Nov. 26, 1929. F. O. CHRISTEL 1,737,357

BRAKE

Filed April 21, 1928

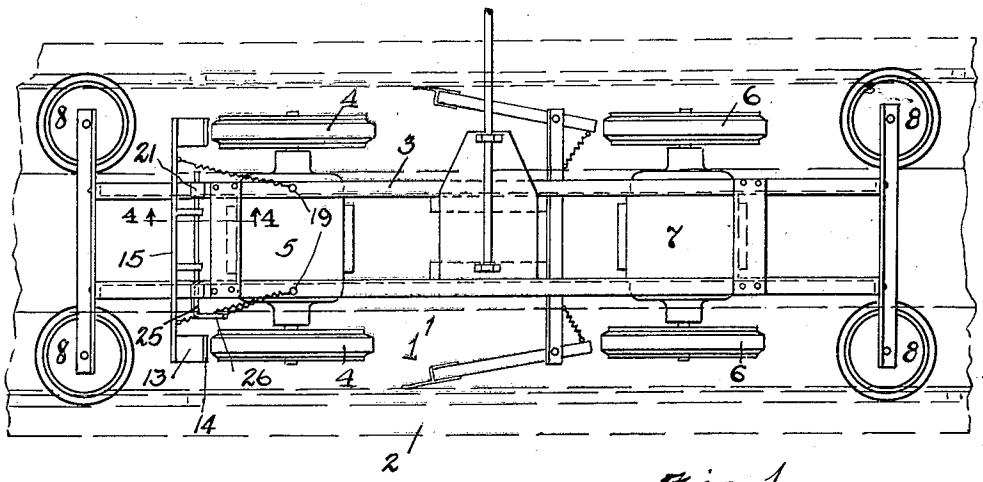


Fig. 1

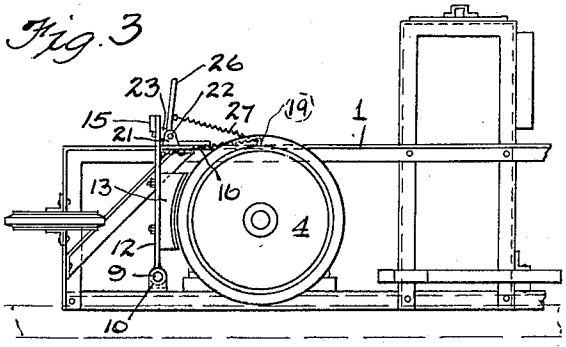


Fig. 3

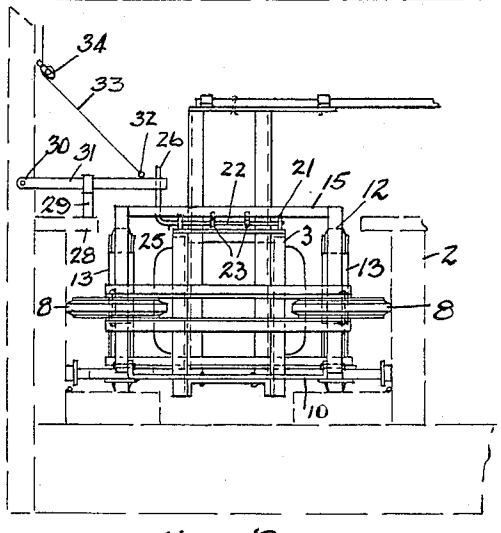


Fig. 2.

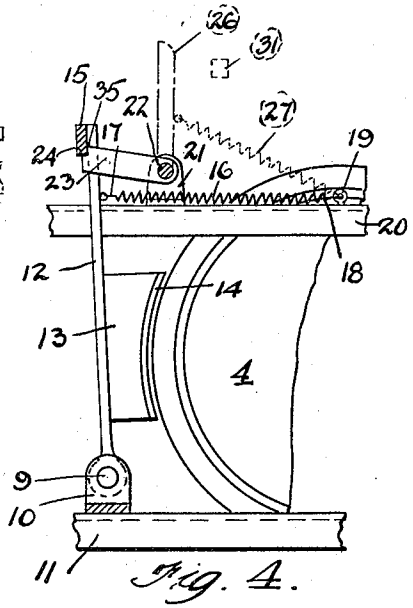


Fig. 4.

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UNITED STATES PATENT OFFICE

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BRAKE

Application filed April 21, 1928. Serial No. 271,737.

The present invention relates, as indicated, to a brake, and more specifically to an automatically operated brake for application to a car of the general type disclosed in my co-pending application Serial No. 214,084, filed August 19, 1927, for a "Running decoy." It is the primary object of this invention to provide a brake of the character described which will be efficient in operation, certain of actuation, inexpensive to manufacture and install, relatively free from disorders, and simple to repair.

To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims; the annexed drawings and the following description setting forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings:—

Fig. 1 is a plan view of a car of the type disclosed in my above identified co-pending application having applied thereto a brake of the character contemplated by the present invention; Fig. 2 is an end view of said car; Fig. 3 is a side elevation of a fragment thereof; and Fig. 4 is a vertical section taken substantially upon the line 4—4 of Fig. 1 and looking in the direction of the arrows.

Referring more particularly to the drawings, the reference numeral 1 indicates generally a car of the character described running in a semi-enclosing track 2 and comprising a frame 3 provided with a pair of wheels 4 driven by a motor 5, a second pair of wheels 6 driven by a second motor 7, and a plurality of wheels 8 mounted on vertical axles and bearing against the side walls of the track 2 to guide said car.

According to the present invention pivots 9 are mounted in upstanding ears 10 upon a member extending transversely of said car and secured to the lowermost frame members 11. Each of said pivots 9 carries a brake lever 12 in alignment with one of said wheels 4. Each of said levers 12 carries a shoe 13 adjacent to, and in the plane of, one of said wheels 4, each of said shoes 13 being provided with a wear plate or friction plate 14 on its face adjacent said wheel. The upper ends of the levers 12 are connected by a member 15 secured thereto, and extending transversely of said levers. A coil spring 16 has one end 17 secured to one of said levers 12 and its opposite end 18 secured to an eyebolt 19 upon the upper frame member 20. A similar spring 16 is secured to the other lever 12 and to a similar eyebolt 19 upon the other upper frame member 20. As a modification of the above described spring connection, each of said springs may have an end secured to said member 15 adjacent the ends thereof, as illustrated in Fig. 1.

Journaled in ears 21 projecting upwardly from said upper members 20 is a rock shaft 22 having secured thereto a pair of latch arms 23. Each of said arms is notched adjacent its outer end, as at 24, said notches being adapted to receive the member 15. At one end, the rock shaft 22 extends beyond the frame of said car, as at 25, and is bent upwardly as at 26 to form a trip arm. A coiled spring 27 has one end secured to said trip arm 26 and has its opposite end secured to any suitable point on the frame, such as one of the eyebolts 19.

Upon one side flange 28 of the track 2 there is mounted a bifurcated brace 29, and pivoted, as at 30, to the adjacent wall is a latch trip lever 31. An eyebolt 32 is carried by said lever 31 adjacent its free end, and a cord 33 may be secured to said eyebolt and threaded through a pulley 34 and led to any convenient point for operation. It is to be understood that the pivot point 30 for the lever 31 is so located that the lever 31 will fall between the furcations of the brace 29 when said lever is allowed to swing downwardly.

When the car 1 is about to be started upon a circuit of the track 2, the member 15 is pulled rearwardly against the force of the springs 16 until it overrides the point 35 on the latch arms 23. The spring 27 operating upon the trip arm 26 will throw the latch arms 23 upwardly to allow the member 15 to enter the notches 24. The operator may

then release the member 15 and the latch arms 23 will hold said member in the position illustrated in Fig. 4 in which the brake shoes 13 are held out of contact with the wheels 4. The cord 33 is drawn in to raise the trip lever 31, and the motors 5 and 7 are then energized to drive the car about the track. If the car is to make only one circuit of the track the arm 31 may be dropped as soon as the car has started. If, however, the car is to make more than one circuit the lever 31 must be held in its raised position until the car has passed the same on its last lap. Thereafter the cord 33 may be released to permit the lever 31 to drop into the position illustrated in Fig. 2. As the car reaches the finish line, the lever 31 is interposed in the path of the trip arm 26. The car is moving, at this time, toward the right, as seen in Figs. 1, 3 and 4, and it will be seen that when the trip arm 26 strikes the trip lever 31 said arm will be forced to the left, thus rotating the rock shaft 22 in a counterclockwise direction and releasing the engagement between the latch arms 23 and the member 15. Immediately, the springs 16 move the arms 12 toward the right, as viewed in Fig. 4, for instance, and pull the brake shoes 13 firmly into contact with the wheels 4 to stop the car.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

1. The combination with a self-propelled car adapted to run in a track and provided with a pair of wheels, of a brake comprising a lever pivotally mounted at its lower end on the frame of said car and carrying a brake shoe adjacent one of said wheels, means urging said shoe toward contact with said wheel, and latch means cooperative with said lever to hold said shoe out of contact with said wheel.

2. The combination with a self-propelled car adapted to run in a track and provided with a pair of wheels, of a brake comprising a lever pivotally mounted at its lower end on the frame of said car and carrying a brake shoe adjacent one of said wheels, means urging said shoe toward contact with said wheel, a member secured to said lever and extending transversely thereof, and means engageable with said member to counteract the tendency of said first means.

3. The combination with a self-propelled car adapted to run in a track and provided with a pair of wheels, of a brake comprising a lever pivotally mounted at its lower end on the frame of said car and carrying a brake shoe adjacent one of said wheels, means urging said shoe toward contact with said wheel, a member secured to said lever and extending transversely thereof, and a latch arm engageable with said member to counteract the tendency of said first means.

4. The combination with a self-propelled car adapted to run in a track and provided with a pair of wheels, of a brake comprising a lever pivotally mounted at its lower end on the frame of said car and carrying a brake shoe adjacent one of said wheels, a coiled spring secured at one end to said frame and at its opposite end to said lever at a point adjacent the upper end of the latter, said spring tending to move said shoe into contact with said wheel, a member secured to said lever adjacent the upper end of the latter and extending transversely thereof, and a latch arm engageable with said member to prevent movement of said shoe by said spring.

5. The combination with a self-propelled car adapted to run in a track and provided with a pair of wheels, of a brake comprising a lever pivotally mounted at its lower end on the frame of said car and carrying a brake shoe adjacent one of said wheels, a coiled spring secured at one end to said frame and at its opposite end to said lever at a point adjacent the upper end of the latter, said spring tending to move said shoe into contact with said wheel, a member secured to said lever adjacent the upper end of the latter and extending transversely thereof, a rock shaft carried by said frame adjacent said member and parallel thereto, a latch arm secured to said shaft and engageable with said member to prevent movement of said shoe by said spring, and resilient means tending to hold said latch arm in engagement with said member.

6. The combination with a self-propelled car adapted to run in a track and provided with a pair of wheels, of a brake comprising a lever pivotally mounted at its lower end on the frame of said car and carrying a brake shoe adjacent one of said wheels, a coiled spring secured at one end to said frame and at its opposite end to said lever at a point adjacent the upper end of the latter, said spring tending to move said shoe into contact with said wheel, a member secured to said lever adjacent the upper end of the latter and extending transversely thereof, a rock shaft carried by said frame adjacent said member and parallel thereto, a latch arm secured to said shaft and engageable with said member to prevent movement of said shoe by said spring, a trip arm secured to said rock shaft, and a spring cooperating with said trip arm and tending to hold said latch arm in engagement with said member.

7. The combination with a self-propelled car adapted to run in a track and provided with a pair of wheels, of a brake comprising a pair of pivots secured to the lowermost

members of the frame of said car, a pair of spaced, parallel levers mounted on said pivots in longitudinal alignment with said wheels, respectively, and projecting upwardly from said pivots, a shoe secured to each of said levers adjacent the respective wheels, a coiled spring having one end secured to each of said levers adacent the upper end thereof, each of said springs being secured at its opposite end to said frame, said springs tending to move said shoes into contact with said respective wheels, a transverse member connecting the upper ends of said levers, a rock shaft journaled in ears on the uppermost members of said frame, a latch member having its free end notched secured to said rock shaft said notch being adapted to receive said transverse member to hold said shoes out of contact with said respective wheels, said rock shaft extending beyond said car frame, a trip arm on the extending end of said rock shaft, and a coiled spring secured to said trip arm and to said frame to hold said latch arm resiliently in engagement with said transverse member.

8. The combination with a self-propelled car adapted to run in a track and provided with a pair of wheels, of a brake comprising a movable member, a shoe on said member resiliently urged to contact with one of said wheels, latch means cooperative with said member to hold said shoe out of contact with said wheel, and a trip lever mounted on said track and movable into and out of the path of said latch means.

9. The combination with a self-propelled car adapted to run in a track and provided with a pair of wheels, of a brake comprising a lever pivotally mounted at its lower end on the frame of said car and carrying a brake shoe adjacent one of said wheels, a coiled spring secured at one end to said frame and at its opposite end to said lever at a point adjacent the upper end of the latter, said spring tending to move said shoe into contact with said wheel, a member secured to said lever adjacent the upper end of the latter and extending transversely thereof, a rock shaft carried by said frame adjacent said member and parallel thereto, a latch arm secured to said shaft and engageable with said member to prevent movement of said shoe by said spring, a trip arm secured to said rock shaft, a spring cooperating with said trip arm and tending to hold said latch arm resiliently in engagement with said member, and a trip lever mounted on said track and movable into the path of said trip arm.

Signed by me, this 19th day of April, 1928.

FRANK O. CHRISTEL.