

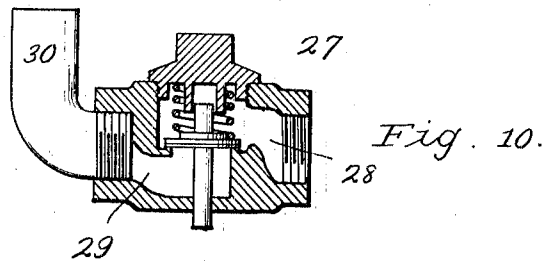
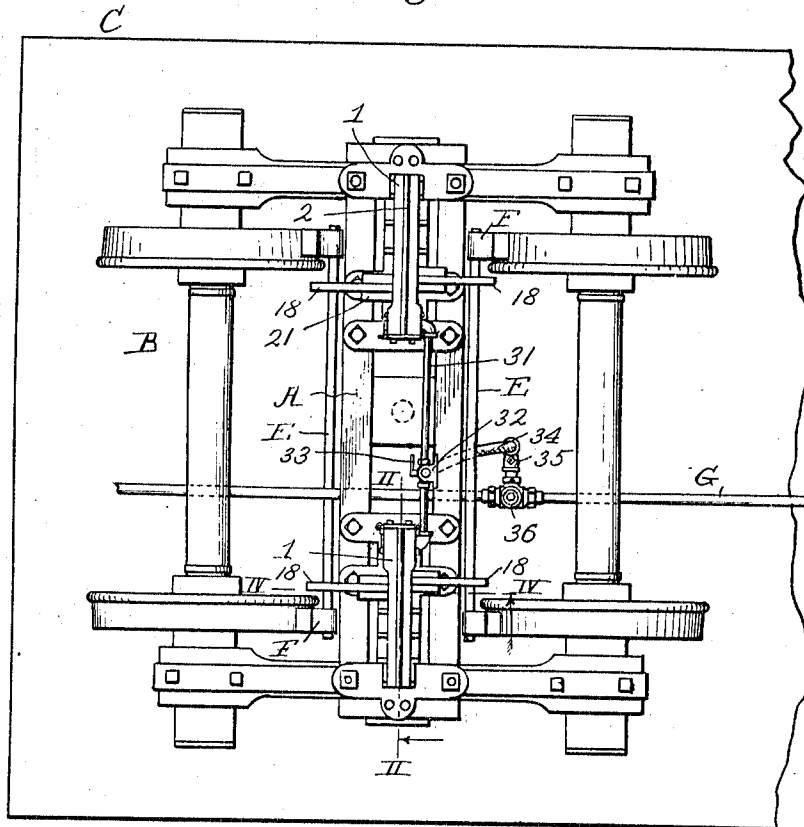
C. H. SCHUMAKER & J. W. HULME.
 AUTOMATIC SAFETY APPLIANCE FOR RAILWAY CARS.
 APPLICATION FILED OCT. 28, 1912.

1,059,399.

Patented Apr. 22, 1913.

3 SHEETS—SHEET 1.

Fig. 1.



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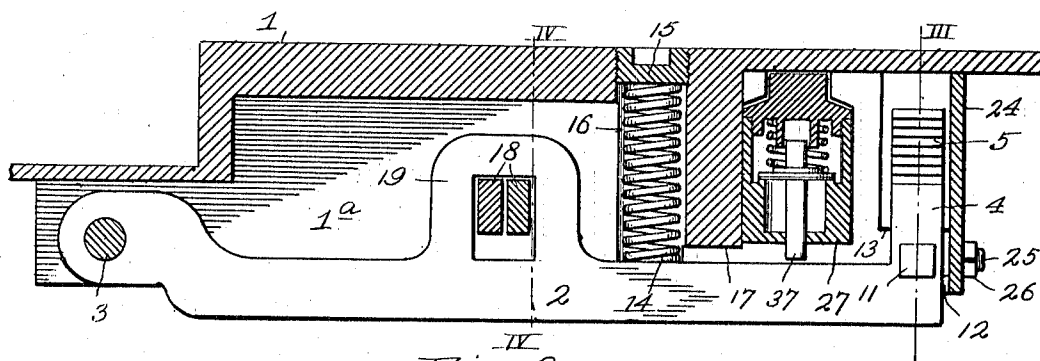


Fig. 2.

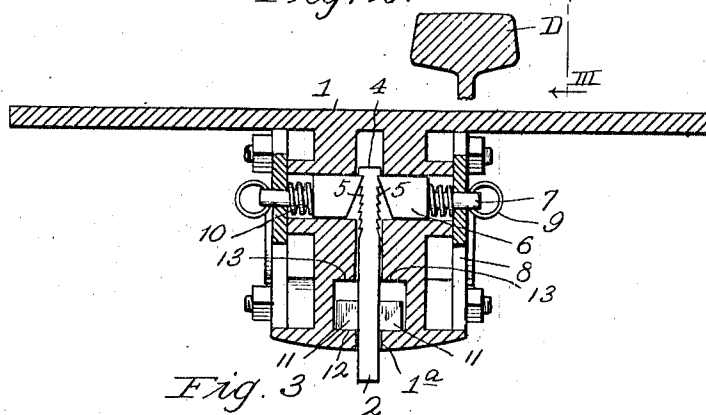


Fig. 3.

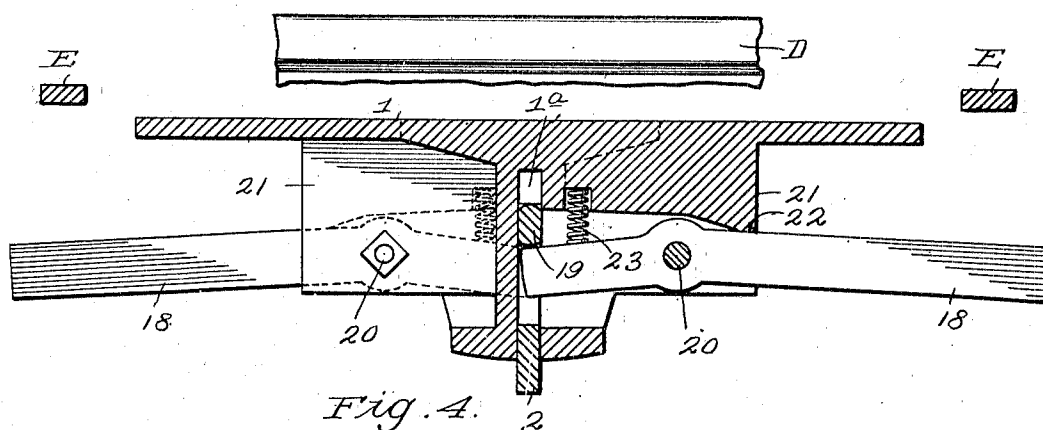


Fig. 4.

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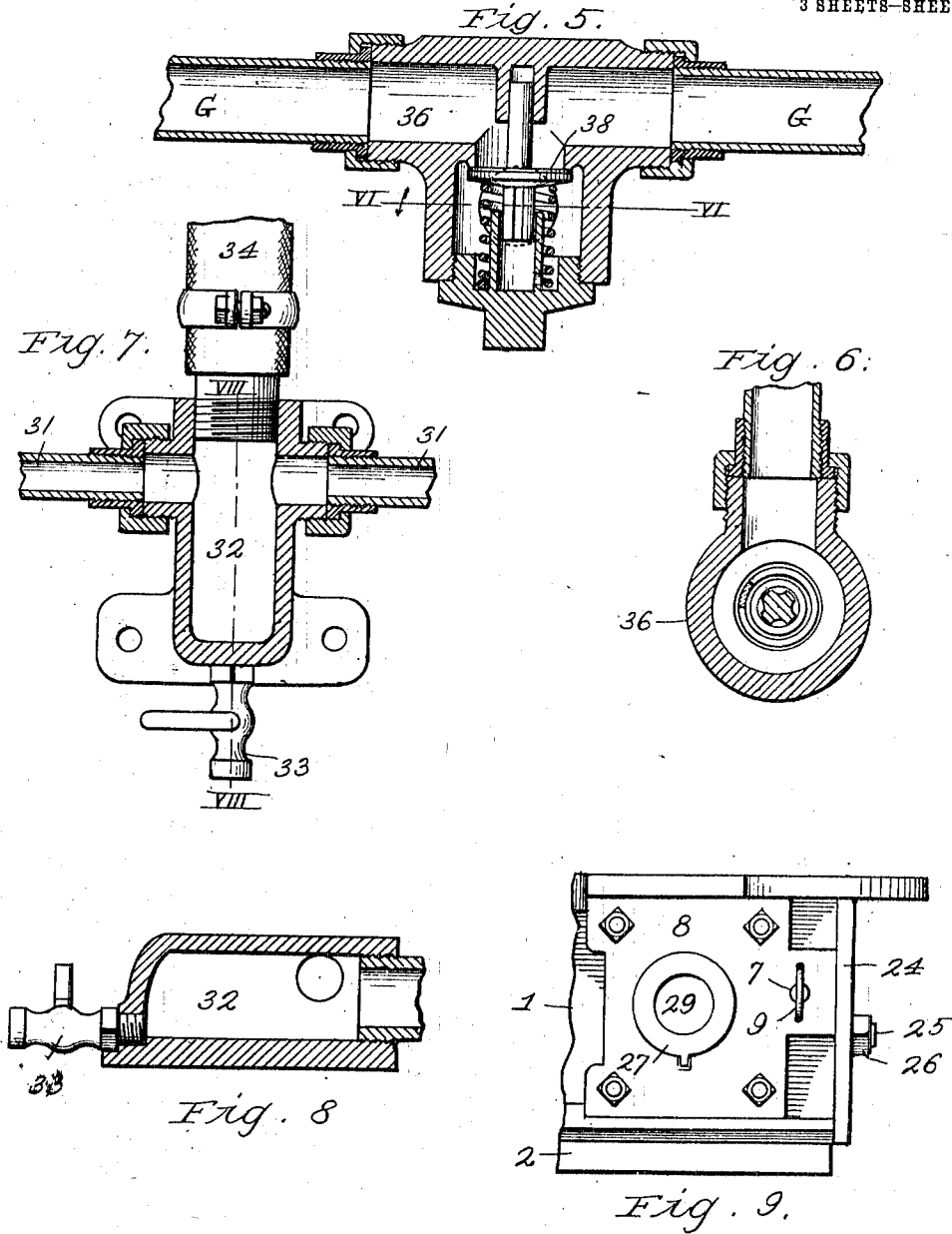
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC SAFETY APPLIANCE FOR RAILWAY-CARS.

1,059,399.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed October 28, 1912. Serial No. 728,112.

To all whom it may concern:

Be it known that we, CARL H. SCHUMAKER and JOHN W. HULME, citizens of the United States, residing at Guthrie and Arkansas City, in the counties of Logan and Cowley, States of Oklahoma and Kansas, respectively, have invented certain new and useful Improvements in Automatic Safety Appliances for Railway-Cars, of which the following is a specification.

Our invention relates to improvements in safety appliances for railway cars, and our object is to provide a new and useful appliance of this character whereby automatic stoppage of a train or car is effected in case of derailment, or the dropping of a brake beam, or breaking of a truck.

In order that the invention may be fully understood, reference will now be made to the accompanying drawings in which:

Figure 1, is a broken inverted plan view of one end of a railway car, provided with our safety appliance. Fig. 2, is a vertical longitudinal section on line II—II of Fig. 1, of a housing carrying a number of important features of the invention. Fig. 3, is a vertical cross section on line III—III of Fig. 2. Fig. 4, is a vertical cross section on line IV—IV of Fig. 2. Fig. 5, is a vertical longitudinal section of a self-closing valve employed in carrying out the invention. Fig. 6, is a horizontal section on lines VI—VI of Fig. 5. Fig. 7, is a vertical section of a three-way pipe fitting and its connections, employed in carrying out the invention. Fig. 8 is a broken longitudinal section on line VIII—VIII of Fig. 7. Fig. 9, is a broken side elevation of one end of the housing. Fig. 10, is a vertical longitudinal section of a self-closing valve employed in carrying out the invention.

In carrying out the invention, we employ housings 1, one of which is, preferably, secured to each side of a sand-board A, of the truck B, of a railway car C. In practice, two housings are secured to each sand-board of a truck. The number of housings, however, may be increased or diminished as desired.

Each housing is placed transversely across an underlying rail D (Figs. 2, and 3) which it clears a distance somewhat less than the height of the rail, so that it will contact said rail in case of derailment of one or more wheels of the truck. Housing 1, has a longi-

tudinal slot 1^a, to receive a main lever 2, pivotally mounted at one end upon a pin or bolt 3, and provided at its opposite end with an arm 4, extending upwardly at right angles thereto and provided at its upper portion with oppositely-disposed ratchet-teeth 5.

6 designates a pair of pawls slidably mounted within the housing 1, and engaging the ratchet-teeth 5, as shown on Fig. 3. Each pawl has a stem 7, extending outward through an adjacent face-plate 8, one of which is secured to each side of the housing 1, to retain the pawls 6 therein, and also to assist in securing a self-closing valve, hereinafter described, within the housing.

Each pawl-stem 7, has a ring 9, in its outer end whereby the pawl may be drawn backward out of engagement with its respective ratchet-teeth 5, against the action of a coil spring 10, interposed between the adjacent face-plate 8, and the enlarged portion of the pawl.

Pivotal movement of the main lever 2, is limited by a pair of lugs 11, disposed at opposite sides of arm 4, and adapted to contact shoulders 12 and 13, within the housing 1. The main lever 2, is normally held in its lowermost position by a coil spring 14, interposed between said lever and a screw plug 15, engaging the upper threaded end of a vertical bore 16, extending almost through the housing 1. Lugs 11, and shoulders 13, are assisted in limiting upward movement of lever 2, by a shoulder 17, within the housing 1.

18 designates a pair of levers extending transversely in opposite directions from housing 1, the inner ends of said levers engaging the loop portion 19, of the main lever, as shown on Figs. 2 and 4. Levers 18, are fulcrumed on bolts 20, extending through cheeks 21, on opposite sides of the housing. The outer ends of said levers 18, underlie the brake-beams E, of the car-truck, so that in case one or both of said brake-beams should from any cause become loose and drop they will contact the outer ends of said levers 18, and depress the same, causing said levers to raise the main lever 2, and set the air-brakes F, as will hereinafter appear. Levers 18, are normally held in contact with shoulders 22, of the cheeks 21, by coil springs 23, interposed between the adjacent portions of the cheeks and the inner ends of said

levers. One end of the longitudinal slot 1^a, extending through housing 1, is closed by an end-plate 24, secured in place by studs 25, and nuts 26.

27 designates the self-closing valve hereinbefore referred to as secured within the housing 1. Said self-closing valve 27, is provided with inlet and exhaust ports 28 and 29, respectively, the latter being provided with a discharge pipe 30, bent upwardly to prevent the entrance of snow or other obstructions. The inlet port 28, of each valve 27, communicates with a pipe 31, provided intermediate its ends with a three-way fitting 32, secured to the sand-board A, and provided with a drain-cock 33, whereby any water entering said fitting from the train-pipe G, may be drained off.

34 designates a hose communicating at one end with the three-way fitting 32, and at its opposite end with a cut-out cock 55, which in turn communicates with a self-closing valve 36, communicating with the train pipe G. The hose 34, permits of any movement of the truck B, without rupturing the connection of our safety appliance with the train pipe G.

The operation of our safety appliance is substantially as follows: In case of derailment of the car, one or both of the main levers 2, contact the upper surfaces of the rails D, and thus force said main lever or levers upward where they are locked in raised position by the spring-actuated pawls 6, engaging the ratchet-teeth 5. In the upward movement of the main levers they contact the valve stems 37, of the associated self-closing valves 27, thus opening the same and allowing the air from the train pipe G, to exhaust through the hose connection 34, pipe 31, and the exhaust ports 29 of the self-closing valves 27, resulting in setting of the brakes. Normally the same air pressure exists in pipe 31, and hose 34, as in the train pipe G, and under such conditions valve 36, is closed, but the instant the pressure is lowered in pipe 31, due to the opening of either of the valves 27, the pressure in the train pipe unseats the valve plug 38, letting the air escape from said train pipe and resulting in automatic setting of the brakes. The operation of the main levers 2, under the foregoing conditions, is independent of the levers 18. In case no derailment occurs, but one or both of the brake beams 21 drop sufficiently (by reason of defective hangers or other cause) to actuate either of the levers 18, said levers raise their associated main lever 2, and cause them to open their respective valves 27, thus resulting in setting the brakes. When levers 2, are forced upwardly they are locked in raised position by the pawls 6, engaging the ratchet-teeth 5, until said pawls are manually withdrawn.

Should any of the parts become broken, or out of order, air to valves 27, may be cut off by closing the cut-out cock 35, and thus prevent waste of air from the train pipe G.

From the foregoing description, it is apparent that we have produced a safety appliance which is comparatively simple in construction, and reliable and efficient in operation, and while we have shown the preferred form of our invention, we reserve the right to make such changes in the form, arrangement and proportion of parts as properly fall within the spirit and scope of the claims.

Having thus described our invention, what we claim and desire to secure by Letters Patent is:

1. In combination with the air brake system of a car, a normally closed valve communicating with said system and adapted when opened to exhaust air from the system to effect setting the brakes thereof, a lever adapted, in case of derailment of the car, to contact a rail of the car track and open said valve, and means for locking said lever in position to hold the valve open.

2. In combination with the air brake system of a car, a normally closed valve communicating with said system and adapted when opened to exhaust air from the system to effect setting the brakes thereof, a lever adapted, in case of derailment of the car, to contact a rail of the car track and open said valve, teeth on said lever, and means coacting with said teeth for locking the lever in position to hold the valve open.

3. In combination with the air brake system of a car, a normally closed valve communicating with said system and adapted when opened to exhaust air from the system to effect setting the brakes thereof, a lever adapted, in case of derailment of the car, to contact a rail of the car track and open said valve, teeth on said lever, and spring-actuated pawls coacting with said teeth for locking the lever in position to hold the valve open.

4. In combination with the air brake system of a car, a housing secured to the underside of said car, a normally closed valve carried by said housing and communicating with said system, adapted when opened to exhaust air from the system to effect setting the brakes thereof, a lever operably mounted in said housing, adapted, in case of derailment of the car, to contact a rail of the car track and open said valve, means on the housing and the lever to limit the movement of the latter, a spring to normally hold the lever out of engagement with the valve, and means coacting with the lever for locking the same in position to hold the valve open.

5. In combination with the air brake system of a car, a normally closed valve communicating with said system and adapted

when opened to exhaust air from said system to effect setting the brakes thereof, a main lever adapted, in case of derailment of the car, to contact a rail of the car track and open said valve, and oppositely-disposed levers adapted to be actuated by breakage of the brake system and cause the main lever to open the valve.

6. In combination with the air brake system of a car, a normally closed valve communicating with said system and adapted when opened to exhaust air from said sys-

tem to effect setting the brakes thereof, a main lever to open said valve, and a laterally-extending lever adapted to be actuated by breakage of the brake system and cause the main lever to open the valve.

In testimony whereof we affix our signatures, in the presence of two witnesses.

CARL H. SCHUMAKER.

JOHN W. HULME.

Witnesses:

F. G. FISCHER,

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."