P. BROWN.

RATCHET BRAKE.

APPLICATION FILED NOV. 22, 1915.

1,185,977.

Patented June 6, 1916.

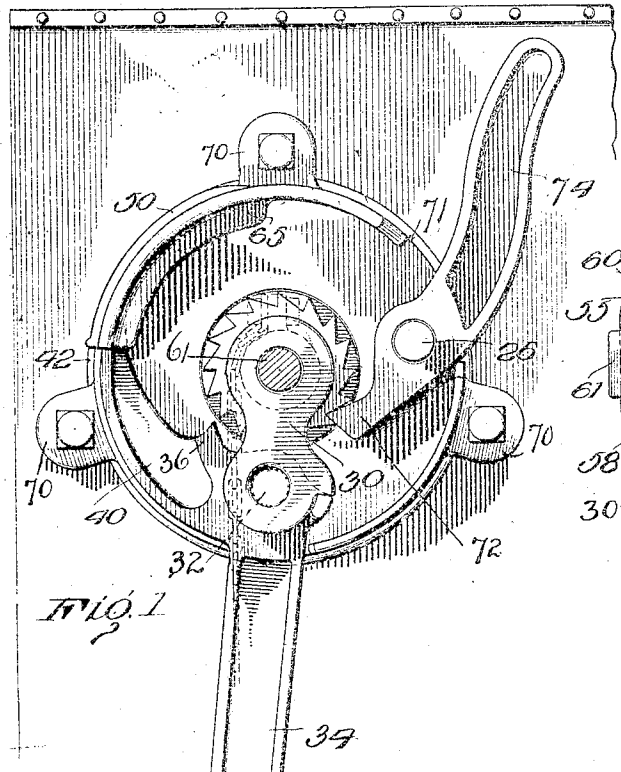


FIG. 1

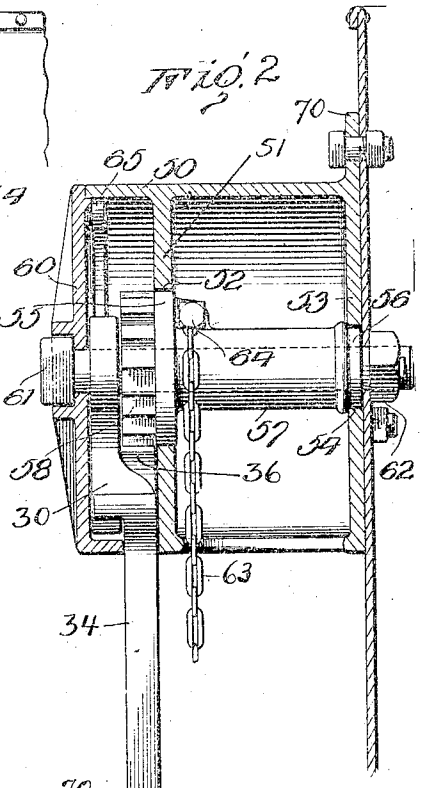


FIG. 2

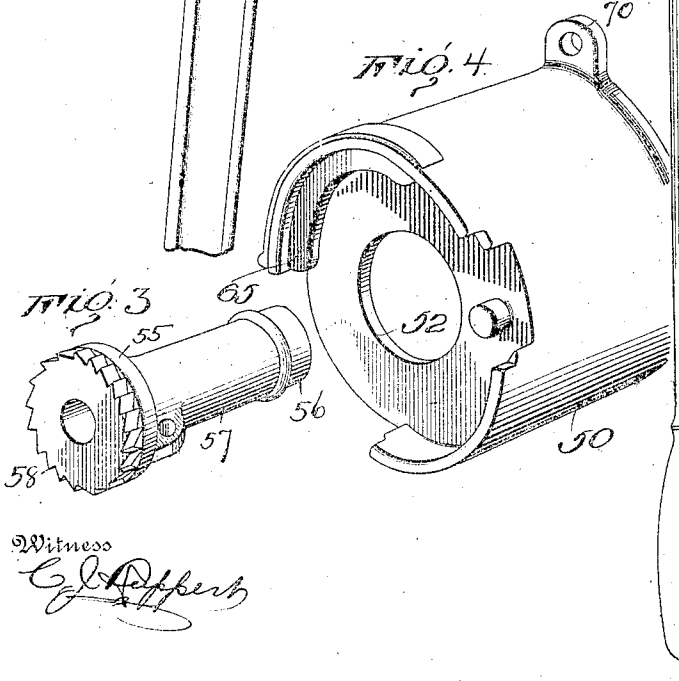


FIG. 4

FIG. 3

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UNITED STATES PATENT OFFICE.

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RATCHET-BRAKE.

1,185,977. Specification of Letters Patent. Patented June 6, 1916.

Application filed November 22, 1915. Serial No. 62,836.

To all whom it may concern:

Be it known that I, PERRY BROWN, a citizen of the United States, and a resident of Coraopolis, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Ratchet-Brakes, of which the following is a specification.

This invention relates to ratchet brakes of the character shown in my application Ser. No. 10,785, filed February 26, 1915, in which an operating handle is arranged to drop by gravity to an inactive position.

The present invention relates to improvements upon the construction shown in the aforesaid application.

In the drawings accompanying and forming part hereof: Figure 1 is a front elevation of a brake made in accordance with my invention, parts being broken away. Fig. 2 is a vertical central section of the same. Fig. 3 is a perspective view of the wheel and drum detached. Fig. 4 is a perspective view of the casing detached.

Referring now to the details of the drawings by numerals: 50 designates a casing having lugs 70 preferably cast integrally therewith which afford a means by which the casing may be secured to a car by suitable bolts, as seen in Figs. 1 and 2. The casing is preferably open at the front and is provided with a divisional wall 51 having a central aperture 52. The back wall 53 of the casing is preferably provided with a similar aperture 54 and these two apertures 52 and 54 provide bearings for annular members 55 and 56 formed on a drum 57, this drum having ratchet teeth 58 preferably cast integrally therewith. The construction is such that the drum 57 with its ratchet teeth may be inserted into position through the open front end until the members 55 and 56 are in position in the apertures 52 and 54. At the front end of the casing I provide a cover 60 and a bolt 61 passes through the cover and through an opening in the drum 57 and its integral ratchet 58, a nut 62 being provided on the rear end of the bolt to lock the various parts together. A brake chain 63 is secured to the drum 57 in any desirable way, preferably by a bolt 64. The aforesaid casing 50 has an opening 71 in its periphery, and a dog 72 projecting from a weighted handle 74 enters the casing and co-acts with the teeth on the ratchet wheel 58, this dog and handle being pivotally supported by a pin 26. The dog 72 therefore holds the ratchet wheel from counter-rotation and yet permits the ratchet wheel to move tooth by tooth as it is rotated.

Supported on the bolt or axle pin 61, preferably alongside of the ratchet wheel 58, is a link 30 which may be identical with the link shown in my aforesaid application Ser. No. 10,785 and therefore has a pin or stud 32 upon which is supported the operating handle or lever 34. This lever or handle also may be identical with that shown in my aforesaid application and therefore has a pawl 36 adapted to engage the teeth of the ratchet wheel 58 so that when the handle or lever 34 is moved on the pin or stud 32 the first action is to cause the pawl 36 to engage the teeth of the ratchet wheel 58. Further movement of the handle or lever will cause the pawl 36 and its link 30 to swing upon the bolt or pin 61 and therefore rotate the ratchet wheel 58 and the drum 57. As in my aforesaid application, the upper end of the handle or lever 34 is provided with a curved arm 40 which is substantially of the same curvature as the inside of the casing 50. The casing 50 has an opening 42 for the purpose of allowing the handle or lever 34 to be moved upwardly to rotate the ratchet wheel 58 and the drum 57, and when the handle or lever 34 is permitted to drop to the vertical position shown in Fig. 1, the aforesaid arm 40 closes the opening 42 and thus prevents water or snow from entering the casing. The interior of the casing 50 is provided with an interior lug or flange 65 under which the end of the arm 40 of the operating handle 34 projects so that the various parts are properly held in position.

In operation, the brakeman grasps the handle or lever 34 and moves it up and down in very much the same way that an old fashioned pump would be operated. On the upward movement of the handle, the pawl 36 immediately engages one of the ratchet teeth of the ratchet wheel 58, and the handle swinging upon the link 30 causes the ratchet wheel to rotate. Inasmuch as the ratchet wheel and the drum move together, the drum is rotated to wind up the chain 63 and thus apply the brake. If one upward movement of the handle or lever 34 is insufficient to apply the brake, the handle is allowed to drop by gravity to the

position shown in Fig. 1, when the operation may be repeated until the brake is sufficiently applied.

I claim:

1. In a brake, a drum, a brake member operated from said drum, a casing inclosing said drum and having two vertical walls provided with bearings for said drum, a ratchet wheel rotatable with said drum, and a lever or handle supported in working relation to said ratchet wheel and arranged to drop by gravity to a substantially vertical position to release said ratchet wheel and drum and to co-act with said ratchet to rotate it and the drum when the handle is moved upwardly.

2. In a brake, a drum, a brake member operated from said drum, a casing inclosing said drum and having two vertical walls provided with bearings for said drum, a ratchet wheel rotatable with said drum, a link journaled in proximity to said ratchet wheel, and an operating handle or lever journaled on said link and arranged to drop by gravity to an inactive position and to co-act with said ratchet wheel as the handle is moved upwardly.

3. In a brake, a drum, a brake member operated from said drum, a casing inclosing said drum and having two vertical walls providing bearings for said drum and having an open end, a plate closing said end, a ratchet wheel rotatable with said drum and located in the space covered by said plate, a link journaled in proximity to said ratchet wheel, and an operating handle journaled on said link and arranged to drop by gravity to an inactive position and to co-act with said ratchet as the handle is moved upwardly.

4. In a brake, a casing cylindrical in form and having a substantially flat end adapted to be secured to a car and two vertical walls having apertures forming bearings, a drum located in said casing and rotatable in said bearings, a brake member operable from said drum, a ratchet wheel rotatable with said drum, and an operating handle supported by said casing in working relation to said ratchet wheel and arranged to drop by gravity to a substantially vertical position to release said ratchet wheel and to co-act with said wheel to rotate it when the handle is moved upwardly.

5. In a brake, a drum, a brake member operated from said drum, a casing inclosing said drum and having two vertical walls providing bearings for said drum and having an open end, a plate closing said end, a ratchet wheel rotatable with said drum and located in the space covered by said plate, and a lever or handle supported in working relation to said ratchet wheel and arranged to drop by gravity to a substantially vertical position to release said ratchet wheel and drum and to co-act with said ratchet to rotate it and the drum when the handle is moved upwardly.

6. In a brake, a casing cylindrical in form and having a substantially flat end adapted to be secured to a car, an open end and two vertical walls having apertures forming bearings, a plate closing said open end and forming a space between it and one of said vertical walls, a drum located in said casing and rotatable in said bearings, a ratchet wheel rotatable with said drum and located in the space between said plate and one of said vertical walls, and an operating handle supported by said casing in working relation to said ratchet wheel and arranged to drop by gravity to a substantially vertical position to release said ratchet wheel and to co-act with said wheel to rotate it when the handle is moved upwardly.

7. In a brake, a casing cylindrical in form and having a substantially flat end adapted to be secured to a car, two vertical walls having apertures forming bearings and an open end, a plate covering said open end and forming a space between it and one of said vertical walls, said casing having an opening in its periphery, a drum located in said casing and rotatable in said bearings, a ratchet wheel rotatable with said drum, and an operating handle projecting through and swinging in the opening in said casing and supported in working relation to said ratchet wheel, said handle being arranged to drop by gravity to a vertical position to release said ratchet wheel and to co-act with said wheel to rotate it when the handle is moved upwardly.

8. In a brake, a casing having a flat back adapted to be secured to a car and an open end on the opposite end of the casing from said back, a drum journaled in said casing, a ratchet wheel movable with said drum, a plate covering the open end of the casing, said plate leaving an opening in the periphery of the casing, and an operating handle supported within said casing under said plate in working relation to said ratchet wheel and arranged to drop by gravity to a vertical position to release said wheel and to co-act with said wheel to rotate it when the handle is moved upwardly.

9. In a brake, a casing having a flat back adapted to be secured to a car and an open end on the opposite end of the casing from said back, a drum journaled in said casing, a ratchet wheel movable with said drum, a plate covering the open end of the casing, said plate leaving an opening in the periphery of the casing, a link in said casing adjacent to said ratchet wheel, and an operating lever or handle mounted upon said link and projecting through and swinging in the opening in the periphery of the casing and arranged to drop by gravity to a

substantially vertical position to release said ratchet wheel and to rotate it as the handle is moved upwardly in said opening.

10. In a brake, a casing having a flat back adapted to be secured to a car and an open end on the opposite side of the casing from said back, a vertical partition between said back and said open end, said back and said partition having openings therein forming bearings, a drum journaled in said casing in said bearings, a ratchet wheel movable with said drum, and an operating handle supported within said casing in working relation to said ratchet wheel and arranged to drop by gravity to a vertical position to release said wheel and to co-act with said wheel when the handle is moved upwardly.

11. In a brake, a casing having a flat back adapted to be secured to a car and an open end on the opposite side of the casing from said back, a vertical partition between said back and said open end, said back and said partition having openings therein forming bearings, a drum journaled in said casing in said bearings, a ratchet wheel movable with said drum, a plate covering the open end of the casing and leaving an opening in the periphery of the casing, a link in said casing adjacent to said ratchet wheel, and an operating lever or handle mounted upon said link and projecting through and swinging in the opening in the periphery of the casing and arranged to drop by gravity to a substantially vertical position to release said ratchet wheel and to rotate it as the handle is moved upwardly in said opening.

12. In a brake, a casing having a flat back and cylindrical in form and having two walls with openings therein forming bearings, a drum and ratchet wheel within said casing rotatable in said bearings, a link mounted in said casing adjacent to said ratchet wheel and a handle mounted upon said link and arranged to drop by gravity to an inactive position, said casing having an opening in its periphery permitting the movement therein of the handle, and said handle being arranged when moved upwardly to engage said ratchet wheel or to slip around said wheel without engaging it.

13. In a brake, a casing having a flat back and cylindrical in form and having two walls with openings therein forming bearings, a drum and ratchet wheel within said casing rotatable in said bearings, a link mounted in said casing adjacent to said ratchet wheel and a handle mounted upon said link and arranged to drop by gravity to an inactive position, said casing having an opening in its periphery permitting the movement therein of the handle, and said handle being arranged when moved upwardly to engage said ratchet wheel or to engage the interior of said cylindrical casing and slip over said wheel without rotating it.

14. In a brake, a casing having an opening in its periphery, a drum and ratchet wheel thereon, a brake member operated from said drum, and a lever arranged to operate said ratchet wheel and to drop by gravity to an inactive position, said lever operating through and swinging in said peripheral opening and having an arm closing said opening when the handle is in its normal vertical position, said casing having a lug or flange co-acting with said arm to hold the parts in position.

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

PERRY BROWN.

Witnesses:
JOHN L. FLETCHER,
THOMAS E. ROBERTSON.