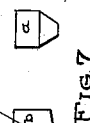
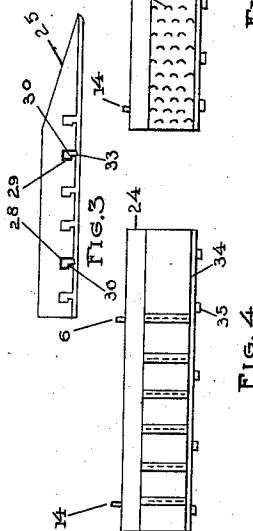
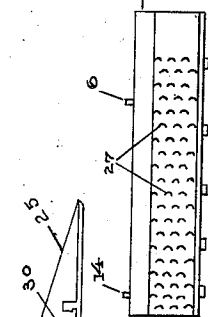
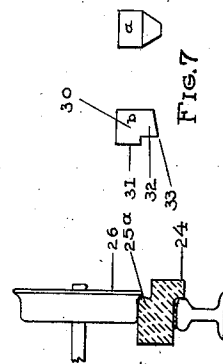
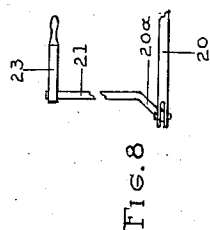
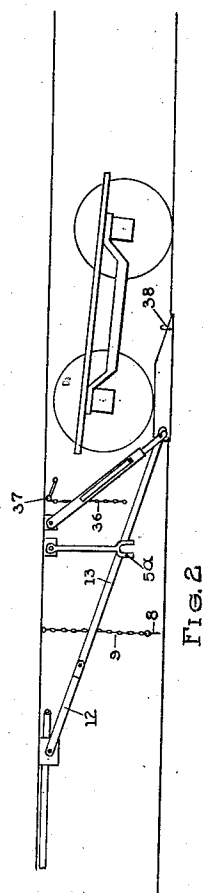
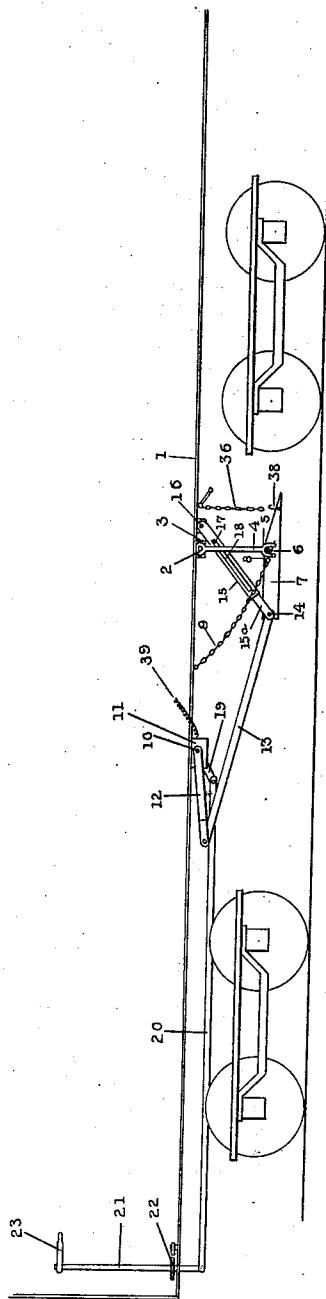


1,019,146.

Patented Mar. 5, 1912.



WITNESSES
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UNITED STATES PATENT OFFICE.

MILON O. GODDING, OF PORTLAND, OREGON.

EMERGENCY-BRAKE.

1,019,146.

Specification of Letters Patent.

Patented Mar. 5, 1912.

Application filed May 20, 1911. Serial No. 628,451.

To all whom it may concern:

Be it known that I, MILON O. GODDING, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Emergency-Brakes, of which the following is a specification.

This invention relates to improvements in emergency brakes, and has for its object to provide an appliance which may be attached to railway cars, and especially to street cars, which may be quickly set into operation for suddenly stopping the car.

A further object is to construct a shoe which may be quickly placed upon the rails in front of the wheels of the moving car, and which is provided with means for engaging with the rail, whereby the car is suddenly stopped.

I accomplish these objects by the mechanism illustrated in the accompanying drawing, in which—

Figure 1 is a side view of the device in normal position on the car. Fig. 2 shows the invention as applied. Fig. 3 is a side view of a brake shoe. Fig. 4 is a bottom view of same. Fig. 5 is a bottom view of a modified form of shoe. Fig. 6 is a section of a shoe upon a rail with car wheel resting thereon. Fig. 7, *a* and *b*, shows front and side views of a bit. Fig. 8 shows the crank mechanism for operating the brake.

Similar characters indicate similar parts in each of the views.

In the drawing, 1 represents the frame work of a street car, or other car, on which my improved brake is applied. At a convenient point on the frame work, in front of the rear truck, is mounted the transverse shaft 2, in suitable bearings 3, to each end of which is pivoted a swinging bar 4, each having a forked lower end 5, adapted to receive the shank 6, of the shoe 7. The members 5, of the bar 4, are each provided with an aperture adapted to receive the pin 8, upon which is supported the rear end of the shoe, when in normal, or inactive position. The apertures in the arms 5 are inclined from the horizontal, and provided at the lower side with one or more rollers

5^a to facilitate the removal of pin 8. To the pin 8 is attached the chain 9, which is secured to the frame 1, at a convenient distance in front of the shaft 2, so that when the bar 4 is vibrated on its shaft in a direction away from the chain, the pin, which is arranged to stand in line therewith, will be withdrawn from its aperture, permitting the shoe to drop, for a purpose to be later described. Forward of the shaft 2, is secured in a similar manner, another shaft 10, in bearings 11. Upon each end of this shaft is rigidly fixed a crank 12, which is pivotally secured to link 13, which in turn is pivotally secured upon a shank 14, on the front end of the shoe 7. Upon each of said shanks 14, is pivotally mounted the telescoping link 15, pivoted at its upper end to the shaft 16, mounted to the rear of shaft 2. The lower member 15^a has secured therein a transverse pin 17, adapted to slide in the slot 18 of the outer member of the link 15, whereby the extension of the link is limited.

At the median point of the shaft 10 is fixed the crank arm 19, to which is pivotally secured the connecting rod 20, the other end of which extends to the front of the car, and is there pivoted to the crank 20^a, of the vertical shaft 21, which rises through the frame work, to the motorman's stand. Upon this shaft may be fixed any suitable locking device, such as the pawl and ratchet 22, and at its upper end is fixed the operating lever 23.

The shoe 7 is formed of any suitable material and, as shown in Fig. 6, the lower face is adapted to fit upon the tread of the rail, the inner edge being provided with a depending flange 24. The rear end is beveled at 25, to permit the wheel to easily roll upon it; and the upper face is reduced at the inner side, in line with the flange 24, so that when the latter rests against the head of the rail, the shoulder 25^a will be in position to receive the wheel 26. In the case of light traffic the shoes will be provided on the lower surface with a plurality of prominences or teeth 27, which under the weight of the car, will engage the rail and quickly bring the car to a stop. In cases, however, where the weight would be sufficient to destroy the rasp teeth, and thus render the

brake less effective, I have provided a plurality of plows or chisel pointed bits 30, which will be caused to cut into the rail, and which are strong enough to withstand the strain applied upon them.

From the outer face of the shoe, a series of transverse grooves 28 are cut to a point even with the flange 24, each being made to open at the lower surface. From the bottom of each groove, a recess 29 extends forwardly. Within each of said grooves are placed side by side a series of the bits 30, each having the shoulder 31 adapted to fit the recess 29, and the reduced portion 32, filling the groove to the surface, with the cutting edges 33 projecting below the surface, the rear portion being beveled, so as to leave the edge free to cut into the rail. These grooves are arranged at frequent intervals, which may be varied according to the service required of the brake. The bits are held from lateral displacement by the plate 34, which is secured on the side of the shoe by bolts 35, or in any convenient manner.

In operation, the ratchet 22 is released and the lever 23 swung through a half revolution. This movement, by means of crank 20^a drives the rod 20 to the rear, and in turn, also the links 12 and 13, thereby forcing the shoe to the rear, in consequence of which the pin 8 is withdrawn from the bar 4, permitting the shoes to fall upon the rails.

As stated above, each shoe has pivotally secured at its front end the telescoping bar 15, which is pivoted to the frame 1, so as to vibrate lengthwise of the car, but which is held against lateral vibration, by its mounting in the frame work. These extensible links permit the free downward movement of the shoes, and act as a guide to insure their seating upon the rails.

It is obvious that the shoe may be made long enough to receive both wheels of the truck, instead of only one, at each side, as here shown. Other means of operation also, may be employed, such as the air jam, or other suitable appliance.

When the car shall have been brought to a standstill, by the brake, as above described, it will be backed up a short distance to free the shoes from the wheels. The chain 36, which is secured upon the crank shaft 37 on the frame 1, may be engaged in the eye 38, in the front end of the shoe, and by winding upon the shaft, the shoe may be raised so as to replace the arms 5 of the bar 4, upon the shank 6, when the insertion of pin 8 in the apertures of said arms retains the shoe there, the chain 36 being disengaged and secured upon its supporting shaft. A return of lever 23 to its original position elevates the front end of the shoe and restores the parts to their normal position.

In cold countries where snow and ice would collect on the shoes, an electric cur-

rent may be provided by the wire 39 from the heater of the car, whereby the shoes may be kept from freezing, and therefore, always ready for useful service.

It must be understood that I do not limit myself to the precise construction or arrangement of mechanical devices herein shown, as they may be varied and modified according to the skill and judgment of a mechanic, without altering any essential operation, departing from any vital principle or sacrificing the advantages of my invention.

What I claim and desire to secure by Letters Patent, is—

1. In a safety appliance for railway cars, in combination, a crank shaft mounted transversely on the car, in front of the truck, a brake shoe suspended at each side of the car, a link connecting each shoe with a crank of said shaft, means for operating said shaft whereby the shoes will be projected beneath the car wheels, and a bar pivotally mounted at each side of the car frame and slidably connected to its corresponding shoe for seating it upon the rail of the car track.

2. In a safety appliance for railway cars, in combination, a crank shaft mounted transversely on the car, in front of the truck,—a brake shoe suspended at each side of the car,—a link connecting each shoe with a crank of said shaft,—means for operating said shaft whereby the shoes will be projected beneath the car wheels,—and a telescoping bar mounted to vibrate longitudinally, for seating the shoes upon the rails of the track.

3. In a safety appliance for railway cars, in combination, a crank shaft mounted transversely on the car in front of the truck,—a depending bar at each side of the car frame,—a brake shoe detachably secured to each of said bars,—a link connecting each shoe with a crank of said shaft,—means for operating said shaft for forcing the brake shoes to the rear,—and means for detaching them from said bars.

4. A safety appliance for railways comprising a shoe having parallel upper and lower surfaces adapted to be seated upon the tread of the rail, and having a depending flange at the inner edge thereof, and a shoulder along the upper face in line with the inner face of said flange, said shoes having an inclined front end whereby the wheels of the car may move upon them, and means for sustaining the shoes under said wheels.

5. A safety appliance for railways comprising a shoe adapted to be seated upon the tread of the rail,—detachable bits secured in the face of the shoe for engaging the rail,—and means at the side thereof for preventing outward displacement, the upper surface of the shoe being adapted to receive the tread of the car wheel.

6. A safety appliance for railways comprising a brake shoe having a plurality of transverse grooves in its lower face,—a plurality of chisel pointed bits secured in each
5 of said grooves,—means for retaining said bits in position,—and means for retaining the shoe upon the rail.

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

MILON O. GODDING.

Witnesses:

W. P. HIBBARD,
EMILY W. JANZEN.

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