

No. 778,638.

PATENTED DEC. 27, 1904.

T. H. DEVANEY.
BOILER TUBE PLUG.

APPLICATION FILED AUG. 20, 1904.

Fig. 1.

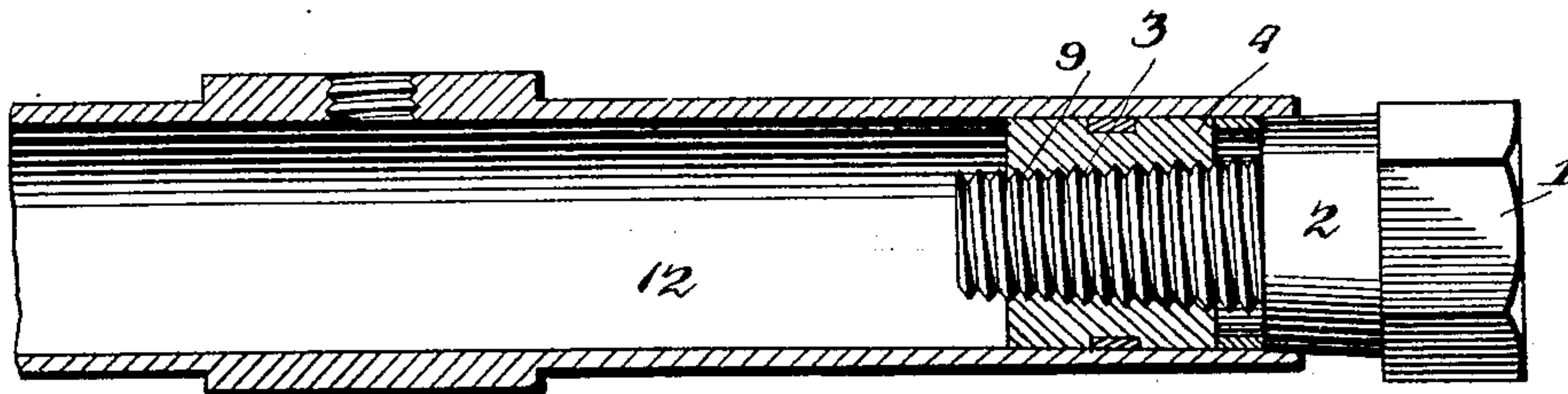
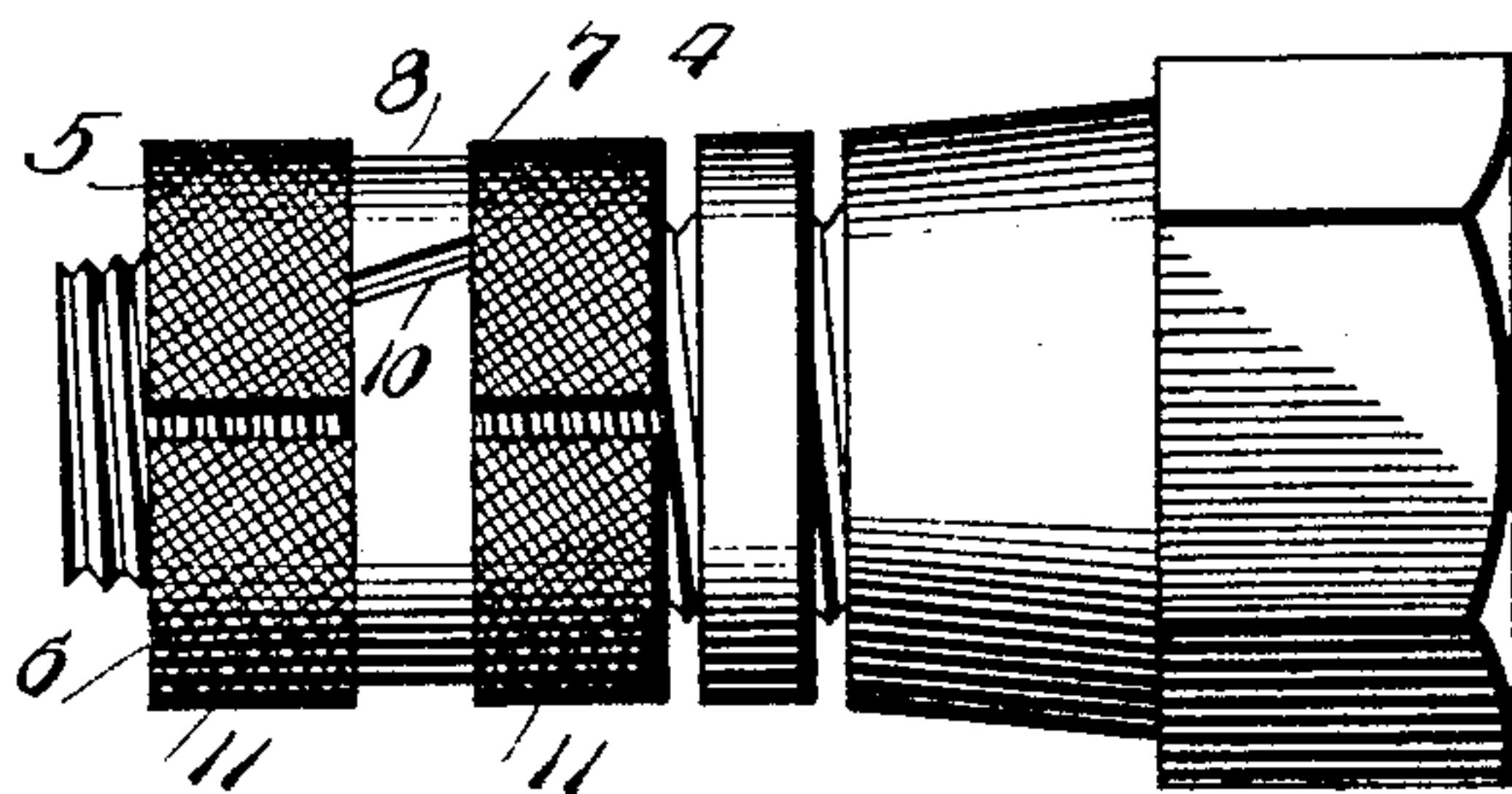


Fig. 2.



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BOILER-TUBE PLUG.

SPECIFICATION forming part of Letters Patent No. 778,638, dated December 27, 1904.

Application filed August 20, 1904. Serial No. 221,529.

To all whom it may concern:

Be it known that I, THOMAS H. DEVANNEY, a citizen of the United States, residing at Longbranch, in the county of Monmouth and State of New Jersey, have invented new and useful Improvements in Boiler-Tube Plugs, of which the following is a specification.

The invention relates to an improvement in boiler-plugs, and specifically to a plug designed for sealing at either end of a boiler-tube, the device being readily applicable from the ends of the tube.

The preferred embodiment of the invention is illustrated in the accompanying drawings, wherein—

Figure 1 represents a view in section of a boiler-tube, showing my improved tube in place. Fig. 2 is an enlarged elevation of the improved plug.

Referring to the drawings, the plug comprises a head 1 of hexagonal or other angular shape designed for the application of a wrench or other suitable tool and a tapered body 2, projecting from said head.

3 represents a tapered screw projecting from the body 2.

4 represents a socket or collar divided longitudinally into two equal sections 5 and 6.

7 represents a groove formed circumferentially of the collar 4 and arranged to receive a split ring 8, designed when in place in said groove to prevent complete separation of the sections 5 and 6, as will be understood. The collar is formed with a central bore 9, tapering from end to end to receive the tapered screw 3. It is understood, of course, that the bore 9 is formed half in each of the sections 5 and 6 and that when assembled the split ring 8 is arranged so that its division is not in alignment with the line of division between the sections. To positively guard against such alinement, however, I prefer to incline the division 10 of the split ring. The peripheral surface of each section 5 and 6 beyond the groove 7 is roughened, as at 11, to afford a good holding-surface within the boiler-tube.

Assuming the ring 8 in place on the socket-section and the tapered screw 3 in engagement with the threaded bore 9, the application of the plug is as follows: The head 1 is manipu-

lated, forcing the screw 3 lengthwise the socket 4 until the sections 5 and 6 are spread sufficiently to just enter the boiler-tube 12. The device is then inserted in the end of the tube desired to be plugged and the head 1 turned to further spread the sections 5 and 6 until a comparatively close contact is made with the interior wall of the boiler-tube. The device as an entirety is now driven into the tube until the tapered body 2 contacts with the end of the tube. A wrench or other tool is now applied to the head 1 to force the screw 3 lengthwise the socket 4, operating the sections 5 and 6 and forcing the same against the interior wall of the boiler-tube, this operation at the same time drawing the tapered body 2 into close contact with the end wall of the tube and plugging the same against leakage. The roughened surfaces 11 of the sections prevent the turning of the sockets within the tube from the operation described. Should the leakage occur between the boiler and the tube-sheet, the screw 3 may be forced lengthwise the socket to spread the latter sufficiently to slightly expand the boiler-tube and bring its exterior wall in close contact with the tube-sheet and prevent further leakage. It will be noted that the socket 4 acts simply as an anchor to permit the head 2 to be drawn or forced into the end of the tube and that the device is readily applicable to tubes of different sizes other than boiler-tubes, as the anchor or socket is not permanently seated until the tapered body 2 has been forced into contact with the end of the tube-boiler.

The device is adapted for unlimited reuse, as the withdrawing movement of the screw 3 will permit the collapse of the sections 5 and 6 under influence of the spring split ring 8, after which the plug may be readily removed as a whole.

Having thus described the invention, what is claimed as new is—

1. A plug for boiler-tubes comprising a socket made in sections and a plug proper comprising a head, a tapered body projecting from the head, and a tapered screw projecting over the body and adapted to engage and spread the sections in operation.

2. A plug for boiler-tubes comprising a

head, a tapered portion and a tapered screw projecting over the body portion and a socket having a tapered threaded bore to receive said screw, said socket being divided longitudinally to permit its extension under the influence of the screw.

3. A plug for boiler-tubes comprising a head a tapered body projecting thereover, a tapered screw projecting over that body, a longitudinally-divided socket having a centrally-tapered bore to receive said screw, and a split ring surrounding said socket.

4. A plug for boiler-tubes having a head, a

tapered body projecting thereover, a tapered screw projecting over the body a longitudinally-divided socket, roughened on its surfaces and formed with a circumferential groove and a spring split ring seated in said groove.

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

THOMAS H. DEVANNEY.

Witnesses:

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