W. H. SAUVAGE.

HAND BRAKE.

APPLICATION FILED AUG. 7, 1919.

1,343,007. Patented June 8, 1920.

Fig. 1.

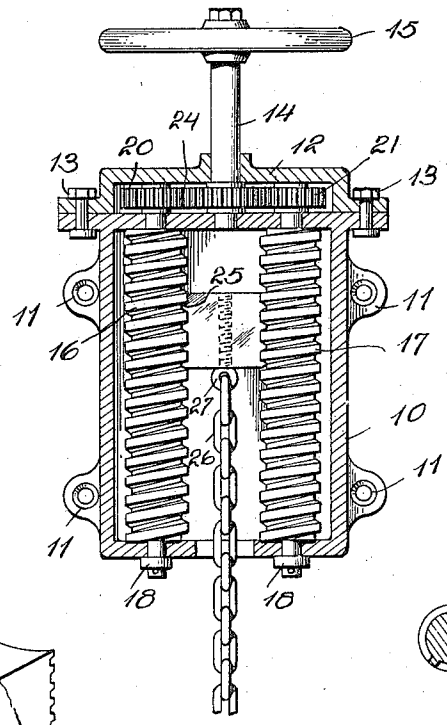


Fig. 2.

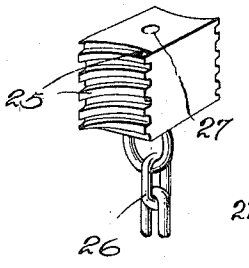


Fig. 3.

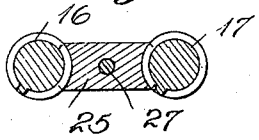


Fig. 4.

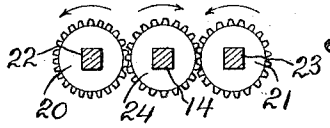
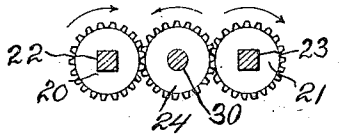


Fig. 5.



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UNITED STATES PATENT OFFICE.

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HAND-BRAKE.

1,343,007. Specification of Letters Patent. Patented June 8, 1920.

Application filed August 7, 1919. Serial No. 315,907.

To all whom it may concern:

Be it known that I, WILLIAM H. SAUVAGE, a citizen of the United States, residing at Flushing, Long Island, in the county of Queens and State of New York, have invented certain new and useful Improvements in Hand-Brakes, of which the following is a specification.

This invention relates to improvements in hand brakes and more particularly to brakes adapted for use on railway vehicles of all types.

One of the objects of the present invention is to provide a hand brake of simple and practical construction having few parts not likely to get out of order, thereby rendering the device reliable and efficient in operation.

A further object is to provide a high power, quick action hand brake of the worm type which may be easily and quickly applied and released.

A further object is to provide a hand brake having relatively few parts which may be inexpensively manufactured, assembled and installed in cars now in use without changing the operation or installation of the foundation brake rigging.

Other objects will be in part obvious from the annexed drawings and in part indicated in connection therewith by the following analysis of this invention.

This invention accordingly consists in the features of construction, combination of parts and in the unique relations of the members and in the relative proportioning and disposition thereof, all as more completely outlined herein.

To enable others skilled in the art so fully to comprehend the underlying features thereof that they may embody the same by the numerous modifications in structure and relation contemplated by this invention, drawings depicting a preferred form have been annexed as a part of this disclosure, and in such drawings, like characters of reference denote corresponding parts throughout all the views, in which—

Figure 1 is an elevational view partly in section showing such parts of the brake mechanism as are necessary to fully understand the invention.

Fig. 2 is a detail perspective view of one of the parts.

Fig. 3 is a detail sectional view.

Figs. 4 and 5 are detail plan views of a portion of the gearing.

Referring now to the drawings in detail, 10 denotes a casing of any desired type adapted to be secured by fastening means passing through perforated ears 11 to the end wall of the car, for example. This casing is preferably provided with a removable front cover secured in place in any desired manner, whereby the parts may be easily and quickly assembled. A separate member 12 is preferably secured to the top of the casing by means of bolts 13 in which the gearings shown in Figs. 4 and 5 is adapted to be mounted. An operating shaft 14 is provided with any suitable turning mechanism such as the hand wheel 15 for applying the brakes.

The internal mechanism comprises worms 16 and 17 at opposite sides of the casing mounted in suitable bearings 18 at their lower ends while their upper ends extend through the partition between the main casing 10 and top plate 12 where they are provided with gears 20 and 21 mounted upon squared or keyed portions 22 and 23 of the worm shafts 16 and 17 respectively. Intermediate these gears 20 and 21 is a gear 24 mounted on the squared portion of the shaft 14. It will thus be seen that as the hand wheel 15 is rotated these gears will also be rotated in the direction of the arrows to cause them to rotate the worms in the same relative direction.

Between the worms 16 and 17 is a block 25 shown in Fig. 3 provided with threaded portions adapted to coact with the worm. Thus as the worm rotates this block 25 will be moved relatively upwardly, thereby to exert a pull upon a chain 26 pivoted to the block at 27. The opposite end of this chain is connected in any desired manner to the foundation brake rigging beneath the car.

It will, of course, be understood that the hand wheel 15 and its shaft 14 may be directly connected with either the squared portion 22 or 23 as shown, for example, in Fig. 5, in which case the central gear 24, Fig. 5, is mounted on a round stud 30 to rotate freely and merely act as an idler between the gears 20 and 21.

The operation of this device is substantially as follows: On turning the hand wheel 15 motion is transmitted to the gear to which it is connected, that is, the gear 24,

Fig. 1, which in turn transmits motion to the gears 20 and 21 to rotate the worms 16 and 17, thereby to cause the block 25 to move upwardly between the walls of the casing 10. The casing is preferably rectangular in shape and is provided with suitable guides if necessary to prevent a relative turning of the block. In this manner the desired pull of high power is transmitted through the chain 26 to the brake rigging.

From the above it will be seen that the present invention provides a simple and practical hand brake mechanism having relatively few parts which may be inexpensively manufactured and assembled, and are unlikely to get out of order. The brake is found to be most efficient in use and operation. The invention is designed to overcome objections in brake rigging now in general use and is believed to accomplish, among others, all objects and advantages herein set forth.

I realize that considerable variation is possible in the details of construction and arrangement of parts without departing from the spirit of my invention, and I therefore do not intend to limit myself to the specific form shown and described.

What I claim is:

1. In a hand brake mechanism, in combination, a casing, a plurality of worms in said casing, a block mounted between said worms having threaded engagement therewith, means connecting said block with the foundation brake rigging, and gears associated with said worms, including a gear associated with each worm, and a gear therebetween, and a hand wheel connected with the central one of said gears.

2. In a hand brake mechanism, in combination, a casing, a pair of oppositely and vertically disposed worms mounted therein, a block having threaded engagement with said worms and capable of longitudinal movement with respect to the worms, means connecting said block with the foundation brake rigging, a hand operated member, and means including a shaft connected with a central pinion for operating said block.

In testimony whereof I affix my signature.

WILLIAM H. SAUVAGE.