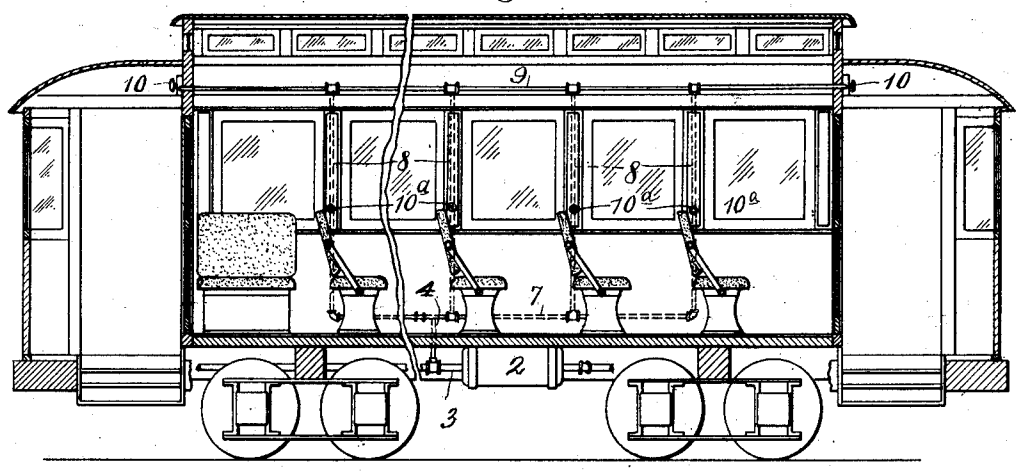
J. H. BRADY.

CAR SIGNAL.

APPLICATION FILED MAR. 13, 1906.

901,586. Patented Oct. 20, 1908.

Fig. 1.



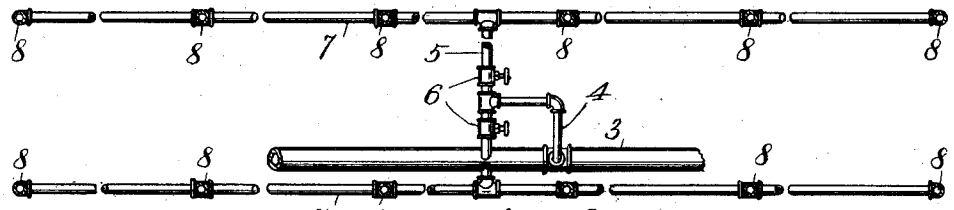


Fig. 2.

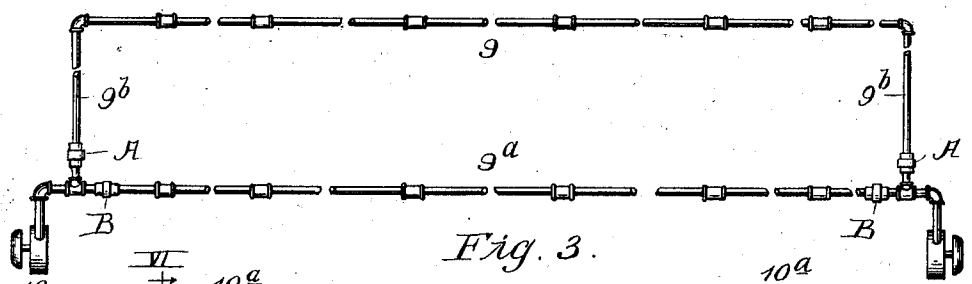


Fig. 3.

Fig. 4.

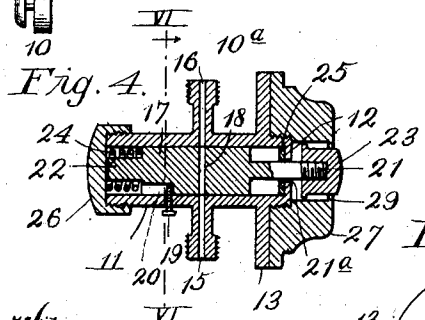


Fig. 5.

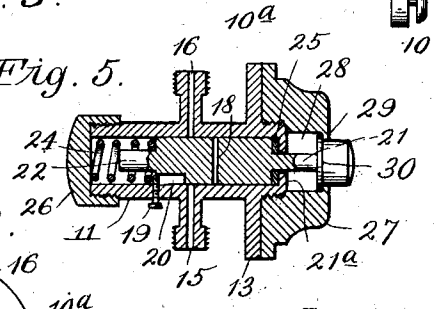
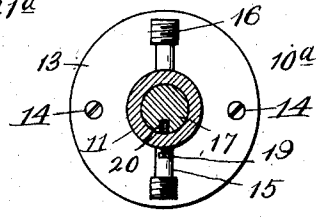


Fig. 6.



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CAR-SIGNAL.

No. 901,586. Specification of Letters Patent. Patented Oct. 20, 1908.

Application filed March 13, 1906. Serial No. 305,801.

To all whom it may concern:

Be it known that I, JOSEPH H. BRADY, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Car-Signals, of which the following is a specification.

My invention relates to improvements in car signals; and my object is to provide simple and convenient means for controlling the flow of fluid under pressure.

The device is especially adaptable for controlling the operation of door-bells, signal bells in street-cars, sleeping-cars, hotels and wherever fluid under pressure is employed for operating signals.

In order that the invention may be fully understood, reference will now be made to the accompanying drawing, in which:—

Figure 1 represents a broken longitudinal section of a car provided with my improvement. Fig. 2 is a plan view of the piping in the lower portion of the car. Fig. 3 is a plan view of the piping in the upper portion of the car. Fig. 4 is a vertical longitudinal section of my improved push-button valve in its operative position. Fig. 5 is a vertical longitudinal section of same in an inoperative position. Fig. 6 is a transverse section taken on line VI—VI of Fig. 4.

1 designates a car provided with the usual air-brake system in which an air-reservoir 2 forms a part thereof. 3 designates a main pipe leading therefrom.

4 designates a supply-pipe leading from pipe 3 to a feed-pipe 5 provided with hand valves 6 located at opposite sides of pipe 4 in order to control the flow of air to inlet or distributing pipes 7 communicating with the ends of feed-pipe 5.

8 designates a series of vertical pipes extending upwardly through the sides of the car from pipes 7 to longitudinal outlet pipes 9 9^a extending along opposite sides of the ceiling of the car and communicating with signal bells 10 at the ends of the car, said pneumatic signal-bells being, preferably, similar to the one patented by me December 26, 1905, No. 808,137.

10^a designates my improved push button valve one of which is placed in communication with each pipe 8 in order to control the flow of air from reservoir 2 to the signal-bells. Pipes 9 9^a are connected by transverse pipes 9^b provided with check-valves A which prevent the air from rushing to the pipes 9 in the opposite side of the car when one of the push-buttons admitting air to pipe 9^a is operated. Pipe 9^a is also provided with check valves B to prevent the air from entering therein when a push-button on the opposite side of the car is operated. Thus economy in compressed air is obtained without interfering with the operation of the bells, toward which all check valves open.

In constructing my improved push button valve I employ a cylindrical case 11 partially closed at its forward end by an annular shoulder 12 and provided near its forward end with an exterior attaching flange 13 having oppositely-disposed screw-holes for the reception of screws 14 whereby it may be secured to the side of the car. Case 11 is also provided with an induction port 15 and an eduction port 16 both of which communicate with a branch-pipe 8.

The flow of air through case 11 is controlled by a piston-valve 17 having a transverse port 18 extending therethrough and adapted to register with ports 15 16 when said valve is pushed backwardly to the position shown in Fig. 4. The valve is prevented from turning in the case and thus throwing port 18 out of line with ports 15 16 by a set-screw 19 projecting into a longitudinal slot 20 in the rear underside of the valve. The forward end of slot 20 and set-screw 19 also limit the backward movement of the valve and are so disposed that said backward movement will be checked when port 18 is brought into coincidence with ports 15 16.

21 22 designate smooth stems projecting from the front and rear ends, respectively, of the valve, the former extending through an orifice 21^a in shoulder 12 and being provided with a push-button 23 for pressure by the operator's thumb or finger whereby the push-button and piston are forced backwardly. When said push-button is released the piston is forced forwardly by an expansion spring 24 into contact with a gasket 25 abutting against the inner side of shoulder 12 and fitting rather snugly around stem 21 in order to retard the escape of air through orifice 21^a and cushion the forward stroke of the piston. Spring 24 embraces stem 22 and abuts against the rear terminal of the valve and a screw-cap 26, which latter engages and closes the rear threaded end of

the case and prevents the admission of dust which might interfere with the proper action of the piston.

27 designates an escutcheon which is screwed upon the front threaded end of the case and into contact with attaching flange 13 in order to cover the front side of the latter and give the device an ornamental appearance. Said escutcheon has a central opening 28, through which the push-button extends, and an annular shoulder 29 which latter is arranged in the path of a shoulder 30 at the rear end of the push-button, so that said button cannot be removed from stem 21 without first removing the escutcheon, and hence the button 23 cannot fall out if it should become detached from the stem 21. By unscrewing the escutcheon 27 the heads of the screws 14 are exposed, and by removing said screws the case 11 can be withdrawn from position—the connections of pipe 8 with the nipples of ports 15 and 16 being first broken.

From the above description it is apparent that I have produced an improved car signal embracing a pneumatic system which economizes the consumption of compressed air and permits the pipes in either or both sides of a car to be cut out of use by the valve 6, and a push-button valve which is especially adapted for car signal service wherein rough usage by the traveling public makes it advisable that the stroke of the piston shall be cushioned in both directions.

Having thus described my invention what I claim and desire to secure by Letters-Patent, is:—

In a car signal, a push button valve comprising a tubular case having opposite radial induction and eduction ports and at its front end an internal shoulder provided with a central orifice, an integral exterior annular attaching flange near its front end provided with screw holes, a piston valve sliding within the case and having a diametric port and a longitudinal slot, a screw through the case entering said slot so that when it engages the end thereof all ports are in register, a stem projecting from the front end of the piston through said orifice and another stem projecting from the rear end of the piston beyond said slot, a cap closing the rear end of the case, an expansion spring in the latter between the cap and valve and around its rear stem, a gasket within said case against its flange and around the front stem, a push button screwed on the end of the latter and having an exterior shoulder, and an escutcheon screwed on the front end of the case to cover the attaching plate and having a shoulder engaging that on the button.

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

JOSEPH H. BRADY.

Witnesses:

F. G. FISCHER,

J. MOORE.