

(No Model.)

T. B. HUNT.
STRAINER FOR AIR BRAKES OF CARS.

No. 569,203.

Patented Oct. 13, 1896.

FIG. 1.

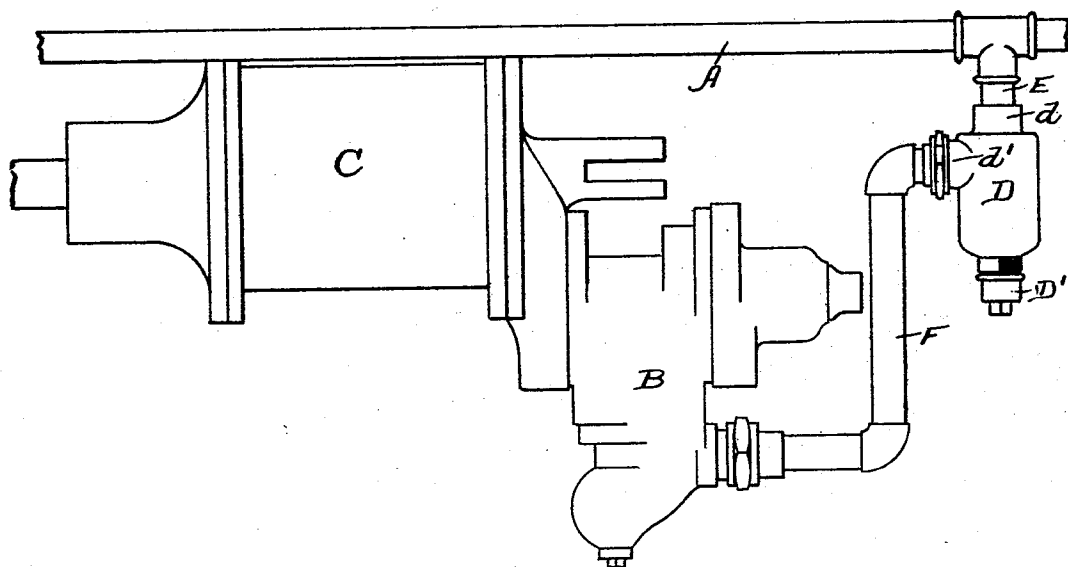


FIG. 2.

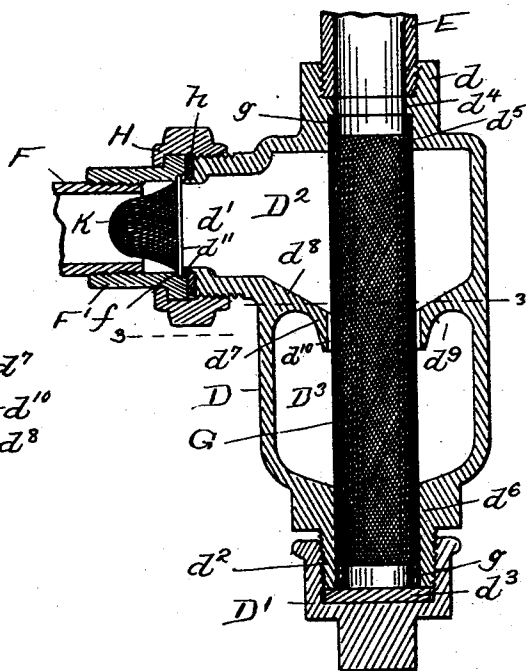


FIG. 3.

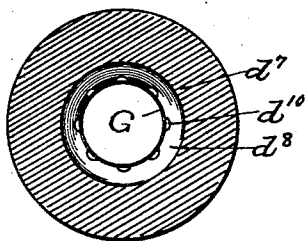
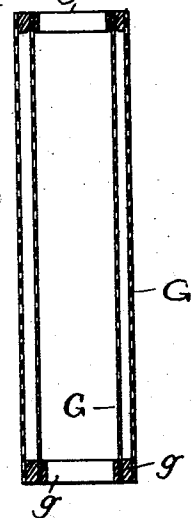


FIG. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS B. HUNT, OF CHICAGO, ILLINOIS.

STRAINER FOR AIR-BRAKES OF CARS.

SPECIFICATION forming part of Letters Patent No. 569,203, dated October 13, 1896.

Application filed April 24, 1896. Serial No. 588,913. (No model.)

To all whom it may concern:

Be it known that I, THOMAS B. HUNT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Drain-Cups and Strainers for Air-Brakes of Cars, of which the following is a specification.

My invention relates to improvements in air-brake drain-cups and strainers.

Heretofore in air-brake apparatus the drain-cups and strainers have been placed in the main air-brake pipe itself, the drain-cups being formed in the T coupling or connection leading to each brake-cylinder or reservoir through the triple valve, and the strainer, consisting of a cylinder of perforated sheet metal or wire-gauze, extending horizontally in the direction of the main pipe and being usually soldered to the necks of the cylindrical horizontal drain-cup to secure it in place; but great practical difficulty has been experienced in keeping such strainer and drain-cups sufficiently clean or free from dirt and water to prevent the triple valve from becoming stuck or gummed up and to enable it to operate properly and with certainty, as required; and a great deal of time and labor is required to clean the drain-cups and strainers, as to do this the main pipe has to be taken apart on one or both sides of the drain-cup, the strainer unsoldered and removed and cleaned, and then again soldered back in place.

The object of my invention is to provide an air-brake drain-cup and strainer of a simple, durable, and efficient construction by means of which these difficulties may be avoided and by which the cups and strainer may be easily and quickly cleaned without the necessity of disturbing the main pipe or its connections or even removing the drain-cup from its position. These results I accomplish, and herein my invention consists, by combining with the main air-brake pipe and the customary triple valve leading to or controlling the connection with the air-brake cylinder or reservoir a drain-cup and strainer connected to a vertical branch pipe or T-coupling leading from the main air-brake pipe to the triple valve, the drain-cup being provided with a removable screw-threaded cap or plug at its lower

end and the strainer being removably mounted in the drain-cup and held in place by the removable cap, so that by simply unscrewing the cap the drain-cup itself may be cleaned and the strainer also slipped out of the cup to enable it to be quickly and thoroughly cleaned.

My invention also consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown and described, and specified in the claims.

In the accompanying drawings, forming a part of this specification, and in which similar letters of reference indicate like parts in all the views, Figure 1 is a side elevation of a device embodying my invention. Fig. 2 is an enlarged detail vertical section of the drain-cup and strainer and their immediate connections. Fig. 3 is a horizontal section on the line 3 3 of Fig. 2, and Fig. 4 is a detail view showing the preferred or perfected construction of the strainer.

In said drawings, A represents the main air-brake pipe of a railway-train, and B one of the triple valves controlling the communication between the main pipe A and the brake-cylinder C, all these parts being of any ordinary or suitable construction now familiar to those skilled in the art and needing no detailed description.

D is the drain-cup, the same occupying a vertical position and being connected at its upper end or nipple *d* to the main air-brake pipe A by a T-coupling or other suitable connection E. The drain-cup D has a screw-threaded nipple *d'*, projecting from its cylindrical surface near its upper end and connected to the branch pipe F, leading to the triple valve B. The drain-cup D is provided at its lower end with a removable screw-threaded plug or cap *D'*, secured to the threaded end or nipple *d''* of the cup D, a gasket or packing *d'''* being interposed to insure an air-tight joint.

G is the removable strainer inserted within the cup D, its upper end abutting against an integral flange or shoulder *d''* at the upper end of the cup D and fitting in a guide or socket *d'''* provided to receive it. The lower end of the strainer is surrounded by a similar but longer guide *d''''*. The interior chamber

of the drain-cup D is preferably divided into two parts or chambers D^2 D^3 by an intermediate wall or partition d^7 and forming an intermediate support or guide for the flexible perforated wall of the strainer. The upper surface of this intermediate web d^7 is preferably conical or flaring, as shown at d^8 , but its under surface is preferably recurved, as shown at d^9 , in order that it may thus tend to downwardly deflect any dirt collected in the lower chamber D^3 of the cup and stirred up by the air when forcibly passing through the drain-cup and strainer from the main pipe A to the triple valve B or brake cylinder C.

The internal dividing-web d^7 of the drain-cup has notches or openings d^{10} at its inner edge, surrounding the strainer, to facilitate the passage of air, dirt, or water into the lower or drip-collecting chamber D^3 of the drain-cup, and the upper surface of this web is made flaring or downwardly inclined for a similar purpose.

Owing to the upright position of the strainer and drain-cup the upper portion of the strainer, or that part thereof within the upper or air-filtering or dirt-separating chamber D^2 of the drain-cup, naturally tends to remain clean or unclogged by the dirt until the lower or dirt-collecting chamber D^3 of the cup becomes filled to the level of the dividing web d^7 , and as the cup and strainer is of course cleaned out before such contingency occurs it will be seen that my device will always operate reliably and properly and effectually prevent the triple or other valve from becoming gummed, stuck up, or clogged with dirt.

To facilitate the withdrawal of the strainer G from the cup D, and also to strengthen it, so that it will preserve its shape and properly fit the guides or walls d^5 d^6 of the cup, I provide it with internal rings g g , preferably soldered thereto, one at each end. These strengthening rings or shoulders afford a ready means for getting hold of the strainer to pull it out of the cup either with the finger, or, if necessary, with a suitable hook, tool, or instrument.

The strainer G may be single, as shown in Fig. 1, but I prefer to make it double, as shown in Fig. 4, where two strainers G G are slipped one inside of another. In this construction the rings g g for the outer strainer G serve also as spacing devices to keep the strainers concentric or in place in respect to each other.

The removable strainer or strainers, it will be observed, are simply pushed upward into place in the drain-cup D and then supported in place by the removable cap D' at the lower end of the cup.

Instead of screwing the connection or branch pipe F directly onto the threaded nipple d' , I prefer to secure said pipe F to said nipple d' by a screw-threaded union or coupling H and gasket h , and interpose a second strainer K of a conical or hood shape between

the drain-cup D and the triple valve B. By unscrewing the union H the strainer K can be readily cleaned, as it is clamped at its rim between a shoulder f on the threaded sleeve F' and a shoulder d^{11} on the nipple d' . By this means I secure an efficient and reliable drain-cup and strainer, and which may be easily kept in perfect condition, as it can be thoroughly cleaned by simply unscrewing the cap or plug D', which closes the opening in the lower end of the cup, and removing the strainer from the cup. This, by my invention, can be done in a few minutes, whereas in the old construction a great deal of time was required to clean the drain-cup and strainer, and by removing the drain-cup and strainer entirely from the main pipe A all danger or trouble arising from the strainer becoming clogged with dirt or collapsing under pressure and thus interfering with the passage of the air through the main pipe is wholly avoided. By reason of the dirt and water collecting in the chamber D^3 at the lower part of the drain-cup, the dirt and water separated from the air by the strainer is retained in a proper receptacle located out of the direct current of the air in its passage from the main pipe to the valve, and the triple valve is thus kept much freer from contact with such dirt and water than is possible where the drain-cup and strainer are located in the main pipe or in the direct passage for or current of the air. The accomplishment of this result is also aided by the interposed web or wall d^7 between the lower or dirt and water collecting portion of the drain-cup and the upper part thereof, through which the air or the greater portion thereof passes.

I claim—

1. In an air-brake apparatus, the combination with the main air-brake pipe and the triple valve controlling the communication with the brake-cylinder, of an upright drain-cup interposed between said main pipe and valve, and provided with a removable strainer and a removable cap at its lower end closing the exit-opening of the drain-cup and holding the removable strainer in place, substantially as specified.

2. The combination with the main air-brake pipe and valve, of a branch pipe leading from the main pipe and communicating with the valve, of a drain-cup located in said branch pipe and interposed between said main pipe and said valve and provided with a removable cap, substantially as specified.

3. The combination with the main brake-pipe and valve, of a branch pipe leading from the main pipe and communicating with the valve, of a drain-cup connected to said branch pipe and provided with a removable cap closing the exit-opening of the drain-cup, and having a removable strainer held in place by said cap, substantially as specified.

4. The combination with a drain-cup having inlet and outlet openings for the air to

pass through and a double strainer and a removable cap closing the exit-opening of the drain-cup and holding the strainer in place, substantially as specified.

5 5. The combination with a drain-cup having inlet and outlet openings for the air to pass through and a double strainer, comprising two separate strainers fitting one inside the other and each provided with an internal
10 ring or shoulder and a removable cap closing the exit-opening of the drain-cup and holding the strainer in place, substantially as specified.

15 6. The combination with a drain-cup divided into two chambers by an intermediate web or wall, of a strainer extending through said intermediate web or wall, the lower surface of said intermediate web or wall being recurved substantially as specified.

7. The combination with a drain-cup divided into two chambers by an intermediate web or wall, of a strainer extending through said intermediate web or wall, the upper surface of said web or wall being downwardly inclined and furnished with openings, substantially as specified. 20 25

8. The combination with a drain-cup provided with a removable cap, of a removable tubular strainer inside the cup, and a second strainer in the air-outlet opening or passage
30 leading from said cup, said removable cap closing the exit-opening of the drain-cup and holding the strainers in place, substantially as specified.

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Witnesses:

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