(No Model.)

J. H. WRIGHT.

STREET CAR BRAKE.

No. 395,414. Patented Jan. 1, 1889.

Fig. 1

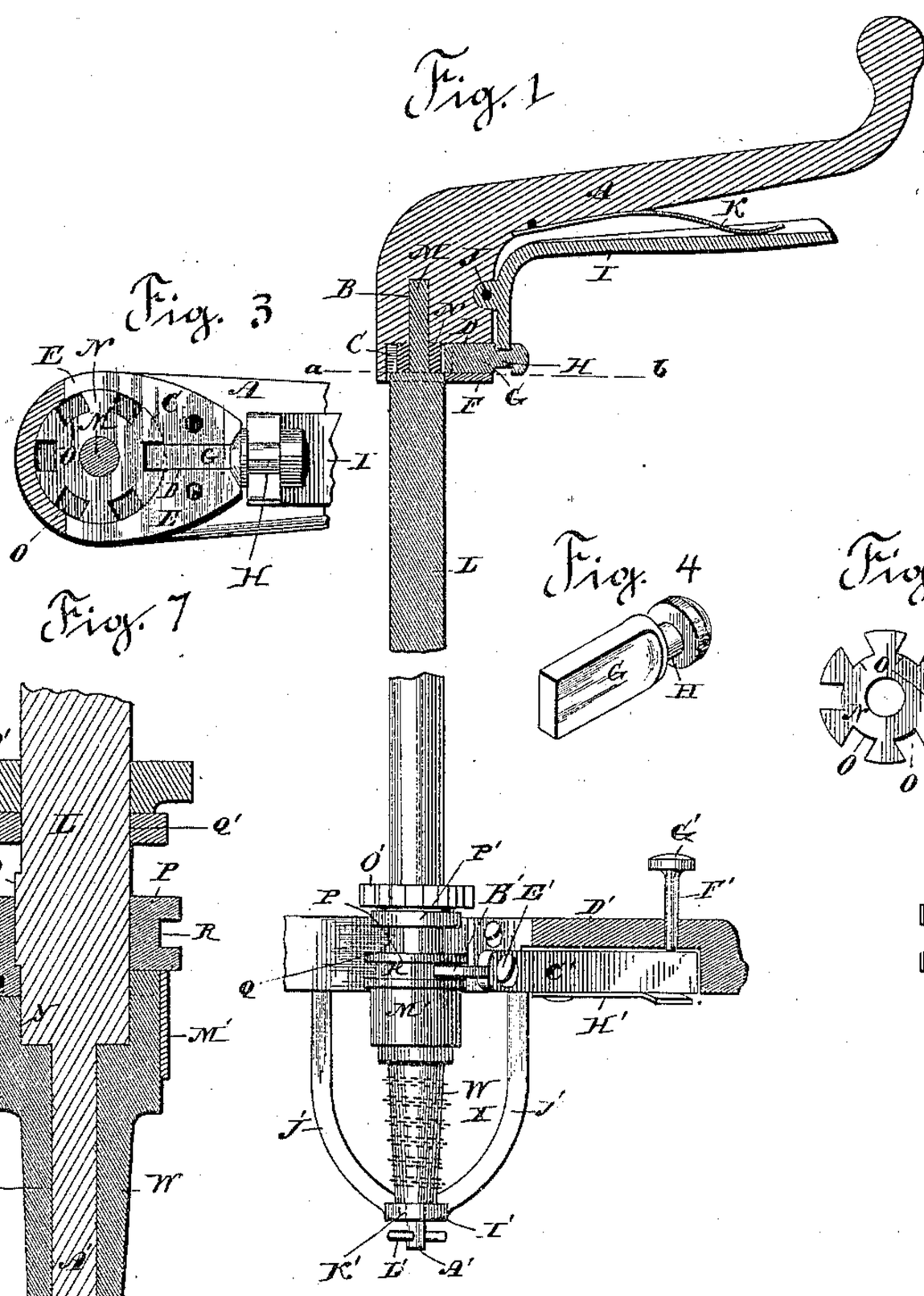


Fig. 3

Fig. 4

Fig. 5

Fig. 6

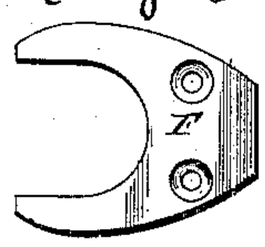


Fig. 7

Fig. 8

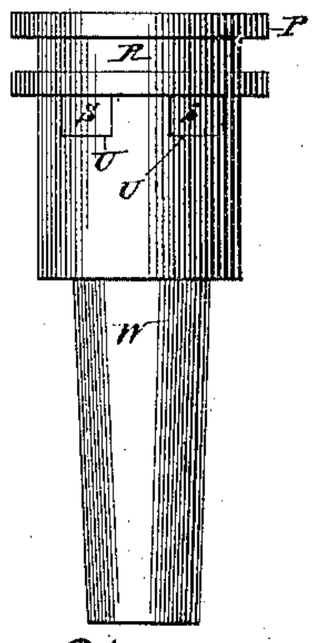


Fig. 9

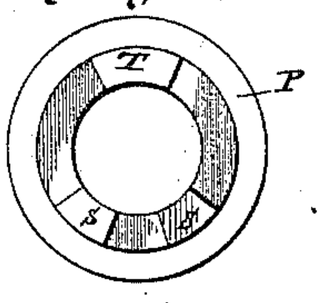


Fig. 10

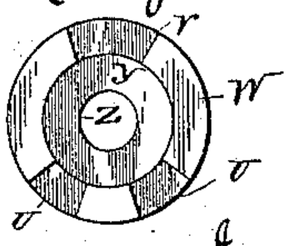
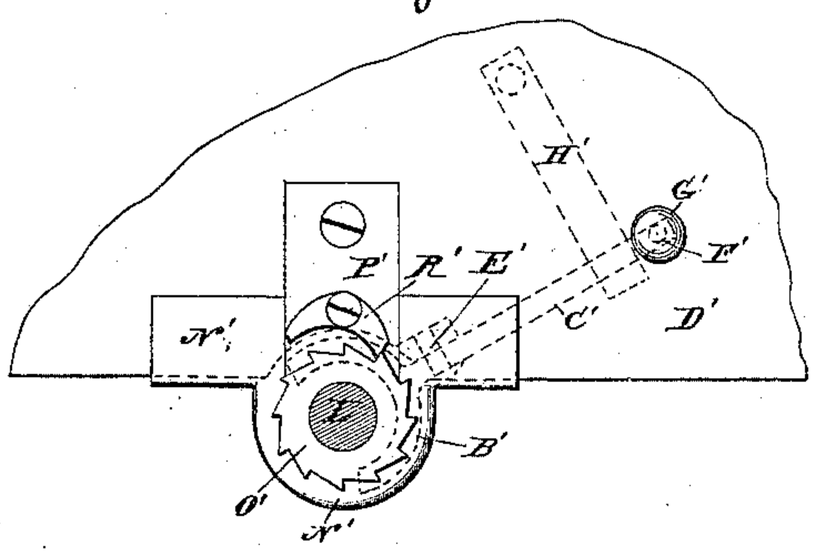


Fig. 2



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UNITED STATES PATENT OFFICE.

JOHN H. WRIGHT, OF BRIDGEPORT, CONNECTICUT.

STREET-CAR BRAKE.

SPECIFICATION forming part of Letters Patent No. 395,414, dated January 1, 1889.

Application filed October 25, 1888. Serial No. 289,122. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. WRIGHT, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Street-Car Brakes; and I do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improvement in brakes for street-cars, the object being to provide such brakes with adjustable handles and relief-clutches of simple and durable construction, and securing a facility in the braking of a car not before attained.

With these ends in view my invention consists in a brake-handle having a coupling-pin and an operating-lever therefor, in combination with a brake-post having a collar provided in its periphery with retaining-points to receive the said pin.

My invention further consists in the combination, with the brake-post, of a chain-barrel mounted so as to turn thereupon, and a clutch-head feathered upon the post and adapted to be coupled with and uncoupled from the said barrel.

My invention further consists in a stirrup-shaped brace for the lower end of the post; in guards for my improved relief-clutch mechanism, and in certain other details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view, partly in front elevation and partly in vertical section, of a brake embodying my invention. Fig. 2 is a broken plan view of the platform with the brake-post in section and the operating-lever in broken lines. Fig. 3 is an enlarged broken view of the brake-handle in transverse section on the line *a b* of Fig. 1. Fig. 4 is an enlarged detached perspective view of the locking-pin. Fig. 5 is a similar plan view of the locking-collar. Fig. 6 is a similar view of the retaining-plate. Fig. 7 is an enlarged broken view in vertical section of the relief-clutch mechanism. Fig. 8 is a detached view in elevation of the clutch-head and chain-barrel. Fig. 9 is a detached face view of the clutch-head, and Fig. 10 is a similar view of the upper end of the barrel.

As herein shown, the brake-handle A is of ordinary form in its general outline, and provided at its lower end with a vertical bore, B, a circular chamber, C, located below such bore, and with a straight-walled slot, D, leading radially out of such chamber and through the adjacent inner edge of the handle, the lower end whereof is faced down, as at E, to receive the retaining-plate F, as will be hereinafter described.

A flat horizontal pin, G, having squared edges and located in the slot D, is provided at its outer end with a neck, H, receiving the forked end of a hand-lever, I, secured by a pivot, J, to the under side of the handle. A spring, K, secured to the handle, and interposed between the same and the manual or longer end of the lever, holds the same normally in position to be operated for withdrawing the inner end of the pin from the chamber C aforesaid, into which it normally projects. The brake-post L is reduced at its upper end to form a spindle, M, which enters the bore B in the handle, and is provided with a fixed collar, N, located at the base of the spindle, and having equidistant transverse slots O, forming retaining-points, each of which is adapted to receive the inner end of the flat pin, and so rigidly couple the handle with the post.

The retaining-plate F, before referred to, is secured by screws to the lower end of the handle and cut away at its inner end to fit around the post at a point under the collar, which, being of greater diameter than the post, offsets from the same and virtually forms a shoulder, which coacts with the plate in holding the handle upon the post. Under the construction described the handle may readily be shifted in its relation to the post and rigidly coupled therewith in another relation by simply using the fingers to operate the hand-lever in retracting the pin from the collar, after which the handle is turned to the right position and the lever released to permit the pin to re-engage with the collar.

The relief-clutch consists, in part, of a clutch-head, P, secured by a feather, Q, to the

lower end of the post, encircled at its upper end by a groove, R, and provided upon its lower face with two corresponding lugs, S, located side by side, and with a wider lug, T, located directly opposite them. These lugs are adapted to fit in corresponding slots U U and V formed in the upper edge of the barrel W, upon which the brake-chain X is wound—such barrel being provided with a chamber, Y, at its upper end, and with a longitudinal bore, Z, which extends through it. The lower end of the post is reduced to form a spindle, A′, over which the barrel is sleeved, the chamber in its upper end receiving the lower end of the post in its full size. A fork, B′, entering the groove R in the clutch-head P, is formed at one end of an operating-lever, C′, fulcrumed in the platform D′ of the car on a pivot, E′, and engaged at its outer end by the spindle F′ of a foot-button, G′, vertically mounted in the said platform in convenient position for operation by the driver. A spring, H′, secured to the under side of the platform, engages with the outer end of the operating-lever, and has the twofold function of normally maintaining the coupling between the clutch-head and the barrel and of sustaining the foot-button in position of constant readiness for operation. The lower end of the barrel is supported upon the offsetting-bracket I′ of a stirrup, J′, the upper ends whereof are secured to the platform of the car, the said step being provided with an opening, K′, for the spindle A′, which passes through it. The post is secured against vertical displacement by a cotter-pin, L′, passed through the lower end of the spindle at a point below the bracket aforesaid. The stirrup braces the lower end of the post against the strain of the brake-chain, tending to bend it back. A collar, M′, secured to the clutch-head, is adapted to inclose the lower end thereof and the upper end of the barrel, and forms a guard against the entrance of any foreign matter into the clutch. A guard, N′, secured to the forward edge of the platform, incloses the upper end of the clutch-head and prevents the access of foreign matter thereto. A ratchet-wheel, O′, rigidly secured to the post, rests upon a bearing-plate, P′, secured to the platform, and having an opening, Q′, through which the post passes. A double-ended pawl, R′, pivoted to this plate, is engaged with the ratchet by the driver, who operates it with his foot in the ordinary manner.

In operating the brakes of a car the brake-handle is often brought to a stop in a position in which it is either in the way or difficult to manipulate it from, or both. My invention surmounts this difficulty by enabling the driver to uncouple it from the brake-post, shift it with reference thereto and recouple it therewith, and all without moving his hand from it and by swinging it with his hand and manipulating the hand-lever with his fingers.

It is often difficult and inconvenient, especially when the front platform is crowded, to take off or relieve the brakes for starting up the car. The ordinary way to do this is to disengage the foot-pawl from the ratchet-wheel, whereby the brake-post is free to revolve and permit the chain to unwind from the barrel; but this involves the sweeping of the handle around with the post, and that takes room. My invention provides a convenient mode of relieving the brakes by uncoupling the barrel from the post. This is done by the driver, who puts his foot on the foot-button and so lifts the clutch-head away from the upper end of the chain-barrel, which then rotates on the post and permits the chain to unwind while the post remains stationary. When the chain has unwound, the driver sweeps the handle around, and as soon as it is brought back to the position it was in when the brakes were relieved the clutch-head is re-engaged with the barrel by the spring provided for this purpose. It will be noted that the barrel and head are not recoupled until the handle is in its right place again. This results from the construction of the head and barrel, so that they will couple at only one point in the circle of their rotation, and the object of this is to avoid the trouble of constantly resetting the handle, as would be necessary if it were not for bringing it back to the place where it was left when the brakes were on. The functions of the stirrup and the guard have, it is thought, been sufficiently described already.

It is apparent that my adjustable brake-handle and relief-clutch may be used independently, if desired; or, in other words, that either or both of these features may be applied to the braking mechanism of a car.

I would have it understood that I do not limit myself to the construction shown and described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a brake mechanism, the combination, with a handle having a horizontal coupling-pin and an independent hand-lever for operating the same, of a post carrying the handle, which is swiveled upon its upper end, and having a fixed collar provided in its periphery with retaining-points to receive the pin, which is radially moved toward and away from its periphery by the said hand-lever, substantially as set forth.

2. In a brake mechanism, the combination, with a handle having a flat square-edged coupling-pin and a spring-actuated hand-lever for operating the same, of a post carrying the handle and having a fixed collar provided in its periphery with a series of transverse slots corresponding in shape to the end conformation of the said pin, substantially as set forth.

3. In a brake mechanism, the combination, with a handle having a coupling-pin and a

hand-lever for operating the same, of a post carrying the handle and having a fixed collar provided with retaining-points to receive the pin, and a retaining-plate secured to the handle and holding the same upon the post, substantially as set forth.

4. In a brake mechanism, the combination, with a post, of a chain-barrel sleeved over the post, so as to rotate freely thereupon when released for unwinding the chain, a clutch-head feathered upon the post close to the said barrel, so as to be directly engaged therewith to lock the barrel for winding the chain and to be disengaged therefrom to release the barrel for unwinding the chain, substantially as set forth.

5. In a brake mechanism, the combination, with a post, of a chain-barrel sleeved over the same, a clutch-head feathered on the post and adapted to be normally coupled with the head, the face of the head and the upper end of the barrel being constructed to couple when brought into one specific relation and in no other, whereby the handle returns to its right position after using the relief-clutch, substantially as set forth.

6. In a brake mechanism, the combination, with a post, of a chain-barrel sleeved over the same, a clutch-head feathered on the post and adapted to be normally coupled with the barrel-head, and lever mechanism connected with such head and arranged to be operated by the driver with his foot, substantially as set forth.

7. In a brake mechanism, the combination, with a brake-post, of a handle located at the upper end thereof, a stirrup-shaped brace secured to the car and provided with an offsetting bracket through which the lower end of the post passes, a chain-barrel sleeved over the post, so as to rotate freely thereupon when released and resting upon the said bracket, and means for locking the barrel to the post and releasing it therefrom, substantially as set forth.

8. In a brake mechanism, the combination, with a brake-post, of a handle located at the upper end thereof, a chain-barrel sleeved over its lower end, a clutch-head feathered upon the post and adapted to be normally coupled with the barrel, lever-connections with the said head for operating it to relieve the barrel, and guards inclosing such mechanisms from the dirt, substantially as set forth.

9. In a brake mechanism, the combination, with a brake-handle, of a post provided at its upper end with an offsetting shoulder and a retaining-plate secured to the handle and cut away to fit around the post, with the shoulder of which it engages to couple the post and handle together, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN H. WRIGHT.

Witnesses:
SAMUEL H. MARCY,
JOHN PALMER.