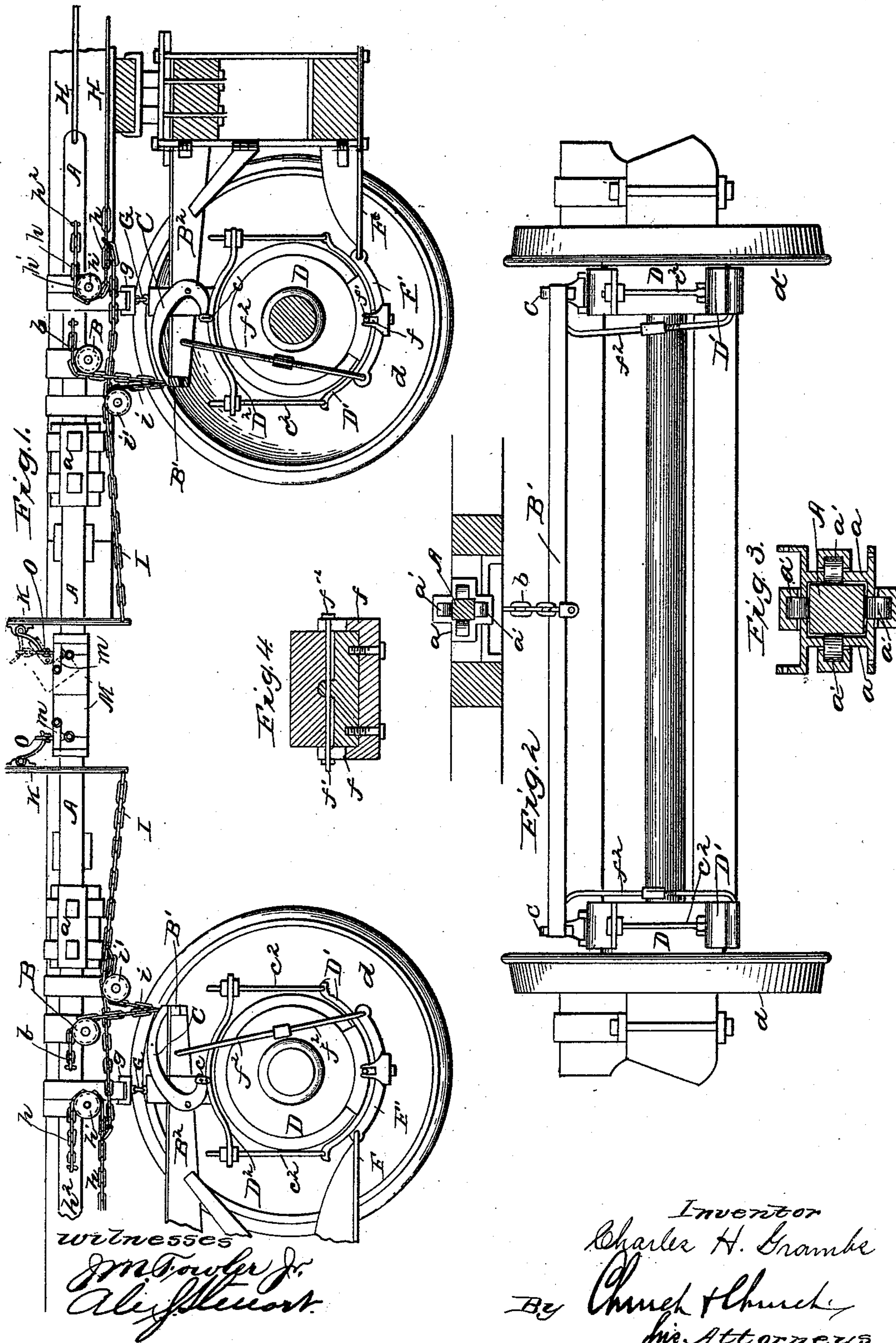


(No Model.)

C. H. GRAMBS.
CAR BRAKE.

No. 498,167.

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UNITED STATES PATENT OFFICE.

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CAR-BRAKE.

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To all whom it may concern:

Be it known that I, CHARLES H. GRAMBS, of Dalton, in the county of Lackawanna and State of Pennsylvania, have invented certain
5 new and useful Improvements in Car-Brakes; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification,
10 and to the letters of reference marked thereon.

This invention relates to improvements in car brakes of that class wherein the brakes are applied by the momentum of the cars, acting through devices located between and
15 moved by the crowding together of the cars in stopping, and the invention consists in certain novel details of construction and combinations and arrangements of parts, all as will be now described and pointed out particularly
20 in the appended claims.

Referring to the accompanying drawings: Figure 1 is a section through the adjacent ends of two cars having the invention applied thereto. Fig. 2 is a section at right angles to
25 Fig. 1 and showing simply the transverse brake beam and brake drums, the arrangement of which does not appear in Fig. 1. Fig. 3 is a detail section of one of the supporting boxes for the longitudinally movable bar. Fig.
30 4 is a detail section of one of the brake shoes.

Like letters of reference in the several figures indicate the same parts.

In carrying my invention into practice the usual arrangement of car trucks, framing and
35 platform is employed and the construction of these parts being well known, I have not deemed it necessary to illustrate the same fully, but will only refer to such parts incidentally in describing the brake apparatus.

Referring to the drawings, it will be seen that on the under side of the framing forming the platform or bottom of the car, I have mounted a longitudinally movable bar A, such bar being supported in place by passing
45 through boxes *a* (Fig. 3) having antifriction rollers *a'* in each side and rigidly secured to the framing by bolts or in any approved manner. The bars A are located at each end of the car, and are so positioned that when the
50 cars come together, the bars on the respective cars will abut, or will strike some projecting

part of the other car, whereby it is moved inward.

Chains *b* attached to the bar A and running over pulleys B down to each truck are
55 adapted to operate the brake shoes, which latter, preferably, operate on drums D attached to the inside of the wheels *d* by bolts or otherwise.

The mechanism located between the chains
60 and brake shoes is as follows: The chains are attached, preferably at the center of the car transversely, to a brake beam B', the ends of which are adapted to engage and move the bell crank levers C pivotally mounted on sup-
65 ports B² (attached to the frame work of the truck), and having their opposite ends connected by links *c* with the center of the yokes D² which latter may be of spring steel, if desired. To each end of the yokes D², adjust-
70 able rods *c'* extend down and are connected to opposite ends of the base D' of the brake shoe located beneath the drum D, whereby when the bars are pushed inward they will, acting through the chains, bell crank levers
75 and described connections, exert a powerful upward pull on the brake shoes, thereby exerting a powerful resistance to the rotation of the wheels.

To prevent the brake shoes from rotating
80° with the drums when pressed against the same, as well as to support said shoes when not in use, a supporting frame F is extended out from the truck frame and provided with a curved portion F' underlying the brake shoe
85 and with upwardly extending ears or projections *f* at each side adapted to engage lateral projections or pins *f'* on the sides of the brake shoe. To afford additional strength to the frame F', and also to render the same adjust-
90 able, I preferably make it jointed and connect the outer end to the top frame B² by means of an adjustable rod *f'* as shown clearly in Fig. 1. Supports for the brake beam B' are also preferably provided by extending the
95 frames B² and forming seats in their ends for the ends of said beam, into which seats the beam will fit when lowered by the forward movement of the bar, and the frames B² may in turn be supported by chains G connected
100 by yokes *g* to the under side of the car framing.

It will be understood that the arrangement thus far described is duplicated at each end of the car, and in order to cause their simultaneous operation, rods H are provided having one end attached to the inner end of the bar A at one end of the car, and at the opposite end having a chain *h* passing around a pulley *h'* and connected to the bar A at that end at *h*².

Should it be desired to adapt the brake for use either as a hand or an automatic brake, it may be accomplished by attaching a chain I to the rod H or chain *h*, extending the same out to the end of the car and attaching it to the usual vertical hand wheel shaft K in the usual manner, and in addition providing a branch chain *i* passing over a pulley *i'* down to the brake beam B'. Thus when the chain I is pulled upon by the rotation of the hand wheel, the brakes at both ends of the car are simultaneously applied.

In many instances, it is desirable to throw the automatic brake connections out of operation and to accomplish this, I preferably provide each of the bars A with a hinged end M adapted to be turned up out of operative position as indicated in dotted lines Fig. 1. To lock this end down in operative position, a latch *m* is pivoted on its upper side at a point beyond the hinge or joint and adapted when lowered as shown in full lines, to engage a shoulder on the bar and prevent the end M from turning up. A chain O is attached to the latch *m* for raising it, and when the latch is raised by the chain, it in turn raises the end M as will be readily understood.

In operation, when the forward cars are stopped by the action of the locomotive or other retarding influence, the rear cars crowding together, force the bars A in, and automatically apply the brakes with great power, thereby arresting the train or checking its speed just so long as the resistance is at the forward end, but as soon as the engine moves forward the rear cars separate as far as permitted by the couplings and allow the bars to advance and remove the brakes from contact with the drums.

Having thus described my invention, what I claim as new is—

1. In an automatic brake apparatus, the combination with the car, truck frame and wheels, of the longitudinally movable bar carried by the car and projecting beyond the end of the same, the vertically movable yoke, the pulley, the chain connected to the bar, passing over the pulley and having connections between its opposite end and the yoke, and the brake shoe connected with the yoke; substantially as described.

2. The combination with the car, truck frame and wheels of the longitudinally movable bar carried by the car and projecting beyond the end of the same, the lever and brake applied thereby, and the chain connecting said lever and bar; substantially as described.

3. In an automatic car brake, the combination with the car, truck frame and wheels, of the longitudinally movable bar carried by the car and projecting beyond the end of the car, the pulley, the chain connected to the bar and passing over said pulley, the horizontally arranged lever connected with said chain, and the brake shoe connected with the lever; substantially as described.

4. In an automatic car brake, the combination with the car, the truck frame, the longitudinally movable bar carried by the car and projecting beyond the end of the same, and the wheels having the brake drums thereon, of the brake shoes cooperating with said drums to stop the wheels, the horizontally arranged levers for moving the shoes into engagement with the drums, the pulley and the chain connected with the levers passing over the pulley and connected at the opposite end with the bar; substantially as described.

5. In an automatic brake, the combination with the framing and wheels having the brake drums on their inner sides, of the longitudinally movable bar carried by and projecting beyond the end of the frame, the brake shoe, cooperating with the drums, the horizontally arranged levers for moving the brake shoes against the drums, the pulley and the chain connecting said lever and bar, passing over the pulley; substantially as described.

6. In an automatic brake, the combination with the car framing and wheels, having the brake drums thereon, the longitudinally movable bar carried by and projecting beyond the end of the framing, the brake shoes engaging the drums, the bell crank levers for applying said shoes and the chains connecting said levers and bar, of the supporting frame cooperating with the brake shoes, to prevent their rotation, connected to the car framing; substantially as described.

7. In an automatic brake for cars, the combination with the car framing and wheels having brake drums on their inner sides, the brake shoes engaging the drums, the longitudinally movable bar and connections between said shoes and bar, of the frames for preventing the rotation of the shoes with the drums, connected with the car framing and having the upwardly projecting ears cooperating with projections on the shoes, whereby the shoes are allowed an independent movement; substantially as described.

8. In a car brake, the combination with the car frame, truck frame and wheels having the brake drums on the inner sides, of the frames B² connected with the truck frame, the bell crank levers mounted on said frame B², the brake shoes carried thereby, the longitudinally movable bar on the car frame and chain connections between the bell crank levers and bar; substantially as described.

9. In an automatic car brake, the combination with the car frame, truck frame, wheels having the brake drums on their inner sides, and frame B², of the bell crank levers pivoted

on the frame B², the yokes carried by said bell crank levers, the brake shoes suspended beneath the drums, connections between opposite ends of said brake shoes and the yoke, 5 the longitudinally movable bar and connections between said bar and the bell crank levers; substantially as described.

10 In an automatic car brake, the combination with the car truck and brake shoes, of the oppositely moving bars at opposite ends

of the car for moving said brake shoes, the rod extending between said bars, connected to one of the bars at one end, a pulley and a chain passing around said pulley and connecting the opposite end of the rod and other 15 bar; substantially as described.

CHARLES H. GRAMBS.

Witnesses:

FRED. DURR,
WM. F. ERBE.