(No Model.)

W. S. SHIPE.

SPUT FOR BOILERS.

No. 517,592. Patented Apr. 3, 1894.

Fig. 1.

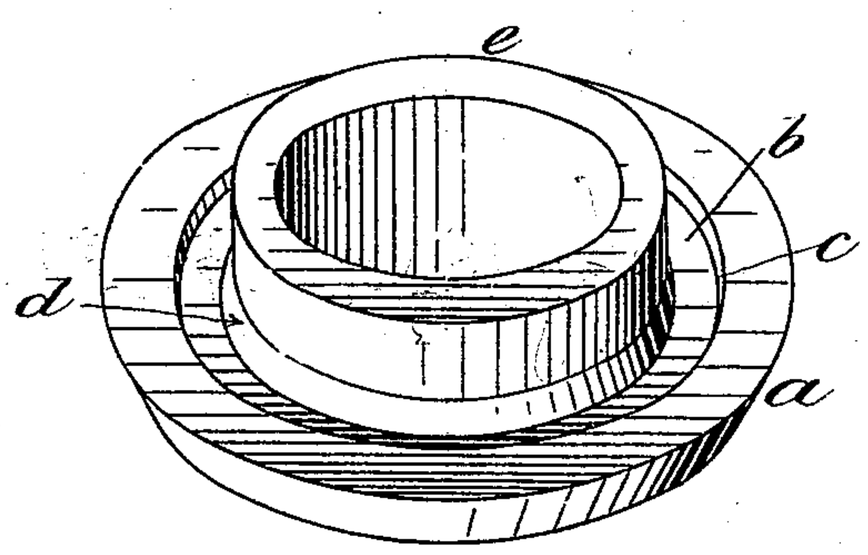
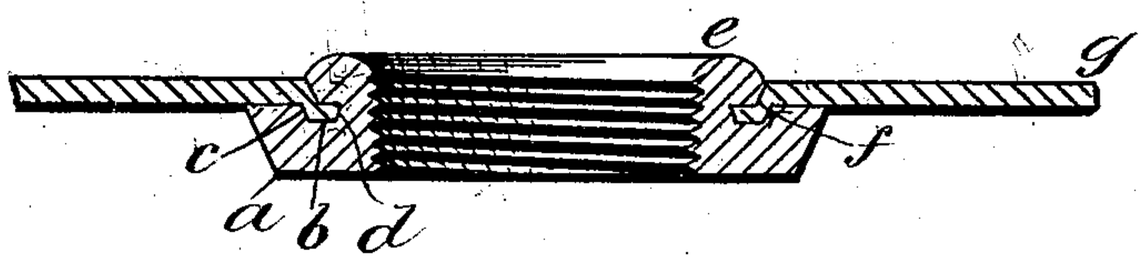


Fig. 2.



Witnesses:
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Inventor:
Walter S. Shipe
by Ernest Gibbs
& his Atty.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WALTER S. SHIPE, OF BROOKLYN, NEW YORK.

SPUT FOR BOILERS.

SPECIFICATION forming part of Letters Patent No. 517,592, dated April 3, 1894.

Application filed June 19, 1893. Serial No. 478,140. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. SHIPE, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Sputs for Boilers, of which the following is a specification.

This invention relates to certain new and useful improvements in sputs for boilers, and has for its object the production of a sput which may be secured to the boiler in such a manner that a perfectly tight joint is made, from which leakage is impossible, and in which there is little or no liability of the sput turning while being tapped, or upon inserting the pipe connections.

To this end my said invention consists in a sput for boilers having a circular base flange provided with an annular depression or groove, and a central projecting portion, the outer wall of which is inclined or tapered, as hereinafter more particularly described and set forth in the claims.

In the accompanying drawings, illustrating my invention, in both figures of which like parts are similarly designated, Figure 1 is a perspective view of the sput; and Fig. 2, is a vertical sectional view of a sput and a fragment of the boiler sheet, showing the completed article.

a, is the base flange of the sput, provided with the annular groove or depression *b*, the opposite walls *c*, *d*, of which are reversely inclined, as shown, and *e*, is a central tubular projection. By the use of suitable dies, which need not be herein particularly described, as they and the process of using them form the subject of a concurrent application, filed by me June 19, 1893, Serial No. 478,141, and upon the exercise of suitable force, the projecting tubular portion *e*, of the sput, and the metal of the boiler sheet *g*, surrounding the same, is swaged or compressed to the form shown in Fig. 2, in which it will be seen that that portion of said boiler sheet extending over the groove *b*, in the sput, is forced downwardly, following the angle of the inclined outer wall *c*, of said groove, and resting upon the bottom thereof, thus forming a corresponding annular depression or flange in the boiler sheet *g*, around the projecting tubular portion *e*, of the sput. As, of course, some metal of the boiler sheet is taken up in the formation of this depression, the sput would be quite loose, were it not for the inclined inner wall *d*, of said groove, which, as the metal of the sheet is forced downwardly, guides it to its seat in the groove *b*, and materially assists in making the sharp angle in said sheet at *f*, and without danger of tearing the sheet. By this operation, the metal of the sheet at this annular depression is reduced nearly one-third in thickness, leaving a comparatively large annular groove, depression or flange within which the upper part of the tubular projecting portion *d*, of the sput, is swaged or compressed, as shown in Fig. 2, sufficient force being used for this purpose to make the outer portion of the sput substantially flush with the boiler sheet, as shown.

It will be seen from the foregoing that I am enabled to have stock on the outside of the boiler equal in thickness to that upon the inside; that the outer portion of the sput when finished, forms a circular wall of uniform thickness, and that by swaging the upper part of the portion *d*, within the annular depression formed in the boiler sheet, the metal is made more dense than if not so confined, but was allowed the spread, in which case, the circumference of the sput would be liable to split or crack.

It will be obvious that changes and modifications may be made in the construction herein shown and described, without departing from the principle and scope of my invention. For example, the outer walls of tubular portion *d*, may be tapering throughout their length, but this, and other changes, are manifestly within the skill of a mechanic versed in the art, and do not require nor involve invention. Nor do I desire to limit myself to the process of and apparatus for, inserting, finishing and securing said sput in the boiler sheet, set forth in my said application, Serial No. 478,141 as other processes and tools may be used with good results.

What I claim as new, and desire to secure by Letters Patent, is—

1. A sput having a base-flange provided with an annular groove, and a tubular projecting portion extending from, and forming the inner wall of, said groove, substantially as described.

2. A sput having a base-flange provided with an annular groove, the opposite walls of which are reversely inclined, and a tubular portion extending from the inner wall, substantially as described.

3. A sput having a base-flange provided with an annular groove, the opposite walls of which are reversely inclined, said groove being adapted to receive and act as a die for a surrounding boiler sheet, and a tubular portion extending from the inner wall of said groove, and adapted to be compressed within the annular groove formed in the boiler sheet, substantially as described.

4. A sput having a base-flange provided with an annular groove, and a projecting tubular portion, in combination with a boiler sheet having a circular aperture, the edges of which are confined in said annular groove by the swaged metal of the tubular projection, substantially as described.

Signed at Brooklyn, in the county of Kings and State of New York, this 16th day of June, A. D. 1893.

WALTER S. SHIPE.

Witnesses:
MORRIS LERENE,
WILLIAM H. G. OSBORN.