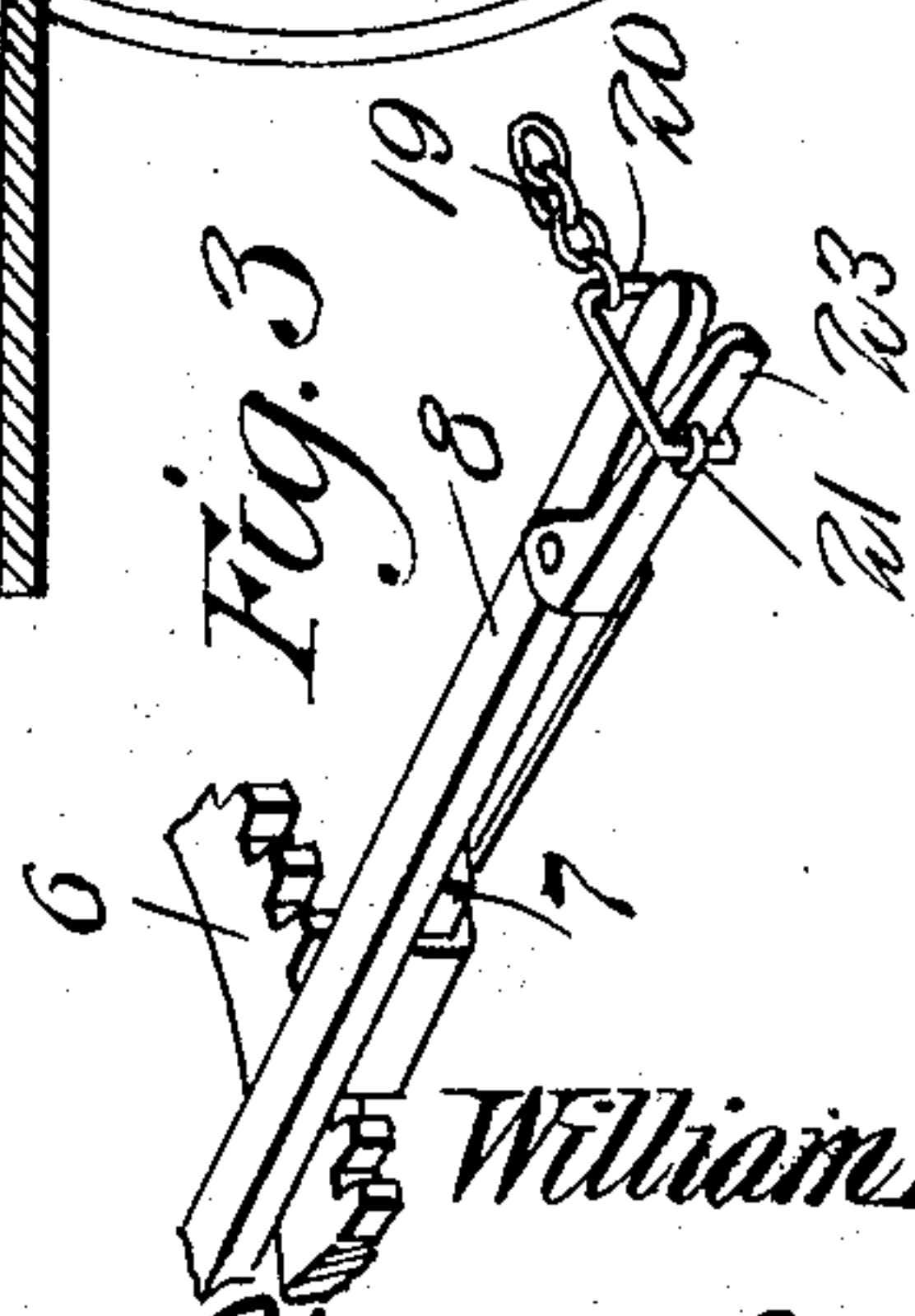


# AUTOMATIC STOPPING MECHANISM FOR TRAINS.

Patented Oct. 25, 1910.

2 SHEETS—SHEET 1.

**973,954.**



*William Mingo Jr*

Victor J Evans

Attorney

Witnesses

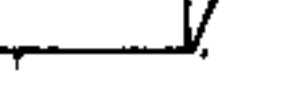


Fig. 1.

Witnesses

F. O. Ackman & Co.

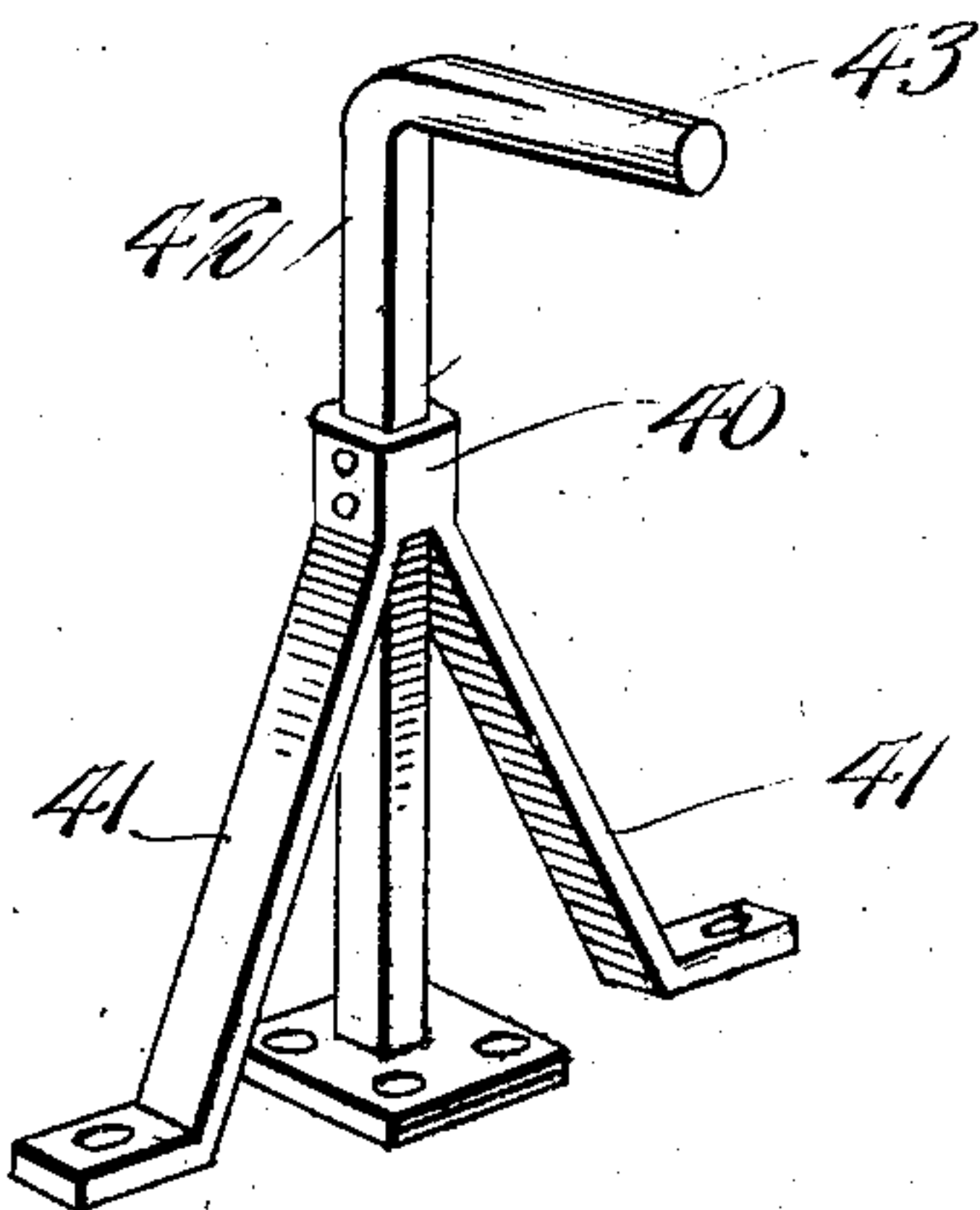
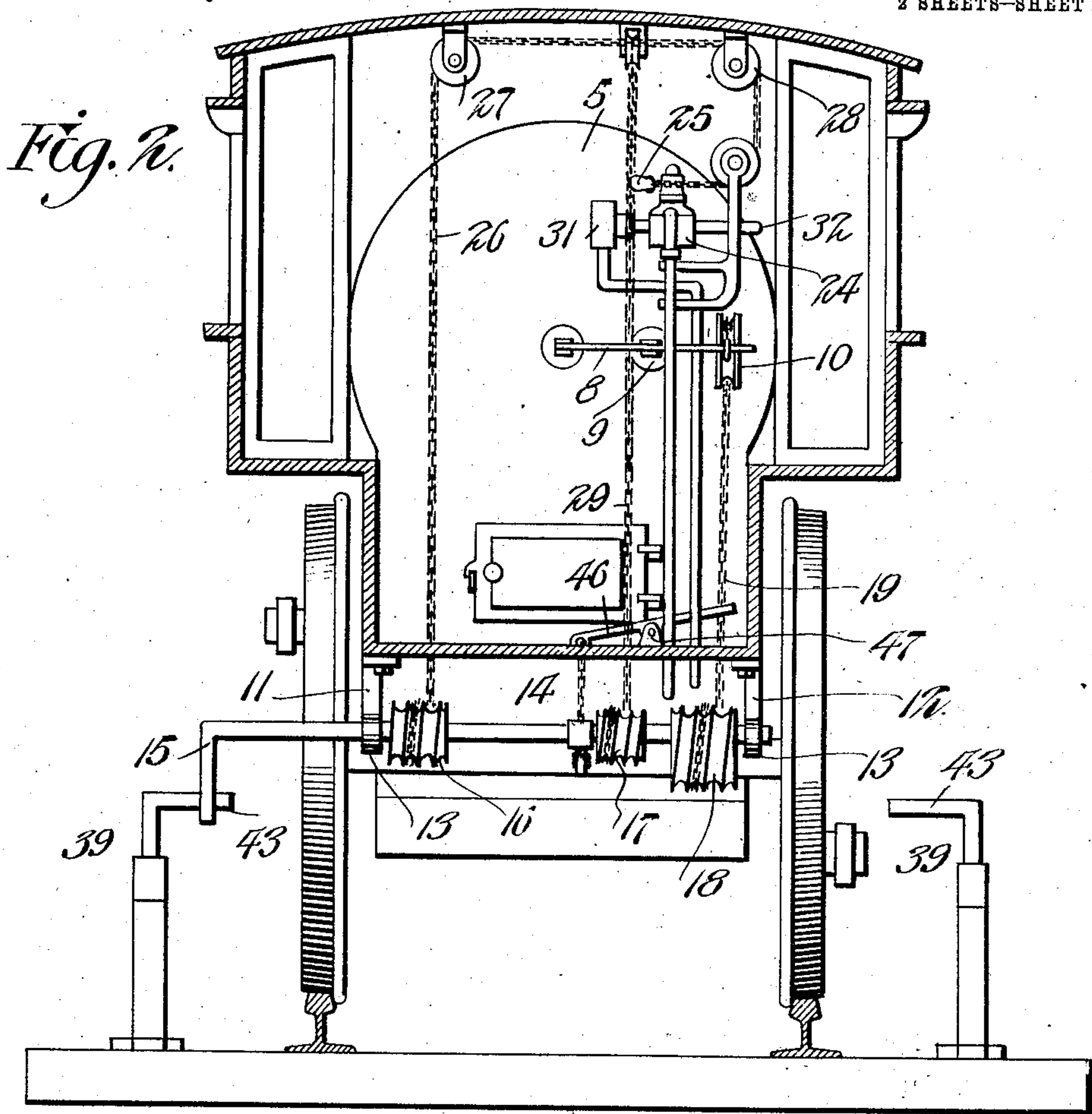
for a record

W. MINGO, JR.  
AUTOMATIC STOPPING MECHANISM FOR TRAINS.  
APPLICATION FILED SEPT. 23, 1908.

973,954.

Patent Oct. 25, 1910.

2 SHEETS-SHEET 2.



Witnesses

*W. Ackema Jr.*  
*for W. A. Koehl*

Inventor

*William Mingo Jr.*

By

*Victor J. Evans*

Attorney



# UNITED STATES PATENT OFFICE.

WILLIAM MINGO, JR., OF WEIMAR, TEXAS.

## AUTOMATIC STOPPING MECHANISM FOR TRAINS.

973,954.

Specification of Letters Patent.

Patented Oct. 25, 1910.

Application filed September 23, 1908. Serial No. 454,359.

*To all whom it may concern:*

Be it known that I, WILLIAM MINGO, JR., a citizen of the United States, residing at Weimar, in the county of Colorado and State of Texas, have invented new and useful Improvements in Automatic Stopping Mechanism for Trains, of which the following is a specification.

This invention relates to automatic stopping mechanism for trains, and has for an object to provide mechanism of this character which may be applied to a locomotive cab, and which, when in operation, will automatically apply the air brake valve, the sanding valve, the throttle valve, and a whistle.

A further object of this invention is to provide a car mechanism adapted for the purpose set forth above with means so that it can be operated by simple and effective means located at suitable points along the line.

A further object is to provide means necessitating the engineer's attention to lights or signals ahead, providing means whereby the engineer can obviate automatic stoppage of the trains should he have a clear track, or in other words, a train will be automatically stopped at predetermined points if the engineer is inattentive.

A further object is to provide automatic means for restoring the mechanism and holding the same normally in an operative position.

Other objects and advantages will be apparent as the nature of the invention is better disclosed and it will be understood that changes within the scope of the claim may be resorted to without departing from the spirit of the invention.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a side view with parts in section showing the application of the present invention to a locomotive. Fig. 2 is a vertical section through the cab of the locomotive. Fig. 3 is a perspective view of the throttle lever. Fig. 4 is a perspective view of one of the trip elements.

Referring now more particularly to the drawings, there is shown a locomotive 1 provided with a steam dome 2 and a sand dome 3. The locomotive cab indicated at 4, is of usual construction, and the head 5 for the boiler of the locomotive is provided

with a throttle rack 6 adapted to receive a spring pressed dog 7 carried by a throttle valve lever 8, adapted to operate the valve 9 which may be of the usual construction. A pulley 10 is mounted upon the head 5 of a locomotive boiler and is disposed in line with the free end of the lever 8.

Hangers or brackets 11 and 12 extend from beneath the cab, and as shown, the said hangers are provided with alining bearings 13 adapted to receive a horizontally disposed shaft 14 which extends transversely of the locomotive. The shaft 14 extends outwardly a considerable distance beyond the hanger 11 and is provided with a depending finger 15 for a purpose to be hereinafter described. The shaft has secured thereto drums 16 and 17, which are mounted concentrically, and adjacent to the hanger 12 an eccentrically mounted drum 18 which is thus adapted to hold the finger 15 normally in the position shown in Fig. 2 of the drawings. The drum 18 has secured thereto one end of a chain or flexible element 19 which is passed around the pulley 10, and the other end of the said chain or element is connected to a bail 20. The bail 20 is connected as shown at 21 to the dog controlling element 23 pivotally mounted upon the throttle valve lever 8.

The usual air brake triple valve is shown at 24 and carries an operating lever 25 which has connected thereto one end of a chain or similar flexible element 26, the other end of the said chain or element being connected to the drum 16. Suitable pulleys 27 and 28 are located at the top of the cab and are adapted to guide the chain or element in its movement as will be readily understood. It will, of course, appear obvious that the triple valve is connected as usual to the air brake train pipes, and a detail description of such pipes is thought to be unnecessary. The drum 17 receives one end of a chain or flexible element 29, the other end of the said chain or element being connected with a lever 30 of a valve 31 which valve may receive air in the customary manner from the air brake reservoirs and conveys the same into the sand dome 3 by means of a pipe 32 in order that sand may be forced by air pressure through a pipe 33 to be discharged from pipes 34 beneath the drive wheels of the locomotive, as clearly shown in Fig. 1 of the drawings. A chain or similar element 35 is connected at one end



to the chain 29 adjacent to the lever 30, and the said chain is passed over a pulley 36 at the top of the cab and is connected at its outer end to a valve lever 37 for operating a whistle 38.

At each side of the locomotive, and at suitable points along the line is shown a plurality of trip elements 39, each being provided with a socket member 40, supporting legs 41, and a vertically extending post 42. Each of the said posts 42 is provided with an inwardly extending right angularly disposed trip arm 43 disposed in the path of movement of the finger 15 at one end of the shaft 14. The shaft 14 is provided with an angularly disposed arm or lever 44 to which is connected the lower end of a flexible element 45, the upper end of the said element being connected to a manually operated lever 46 pivotally mounted upon the cab floor as shown at 47. From the construction herein set forth and described it will be seen that the drum 18 overbalances the shaft 14 and serves to normally hold the finger 15 in a depending position, and to also hold the lever 46 in the position shown in Fig. 2 of the drawings.

In operation when a train is traveling, it will be seen that in view of the fact that the trip elements are located at predetermined points along the line of the train they will engage the depending finger 15, unless the lever 46 is actuated by the engineer to revolve the shaft 14 so that the finger 15 will be thrown into an inoperative position and by movement of the car it is obvious that the said finger 15 will be moved angularly or in an upward position, thus rotating the shaft 14. By reason of the fact that the drums 16, 17 and 18 are secured to the shaft it will be understood that they will be revolved upon operation of the finger

15 and wind thereon their flexible elements or chains previously described and will simultaneously apply the air brake, the throttle valve, the sand discharge valve and the whistle. By installing mechanism of the described character in locomotives, it will be apparent that the engineer must apply strict attention to all signals, and should he fail to note a danger signal it will be seen that the train will be immediately brought to a standstill. Should the signals not indicate a clear track at points between the trip elements, and should the engineer see danger ahead at a point near the trip arm 43 it will only be necessary for him to actuate the lever 46 which will operate the shaft 14 to cause the finger 15 to move to a position where it will clear the trip arm, whereupon, the throttle valve may be controlled by the engineer as in the usual manner.

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

Train controlling mechanism embodying a revolvably mounted shaft, means for actuating the shaft, one or more drums mounted upon the shaft, a valve or valves operatively connected with the drums to be actuated thereby upon rotation of the shaft in one direction, one of the drums being eccentrically mounted on the shaft to normally hold the shaft in an operative position, and means connected with the shaft and adapted to be actuated to move it in a reverse direction to the movement imparted to the shaft by the first named means.

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

WILLIAM MINGO, JR.

Witnesses:

CHAS. E. RODGERS,  
JAMES H. NELSON.