April 21, 1925. 1,534,793

S. J. LUPTON

WASHOUT PLUG

Filed April 13, 1921

Fig1

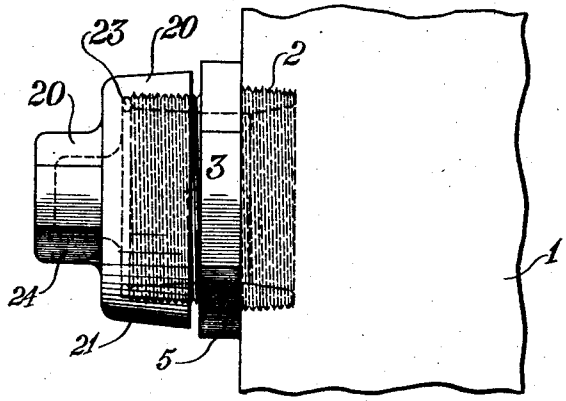



Fig2

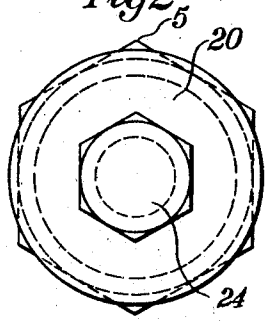



Fig6

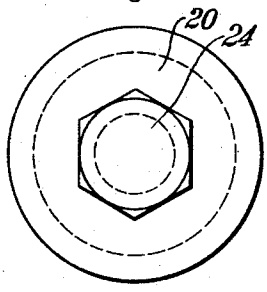



Fig5

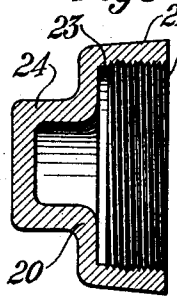



Fig4

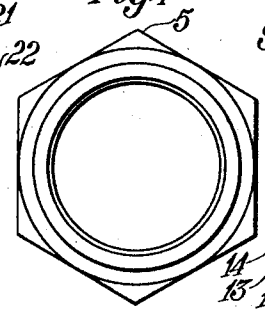



Fig3

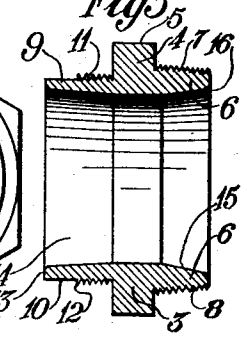



Fig9

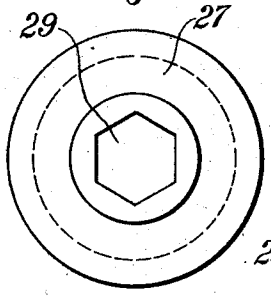



Fig8

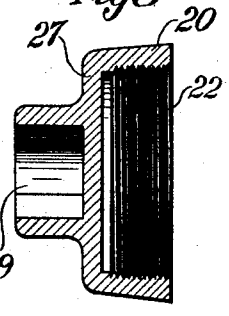
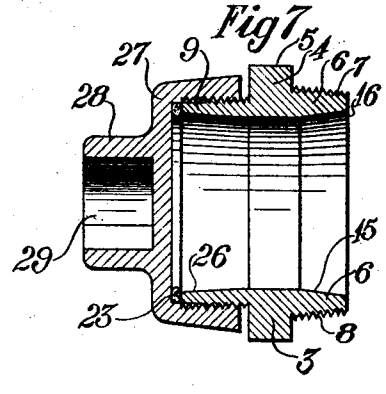



Fig7




Inventor,
Samuel J. Lupton.
By his Attorney
Henry J. Lucke.

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# UNITED STATES PATENT OFFICE.

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## WASHOUT PLUG.

Application filed April 13, 1921. Serial No. 461,121.

*To all whom it may concern:*

Be it known that I, SAMUEL J. LUPTON, a subject of the King of Great Britain, residing at Winnipeg, Province of Manitoba, Dominion of Canada, have invented certain new and useful Improvements in Washout Plugs, of which the following is a specification.

This invention relates to wash-out plugs and is particularly directed to wash-out plugs for locomotive boilers and other types of boilers and the like.

A feature of the invention is to provide a wash-out plug having a screw-threaded cap, the screw thread of the plug for receiving the cap being protected against injury in the use of the wash-out plug, as when barring out mud or other obstruction, inserting the nozzle of a hose for flushing or washing out or other purposes.

In accordance with my invention, the wash-out plug embodies a body member provided with an opening for wash-out purposes and having a projecting portion, preferably tapering, and provided with threading for positioning and sealing the body member in a suitable, threaded opening in the shell or casing of the locomotive boiler or the like. Such threading is located on the outer face of the projecting portion and is remote from the wash-out opening. Such body member embodies an annular portion projecting exteriorly of the boiler casing and is provided on its outer face with threading which is also remote from the wash-out opening; and such threading begins at a location preferably at a substantial distance remote from the extreme edge of the exteriorly projecting portion whereby the screw-threaded cap may be slid on in alignment with the annular portion to preclude any cross-threading when the cap is turned to begin the meshing of its thread with the thread on the annular portion. By such provisions effected by my invention the wash-out opening of the plug affords full access to the interior of the boiler casing by means of a bar, nozzle or the like, and is entirely smooth and devoid of threading; and all threadings for receiving the closure cap and for positioning the body member of the plug are located remote from the zones of movement of the bar, nozzle or the like.

Further features and objects of the invention will be more fully understood from the following detail description and the accompanying drawings, in which—

Fig. 1 is a side elevation of a wash-out plug embodying my invention, with its closure cap seated; the plug is indicated as inserted in any suitable portion of the casing such as a locomotive or other boiler casing.

Fig. 2 is a top plan view of the wash-out plug with its closure cap seated;

Fig. 3 is a central longitudinal section of the body member of the wash-out plug;

Fig. 4 is a top plan view of Fig. 3;

Fig. 5 is a longitudinal central sectional elevation of the cap shown in Figs. 1 and 2;

Fig. 6 is a top plan view of Fig. 5;

Fig. 7 is a central longitudinal sectional elevation of the body member of the plug shown in Fig. 3, with a counter sunk cap seated thereon;

Fig. 8 is a central longitudinal sectional elevation of the cap shown in Fig. 7; and

Fig. 9 is a top plan view of Fig. 8.

Referring to Figs. 1 to 6, inclusive, the casing of the locomotive boiler, stationary boiler or the like is indicated at 1 having a wash-out substantially circular opening 2. The circular side of the opening 2 is usually threaded; the plug may be welded in if desired.

The wash-out plug comprises the hollow body member 3, the central portion 4 of which is of enlarged diameter and having an outer face 5 of hexagonal contour for receiving a wrench or other tool for positioning the body member. The portion 6 is provided on its outer face 7 with the threading 8 for meshing with the threading of the opening 2 in the boiler casing for positioning and setting the hollow body member of the wash-out plug in the opening of the casing. The face 7 is preferably tapered to insure the sealing of the wash-out plug in liquid-tight engagement with the opening 2; such tapering is also advantageous in minimizing the effort required for setting the plug in the opening of the casing.

The annular portion 9 of the body member

extends exteriorly of the boiler casing when the body member 3 is in position. On the outer face 10 of the annular portion 9 I provide the threading 11 adapted to mesh with the threading of the cap, as described more particularly hereinafter.

Such threading 11 begins preferably at a location indicated at 12 which is remote at a substantial spacing from the extreme edge 13 of the annular portion 9.

The central opening of the body member 3 is indicated at 14. The peripheral region 15 of the inner face of the opening 14 is preferably outwardly flaring, and also outwardly curved at its extreme edge 16 to facilitate rocking of the bar or other tool inserted through the opening 14 for the purpose of prying mud or other sediment, and for readily inserting and rotating the nozzle of a water hose for flushing out the interior of the boiler casing.

The form of cap 20 shown in Figs. 1, 2, 5 and 6 comprises the annular body portion 21 which is preferably of outwardly flaring contour and provided on its inner face with the threading 22 for meshing with the threading 11. The space 23 on the interior of the cap is shown of reduced effective diameter and free from threading to provide a free space for the reception of a washer, indicated in Fig. 1, coacting with the extreme edge 13 of the body member 3 of the wash-out plug; such washer is usually a casing of thin copper enclosing asbestos or like material for effecting a steam or water-tight seal against the escape of steam or water between the cap and the annular portion of the wash-out plug.

By reason of the outward portion of the outer face 10 of the annular portion 9 being smooth and free from threading for a considerable spacing, the cap 20 is aligned while being centered for the purpose of starting the meshing of the threading 22 with the threading 11, and thereby precludes the possibility of cross-threading. This feature is important in view of the repeated removal of the cap for washing out of the boiler.

The cap 20 indicated in Figs. 1, 2, 5 and 6 is provided with a hollow extending portion 24 of hexagonal or other polygonal contour for receiving a wrench or the like for tightening and unloosening.

The wash-out plug shown in Fig. 7 corresponds in most details to that shown in Figs. 1 to 6, and the same reference numbers are employed to indicate similar parts. However, the inner face 26 of the annular portion 9 of the body member 3 is outwardly flaring, to increase the range of rocking of a bar or similar tool or the range of the movement of the hose nozzle inserted through the wash-out plug. Also, the cap 27 shown in Figs. 7 to 9, is of the recessed type having its outer projecting portion 28 provided with the recess 29 of hexagonal contour for receiving an hexagonal shaped insert for tightening and unloosening the cap.

From the above, it will be observed that my invention provides for a wash-out plug of rugged construction, and having its cap mounted to be opened and closed in a manner to preclude substantial wear of the parts. These features of construction are of the highest importance, inasmuch as the operation of washing out boilers of locomotives and other boilers is usually performed by unskilled labor.

Whereas, I have described my invention by reference to specific forms thereof it will be understood that many changes and modifications may be made without departing from the spirit of the invention as defined by the appended claims.

I claim.

1. A wash-out plug for the casing of a boiler or the like comprising a hollow body member including a portion threaded exteriorly to be seated within a threaded opening of the casing, said portion being provided with a centrally disposed, outwardly flaring opening of substantially smooth contour for receiving and movably supporting a cleaning-out tool, said body member further including an annular portion extending exteriorly of the opening of the casing, the outer face of said annular portion being provided with a threading beginning at a location at a spaced distance from the outer end of said annular portion and extending toward said first-named portion, the outer face of said annular portion from its outer edge to the location of beginning of said threading being substantially smooth, and a closure cap for said annular portion provided with a threading beginning at its outer end and extending on its inner face to a certain location, the remainder of said inner face being substantially smooth.

2. A wash-out plug for the casing of a boiler or the like comprising a hollow body member including a portion threaded exteriorly to be seated within a threaded opening of the casing, said portion being provided with a centrally disposed, outwardly flaring opening of substantially smooth contour for receiving and movably supporting a cleaning-out tool, said body member further including an annular portion extending exteriorly of the opening of the casing, the outer face of said annular portion being provided with a threading beginning at a location at a spaced distance from the outer end of said annular portion and extending toward said first-named portion, the outer face of said annular portion from its outer edge to the

location of beginning of said threading being substantially smooth, said body portion further including a portion disposed intermediate said first-named portion and said exterior annular portion and provided with a central opening having a substantially smooth inner face, and a closure cap for said annular portion provided with a threading beginning at its outer end and extending on its inner face to a certain location, the remainder of said inner face being substantially smooth.

In testimony whereof I have signed this specification this 7th day of March 1921.

SAMUEL J. LUPTON.