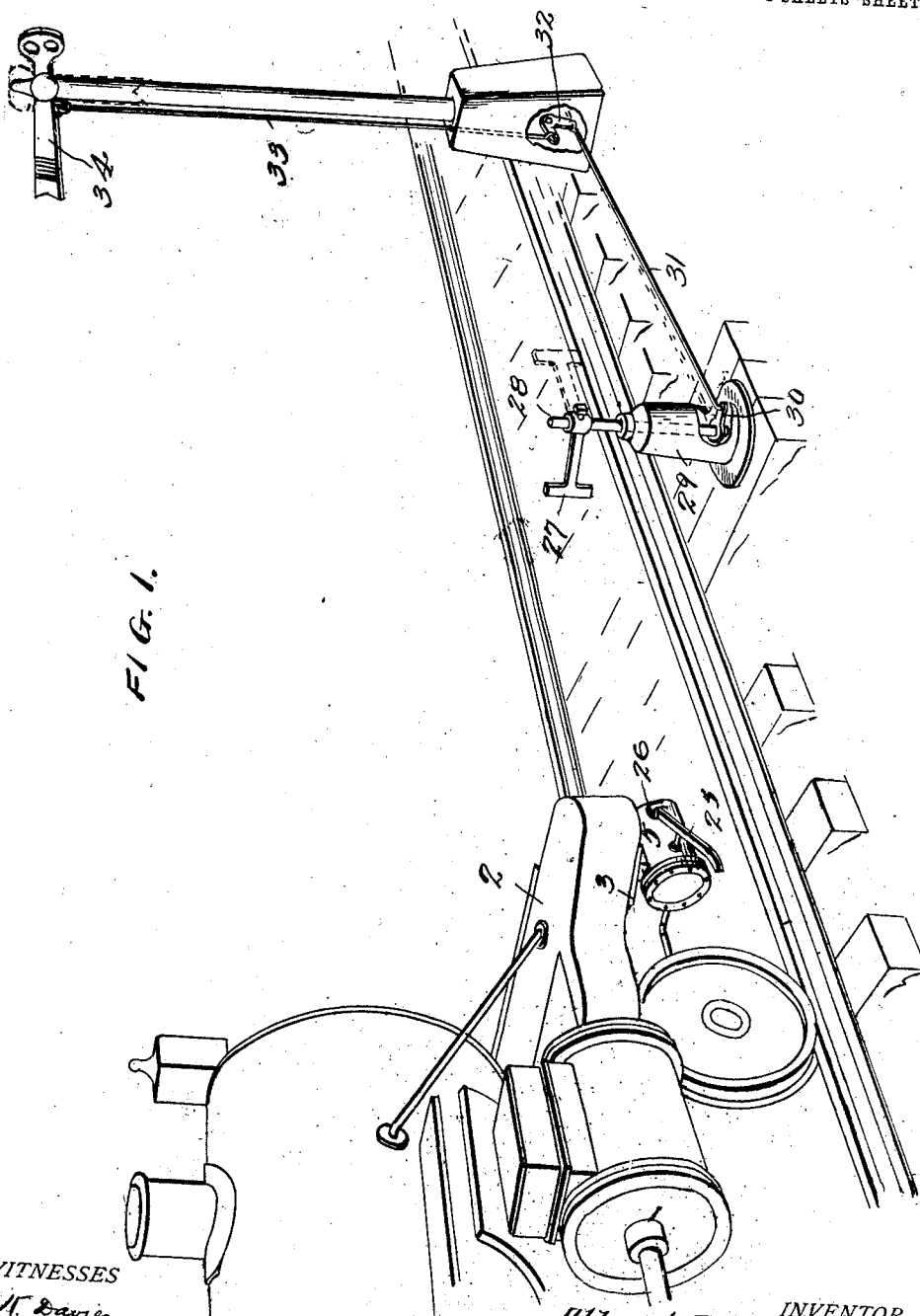


FIG. 1.

WITNESSES

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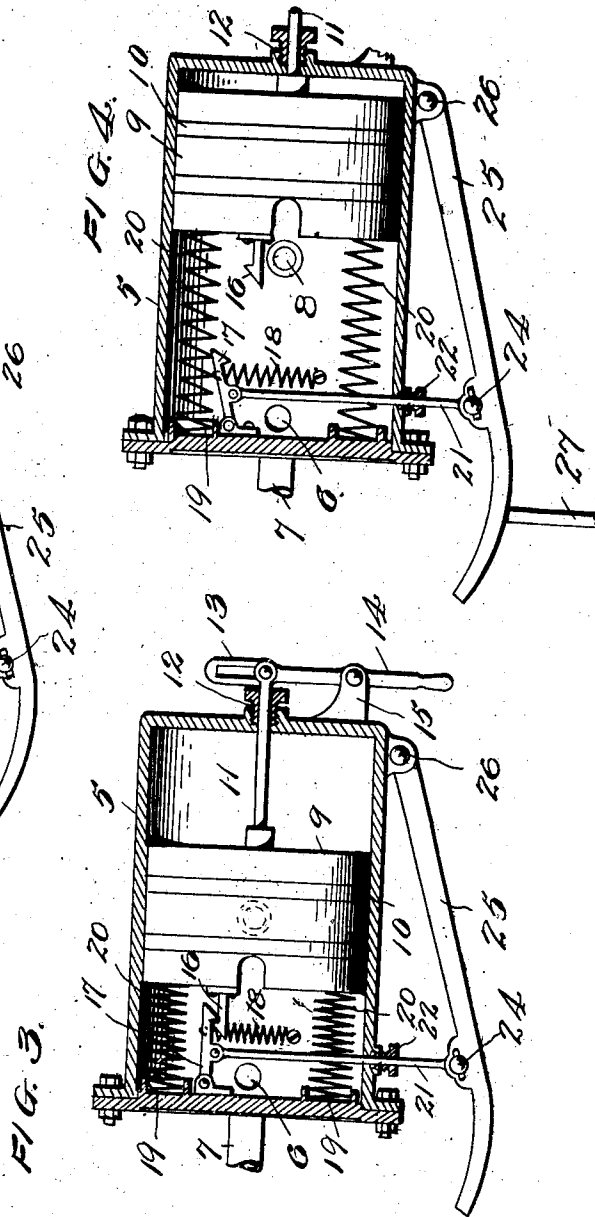
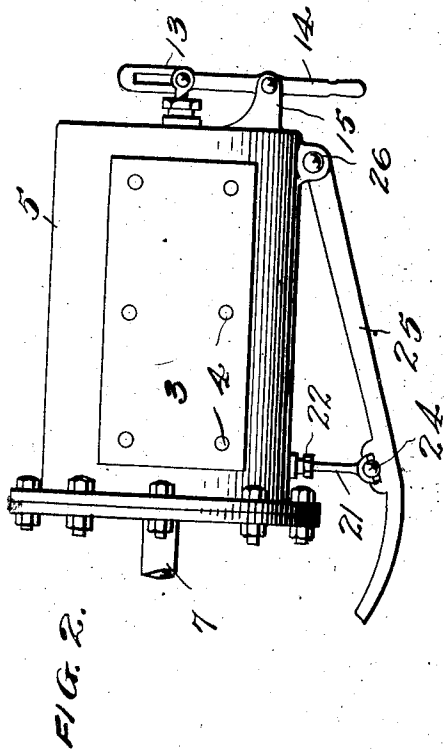
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UNITED STATES PATENT OFFICE.

ALBERT M. JONES, OF HAGERSTOWN, MARYLAND, ASSIGNOR OF ONE-FOURTH TO NORMAN B. SCOTT, THIRD, ONE-FOURTH TO GORDON K. NICODEMUS, ONE-FOURTH TO ALBERT HEARD, AND ONE-FOURTH TO HARRY K. STARTZMAN, ALL OF HAGERSTOWN, MARYLAND.

RAILWAY SAFETY DEVICE.

1,058,437.

Specification of Letters Patent.

Patented Apr. 8, 1913.

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To all whom it may concern:

Be it known that I, ALBERT M. JONES, a citizen of the United States, residing at Hagerstown, in the county of Washington and State of Maryland, have invented certain new and useful Improvements in Railway Safety Devices, of which the following is a specification.

My invention relates to improvements in railway safety mechanism and the leading object of my invention is the provision of means which will automatically release the air from the brake mechanism and effect the instant stopping of the train in the event that the engineer fails to stop his train when the signal is set at the danger designation, to prevent the horrible and constantly occurring collision of trains.

Another object of my invention is the provision of means for automatically applying the air brake and stopping the train which cannot possibly be affected by snow, sleet or rain or by the accumulation of any foreign matter, the mechanism all being so disposed as not to be affected in the manner stated.

Another object of my invention is the provision of means for automatically applying the air brakes in the event of the train passing a danger signal, such means being of the most simple and inexpensive construction to insure inexpensiveness of production and durability and which cannot possibly fail to accomplish the purpose for which it is intended.

To attain the desired objects, my invention consists of railway safety mechanism of the character stated embodying novel features of construction and combination of parts substantially as disclosed herein.

In order that the detailed construction and operation of my mechanism may be fully understood as well as its features of merit and many advantages be fully appreciated I invite attention to the accompanying drawings in which:

Figure 1 represents a perspective view of a portion of an engine equipped with my mechanism and the signal mechanism with the parts in the position assumed when it is desired to stop the train and prevent an accident. Fig. 2 represents a top plan view of the principal mechanism comprising my invention removed from the engine and

shown on an enlarged scale. Fig. 3 represents a horizontal sectional view of the operating mechanism, the parts being in the position they occupy when the train is running smoothly and no danger is ahead, that is the normal position of the mechanism, and Fig. 4 represents a horizontal sectional view showing the position of the parts of the mechanism after the air has been released from the air brake mechanism and the train stopped.

Referring by numeral to the drawings in which similar characters of reference denote corresponding parts in the several views, the numeral 1 designates a sufficient portion of a locomotive engine to illustrate my invention and preferably upon the pilot 2 of which my mechanism is secured.

The preferred construction of my mechanism comprises a bed or securing plate 3 having openings 4 to receive suitable fastening means and this bed plate may be an integral part of the cylindrical casing 5, which is provided at or near one end with the inlet opening 6 which connects with the air brake pipe 7 and about midway of its length the casing is provided with an opening 8 leading to the atmosphere.

In the cylindrical casing is placed the plunger or piston 9, preferably made air tight in the casing by means of the packing rings 10 and the rod 11 of the piston passes through the stuffing box 12 in the casing and is connected to the slotted end 13 of the hand lever 14, which is fulcrumed upon the bracket 15, formed on the casing. In normal position the plunger or piston head fits in the casing in the position shown in Fig. 3 and covers the outlet opening in the casing, and this is the normal position of the plunger or piston, and to the inner face of the plunger is secured the catch or keeper 16, which is engaged by the lever catch 17, which is retained in engagement with the catch by means of the spring 18. Also seated in cups 19 in the inner head of the casing are the pair of springs 20 which also bear upon the plunger and exert their tension outwardly upon the plunger. From the lever catch leads the rod 21, which passes through the stuffing box 22 and has its outer end freely connected at 24 with the operating lever 25, said operating lever being

pivoted at its forward end to the ears 26 on the casing.

In the operation of my invention, assume that the parts of the trip mechanism are in the position shown in Fig. 1 and upon the approach of the train the operating lever is struck by the arm 27 secured to the pivoted post 28 in the trip stand 29, which post carries the arm 30 from which leads the connection 31 to the angle shaped lever 32, which by means of the rod 33, which connects with the signal 34, and when the said arm 27 engages the operating lever 25, said lever is moved inward, releasing the lever catch from the keeper upon the plunger and instantly upon this release, the plunger under the action of the spring and air in the cylinder is moved to the position shown in Fig. 4, which uncovers the outlet opening in the cylinder and the air from the brake mechanism escapes and the brakes are instantly applied and the stopping of the train effected.

It will be understood that my mechanism is particularly intended for the stopping of a train when the engineer fails to see the danger signal, although it may be used in any situation where it would perform its functions in an efficient and practical manner.

One of the most important advantages of my invention is the fact that the parts cannot possibly be affected by foreign matter or weather conditions; also that the mechanism cannot possibly be damaged or get out of order by reason of hard usage, and that its simplicity and inexpensiveness will enable the mechanism to be applied at a comparatively small cost and make its installation both desirable and necessary.

I claim:—

1. In railway safety mechanism, in combination with the air pipe of brake mechanism, a casing communicating with the air pipe and having an air outlet, a plunger in said casing normally covering said air outlet, a keeper carried by said plunger, means pivotally mounted within the casing and engaging the keeper device on the plunger for normally retaining the plunger in position to cover said air outlet, and means operated exteriorly of the casing to release the retaining means for the plunger to permit moving of said plunger to uncover the air outlet and effect the stopping of a train.

2. In railway safety mechanism, the combination with the air pipe of the brake mechanism, a casing communicating with the air pipe and having an air outlet, a plunger in said casing normally covering said air outlet, means for normally retaining the plunger in position to cover said air outlet, consisting of a latch and keeper within the casing, and means operated exteriorly to release the retaining means for

the plunger to permit moving of said plunger to uncover the air outlet and effect the stopping of the train.

3. In railway safety mechanism, the combination with the air pipe of the brake mechanism, a casing communicating with the air pipe and having an air outlet, a plunger in said casing normally covering said air outlet, means for normally retaining the plunger in position to cover said air outlet, consisting of a latch and keeper within the casing, a rod connected with the latch and leading through the casing, a lever pivoted upon the casing and connected with said rod, contact with said lever effecting the release of the catch and permitting the plunger to uncover the air outlet of the casing and release the air to effect the stopping of the train.

4. In railway safety mechanism, the combination with the engine and the air brake mechanism thereof, a casing in communication with the air brake mechanism and having an air outlet, a spring controlled plunger mounted in the casing, means for retaining the plunger in normal position to close the air outlet, a connection leading from the retaining means outside the casing, and an operating lever carried by the casing and connected with the retaining means.

5. In railway safety mechanism, in combination with the air pipe of brake mechanism, a casing communicating with said pipe and having an air outlet, a plunger in said casing adapted to normally cover said air outlet, means arranged within said casing for retaining the plunger in normal position, means for causing said plunger to uncover the air outlet, and means for returning the plunger to normal position.

6. In railway safety mechanism, in combination with the air pipe of brake mechanism, a casing communicating with said pipe and having an air outlet, a plunger in said casing adapted to normally cover said air opening, means including spring members attached to the plunger and casing and arranged parallel to each other for causing the forward movement of the plunger when the plunger is released, means for releasing and permitting said plunger to uncover the air outlet, and means for returning the plunger to normal position.

7. In railway safety mechanism, in combination with the air pipe of brake mechanism, a casing communicating with said pipe and having an air outlet, a plunger in said casing adapted to normally cover said air outlet, spring devices attached to the plunger and casing and arranged parallel to each other for causing the forward movement of the plunger when the plunger is released, a keeper carried by the plunger, a catch carried within the casing normally engaging said keeper on the plunger when the

plunger is covering the air outlet to retain same in normal position, and means for releasing and permitting said plunger to uncover the air outlet to effect the stopping of a train.

8. In railway safety mechanism, in combination with the air pipe of brake mechanism, a casing communicating with said pipe and having an air outlet, a plunger in said casing adapted to normally cover said air outlet, spring devices attached to the plunger and casing and arranged parallel to each other for causing the forward movement of the plunger when the plunger is released, a keeper carried by the plunger, a catch carried within the casing normally engaging said keeper on the plunger to retain the plunger in position, a spring carried within the casing and engaging over the catch for retaining the catch and keeper in engagement with each other, and means for releasing and permitting said plunger to uncover the air outlet to effect the stopping of a train.

9. In railway safety mechanism, in combination with the air pipe of brake mechanism, a casing communicating with said

pipe and having an air outlet, a plunger in said casing adapted to normally cover said air outlet, means arranged within the said casing for retaining the plunger in normal position, and means connected to the retaining means for releasing the same and permitting said plunger to uncover the air outlet to effect the stopping of a train.

10. In railway safety mechanism, in combination with the air pipe of brake mechanism, a casing communicating with said pipe and having an air outlet, a plunger in said casing adapted to normally cover said air outlet, means arranged within the casing for retaining the plunger in normal position, means for causing said plunger to uncover the air outlet, and means including a rod connected to the plunger and a slotted lever fulcrumed to the casing and connected to said rod for returning the plunger to normal position.

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

ALBERT M. JONES.

Witnesses:

A. L. HOUGH,
WM. N. MOORE.