J. A. HICKS.

CROSSOVER CONNECTION FOR FLUID PRESSURE BRAKE PIPES.

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Fig. 2.

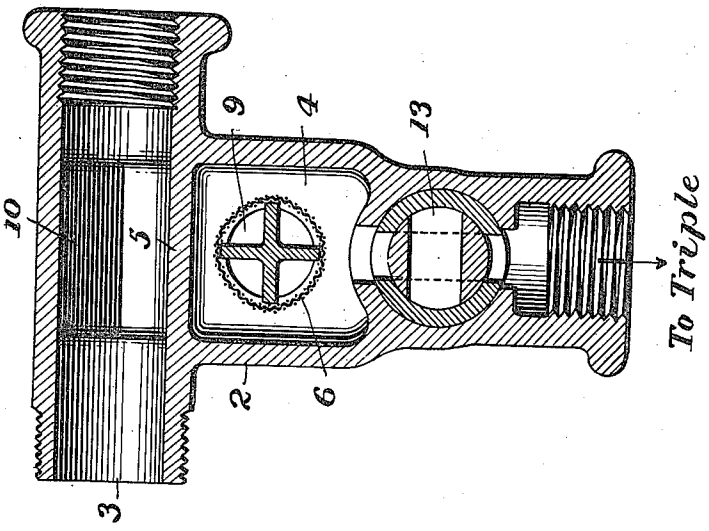
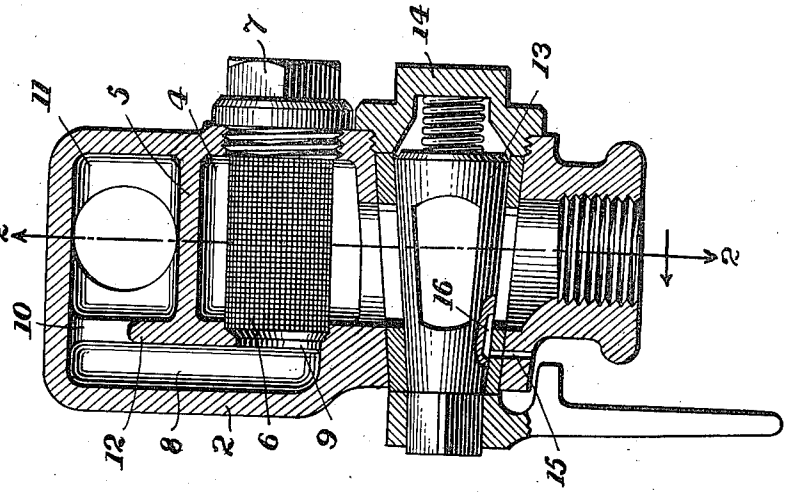


Fig. 1.



Witnesses

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JAMES A. HICKS, OF ATLANTA, GEORGIA.

CROSSOVER CONNECTION FOR FLUID-PRESSURE-BRAKE PIPES.

973,043. Specification of Letters Patent. Patented Oct. 18, 1910.

Application filed March 16, 1910. Serial No. 549,765.

To all whom it may concern:

Be it known that I, JAMES A. HICKS, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Crossover Connections for Fluid-Pressure-Brake Pipes, of which the following is a specification.

The present invention relates to cross-over connections for air brake systems, as those from the train-line to the triple valve are commonly termed, although it will be understood that I do not limit the invention to any particular use, but contemplate its use wherever a coupling is needed in fluid-pressure system, the exigencies of which demand a construction like or equivalent to the invention which I have disclosed herein. It is an improvement on that cross-over connection shown, described and claimed in my co-pending application Serial No. 534,535.

The object of my invention is to provide a cross-over connection and cut out valve in which the strainer for preventing dust, cinders, scale and the like from passing to the triple valve mechanism and the cut-out valve is effectually protected against abrasion and clogging from the grit-laden air currents which surge back and forth through the train line. This object is accomplished in the present embodiment of my invention by arranging the train-line passage, the strainer-chamber and the valve-chamber in such relation and so separated from each other as that the strainer and cut-out valve are segregated from the train-line passage and out of the way of any direct action of the train-line current.

In order that the invention may be understood by those skilled in the art I have shown in the accompanying drawings one embodiment of my invention, and in said drawings,

Figure 1 is a sectional view at right angles to the line of the train pipe of my improved cross-over connection. Fig. 2 is a sectional view on line 2—2 of Fig. 1, looking in the direction of the arrow.

2 designates a casing, preferably, though not necessarily, formed in one piece, said casing having a through passage 3 in direct line with the train-pipe (not shown), said passage being unobstructed so that no interruption or impediment to the movement of air in the train-pipe can possibly occur. The said casing 2 is provided with a strainer-chamber 4, which is located as shown in the present instance just below the passage 3 and is separated therefrom by a wall 5, which forms one wall of the train line passage 3, and completely separates the train-line passage 3 and the strainer 4. The strainer-chamber 4 is provided with a strainer 6 of cylindrical form which abuts a suitable port in a wall of the strainer-chamber at one end and at the other end is backed by a screw-plug 7 fitted in an aperture in the opposite wall of the strainer-chamber 4, through which aperture the strainer may be introduced. The strainer-chamber 4 communicates with the train-line passage 3 by a conduit 8, as shown in Fig. 1, the conduit 8 entering the strainer-chamber through the port 9 and entering the train-line passage 3 through the port 10 as shown. Preferably the train-line passage is slightly expanded into a chamber 11, as shown, and adjacent the port 10 there is provided an upstanding wall 12 which will act as a check against the blowing over of cinders, scale and the like from the train-line passage 3 into the conduit 8 and thence to the strainer 6.

Below the strainer-chamber and communicating therewith through a suitable port is a valve-chamber, preferably, though not necessarily, formed in an integral part of the casing 2, in which valve-chamber is mounted a turning-plug or other suitable valve 13 which will normally stand open, as shown in dotted lines in Fig. 2, giving a clear passage from the train-line 3 to the triple (not shown), but capable of being turned to interrupt and cut off this passage to the triple valve if the triple or brake rigging should become so deranged as to incapacitate the brake mechanism of a particular car, or the cross-over pipe should become broken, so that the triple valve and brake mechanism for that particular car may be cut out, the integrity of the train-line preserved, and the necessity of cutting out the disabled car may be avoided.

It will be observed that the cut-out valve 13 may be readily entered in its chamber or seat, and the chamber then closed, and the valve backed by a nut 14, and this valve-chamber 13 may or may not be bushed as desired.

In order that danger of building up on the triple side of the cut-out valve 13 may

be avoided when the valve is in the cut-out position shown in Fig. 1, I provide a bleeder port 15 which is bridged by a groove 16 in the valve body so as to exhaust the triple valve passage on that side of the valve 13 to atmosphere when the cut-out is closed, and all danger of leaking past the valve 13, pulling the triple, and setting the brakes under any conditions, where the cut-out valve is closed, is eliminated.

It will be observed that the cut-out valve 13 is protected from the action of the direct air currents in the train-line passage 3 and its life prolonged indefinitely by reason of thus guarding it against the abrasive action of grit-laden air currents, for the air reaches this cut-out valve 13 only in an indirect manner through the strainer-chamber 4, strainer 6, conduit 8, and the port 10, and obviously all foreign substances are thus eliminated.

By locating the strainer-chamber between the train-line passage and the cut-out valve, and separating this strainer-chamber from the train-line passage so that communication between the two is an indirect one, I not only protect the valve but also the strainer, and in practice it has been found that strainers when subjected to the grit-laden train-line air currents are clogged or cut so that their action is impeded and their life is shortened.

It will be observed that the present cross-over gives a very compact disposition of the essential parts, and one which is calculated to secure a maximum efficiency without unduly complicating the construction so as to enhance the cost of production and maintenance.

While I have disclosed a particular form of my invention, this is merely an illustrative embodiment and is in no sense a restrictive disclosure, and such variations from this structure as are within the skill of the mechanic I regard as properly within the range of my invention.

I claim:—

1. A cross-over connection for fluid-pressure brake pipes, comprising a casing, a train-line passage traversing said casing, a strainer-chamber in said casing, a wall separating said passage and chamber, and a conduit connecting said passage and chamber.

2. A cross-over connection for fluid-pressure brake pipes, comprising a casing, a train-line passage traversing said casing, a strainer-chamber in said casing, a wall separating said passage and chamber, a conduit connecting said passage and chamber, and a valve-chamber to which said strainer-chamber delivers.

3. A cross-over connection for fluid-pressure brake pipes, comprising a casing, a train-line passage traversing said casing and having a port opening laterally therefrom, a strainer-chamber adjacent said passage and having a port opening laterally therefrom, a wall separating said train-line passage and said strainer-chamber, and a conduit traversing the wall of the casing and connecting the train-line passage and said strainer-chamber.

4. A cross-over connection for fluid-pressure brake pipes, comprising a casing having a substantially horizontal limb which is traversed by a train-line passage, a substantially vertical limb containing a strainer-chamber, a wall between said train-line passage and said strainer-chamber to prevent direct communication therebetween, and a conduit traversing the wall of said casing and forming an indirect connection between said train-line passage and said strainer-chamber.

5. A cross-over connection for fluid-pressure brake pipes, comprising a casing having a train-line passage therethrough, a cross-over passage perpendicular to said train-line passage and separated therefrom by a wall, a strainer-chamber in said cross-over passage, a conduit connecting said strainer-chamber and said train-line passage, and a cut-out valve in said cross-over passage adjacent said strainer-chamber.

6. A cross-over connection for fluid-pressure brake pipes, comprising a casing of substantially T-shaped form the horizontal limb of which has a thorough train-line passage, a strainer-chamber and cut-out valve in the vertical limb of said casing, a wall dividing said train-line passage from said strainer-chamber and cut-out valve, and a conduit traversing the side wall of said casing and connecting the train-line passage and the strainer-chamber.

7. A cross-over connection for fluid-pressure brake pipes, comprising a casing having a train-line passage and a cross-over passage disposed at substantially right angles to each other, a wall separating said passages from each other, a conduit traversing the side wall of said casing and connecting said passages, and a strainer-chamber and cut-out valve in the cross-over passage or said connection.

8. A cross-over connection for fluid-pressure brake pipes, comprising a casing having a chamber 11 to which the train-line passage delivers, a port 10 leading laterally from said chamber, a strainer-chamber 4 below said chamber 11 and having a port 9, said strainer-chamber being separated from the chamber 11 by a wall 12, a conduit 8 connecting said chambers 11 and 4, and a cut-out valve 13 mounted below said strainer chamber and connecting therewith.

9. A cross-over connection for fluid-pressure brake pipes, comprising a casing having a train-line passage therethrough, a strainer-chamber independent of said train line passage but having a pressure connec-

tion therewith, and a cut-out valve on the side of said strainer chamber opposite the train line passage.

10. A cross-over connection for fluid-pressure brake pipes, comprising a casing having a chamber to which train-line pipe delivers, a strainer-chamber having a pressure connection with said first-named chamber, a strainer in said strainer-chamber, and a wall separating said chambers and protecting said strainer from the direct action of train-line surge.

11. A cross-over connection comprising a casing having a train-line passage therethrough, and a strainer-chamber therein which is in communication with said passage, a strainer in said strainer-chamber, and means for protecting said strainer from the abrasive and clogging action of direct currents in said train-line passage.

12. A cross-over connection comprising a casing having a train-line passage therethrough, and a strainer-chamber therein which is in communication with said passage, a strainer in said strainer-chamber, and a wall for protecting said strainer from the abrasive and clogging action of direct currents in said train-line passage.

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

JAMES A. HICKS

Witnesses:
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