C. A. BURKE.

BRAKE MECHANISM.

APPLICATION FILED MAR. 20, 1909.

927,941. Patented July 13, 1909.

Fig. 1.

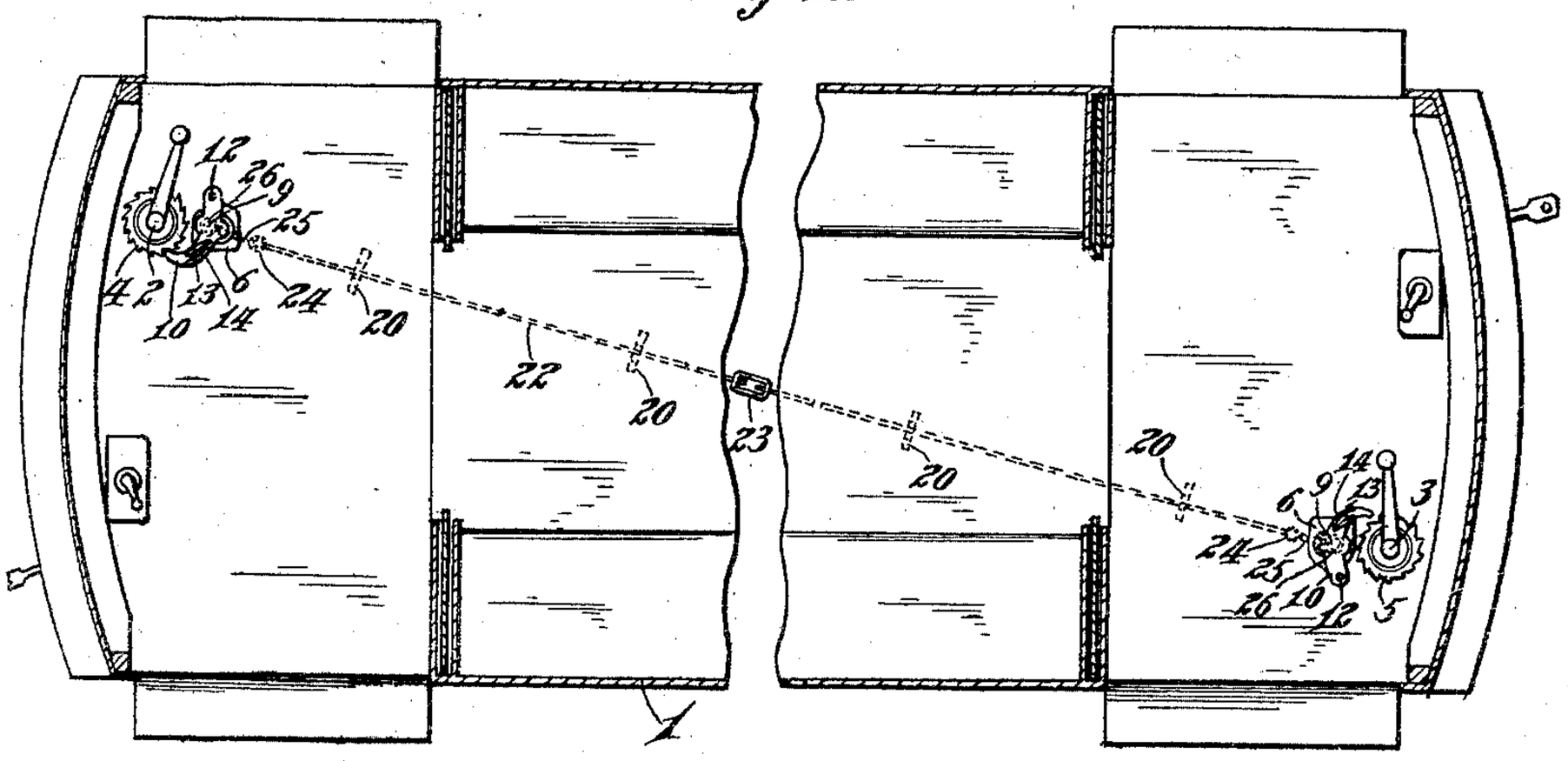


Fig. 2.

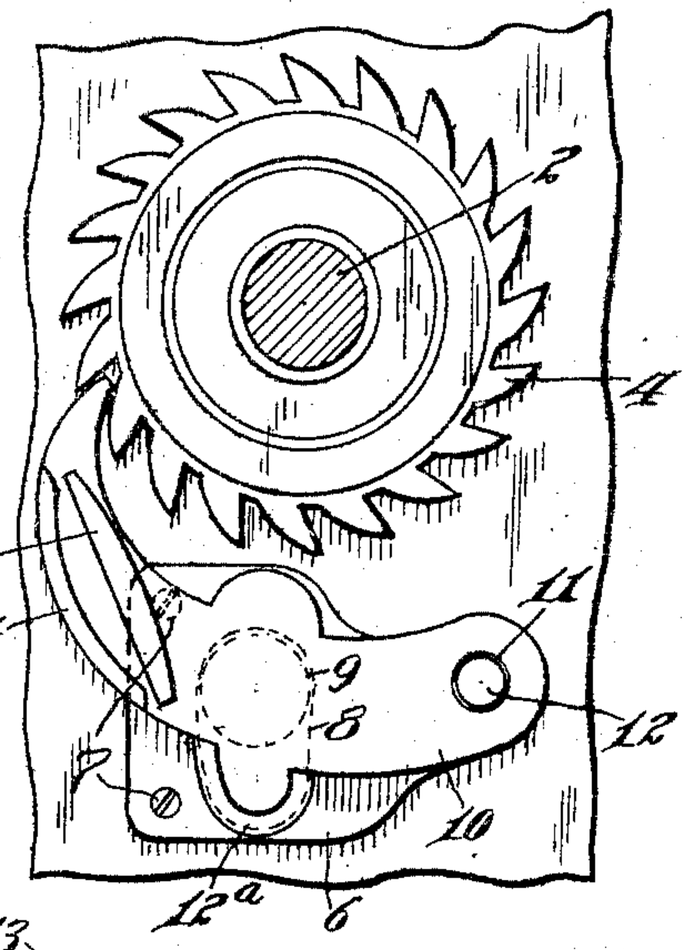


Fig. 3.

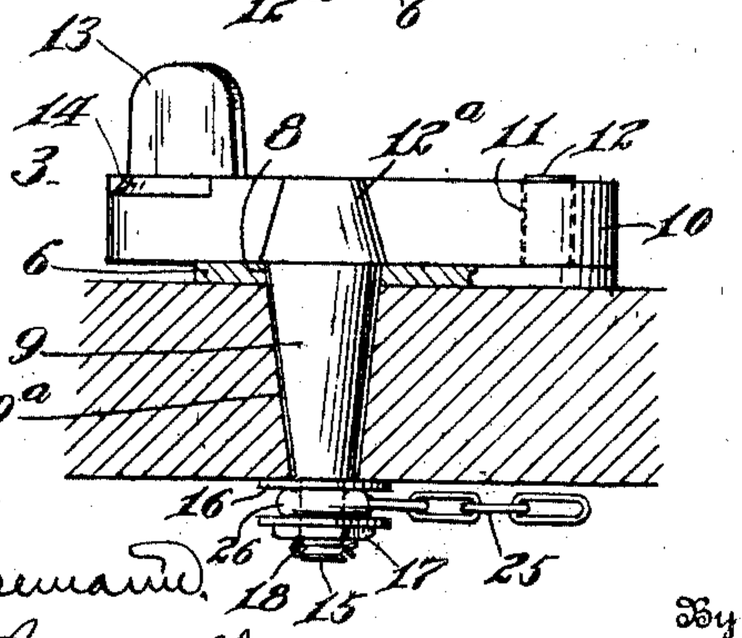


Fig. 4.

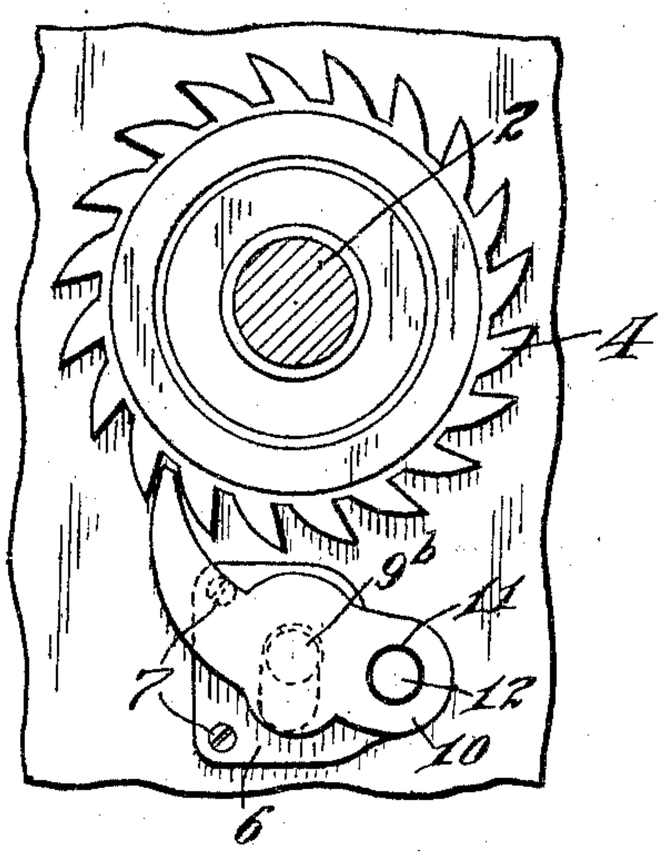
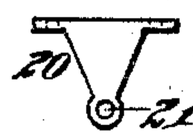


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

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BRAKE MECHANISM.

No. 927,941. Specification of Letters Patent. Patented July 13, 1909.

Application filed March 20, 1909. Serial No. 484,786.

To all whom it may concern:

Be it known that I, CHARLES A. BURKE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Brake Mechanism, of which the following is a specification.

My invention relates to improvements in brake mechanism, and more particularly to an improved construction, and means for controlling the operation of safety dogs for engagement with the ordinary ratchet wheels of railway brake shafts, such as are in ordinary use on street or other railway cars, an object of the invention being to provide an improved dog of this character, which can only be released by tightening the brakes, and which will absolutely prevent possibility of accidental release, and the consequent injury and damage due to a whirling of the brake arm and the release of a car.

A further object is to provide improved means connecting my improved safety dogs, which will compel the release of the dog from its ratchet on one end of a car, when the dog is applied to its ratchet on the other end of the car.

With these and other objects in view, the invention consists in certain novel features of construction, and combinations, and arrangements of parts as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings, Figure 1, is a plan view illustrating the application of my improvements to a street car. Fig. 2, is an enlarged plan view illustrating the dog and its ratchet wheel. Fig. 3, is a fragmentary view in section through the platform. Fig. 4, is a view illustrating a modification, and Fig. 5, is a detail view of one of the hangers 20.

1 represents a car, shown broken and in plan, and 2 and 3 respectively, are the brake shafts at the opposite ends of the car, on which, adjacent to the platforms are ratchet wheels 4 and 5 respectively, which are of the ordinary type, are secured. In other words, my improvement may be applied to the ordinary brake shafts and ratchet wheels now in common use, and only requires the substitution of my improved ratchet dogs, and connecting devices as will more fully hereinafter appear.

My improved construction is exactly alike at both platforms, and the following description of one will apply alike to both.

On the platform of the car 1, a bed plate 6 is secured by screws or other similar fastening devices 7, and this bed plate is provided with a curved slot 8 registering with a similarly shaped opening 9^a in the car 1, and a stud 9 integral or secured to an intermediate portion of my improved dog 10, is mounted to move in the said openings registering in the base plate of the car platform. The dog 10 near one end is provided with an opening 11 to receive a pivot bolt 12, which latter is preferably passed through an opening in the bed plate 6, and secured in the car platform. The dog 10 between its ends is provided at its opposite sides with beveled or inclined extensions 12^a, which are of a size and shape to completely cover the opening 8 in the bed plate, in either of the positions of the dog, and the bevel of said extensions, serves to prevent any accumulation of dirt and foreign matter on top of the dog. The free end of the dog 10 is curved as shown and pointed to engage between the teeth of the ratchet wheel, and is provided with an upwardly projecting web portion 13, against which the motorman's foot is to be placed to force the dog into engagement with the ratchet. The dog is preferably beveled or inclined adjacent to this web portion 13 as indicated at 14, so as to guide the motorman's foot against the web when pressing the dog into operative position. The studs 9 on the dogs 10 are preferably of general conical form as shown, and are provided near their lower ends with a cylindrical restricted portion 15, and a washer 16 is located against the shoulder formed by the juncture of the cylindrical and conical portions of the studs. The extreme ends of the studs are screw threaded for the reception of nuts 17, and are perforated to receive cotter pins 18, or other locking devices to prevent accidental escape of the nut, and washers 19 are preferably located above said nuts 17.

Hangers 20 as shown in Fig. 5, are secured to the under face of the car frame, and provide bearings 21 for a sliding rod 22, which latter is preferably made in two sections connected by a turn buckle 23 as shown, to adjust it longitudinally. The ends of the rod 22 are made in the form of eyes 24, to which chains 25 are connected, and rings 26

are provided at the ends of these chains and adapted to be positioned on the cylindrical lower ends of the studs 9, and be securely held by means of the nuts 17 and cotter pins 18. The purpose of this connecting device is to compel the release of the brake shaft at the rear end of the car when the dog at the front end of the car is operated, to engage the ratchet wheel when the brake is applied. This is a very important feature, as it often happens that the brake shaft at the rear end of a car is locked and will interfere with the proper applying of the brakes by the motorman at the forward end of the car, and to prevent any possibility of such a condition, my improvements were devised, and will compel the release of the rear brake shaft when the front one is locked.

It will also be observed that the only means of releasing the dog from engagement with its ratchet wheel, is by turning the shaft, so as to advance the ratchet wheel at least a distance of one tooth. This absolutely prevents possibility of accidental release of the shaft, and consequently prevents any possibility of a whirling brake arm striking a passenger, and prevents the accidental release of the brakes, and there is no danger whatever of a passenger accidentally kicking against the dog and releasing the brakes, as is common with constructions ordinarily in use.

Fig. 4, illustrates a modification of my improved dog, the structure is very similar to the preferred form, except that the beveled extensions are disposed with, and a separate stud 9^b is secured to, the intermediate portion of the dog to take the place of the stud 9 of the preferred form.

In operation, this modified construction of dog performs the same functions and operates in precisely the same way as does the preferred form.

Various other changes might be made in the general form and arrangement of parts described without departing from my invention, and hence I do not restrict myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In combination with a brake shaft and a ratchet wheel thereon, of a dog pivotally secured at one end and constructed at its other end to engage between teeth of the ratchet wheel, and an upwardly projecting web adapted to be struck by an operator to force the dog into locked engagement with the ratchet wheel.

2. In combination with a brake shaft and a ratchet wheel thereon, of a dog pivotally secured at one end and constructed at its other end to engage between teeth of the ratchet wheel, a foot engaging web projecting upwardly from said dog near its ratchet engaging end, and said dog beveled or inclined at its edge adjacent to said web.

3. In combination with a car, brake shafts at opposite ends of the car, ratchet wheels on said shafts and dogs engaging said ratchet wheels, of means connecting said dogs, whereby the locking of one dog in engagement with its ratchet will cause the release of the other dog from its ratchet.

4. In combination with a car, brake shafts at opposite ends of the car, ratchet wheels on the brake shaft, dogs pivotally connected at one end and constructed at their opposite ends to engage the ratchet wheels, studs fixed to said dogs between the ends of the latter, and projecting through openings in the car platforms, and a connecting device between the studs of the said dogs, whereby when one dog is moved to lock its ratchet wheel, the other dog will be moved to release its ratchet wheel.

5. In a device of the character described, the combination with a car, of brake shafts located at opposite ends of the car, sprocket wheels on said brake shafts, dogs pivotally secured at one end and constructed at their other ends to engage the ratchet wheels, bed plates below said dogs, slots in said bed plates and in the car platforms, studs on said dogs between the ends of the latter and movable in said slots, hangers secured to the car, a rod movable longitudinally in said hangers, chains at the ends of said rods, rings at the ends of said chains located on said studs, nuts on said studs locking said rings thereon, and a turn buckle between sections of said rod, whereby the rod may be adjusted longitudinally.

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

CHARLES A. BURKE.

Witnesses:
R. H. KRENKEL,
J. A. L. MULHALL.