

F. GEHRICKE.  
 DERAILMENT GUARD.  
 APPLICATION FILED JAN. 9, 1908.

995,128.

Patented June 13, 1911.

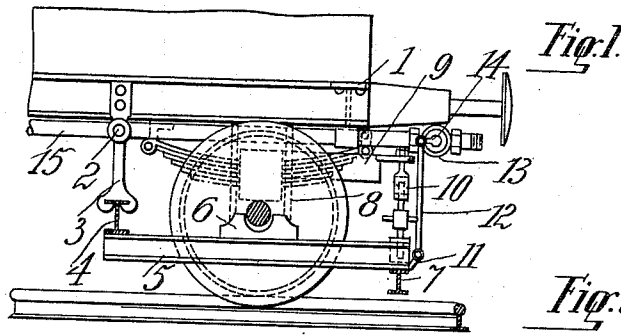


Fig. 2.

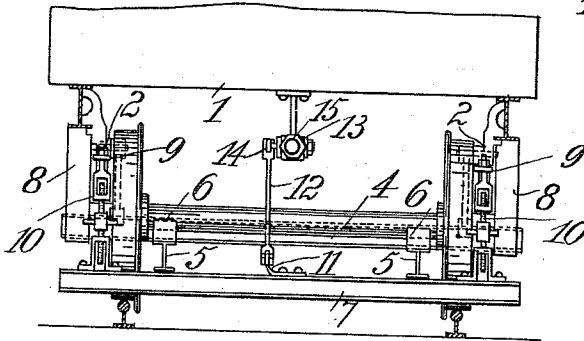
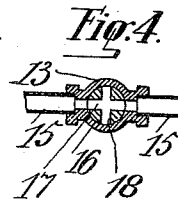
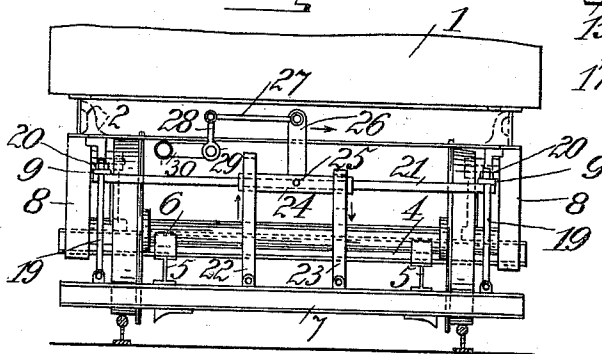


Fig. 4.



Witnesses:  
 Walter Mann  
 Frank Smith

Inventor:  
 Friedrich Gehricke

# UNITED STATES PATENT OFFICE.

FRIEDRICH GEHRICKE, OF BERLIN, GERMANY, ASSIGNOR OF ONE-HALF TO FRIEDRICH BOLLMANN, OF BERLIN, GERMANY.

## DERAILMENT-GUARD.

995,128.

Specification of Letters Patent. Patented June 13, 1911.

Application filed January 9, 1908. Serial No. 410,048.

### *To all whom it may concern:*

Be it known that I, FRIEDRICH GEHRICKE, a subject of the German Emperor, and resident of 4 Schröderstrasse, Berlin N., Germany, have invented certain new and useful Improvements in Derailment-Guards, of which the following is a specification.

The derailment guard for railroad trains according to my Patent No. 883,107 filed September 7, 1906 serves besides other uses for the purpose of indicating possible danger to traffic or to immediately stop the train by actuating a brake, as the guard bar keeps its position during the normal traffic and leaves the same only in case of accidents.

My present invention serves the purpose of using the guard bar to automatically stop the train at once in the event of danger to traffic as caused by derailment or the like. The brakes actuated in case of accidents may be variously constructed. The guard can *e. g.* be connected to rods which mechanically press brake blocks against the circumference of the wheels by means of the up and down motion of said guard bar. I prefer to connect the guard bar with the air pressure brake in such a manner that if but one guard bar leaves its normal position the train is at once automatically stopped.

In the accompanying drawing in which I have illustrated my invention like characters of reference refer to like parts throughout the different views.

In said drawing, Figure 1 shows a side view of my improved derailment guard in connection with the air pressure brake. Fig. 2 shows a front view of Fig. 1. Figs. 3 and 4 show stop valves for such brakes. Fig. 5 shows a front view of my improved derailment guard in connection with an ordinary regulating device of the air pressure conduit.

Pivots 2 are connected to the frame 1 of the vehicle and oscillating rods 3 are mounted on said pivots. The rods 3 are connected by rails 4 which on their part carry the rails 5 on which the bearings 6 rest. The guard bar 7 forms the connection between the rails 5 and its distance from the rail track is regulated by the rod 10 suspended on a fixed arm 9 attached to the bearing 8. All these parts are the same as described in my previous Patent No. 883,107 filed Sept. 7, 1906 and illustrated in Fig. 4 of the same.

The rod 10 consists, as shown in Figs. 1

and 2, of a fixed rod the length of which is adjustable by suitable means and it loosely rests in a large bore hole of the arm 9. The rod 10 is provided on its upper end above the arm 9 with a head preventing a dropping of said rod through the bore hole of said arm. In consequence thereof the guard bar can swing upward during derailment or while passing over an obstacle but not downward except when one of the rods 10, arms 9 or the like parts breaks. In order that such motion of the guard bar may stop the train I provide said bar with a pivot 11. Furthermore the air pressure conduit 15 has a valve 13 actuated by an arm 14. The arm 14 is connected to the pivot 11 by means of the link 12 and consequently undergoes in case of accidents the same motions as the guard bar. In order to actuate the valve 13 by the upward motion of the bar as well as by the downward motion of the same the valve cock 16 is provided with two canals 17 and 18 crossing each other in right angles (Figs. 3 and 4). It is in this manner that the cock 16 is turned from its position of rest into the one actuating the brake by the upward or downward motion of the guard bar.

The construction shown in Fig. 5 overcomes the drawback of requiring a specially designed valve.

The guard bar 7 is carried by means of the rods 19 linked to the same, said rods 19 being loosely suspended by the rigid arms 9 in order to allow an easy upward swinging of the bar 7. The support of the rods 19 is formed by nuts 20 located on the arms 9, said nuts being preferably placed on washers and secured by counter-nuts. The rods are provided at their upper ends with a screw thread in order to regulate the distance between guard bar and rail.

As shown in Fig. 5 the fixed arms 9 are connected with each other by a fixed rod 21. Pivoted to this rod is an angle lever by means of a pivot 25 in such a manner that its upward directed arm 26 can swing to the right as well as to the left, when the ends of its horizontal arm 24 swing up and down. The free ends of the horizontal arm 24 rest in the slot like guides of the rods 22 and 23 pivotally connected with the guard bar 7. The longer lever 22 is so placed that one free end of the arm 24 in its horizontal position rests on the bottom of the slot of said lever

22, the free space of the guiding slot being located above the arm 22. The arm 24 can consequently on this end move only upward. The slot in the shorter rod 23 is so located that the end of the arm engaging in this slot can only move downward. If the guard bar is moved upward the rod 22 pushes the left arm of the lever 24 in the direction indicated in the drawing by an arrow and the arm 26 swings to the right. The simultaneous downward motion of the other free end of the arm 24 is permitted as the slot of the rod 23 is located below the arm 24. The same motion to the right of the arm 26 is caused if the guard bar is moved downward. In this case the rod 23 draws down the right end of the arm 24. The arm 26 is connected by means of a link 27 with the lever 28 of the valve 29 and consequently levers 28 and 26 swing simultaneously whereby the valve is opened and the air allowed to escape from the conduit 30 whereby the brakes are actuated. The motion of the lever 28 is larger or smaller according to the point at which the link 27 is connected to the lever arm 26. In the drawing said motion is a very large one as the connection takes place between the ends of said arms.

Changes in the form, proportion and the minor details of construction may be re-

sorted to without departing from the principle or sacrificing any of the advantages of this invention. The rod 12 may *e. g.* actuate instead of a valve, brake blocks by pressing the same in a suitable manner against the wheels of the vehicle.

What I claim as new and desire to secure by a United States Letters Patent is:—

In a derailment guard for railroad trains the combination of a guard bar (7), two rods (22, 23) of different length pivotally connected to said bar, slots in the upper ends of said two rods, an angle lever (24, 26) mounted in said slots, means to move one end of said lever upward by the upward motion of the guard bar, means to cause the other arm of said lever to undergo the same motion irrespective of the direction of motion of the guard bar, an ordinary air pressure brake valve, and means to connect the free up-right arm of the angle lever to said valve, substantially as described and for the purpose set forth.

In testimony whereof I have hereunto signed my name this 13th day of July 1907, in the presence of two subscribing witnesses.

FRIEDRICH GEHRICKE.

Witnesses:

HENRY HASPER,  
WOLDEMAR HAUPT.