P. BROWN, DEC'D.

M. J. BROWN, EXECUTRIX.

BRAKE.

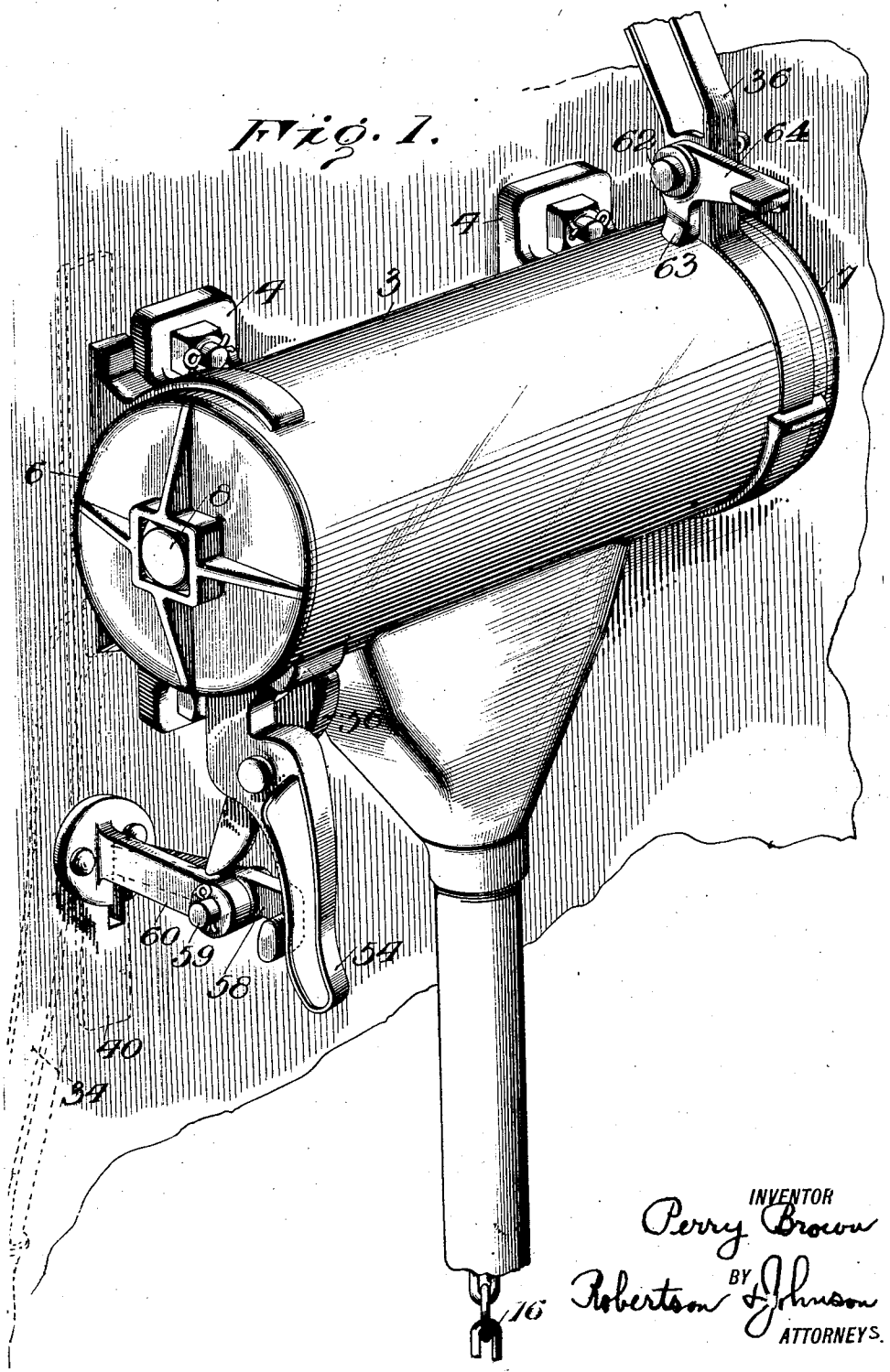
APPLICATION FILED NOV. 14, 1916.

1,340,321.

Patented May 18, 1920.

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 2.

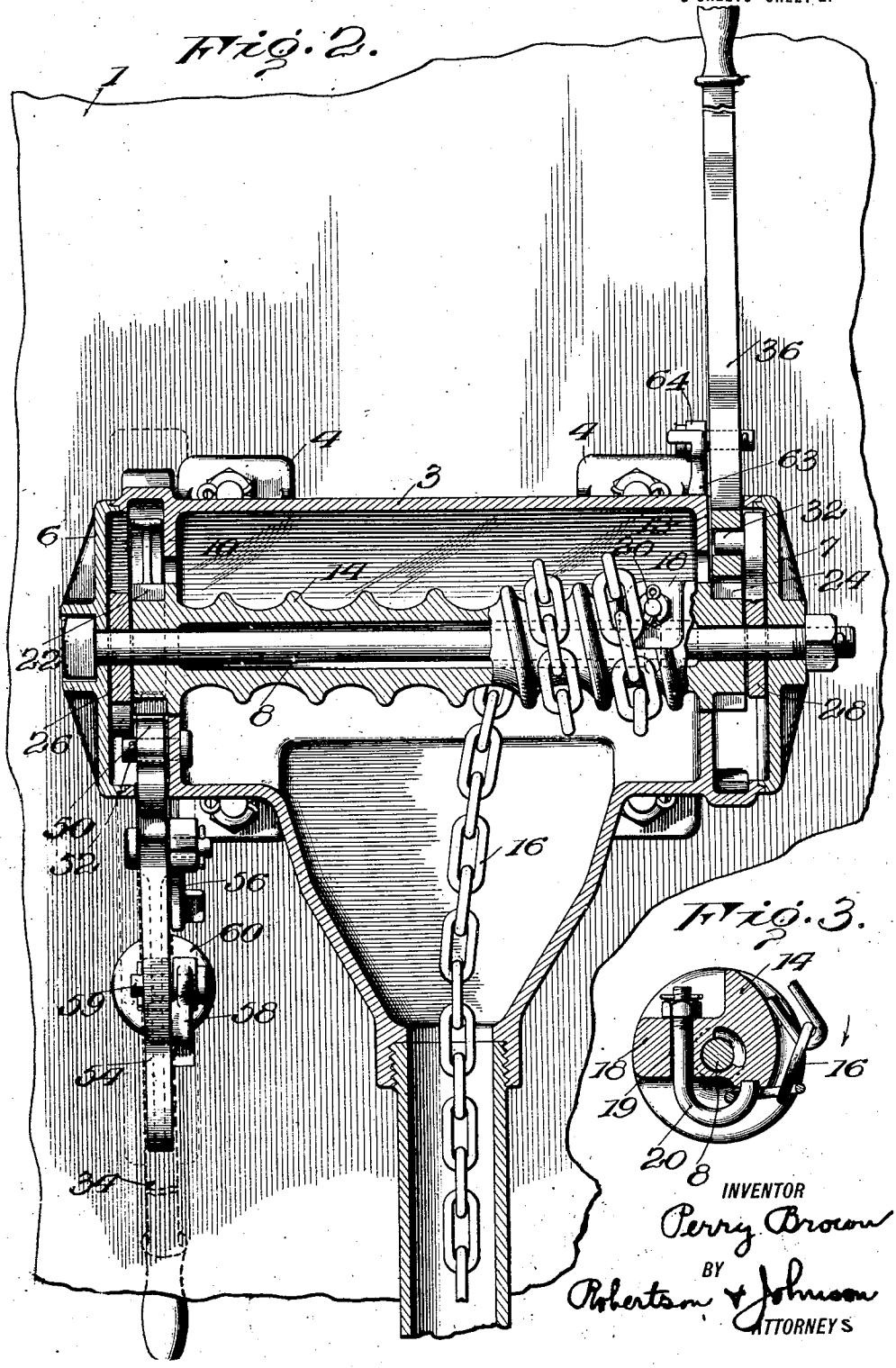


Fig. 3.

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3 SHEETS—SHEET 3.

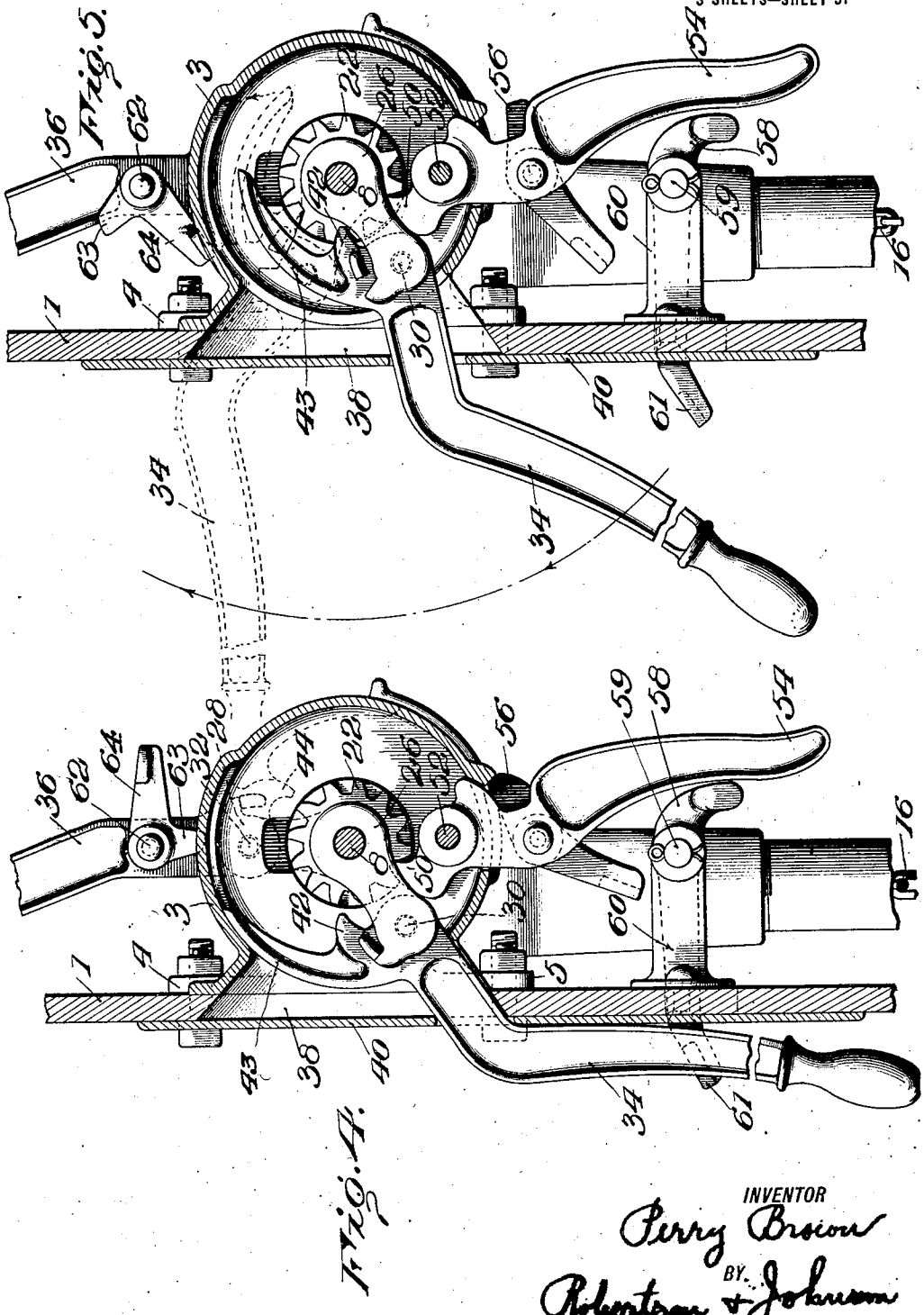


Fig. 5.

Fig. 4.

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PERRY BROWN, OF CORAOPOLIS, PENNSYLVANIA; MARGARET J. BROWN EXECUTRIX OF SAID PERRY BROWN, DECEASED.

BRAKE.

1,340,321. Specification of Letters Patent. Patented May 18, 1920.

Application filed November 14, 1916. Serial No. 131,316.

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 Brakes, of which the following is a specification.

This invention relates to brakes for railway cars and more particularly to hand operated brakes. The invention relates more particularly to a ratchet brake on the order of those shown in my United States Patents Nos. 1,185,974 and 1,185,977 and it will be hereinafter more particularly described and then definitely claimed.

In the drawings accompanying and forming part hereof and which represent the preferable but not necessary embodiment of my invention:

Figure 1 is a perspective view of a brake made in accordance with my invention, secured to the end of a car wall.

Fig. 2 is a vertical longitudinal section of the brake.

Fig. 3 is a sectional detail.

Fig. 4 is a vertical section of the brake showing the parts in their locked positions.

Fig. 5 is also a vertical central section showing in full lines the brake in the position for operation, and in dotted lines the position the handle will take at its extreme upper movement.

Referring now to the details of the drawings by numerals: 1 represents in conventional form the end wall of a car to which my brake may be applied. The brake proper may be secured to either side of this wall and in its preferable embodiment consists of a casing 3 having lugs 4 by which said casing may be bolted to said car wall 1, as illustrated. The casing is preferably open at each end, and if open at each end the casing is closed by two caps 6 and 7, a central bolt 8 passing through the casing and securing the cap or caps thereto. The casing is preferably provided with two partitions or interior walls 10 and 12 having central apertures which provide bearings for a chain drum 14 through which passes the aforesaid bolt 8. This drum is made of the shape shown best in Figs. 2 and 3 and is therefore provided with circumferential grooves for the brake chain 16. In close proximity to the first of these grooves or corrugations is formed a lug 18 and the drum at this point is cut away to the shape shown in Fig. 3 and the lug is provided with a recess 19 through which is passed the shank of a hooked bolt 20 to which the first link of the chain 16 is secured. Formed on or connected to the drum 14 are two sets of ratchet teeth 22 and 24, the ratchet teeth 22 being at one end of the drum and the ratchet teeth 24 at the opposite end of the drum. Adjacent to these two sets of ratchet teeth are two links 26 and 28 which may, if desired, be identical with those shown in my aforesaid Patents Nos. 1,185,974 and 1,185,977. Therefore these links are provided with lugs or projections 30 and 32 on which are supported brake handles or levers 34 and 36, one of these levers normally hanging in a downward position and the other in an upward position. One of these levers, that marked 34 in Figs. 4 and 5, is arranged to be on one side of the wall of the car while the other lever is designed to be upon the opposite side of the wall of the car. To make it possible that one of these levers may be properly worked from the side of the car opposite to that to which the brake is secured, I provide the wall 1 with a slot 38 through which the lever 34 may be operated, the lever being bent as illustrated in Fig. 4 to permit it to pass through this slot. In order to close the slot, except for the space actually occupied by the brake handle, I provide a sliding plate 40 which is capable of being moved up and down as the handle is operated through the limits of the slot 38. The handle 34 is provided with a pawl 42 and with an arm 43, the latter normally closing the opening in the casing 3, and the pawl normally occupying the position shown in Fig. 4 where it is out of contact with the ratchet teeth 22 formed on or connected to the drum 14. Inasmuch as the lever or handle 34 is pivotally connected to the link 26, it follows that when the handle 34 is moved from the position shown in Fig. 4 to the position shown in full lines in Fig. 5, the pawl 42 will engage one of the ratchet teeth 22 and then as the handle or lever 34 is swung upward to the position shown in dotted lines in Fig. 5, the ratchet teeth will be thereby rotated to correspondingly rotate the chain drum 14 to apply the brake. Of course, as in my aforesaid patent, when the brake handle is released it will

fall by gravity to its inactive position. The companion operating lever 36 is preferably normally in an upright position as illustrated, and this handle or lever also has a pawl marked 44 to engage the other set of ratchet teeth 24 on the opposite end of the drum 14. When this lever or handle 36 is in the position shown in Fig. 4, said pawl 44 is out of engagement with the ratchet teeth 24 but as it is moved downward, the first movement causes the pawl 44 to engage the teeth 24 and then as said handle is moved downward on the link 28, the pawl is caused to rotate the ratchet teeth 24 and thereby correspondingly rotate the drum 14. It will thus be seen that when I employ two brake handles of the character shown in my drawings each of them is normally in an active position and each may be used independently of the other.

In order to hold the drum 14 from counter-rotation and yet to release it when it is desi. ed to release the brake, I provide a dog 50 which is adapted to engage either set of ratchet teeth but as illustrated in the drawings, it engages the ratchet teeth 22. This pawl is pivoted at 52 and is provided with an operating handle 54. The weight of this handle normally holds the dog 50 in contact with the ratchet teeth 22 and when it is desired to release the brake, the operator merely has to raise the handle 54 until the dog 50 is out of engagement with the teeth 22 when the brake will be released. A locking device 56 is provided to lock this lever against accidental release, but this locking device forms part of an application filed of even date herewith, November 14, 1916, Ser. No. 131,317, and claims thereto are therefore not made in this application. However, it will be noted from an inspection of Fig. 1 that the upper end of the locking device is much heavier, owing to its greater thickness, than its lower end so that it will normally hang in the position shown in Fig. 5 but it may be moved to the position shown in Fig. 4 to form the lock. In order that the brake may be applied from either side of the wall 1 through the medium of either of the brake handles 34 or 36 and be released from either side of the car wall, I provide a lever 58 to co-act with the handle of the dog 50. This lever 58 is pivoted at 59 on a bracket 60 and the other end 61 of the lever passes through an opening in the end wall of the car so that when the operator desires to release the dog 50 from the opposite side of the car on which the dog and its handle 54 are located, it is only necessary to press the end 61 of the lever 58 downward, with either his foot or his hand, in order to move the handle 54 outward and thereby release the dog 50 from the ratchet teeth 22 to release the brake.

It is desirable that one of the brake handles 34 or 36, preferably that marked 36, be provided with a locking device to lock the handle in the inactive position so that it cannot interfere with the operation of the brake from the other side of the wall of the car. To accomplish this purpose I provide the handle 36 with a cam lever 64 pivoted at 62 to the handle 36, this lever being provided with a cam 63 which, in the position shown in Fig. 4, locks against the exterior of the casing 3 and prevents the lever 36 from being moved downward. However, when it is necessary to apply the brake by this lever 36 the operator merely throws the locking lever 64 from the position shown in Fig. 4 to the position shown in Fig. 5 when the lever 36 is released and may then be used to apply the brakes.

From the foregoing and accompanying drawings it will be seen that I have provided a simple form of brake in which there is a drum with two sets of ratchet teeth, a handle being arranged to operate one set of ratchet teeth, and a holding pawl being arranged to co-act with the other set of ratchet teeth, and that I have also provided a brake which can be made with two operating handles one for each set of ratchet teeth so that one handle may be operated from one side of the end wall of a car and the other operated from the inside of the car.

It is obvious that modifications and variations may be made in the details of my brake without departing from the spirit of my invention, the scope of which is set forth in the appended claims.

What I claim is:

1. In a brake, the combination of a casing adapted to be secured entirely upon one side of a car wall, a drum within said casing having ratchet teeth near opposite ends thereof, operating devices co-acting with said ratchet teeth to independently operate said drum to apply the brake, one of said operating devices adapted to extend through the wall of a car, and a dog co-acting with one set of said teeth to prevent counter-rotation of said drum.

2. In a brake, the combination of a casing adapted to be secured entirely upon one side of a car wall, a drum within said casing having ratchet teeth near opposite ends thereof, said casing having openings at opposite ends thereof, operating devices projecting through said openings and co-acting with said ratchet teeth to independently rotate said drum to apply the brakes, one of said operating devices adapted to extend through the wall of a car, and a dog also projecting through an opening in the casing to hold the drum from counter-rotation.

3. In a brake, the combination of a casing adapted to be secured entirely upon one side of a car wall, heads at opposite ends of said casing to close the same, a drum within

said casing having ratchet teeth near opposite ends thereof, said casing having openings at opposite ends thereof, operating devices projecting through said opening and co-acting with said ratchet teeth to independently rotate said drum to apply the brake, one of said operating devices adapted to extend through the wall of a car, and a dog also projecting through an opening in the casing to hold the drum from counter-rotation.

4. In a brake, the combination of a casing, a drum thereon, ratchet teeth at opposite ends of said drum, openings at opposite ends of said casing, an operating device projecting through one of said openings and co-acting with one set of said teeth to rotate said drum and apply the brake, and a dog projecting through the other opening at the opposite end of said casing co-acting with the other set of ratchet teeth to prevent counter-rotation of said drum, heads at opposite ends of said casing, and a bolt passing through said heads and through said drum and securing the parts together.

5. In a hand brake, the combination with a chain tightening element having two sets of ratchet teeth thereon, means for supporting said element and its two sets of teeth on the same side of a car wall, an operating member located on the same side of said wall and associated with said element for rotating the same, and a second operating member having one end coöperating with the ratchet teeth on said element and having its other end extending through said wall and operable from the opposite side thereof.

6. In a hand brake, the combination with a chain tightening element having two sets of ratchet teeth thereon, means for supporting said element and its two sets of teeth on the same side of a car wall, an operating member located on the same side of said wall and associated with said element for rotating the same, a second operating member having one end coöperating with the ratchet teeth on said element and having its other end extending through said wall and operable from the opposite side thereof, and a dog coöperating with said element to prevent counter-rotation and operable from both sides of said car wall.

7. In a braking mechanism for railway cars and the like, the combination with a chain tightening element rotatably mounted, and means for supporting said element on one side of the wall of said car, of an operating lever disposed on one side of said wall for rotating said element, a second operating lever for rotating said element and adapted to be extended through said wall for operation on the opposite side, both of said levers being oscillatable in planes perpendicular to the wall of the car.

8. In a hand brake, the combination with a chain tightening element having two sets of ratchet teeth thereon, means for supporting said element and its two sets of teeth on the same side of a car wall, an operating member located on the same side of said wall and associated with said element for rotating the same, a second operating member having one end coöperating with the ratchet teeth on said element and having its other end extending through said wall and operable from the opposite side thereof, and a device for locking one of said operating members inactive.

9. In a brake, the combination of a casing, a drum thereon, ratchet teeth at opposite ends of said drum, openings at opposite ends of said casing, an operating device projecting through one of said openings and co-acting with one set of said teeth to rotate said drum and apply the brake, a latch pivoted to said operating device and co-acting with the exterior of said casing to lock said device in an inactive position, and a dog projecting through the other opening at the opposite end of said casing and co-acting with the other set of ratchet teeth to prevent counter-rotation of said drum.

10. In a brake, the combination of a casing, a drum thereon, ratchet teeth at opposite ends of said drum, openings at opposite ends of said casing, an operating device projecting through one of said openings and co-acting with one set of said teeth to rotate said drum and apply the brake, a latch pivoted to said operating device and having a cam co-acting with the exterior of said casing to lock said device in an inactive position, and a dog projecting through the other opening at the opposite end of said casing and co-acting with the other set of ratchet teeth to prevent counter-rotation of said drum.

11. In a brake, the combination of a casing, a drum therein, ratchet teeth near one end of said drum, an operating device having a pawl co-acting with said ratchet teeth to rotate said drum to apply the brake and being capable of movement to an inactive position, and a member supported by said operating device and co-acting with said casing to lock the former in its inactive position.

12. In a brake, the combination of a casing, a drum therein, ratchet teeth near one end of said drum, an operating device having a pawl co-acting with said ratchet teeth to rotate said drum to apply the brake and being capable of movement to an inactive position, and a lever pivoted to said operating device and having a cam for locking said device in its inactive position.

13. In a brake, the combination of a wall, a casing adapted to be secured to said wall, a drum in said casing, an operating device on each end of said casing for operating

said drum, and both of said operating devices co-acting with the drum on one side of said wall and one of said operating devices having a part passing through an opening in said wall and operable from the other side of the wall.

14. In a brake, the combination of a wall, a casing adapted to be secured to said wall, a drum in said casing, an operating device on each end of said casing for operating said drum, and both of said operating devices co-acting with the drum on one side of said wall and one of said operating devices having a part passing through an opening in said wall and operable from the other side of the wall, and a dog operable from both sides of said wall adapted to hold said drum from counter-rotation.

15. In a brake, the combination of a wall, a casing adapted to be secured to said wall, a drum in said casing, an operating device on each end of said casing for operating said drum, and one of said operating devices being on one side of said wall and the other passing through an opening in said wall and operable from the other side of the wall, and a dog operable from both sides of said wall adapted to hold said drum from counter-rotation, and a device for locking one of said operating devices in an inactive position.

16. In a brake, the combination of a wall, a casing adapted to be secured to said wall, a drum in said casing, ratchet teeth on opposite ends of said drum, an operating device at each end of said casing adapted to co-act with said ratchet teeth and capable of movement to inactive position, and one of said operating devices being on one side of said wall and the other having its handle passing through an opening in said wall and operable from the other side of the wall.

17. In a brake, the combination of a wall, a casing adapted to be secured to said wall, a drum in said casing, ratchet teeth on opposite ends of said drum, an operating device at each end of said casing adapted to co-act with said ratchet teeth and capable of movement to inactive positions, and one of said operating devices being on one side of said wall and the other having its handle passing through an opening in said wall and operable from the other side of the wall, and a dog operable from both sides of said wall adapted to hold said drum from counter-rotation.

18. In a brake, the combination of a wall, a casing adapted to be secured to said wall, a drum in said casing, ratchet teeth on opposite ends of said drum, an operating device at each end of said casing adapted to co-act with said ratchet teeth and capable of movement to inactive positions, and one of said operating devices being on one side of said wall and the other passing through an opening in said wall and operable from the other side of the wall, and a dog operable from both sides of said wall adapted to hold said drum from counter-rotation, and a device for locking one of said operating devices in an inactive position.

19. In a brake, the combination of a wall, a brake secured thereto, a brake drum, ratchet teeth on opposite ends of said drum, operating devices at opposite ends of said drum having pawls co-acting with said ratchet teeth when in one position and free from said teeth when said operating devices are moved to inactive positions, and one of said operating devices being on one side of said wall and the other having its handle passing through an opening in said wall and operable from the other side of the wall.

20. In a brake, the combination of a wall, a brake secured thereto, a brake drum, ratchet teeth on opposite ends of said drum, operating devices at opposite ends of said drum having pawls co-acting with said ratchet teeth when in one position and free from said teeth when said operating devices are moved to inactive positions, and one of said operating devices being on one side of said wall and the other having its handle passing through an opening in said wall and operable from the other side of the wall, and a dog operable from both sides of said wall adapted to hold said drum from counter-rotation.

21. In a brake, the combination of a wall, a brake secured thereto, a brake drum, ratchet teeth on opposite ends of said drum, operating devices at opposite ends of said drum having pawls co-acting with said ratchet teeth when in one position and free from said teeth when said operating devices are moved to inactive positions, and one of said operating devices being on one side of said wall and the other passing through an opening in said wall and operable from the other side of the wall, and a dog operable from both sides of said wall adapted to hold said drum from counter-rotation, and a device for locking one of said operating devices in an inactive position.

22. In a brake, the combination of a wall, a brake secured thereto comprising a casing, a brake drum therein having ratchet teeth at opposite ends thereof, links adjacent said ratchet teeth, operating handles supported from said links and having pawls co-acting with said teeth, said handles being capable of movement to free said pawls from said ratchet teeth, and one of said operating devices being on one side of said wall and the other having its handle passing through an opening in said wall and operable from the other side of the wall.

23. In a brake, the combination of a wall, a brake secured thereto comprising a casing, a brake drum therein having ratchet

teeth at opposite ends thereof; links adjacent said ratchet teeth, operating handles supported from said links and having pawls co-acting with said teeth, said handles being capable of movement to free said pawls from said ratchet teeth, and one of said operating devices being on one side of said wall and the other having its handle passing through an opening in said wall and operable from the other side of the wall, and a dog operable from both sides of said wall adapted to hold said drum from counter-rotation.

24. In a brake, the combination of a wall, a brake secured thereto comprising a casing, a brake drum therein having ratchet teeth at opposite ends thereof, links adjacent said ratchet teeth, operating handles supported from said links and having pawls co-acting with said teeth, said handles being capable of movement to free said pawls from said ratchet teeth, and one of said operating devices being on one side of said wall and the other passing through an opening in said wall and operable from the other side of the wall, and a dog operable from both sides of said wall adapted to hold said drum from counter-rotation, and a device for locking one of said operating devices in an inactive position.

25. In a brake, the combination of a car wall, a casing, heads at opposite ends thereof, a drum in said casing having ratchet teeth on opposite ends thereof, an axle pin passing through said heads and said drum and connecting said parts together, an operating device at each end of said casing for actuating said drum, and one of said operating devices being on one side of said wall and the other passing through an opening in said wall and operable from the other side of the wall.

26. In a brake, the combination of a car wall, a casing, heads at opposite ends thereof, a drum in said casing having ratchet teeth on opposite ends thereof, an axle pin passing through said heads and said drum and connecting said parts together, an operating device at each end of said casing for actuating said drum, and one of said operating devices being on one side of said wall and the other passing through an opening in said wall and operable from the other side of the wall, and a dog operable from both sides of said wall adapted to hold said drum from counter-rotation.

27. In a brake, the combination of a car wall, a casing, heads at opposite ends thereof, a drum in said casing having ratchet teeth on opposite ends thereof, an axle pin passing through said heads and said drum and connecting said parts together, an operating device at each end of said casing for actuating said drum, and one of said operating devices being on one side of said wall and the other passing through an opening in said wall and operable from both sides of the wall, and a dog operable from both sides of said wall adapted to hold said drum from counter-rotation, and a device for locking one of said operating devices in an inactive position.

28. In a brake, the combination of a wall, a casing, heads on opposite ends thereof, a drum in said casing having ratchet teeth at opposite ends thereof, links in proximity to said ratchet teeth, an axle pin passing through said heads, said links and said drum and securing said parts together, operating devices on opposite sides of said drum having pawls co-acting with said ratchet teeth, and one of said operating devices being on one side of said wall and the other passing through an opening in said wall and operable from the other side of the wall.

29. In a brake, the combination of a wall, a casing, heads on opposite ends thereof, a drum in said casing having ratchet teeth at opposite ends thereof, links in proximity to said ratchet teeth, an axle pin passing through said heads said links and said drum and securing said parts together, operating devices on opposite sides of said drum having pawls co-acting with said ratchet teeth, and one of said operating devices being on one side of said wall and the other passing through an opening in said wall and operable from the other side of the wall, and a dog operable from both sides of said wall adapted to hold said drum from counter-rotation.

30. In a brake, the combination of a wall, a casing, heads on opposite ends thereof, a drum in said casing having ratchet teeth at opposite ends thereof, links in proximity to said ratchet teeth, an axle pin passing through said heads said link and said drum and securing said parts together, operating devices on opposite sides of said drum having pawls co-acting with said ratchet teeth, and one of said operating devices being on one side of said wall and the other passing through an opening in said wall and operable from the other side of the wall, and a dog operable from both sides of said wall adapted to hold said drum from counter-rotation, and a device for locking one of said operating devices in an inactive position.

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

PERRY BROWN.

Witnesses:
JOHN L. FLETCHER,
S. S. SHNINE.