

(No Model.)

2 Sheets—Sheet 1.

J. P. SEAWELL.
CAR COUPLING BRAKE.

No. 479,024.

Patented July 19, 1892.

Fig. 1.

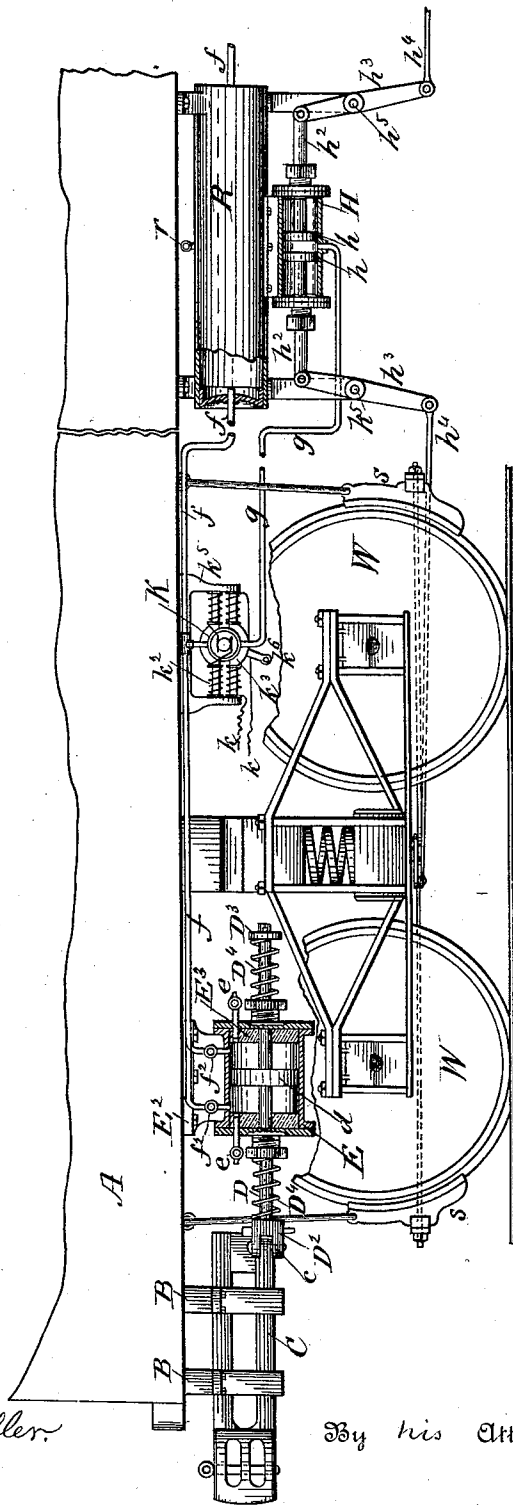
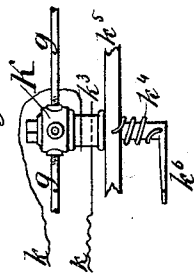


Fig. 2.



Witnesses
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By his Attorney
E. E. Masson

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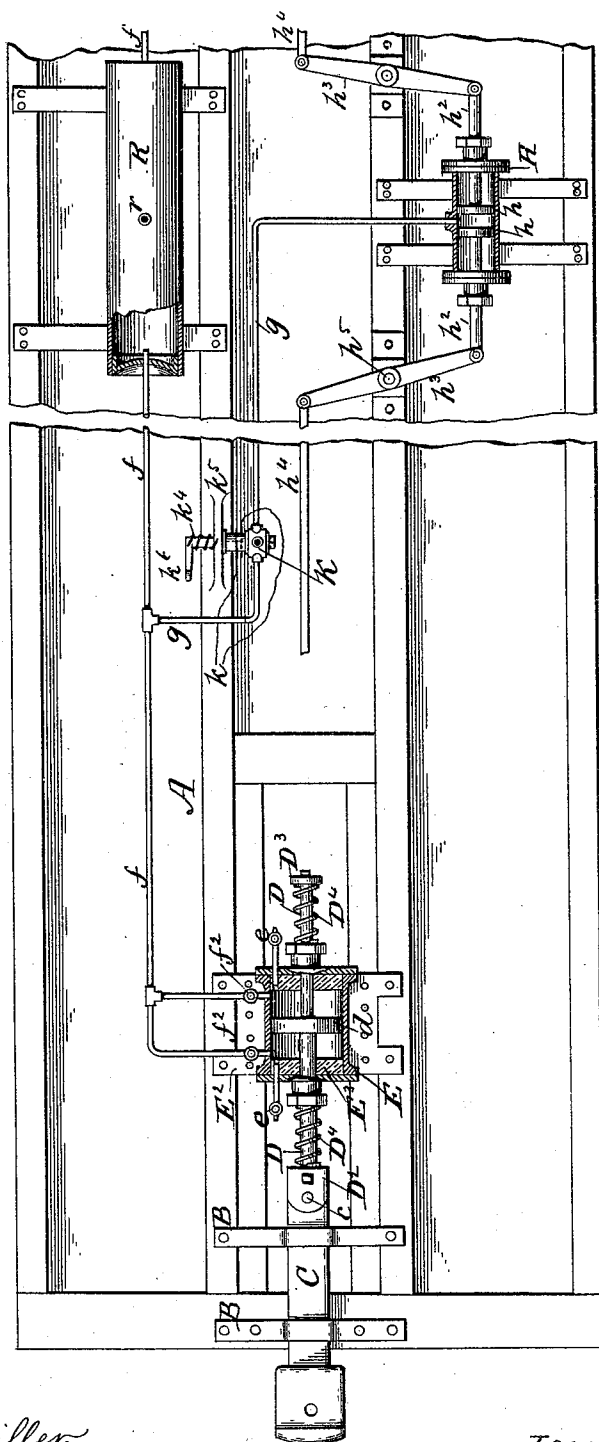
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Fig. 3



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UNITED STATES PATENT OFFICE.

JESSE P. SEAWELL, OF CLARKSBURG, MISSOURI.

CAR-COUPLING BRAKE.

SPECIFICATION forming part of Letters Patent No. 479,024, dated July 19, 1892.

Application filed August 5, 1891. Serial No. 401,735. (No model.)

To all whom it may concern:

Be it known that I, JESSE P. SEAWELL, a citizen of the United States, residing at Clarksburg, in the county of Moniteau, State of Missouri, have invented certain new and useful Improvements in Car-Coupling Brakes, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to devices for automatically filling the portable reservoir of a car-brake with air under pressure and releasing said air either from the interior of the car or from one end of a train of cars. It is an improvement upon the invention for which a patent was granted to me and to John H. O'Hara February 24, 1891, No. 447,207; and the objects of my improvement are to simplify and reduce the cost of parts of the device in the manner hereinafter described. I attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a side view, partly in section, of the apparatus constructed in accordance with my invention and applied to a portion of a car. Fig. 2 is a top view of a three-way cock used with my apparatus. Fig. 3 is an under side plan view of the apparatus, partly in section, showing the brake-cylinder on one side of the air-reservoir.

In the drawings, A represents the body of a car, to the bottom of which are secured, adjacent to its end, the straps B, that support the draw-head C, which can be of any suitable construction. To the inner end of said draw-head is secured by a pivot-pin *c* one end of the piston-rod D, carrying the piston *d*. Said piston is located within a cylinder E, retained in a strong frame E², known as "draft-timbers," securely bolted to the bottom of the car, said frame being capable of withstanding the traction of the car by the draw-head. One end of the piston-rod has a slotted head D², through which the pivot-pin *c* passes, and between said head and one of the packing-boxes of the cylinder E a coiled spring D⁴ is placed upon the piston-rod to relieve the piston of any sudden concussion produced against the face of the draw-head by another car backing against it, and a similar spring D⁴ is coiled upon the opposite end

of the piston-rod between the opposite packing-box of the cylinder and a head or nut D³ secured upon said end of the piston-rod to relieve the piston of any sudden concussion produced by starting or pulling upon the draw-head of the car. The springs D⁴ are also used to keep the piston when in normal position near the center of the cylinder. To prevent, also, the piston from striking the heads of the cylinder and thus protect said heads, an elastic cushion E³, preferably of rubber about three inches thick, is located against the inner face of each of said heads.

The intermittent forward and back motions to which the draw-head is subjected while a train of cars is being made up or while traveling upon roads causes a reciprocating motion of the piston within the cylinder, and said motion is utilized to fill a reservoir R with air under a pressure of one hundred to one hundred and fifty pounds per square inch, as may be desired, the amount of pressure in said reservoir being regulated by a blow-off valve *r* upon said reservoir. Air is admitted alternately into both ends of the cylinder E in front and rear of the piston *d* therein through short pipes secured to the heads of the cylinder, upon which are placed inwardly-swinging valves or check-valves *e* of suitable well-known construction to prevent the air admitted into the cylinder from escaping through the same opening. The air received in the cylinder E is conducted to the reservoir R through a pipe *f*, having two branches at the end attached to said cylinder, and each branch has a check-valve *f*² of suitable well-known construction to prevent the return of the air into the cylinder after it has been expelled therefrom into the pipe *f* and reservoir R by the piston *d* in said cylinder E.

The compressed air in the pipe *f* and reservoir R is to be used to apply the brake against the wheels W through the medium of the brake-cylinder H. The latter is shown suspended under the reservoir in Fig. 1; but it may preferably be suspended from the bottom of the car, as shown in Fig. 3, and be alongside of said reservoir.

The cylinder H is shown provided with two pistons *h h*, each having a piston-rod *h*², so that the brakes of the forward and rear truck

of the car can be uniformly operated from the same cylinder; but two independent cylinders may be used, if desired. In the illustrated construction the air under pressure is admitted in the brake-cylinder half-way of its length through the pipe *g*, issuing from a T branch placed upon the pipe *f*. The air admitted into the cylinder *H* forces the pistons apart and the piston-rods rock the levers *h*³, so as to bring their lower ends nearer together, and pulling upon the brake-rods *h*⁴ apply the brake-shoes against the periphery of the wheels in the usual manner. The bearing-hole for the pivot-pin *h*⁵ may be slightly elongated to compensate for the slight area that would otherwise be traveled by the end of the lever *h*³, that is attached to the piston-rod *h*².

In Fig. 1 the levers *h*³ are shown standing vertically to act upon the brake-rods; but in Fig. 3 the levers *h*³ are shown adapted to swing horizontally to give motion to the vertical brake-lever shown in my patent, No. 447,207.

The passage of compressed air from the reservoir *R* or pipe *f* to the brake-cylinder *H* is controlled by a three-way cock *K* placed on the pipe *g* between said pipe *f* and cylinder *H*. This three-way cock can be controlled by the engineer of the train by means of electric wires *k*, connected with an electric dynamo upon the locomotive and with any well-known arrangement of electro-magnets or small dynamo *k*², nearly encircling the spindle of the cock or a suitable core *k*³ placed thereon, so that by rotating the spindle of the cock the length of a segment of a circle compressed air will be permitted to pass to the cylinder *H*, while the electric current remains on the cock, and when the current is cut off the passage of air under pressure is cut from the brake-cylinder and the air therein is permitted to escape to the atmosphere through the pipe *g* and the third passage of the three-way cock. The closing of the current of air from the reservoir *R* is accomplished by giving to the spindle of the cock a portion of a back rotation by means of a torsional spring *k*⁴, hav-

ing one end secured to the frame *k*⁵ and the other end to the stem of the cock.

If desired, the stem of the cock can be operated from the inside of the car or from the caboose of the train by pulling upon a cord attached to a crank-handle *k*⁶, projecting from said stem. When electric wires are used, the three-way cock of each car is connected by branch wires with wires extending the length of the train, so that the engineer can apply the brakes on the entire train in an instant.

Having now fully described my invention, I claim—

1. In a car-brake, the combination of a draw-head, a piston-rod connected with said draw-head, a piston and its inclosing cylinder *E*, and check-valves in the ends of said cylinder, a spring between said cylinder and the draw-head, an air-reservoir and brake-cylinder, and means for connecting the brake-cylinder with the air-reservoir, substantially as described.

2. In a car-brake, the combination of a draw-head, a piston-rod connected with said draw-head and carrying a piston, the cylinder *E*, its check-valves and springs bearing against the packing-boxes at the ends thereof, with cushions within the cylinder, an air-reservoir and brake-cylinder, and means for connecting the brake-cylinder with the air-reservoir, substantially as described.

3. In a car-brake, the combination of a draw-head, a piston-rod and piston connected with said draw-head, the cylinder *E*, having check-valves at the ends, an air-reservoir, a brake-cylinder and pipes connecting the brake-cylinder and air-reservoir with the cylinder *E*, a three-way cock to control the air from the reservoir to the brake-cylinder, and means for operating said cock, substantially as described.

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

JESSE P. SEAWELL.

Witnesses:

A. P. FRAUSE,
W. H. JOBE.