

(No Model.)

J. P. HIGH.
AIR BRAKE SIGNAL.

No. 555,809.

Patented Mar. 3, 1896.

FIG. 1-

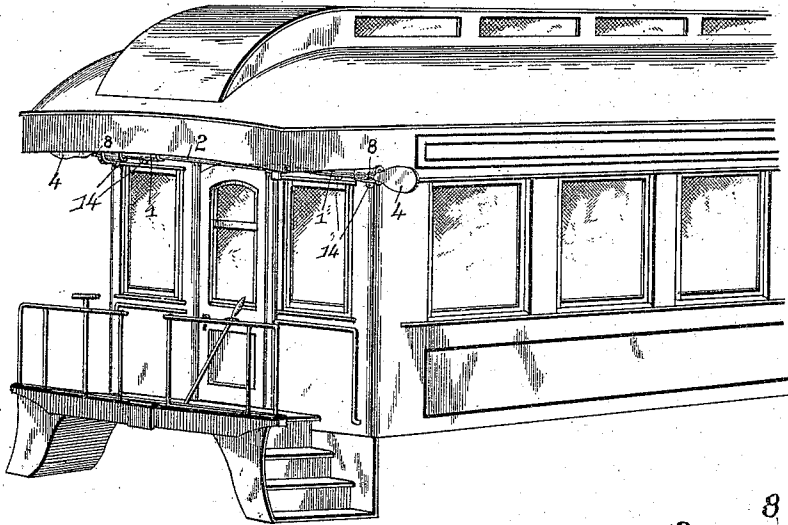


FIG. 2-

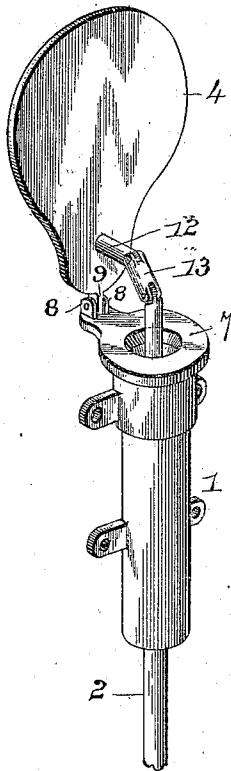
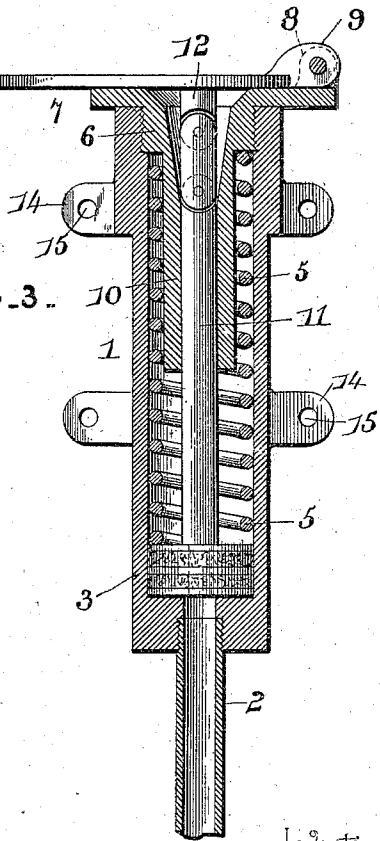


FIG. 3-



Inventor

Witnesses

Jas. H. McLaughlin
[Signature]

By *his* Attorneys.

James P. High

Chas. Snow & Co.

UNITED STATES PATENT OFFICE.

JAMES PAYTON HIGH, OF NASHVILLE, ARKANSAS.

AIR-BRAKE SIGNAL.

SPECIFICATION forming part of Letters Patent No. 555,809, dated March 3, 1896.

Application filed February 27, 1895. Serial No. 539,898. (No model.)

To all whom it may concern:

Be it known that I, JAMES PAYTON HIGH, a citizen of the United States, residing at Nashville, in the county of Howard and State of Arkansas, have invented a new and useful Air-Brake Signal, of which the following is a specification.

My invention relates to an air-brake signal or indicator adapted for use in connection with pneumatic tubes, and designed to indicate to the engineer the operativeness or inoperativeness of the brake apparatus upon each car of his train, whereby upon operating the brake mechanism to release the wheels the signal will show whether the apparatus has responded upon all of the cars, or whether one or more of the cars still have the brakes set.

Further objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claim.

In the drawings, Figure 1 is a view of a signal constructed in accordance with my invention applied in the operative position to a car. Fig. 2 is a detail view in perspective of the signal. Fig. 3 is a longitudinal central section of the same.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The signal is adapted to be arranged in a conspicuous position upon each of the cars in a train—as, for instance, adjacent to the corners of the roof at both ends of the car, whereby it may be seen by the engineer from the cab. The signal comprises a cylinder 1 arranged in communication with the brake-pipe or brake-cylinder of an air-brake system, such communication being established through a branch pipe 2, a piston 3 operating in said cylinder and exposed to the fluid-pressure admitted by said branch pipe, a signal-plate 4 connected to the piston-rod and adapted to receive motion therefrom, and means, such as a spring 5, for returning the parts to their normal positions. The cylinder is preferably of approximately one inch in diameter, and threaded in the outer end thereof is a cap 6, provided beyond the extremity of the cylinder with a lateral flange 7, having parallel per-

pendicularly-disposed ears 8, between which is pivotally mounted a tongue 9 on the extremity of the movable or signal plate. Said cap is also provided with a tubular extension or guide 10, arranged axially in the cylinder through which the piston-rod 11 extends, one end of said rod being affixed to the piston-head and the other end being loosely connected to the signal-plate. The return-spring 5 bears at one end against the piston-head and at the other end against the inner end of the cap, the diameter of the spring being such as to encircle the tubular extension or guide, whereby the extremity of said extension or guide forms a stop to limit the movement of the piston-head against the tension of the spring when the signal-plate arrives at a position perpendicular to its normal position, or that which it occupies when the piston is unaffected by pressure in the brake pipe or cylinder.

Secured to the signal-plate in alignment with the axis of the cylinder is a stud 12, which is connected with the adjacent extremity of the piston-rod by means of loose links 13, whereby freedom of movement of the connected parts is secured, and the cylinder is provided at suitable points with lateral lugs 14, having perforations 15 for the reception of securing-screws.

From the above description it will be seen that the pressure of fluid in the brake pipe or cylinder will be communicated by means of the branch pipes to the cylinders of the various signals, thus affecting the pistons and moving the signal-plates into positions perpendicular to those which they normally occupy. The arrangement of the signal-plates upon all of the cars in the proper position, or, as seen, when the pistons are exposed to fluid-pressure, is an indication that the brakes upon all of the cars are properly operated, and in the same way when the mechanism is operated to release the brakes the return of all of the signal-plates to their normal positions will show that the brakes upon all of the cars have been released, whereas the failure of one or more of the signal-plates to return to the normal position will not only disclose to the engineer and crew that all of the brakes have not been released but the particular car upon which the failure has oc-

curred, thus saving time in discovering the car upon which the brakes are set, and also avoiding the danger of starting before all of the brakes have been released. It frequently occurs that efforts to start a train when the brakes upon one or more of the cars have failed to release the wheels cause injury to the draw-heads, or, if the train is light, produce flat surfaces upon the wheels by frictional contact with the rails. Furthermore, the signal being visual, in contradistinction to those which are audible, can be read by engineers who are hard of hearing, and can be read when other noises drown that of the escaping air.

It is obvious that various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described the invention, what is claimed is—

An air-brake signal having a cylinder adapt-

ed to be arranged in communication with a fluid conductor or cylinder of an air-brake system, a piston operating in said cylinder and having a rod arranged axially therein, a cap removably fitted in the end of the cylinder, a tubular extension or guide carried by the cap with its extremity in the path of the piston to limit the movement thereof in one direction, a spring coiled upon said extension or guide and projecting beyond the extremity thereof to bear against the piston, and a pivotal signal-plate mounted upon the cap and loosely connected with the projecting extremity of the piston-rod, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES PAYTON HIGH.

Witnesses:

J. P. EXALL,

E. W. HUTCHINSON.