No. 809,632. PATENTED JAN. 9, 1906.

C. Z. SANDERS.

ANCHOR EMERGENCY AIR BRAKE.

APPLICATION FILED MAY 1, 1905.

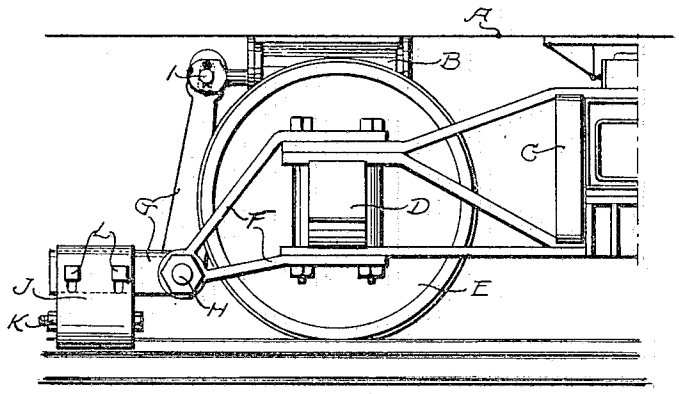


FIG. 1.

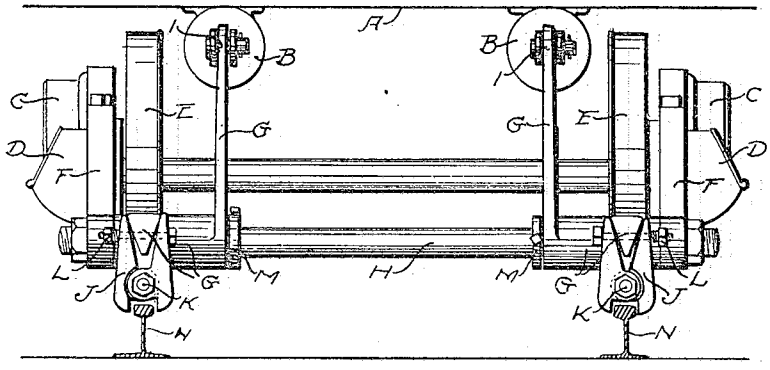


FIG. 2.

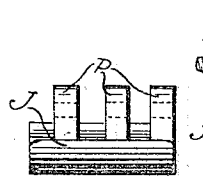


FIG. 5.

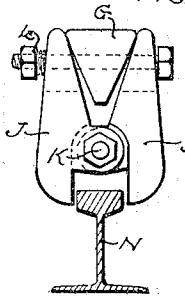


FIG. 3.

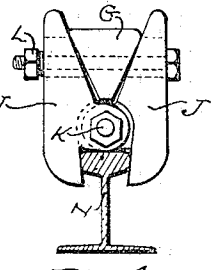


FIG. 4.

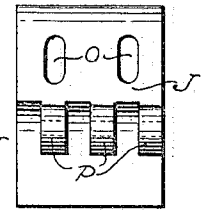


FIG. 6.

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ANCHOR EMERGENCY AIR-BRAKE.

No. 809,632. Specification of Letters Patent. Patented Jan. 9, 1906.

Application filed May 1, 1905. Serial No. 258,427.

To all whom it may concern:

Be it known that I, CHARLES ZENAS SANDERS, a citizen of the United States, residing at Sacramento, in the county of Sacramento and State of California, have invented a new and useful Anchor Emergency Air-Brake, of which the following is a specification and description.

The anchor emergency air-brake is intended for use on both passenger and freight cars, whether such cars are driven by steam, electricity, gasolene, or any other known motive power. The design of the anchor emergency air-brake is what its name implies. It is an emergency auxiliary air-brake to those air-brakes which are now being generally used on such cars. It is further the design of the anchor emergency air-brake to put it within the power of the engineer or person in charge of the train or car in times of great emergency to avoid collisions, telescoping, or otherwise disastrous occurrences that seem to threaten both life and property, to immediately stop the train or car by applying the emergency air-brake, which when applied will immediately anchor the train or car to the track on which it runs, thus necessarily bringing the train or car to a complete stop.

The construction and application of the anchor emergency air-brake is as follows and is illustrated by the accompanying drawings, in which—

Figure 1 is a side view of air-brake, showing how yoke is attached to the frame of truck and how upright arm of lever is connected with piston-rod of air-cylinder. Fig. 2 is an end view of air-brake, showing portion of the two brake-shoes immediately over the track, also showing the shaft, which passes through boss of yokes, to which it is secured and on which the bell-crank levers swing. Fig. 3 shows brake-shoe with wedge-shaped lever attached as it descends on track. Fig. 4 shows brake-shoe when gripping the track. Fig. 5 is a transverse view of brake-shoe, showing hinge; Fig. 6, an elevation of inside of brake-shoe, showing hinge and bolt-holes for attaching it to the wedge-shaped lever.

Same letters refer to same parts of the drawings in the several views.

A represents the bed or bottom of car to which air-cylinder is bolted.

B is the air-cylinder and is piped to the air-reservoir in the usual style of air-cylinders and put under control of engineer by suitable valve in cab within easy reach of his hand.

C is a section of truck-frame to which yokes are bolted.

D is the axle-box, on which truck-frame rests.

E represents the wheels of truck.

F represents the yokes, made of bar-iron and bolted to opposite ends of truck looking toward center of car. Yokes are so made that they will straddle from top to bottom of truck-frame and will use the same pedestal bolt-holes as are now in frame. Yokes are bent to the proper angle and terminate in a large boss. Through this boss a hole is drilled to receive the ends of shaft H.

G is a bell-crank lever, the two levers being one solid forging with hole through center to receive shaft H, on which they swing. The upright arm of lever reaches up to a connection with piston-rod of air-cylinder B and is secured by a bolt I through jaw. The longitudinal end of lever, situated just over the track, carries the brake-shoe, which is bolted to it, and in shape where it enters the brake-shoe it is that of a wedge.

H is a steel shaft which stretches from yoke F on one side to yoke F on the other. The ends of the steel shaft H are made small enough to pass through the holes in yoke F, and the shaft is held securely in its place by a nut screwed on each end of shaft as it projects through yoke. On this shaft swings the bell-crank lever G, carrying brake-shoes J, lever G being allowed to work freely on shaft H as the brake is either put on or taken off.

M is a set-collar with suitable set-screw to hold lever G in its proper position.

J is the brake-shoe. The brake-shoe is made in two parts, the two parts being hinged together through the middle, and a steel bolt K, passing through the hinge, secures the two parts, the one to the other. The lower parts of the brake-shoes are separated just far enough to straddle the rail, while the upper parts are separated far enough to receive the wedge-shaped lever G, to which it is bolted by two bolts.

O shows bolt-holes through shoes, the holes being cast oblong.

When it is desired to use the brake, the engineer throws on the air and the upright arm of lever G is thrust forward, which causes the lower arm of lever and the brake-shoe J to come down on track. When the shoe can come no lower, but rests on the track, the arm of the lever continues to descend through the aid of slotted holes in brake-shoe O, and

as it descends now it presses apart by means of the wedge shape the upper ends of the brake-shoe, which causes the lower ends of the brake-shoe to close on the rail with all the power that the air-brake can give, thus practically anchoring the car to the track and bringing it to a complete stop. When the air is released, the arms of lever G will again resume their normal positions, and the brake-shoes J will be lifted up clear of track.

On the bolts that hold brake-shoe J to lever G a small coiled spring L is placed between outside of shoe and nut of bolt. This coiled spring will give sufficiently to admit of the working of the brake; but when brake is not in use it will still keep both parts of shoe close up to wedge-shaped lever G, and thus prevent any undue rattling or jumping of the parts when car is in motion.

N shows rails of track.

The brake-shoe J can be made in two halves, hinged in the middle, as above described, or it can be a solid shoe just the width of the track below and bolted solidly to arm of lever G above, which arm then would be parallel. The design of the anchor emergency air-brake is intended to cover both of these ideas.

The piping to air-cylinder, with necessary valves, the bed of the car, and section of the truck shown in the drawings of course form no part of the declared invention.

In the manufacture of this air-brake changes and modifications from the exact description as shown will naturally suggest themselves to those skilled in the art, and I do not wish to be limited strictly to the exact mechanism as shown, but desire to include all such modifications as would readily be adopted by a competent mechanic.

Having thus described my invention, for which Letters Patent are prayed, what I claim is—

1. In a car, the combination with a truck-frame, of two yokes, each having bifurcated arms secured to the top and bottom of said truck-frame, said yokes having their convergent arms terminating in an enlarged portion, a fulcrum-shaft supported in said enlarged portions, a bell-crank lever fulcruming on said shaft, a brake-shoe carried by one arm of the lever, and connection with a source of power by the other arm of said lever, substantially as set forth.

2. The combination with a truck-frame, of a yoke having bifurcated arms secured to the top and bottom of said frame, a fulcrum-shaft carried by said yoke, a bell-crank lever mounted on said shaft, a brake-shoe carried by one of the arms of said lever, and means connected with the other arm of the lever to operate the latter and the shoe, substantially as set forth.

3. In a car, the combination with a truck-frame, of two yokes carried by said frame, a fulcrum-shaft supported by said yokes, a bell-crank lever mounted on the fulcrum-shaft, a brake-shoe on one arm of the lever and means connected with the other arm to operate the lever, substantially as set forth.

4. In a car, the combination with a truck-frame, of two yokes carried by said frame, a fulcrum-shaft supported by said yokes, a bell-crank lever mounted on the fulcrum-shaft, a brake-shoe on one arm of the lever, a pressure-cylinder on the car, and a piston-rod therefor connected with the other arm of the lever, to operate the latter, substantially as set forth.

5. In a car the combination with the truck-frame, of a hanger thereon, a bell-crank lever fulcrumed on the hanger, a brake-shoe to engage the rail carried by one arm of the lever, and pressure means connected with the other arm of the lever to operate the latter, said brake-shoe having hinged movable sections to grip the opposite sides of the rail, substantially as set forth.

6. In a car the combination with the truck-frame, of a hanger thereon, a bell-crank lever fulcrumed on the hanger, a brake-shoe to engage the rail carried by one arm of the lever, pressure means connected with the other arm of the lever to operate the latter, said brake-shoe having hinged movable sections to grip the opposite sides of the rail, said lever having a limited movement independent of said clamp-sections, substantially as set forth.

7. In a car the combination with the truck-frame of a hanger thereon, a bell-crank lever fulcrumed on the hanger, a brake-shoe to engage the rail carried by one arm of the lever, pressure means connected with the other arm of the lever to operate the latter, said brake-shoe having hinged movable sections to grip the opposite sides of the rail, said lever having a limited movement independent of said clamp-sections, and means for maintaining said clamp-sections normally out of contact with the rail, substantially as set forth.

8. In a car, a suitably-fulcrumed bell-crank lever, having one of its members wedge shape, in cross-section, a sectional clamp-shoe carried by said arm, the incline surface of said arm engaging corresponding surfaces on said sections to operate the latter clamp fashion, and means to rock the lever, substantially as set forth.

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Witnesses:
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