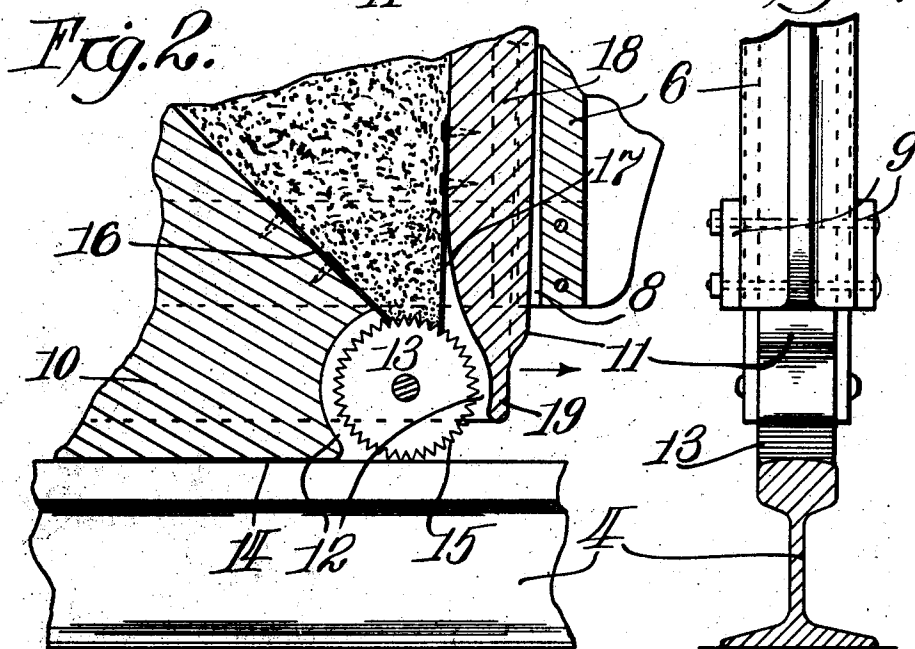
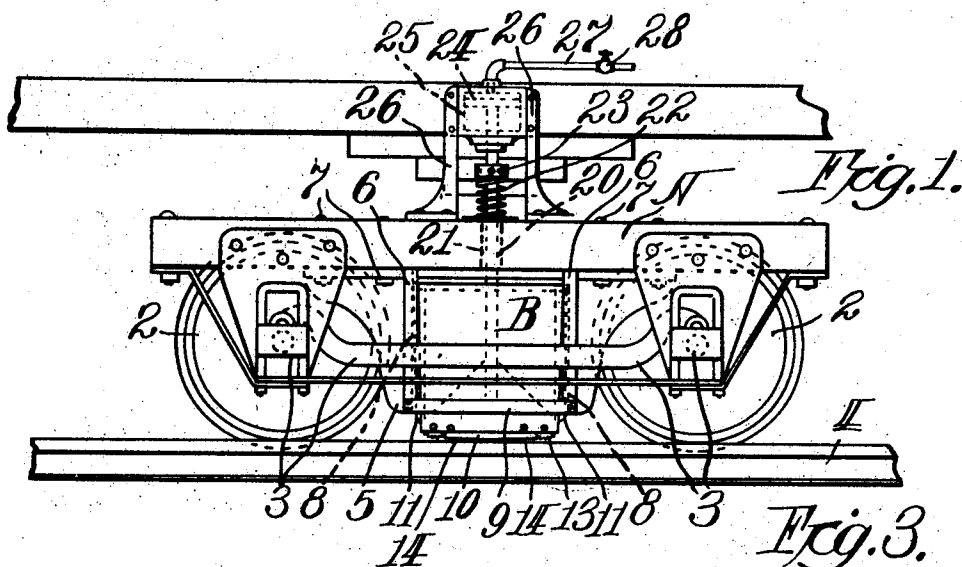


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EMERGENCY BRAKE.  
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Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## EMERGENCY-BRAKE.

1,047,909.

Specification of Letters Patent.

Patented Dec. 17, 1912.

Application filed August 19, 1912. Serial No. 715,782.

*To all whom it may concern:*

Be it known that I, GUNDER SORENSEN, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented a new and useful Improvement in Emergency-Brakes, of which the following is a specification.

This invention relates to brake mechanism and more particularly to that class in which the brake shoe is applied to the tread of a railway rail.

The primary object of this invention is to provide an efficient and effective emergency brake which will automatically sand the surface of the track below the brake shoe for the purpose of increasing friction between the impinging brake surfaces.

In the accompanying drawing forming part of this specification, Figure 1 is a side elevation of my invention; Fig. 2 is a detail partly in section of the frame and a portion of a railway rail and Fig. 3 is an end view of the structure illustrated in Fig. 2.

Referring to the drawings A indicates a car truck which may be of any ordinary form having wheels 2 and truck frame 3 in which said wheels are journaled it being understood that the frame and wheels are reproduced on each side of the truck in the ordinary manner.

4 indicates the railway rail at one side of a road bed on which the wheels 2 are adapted to travel. Secured to the frame between the wheels 2 is a yoke 5 having vertical guides 6 spaced apart resembling brackets which are secured to the frame by bolts 7. These brackets have vertical and parallel channels 8 which receive a vertically reciprocable brake element B working freely through collar 9 at the lower end of the yoke. The collar 9 is integral with the guides 6 and assists the guides in limiting lateral movement of the element B. The brake element is in the form of a hopper like receptacle open at its upper end and provided with a wear shoe 10 at its lower end which is adapted to impinge against the surface of the rail 4 and brake the vehicle when the brake element is set. The brake element is provided with ribs 11 which are adapted to slide loosely in the channels 8 of the yoke thus acting in cooperation with the guides to cause the brake element to move vertically in the yoke. In the brake element above the shoe 10 a floor is provided converging upwardly from two

opposite sides of the receptacle and at each lower end portion of said floor an orifice 12 is formed in the shoe in which a feed wheel 13 for sand is journaled freely.

The sides of the brake element sliding in the guides 6 converge toward each other downwardly and the guides 11 converge correspondingly, leaving the brake element free to tilt in synchronism with the forward or backward movement of the vehicle when its shoe is pressed downwardly against the rail. The lower portion of the shoe has contact surfaces 14 with the rail inclined downwardly from the two opposite sides of the shoe, the incline being very slight but sufficient to cause the brake element to tilt, with its forward braking surface as regards the direction of travel of the vehicle, bearing flat against the rail and the contiguous contact surface raised out of contact with the rail. The position of the feed wheels 13 is such as to cause the periphery of the wheel at the end of the contact surface 14 bearing upon the tread of the rail to roll upon the rail while the other wheel is raised out of rolling contact. The feed wheel bearing upon the tread of the rail cooperates with the rail to feed sand from the hopper in the brake element down upon the tread of the rail in front of the shoe. Each feed wheel has its periphery toothed at 15 and is adapted to revolve in the lower portion of the hopper in position to feed sand by its teeth down on to the rail as the wheel revolves.

A spring dog 16 mounted upon the floor of the receptacle or hopper has its free end sweeping freely over the teeth of the wheel when the wheel revolves forwardly but serves to stop the wheel from turning back. Another spring 17 mounted upon a side of the receptacle has its free end sweeping over the teeth of the feed wheel for the purpose of normally closing the passage between the wheel and hopper and limiting the amount of sand fed to the interstices of the teeth. The walls 18 of the receptacle depend sufficiently at 19 in front of the wheels to act as guards in directing the sand down upon the rail and prevent any obstruction such as small stones coming into contact with and breaking the feed wheels.

The brake element is reciprocated up and down by a shaft 20 passing vertically and freely through an enlarged opening 21 in the frame of the truck and connected to the

floor of the hopper above the shoe. The upper portion of this shaft carries a spring 22 impinging against the surface of the truck frame and against a collar 23 carried by the shaft. This spring tends to and does normally raise the brake element into superior position and out of contact with the rail and closes the upper end of the hopper against the lower surface of the truck frame. The upper end of the shaft carries a piston 24 working in the cylinder 25 which is carried by brackets 26 on the frame of the truck. This cylinder may be connected with a source of air pressure or fluid motive power (not shown) by means of the pipe 27 controlled by the valve 28. When the pressure is turned on through the pipe 28 by the valve, the piston 24 is forced down carrying the brake element with its shoe into contact with the tread of the rail, thus braking the truck directly upon the rail.

It is obvious that any suitable operating mechanism may be employed for actuating the brake shoe, and I do not confine myself to the use of air or fluid pressure means for this purpose. By pressing the brake element down against the tension of the spring 22 by hand or by the use of a hand implement the hopper may be opened and filled with sand in readiness for use.

In accordance with the patent statutes I have described the principles of operation of my invention together with the apparatus which I now consider to represent the best embodiment thereof but I desire to have it understood that the construction shown is only illustrative and that the invention can be carried out by other means and applied to uses other than those above set forth within the scope of the following claims.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:—

1. A brake adapted to frictionally engage the tread of a rail, comprising, in combination, a car truck having a support forming a vertical guide, a brake shoe adapted to slide in said guide and frictionally engage the surface of a rail, and a sanding device carried by said shoe having a feed wheel

operable through peripheral contact with said rail when said shoe is lowered and adapted to precipitate sand in front of said shoe on said rail.

2. In a brake for railway cars, a vehicle frame, a brake shoe carried above the tread surface of a rail of a road bed, a guide frame on said vehicle frame in which said shoe is adapted to move vertically and having limited longitudinal tilting movement as regards said rail, means for setting said shoe into frictional contact with the surface of said rail, said shoe having its lower surface slanting longitudinally down from both of its ends and carrying a hopper having an orifice at each end of said shoe adapted to conduct sand down upon the tread of the rail, and feeding means placed in each orifice and operable to feed sand by contact with said tread through the tilting action of said shoe.

3. A brake adapted to frictionally engage the tread of a rail, comprising, in combination, a vehicle frame having a downwardly projecting guide, a brake shoe having a double rail engaging surface slanting downwardly from both of its ends and an orifice at each end of said shoe communicating with said hopper, a feed wheel placed in each orifice having a toothed periphery, a spring sweeping over the teeth of said wheel and adapted to limit the amount of material fed by said wheel from said hopper, said shoe being loosely mounted in its guide to tilt forward or back according to the direction in which said vehicle is moving, whereby one of the rail engaging surfaces of said shoe and its corresponding feed device are adapted to engage the tread of the rail and to feed sand from said hopper in front of said shoe, while the remaining rail engaging surface of said shoe and its feed device are simultaneously tilted up out of co-action with the tread of said rail.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

GUNDER SORENSEN.

Witnesses:

H. L. FISCHER,  
G. H. DEEBACH.