

F. INGERSOLL & W. W. MACFARREN.

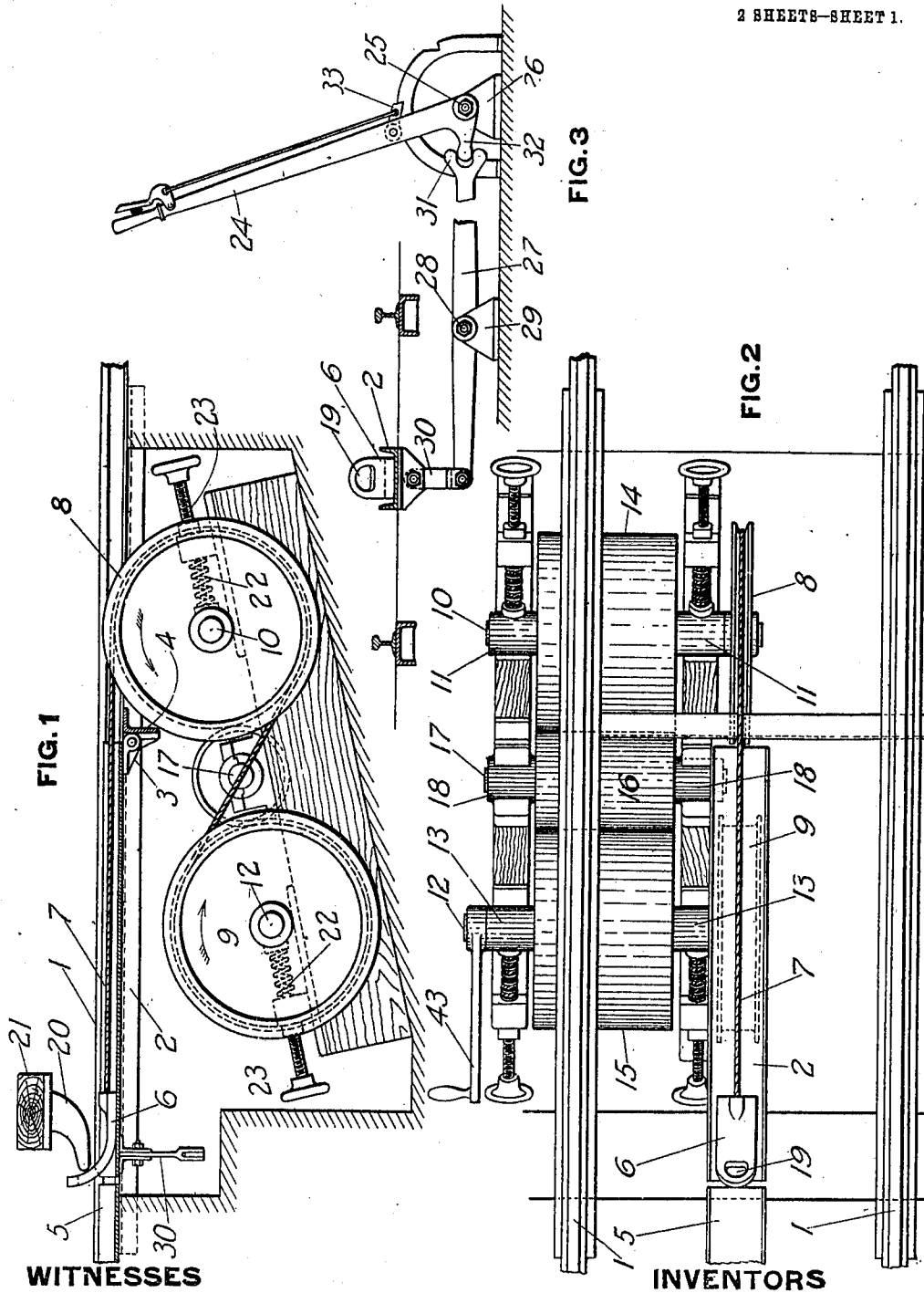
TRACK BRAKE.

APPLICATION FILED APR. 4, 1910.

980,272.

Patented Jan. 3, 1911

2 SHEETS-SHEET 1.



WITNESSES  
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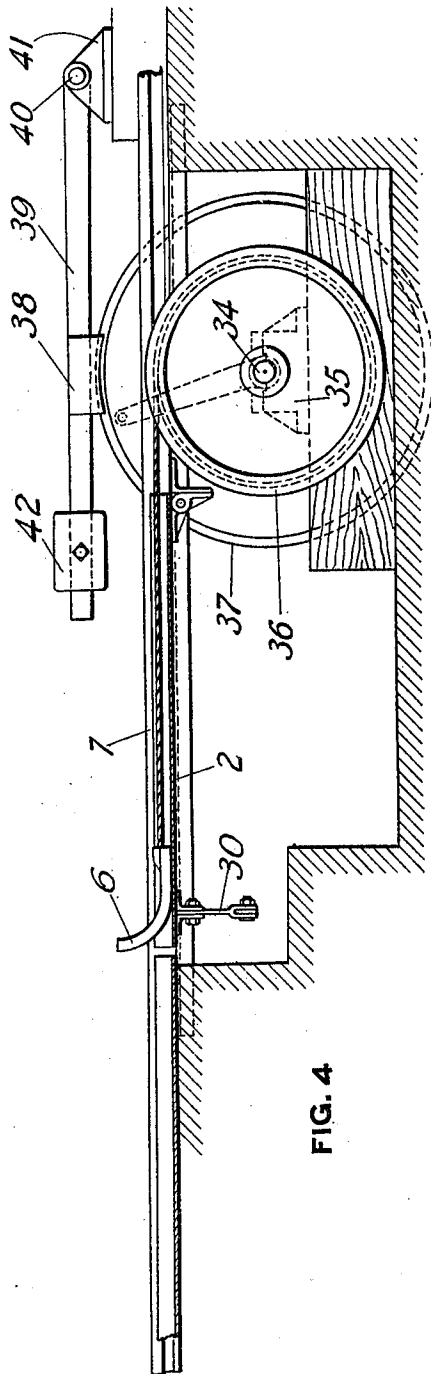


FIG. 4

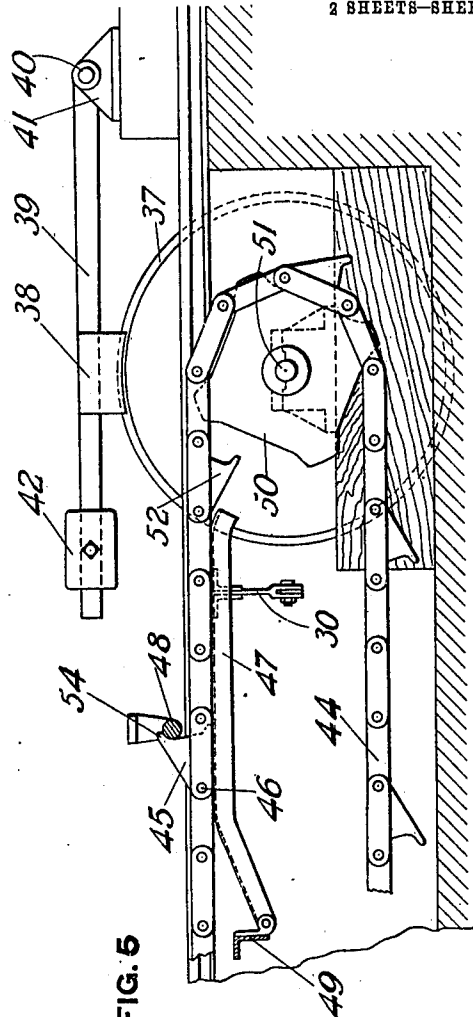
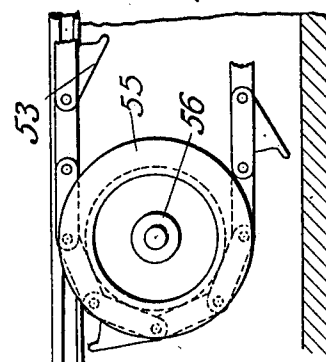


FIG. 5



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# UNITED STATES PATENT OFFICE.

FREDERICK INGERSOLL AND WALTER W. MACFARREN, OF PITTSBURG, PENNSYLVANIA.

## TRACK-BRAKE.

980,272.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Application filed April 4, 1910. Serial No. 553,453.

*To all whom it may concern:*

Be it known that we, FREDERICK INGERSOLL and WALTER W. MACFARREN, citizens of the United States, residing at Pittsburg, in the county of Allegheny and the State of Pennsylvania, have invented certain new and useful Improvements in Track-Brakes, of which the following is a specification.

Our improvement relates to mechanism for destroying the momentum of a moving car and more particularly to a class of cars which are not fitted with individual brakes.

The objects of our invention are, to provide a simple and inexpensive device which is certain in action, and which will bring a car moving at high speed to a gradual stop without shock, in a comparatively short distance.

Our invention comprises, generally stated, a stationary device adapted to be engaged by the car, said device being connected to a flexible member upon which a retarding effect is obtained, preferably by frictional contact of a moving part attached to said flexible member.

We have illustrated and described three different forms of mechanism for carrying out our invention.

In the drawings, Figure 1 is a side elevation partly in section of the first of said forms thereof. Fig. 2 is a plan view of the same. Fig. 3 is a cross section through the track, showing the means for bringing the brake into action. The mechanism illustrated in Fig. 3 also applies to the second and third forms of our invention. Fig. 4 is a sectional side elevation of the second form of our improved brake mechanism, and Fig. 5 is a sectional side elevation of the third form thereof.

Referring to Figs. 1, 2 and 3, the track rails 1, may be of any suitable construction. Between the track rails 1, there is mounted a swinging guide 2, one end of which is supported by the hinge 3, fastened to the angle 4. A stationary guide 5 extends for any convenient distance from the free end of the swinging guide 2. The swinging guide 2 supports a catch 6, which is fastened to the wire rope 7. The wire rope 7 passes from the catch 6 around the sheave 8, and from the sheave 8 to the rope drum 9, around which drum is wrapped a number of times, and to which, the end of the wire rope 7 is securely fastened. The sheave 8 is mounted

on a shaft 10, supported in the spring bearings 11. The rope drum 9 is mounted on a shaft 12, supported in the spring bearings 13. The shaft 10 carries a friction drum 14 and the shaft 12 carries a second friction drum 15. Between the drums 14 and 15 there is mounted a third friction drum 16 upon a shaft 17, supported in the rigid bearings 18. The catch 6 is provided with an eye 19. A hook 20 is carried by a part of the car 21 in such a position as to engage the eye 19, if the swinging guide 2 is in its upper position, as shown in Fig. 1. When the hook 20, carried by the moving car, engages the catch 6, the rope 7 will be quickly stretched and the drums 14 and 15 will be revolved in the direction shown by the arrows. It will be observed that the direction of rotation of the drums 14 and 15 is opposed to each other and that therefore the drum 16 will either not revolve at all or will revolve at some undetermined speed, depending on the degree of friction between it and one of the drums 14 and 15. The three drums, 14, 15 and 16, being held in close frictional contact by the pressure of the springs 22, upon the spring boxes 11 and 13, the rope 7 will have to overcome the frictional resistance thus offered and will therefore exercise a braking effect upon the car. It may be advisable to give the rope 7 more than one wrap upon the sheave 8. By adjusting the screws 23, any desired amount of braking effect can be obtained. When it is desired to let the car run over the brake without changing its speed, the movement of the lever 24 lowers the swinging guide 2 so that the hook 20 will not engage the catch 6 in the following manner:—The lever 24 is fulcrumed upon the pin 25, supported by the bracket 26. A second lever 27 is fulcrumed upon the pin 28, supported by the bracket 29. One end of the lever 27 is connected by the link 30 with the movable end of the swinging guide 2, to raise or lower it. The other end of the lever 27 is forked as shown at 31, and engages a projection 32 upon the lever 24. The latch 33 is provided to hold the lever 24 in the position set. By the above described means, the brake can be made to engage or not to engage the cars as desired.

In Fig. 4, we have shown a modification of our invention, employing a catch 6 attached to a rope 7, as before described. A

swinging guide 2 is actuated by a link 30, which may be operated by the same means as shown in Fig. 3. A shaft 34 supported in rigid bearings 35, carries the rope drum 36, upon which any desired length of the rope 7 may be wound, the end being fastened thereto. In addition to the rope drum 36, the shaft 34 carries a brake wheel 37, which is frictionally engaged by the brake block 38, carried by the swinging lever 39. The swinging lever 39 is pivoted by the pin 40 to the bracket 41, and a weight 42 is adjustably mounted to vary the retarding effect. The crank 43, shown in Fig. 2, is used to reset the catch 6, after a car has been stopped by the brake. A similar arrangement may be used to reset the catch 6 in the form of our invention shown in Fig. 4.

In Fig. 5, we have shown a form of brake mechanism which acts continuously without resetting. This consists of an endless chain 44 to which are pivotally secured a number of dogs 45. The dogs 45 are pivoted to the chain pins 46, and upon striking the swinging guide 47, assume the position shown in 45, in which position they can be engaged by an attachment 48, carried by the car. The swinging guide 47 is hinged to the angle 49, and operated by the link 30, as previously described. The straight portion of the swinging guide 47 need only be long enough to insure that at least one of the dogs 45 shall be in engaging position when the swinging guide 47 is in its upper position, as shown in Fig. 5. The chain 44 operates over the sprocket 50, mounted upon the shaft 51, and the idler wheel 55, mounted upon the shaft 56. The brake wheel 37, brake block 38, lever 39, pin 40, bracket 41 and weight 42 may be in duplicate of those shown in Fig. 4.

With the device shown in Fig. 5, it will be obvious that when the swinging guide 47 is in its upper position, that a car passing over the brake will be engaged and retarded and that the cars may come in at close intervals, one behind the other, as the device does not have to be re-set. When the swinging guide 47 is lowered, the dogs 45 drop to the position shown at 52 and 53, and the car will not be engaged. The dogs 45 are provided with a hook 54, which rides on the car attachment 48, and supports the dog as long as the car is being retarded.

A brake band or other form of retarding device may be substituted for the brake block 38, or a constantly engaged friction

clutch may be substituted for the brake wheel 37, and the brake block 38.

It is obvious that many changes in the arrangement and details of construction, as shown by us, may be made by those skilled in the art, without departing from the spirit of our invention, as covered by the following claims:—

1. A track brake acting automatically to retard a moving car, and comprising a car engaging member, a guide therefor, a flexible element connected to said car engaging member, a retarding element connected to said flexible element, and means for positioning said guide to bring said car engaging element into or out of position to engage the car.

2. In an apparatus of the class described, a track, a car moving thereon, a projection on said car, a catch arranged to engage said projection, a flexible element connected to said catch, a brake wheel connected to said flexible element, and means for frictionally retarding said wheel.

3. In apparatus of the class described, a track, an endless flexible element operating contiguous thereto, dogs on said flexible element, arranged to engage a moving car, means for retarding said flexible element, and means for positioning said dogs so as to avoid their engagement with the car.

4. In apparatus of the class described, a track, an endless chain operating contiguous thereto, pivoted dogs on said chain, said dogs being arranged to assume a higher position, in which they will engage a moving car, and a lower position in which they will clear the same, and means for raising and lowering said dogs for the purpose desired.

5. In apparatus of the class described, a track, an endless chain operating contiguous thereto, dogs pivoted to said chain, a guide under said chain, means for raising and lowering said guide, to raise or lower said dogs, and means for retarding said chain.

6. In apparatus of the class described, a track, an endless chain operating contiguous thereto, dogs on said chain, arranged to engage a moving car, a brake drum operatively connected to said chain, and a brake block frictionally engaging said drum to retard the same.

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