Nov. 6, 1923. 1,472,794

T. J. FOLEY

DEVICE FOR CONNECTING PIPES TO BOILERS

Filed July 20, 1921

Fig. 1.

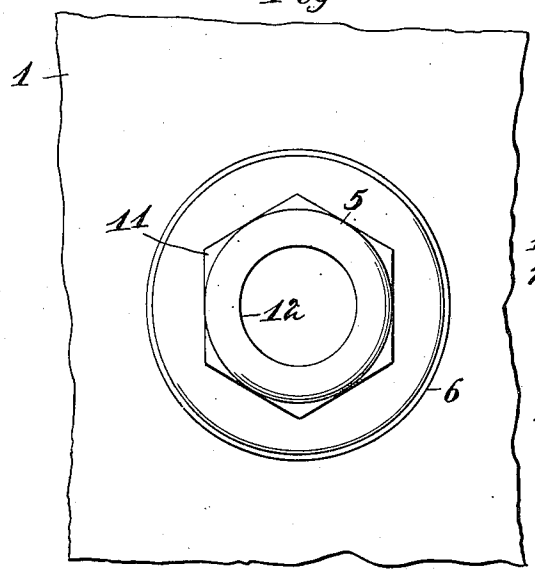


Fig. 2.

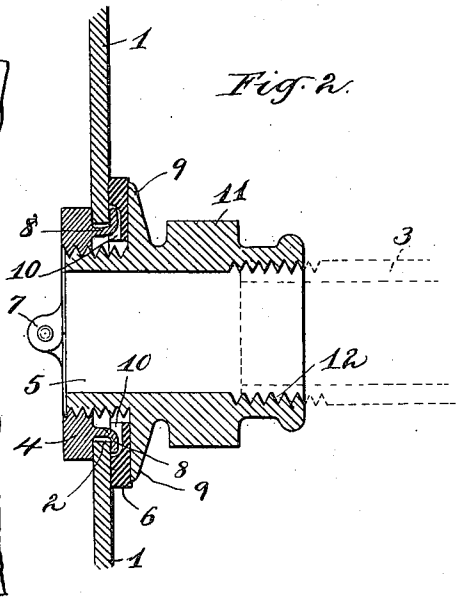


Fig. 4.

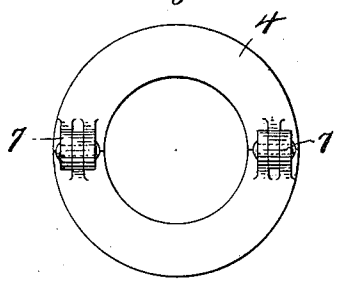


Fig. 3.

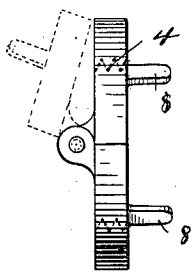
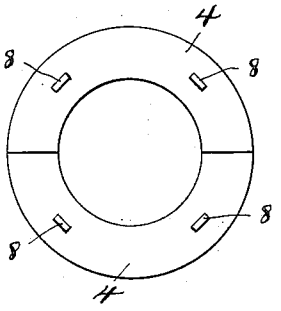


Fig. 5.



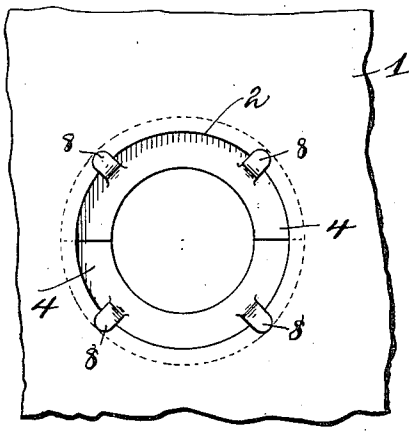


Fig. 6.

Fig. 7.

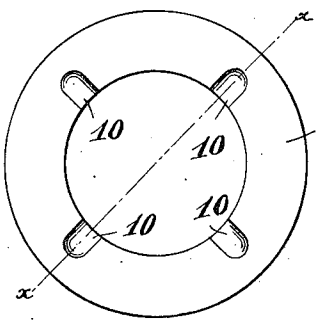
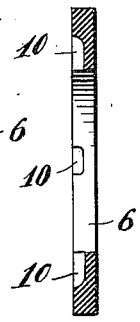


Fig. 8.



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by his attorney,
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UNITED STATES PATENT OFFICE.

TIMOTHY J. FOLEY, OF NEW YORK, N. Y.

DEVICE FOR CONNECTING PIPES TO BOILERS.

Application filed July 20, 1921. Serial No. 486,109.

To all whom it may concern:

Be it known that I, TIMOTHY J. FOLEY, a citizen of the United States, residing in the city of New York, borough of Bronx, in the county of Bronx and State of New York, have invented a certain new and useful Improvement in Devices for Connecting Pipes to Boilers, of which the following is a specification.

The invention relates to means for connecting pipes to shells of boilers and the like, known in the trade as "spuds," and the object of the invention is to provide a simple, inexpensively manufactured device of this character which may be easily and quickly applied to the boiler shell, and which will hold reliably without leaking.

The invention consists in certain novel features and details of construction by which the above objects are attained, to be hereinafter described and claimed.

The accompanying drawings form a part of this specification and show an approved form of the invention.

Figure 1 is an elevation showing the spud in place on a boiler.

Figure 2 is a corresponding vertical section.

Figure 3 is an edge view of a foldable ring for engaging the interior of the boiler shell.

Figure 4 is an elevation of the inner face of the ring.

Figure 5 is an elevation of the outer face of the ring.

Figure 6 is an elevation showing the ring engaged with the boiler shell before the application of the nipple and gasket.

Figure 7 is an elevation of the inner face of the gasket.

Figure 8 is a diametrical section through the gasket, taken on the line x—x in Figure 7.

Similar reference numerals indicate the same parts in all the figures.

Referring to the drawings, 1 is the shell of a boiler which may be understood to be a kitchen boiler of the usual type, provided with a circular opening 2 cut to permit the attachment of a pipe 3, shown in dotted lines in Figure 1, by means of the improved spud. The latter comprises a foldable ring 4 adapted to engage the interior face of the shell at the margin of the opening, and internally screwthreaded, a flanged nipple 5 introduced through the opening and screwed into the ring, and a gasket 6, preferably of soft lead, lying between the flange of the nipple and the exterior face of the shell surrounding the opening.

The ring 4 is in two semicircular sections or halves joined at the abutting ends by hinges 7 on the rear face, arranged to permit the sections to fold one upon the other, as shown in dotted lines in Figure 3. On the outer face of the ring are thin spurs 8 adapted to be bent outwardly. The diameter of the ring when open is greater than the diameter of the opening 2, and it is introduced through the opening in the collapsed or folded condition and then opened with the spurs 8 protruding through the opening; the spurs are then bent radially outward upon the outer margin of the opening, as in Figure 6, and the ring thus held in place and in engagement with the inner margin of the opening.

The nipple 5 is threaded exteriorly at its inner end to match the internal threads of the ring, and has an annular flange 9 larger than the opening.

The annular gasket 6 has radial recesses 10 on its inner face located to receive the folded spurs 8 to permit such face to apply against the outer face of the shell. When thus applied the nipple 5 is passed through the gasket and opening, engaged with the ring and screwed firmly home by a wrench applied upon the hexagonal portion 11 of the nipple. The pressure thus induced forces the flange 9 strongly against the gasket, compressing the latter and causing it to make a tight joint between the flange and shell, the soft material of the gasket permitting it to gush or flow slightly and accommodate itself to any roughnesses or inequalities of the surfaces.

The outer end of the nipple is screwthreaded as at 12 to receive the threaded end of the pipe to be connected.

The improved spud is of few parts, inexpensively manufactured, and is easily and reliably attached without requiring special tools or other equipment, or additional gaskets or packing to insure the desired watertight joint.

In applying the spud the engagement of the recesses 10 with the bent ends of the spurs 8, and the frictional engagement of the gasket with the face of the shell, tend to hold the gasket against rotation in applying

the nipple and insures the required close contact of the gasket surface with the surfaces of the shell and flange.

I claim:—

In a device of the character set forth, a ring screwthreaded internally and divided diametrically into sections hinged to fold one upon the other for insertion through an opening of less diameter than said ring, spurs on said ring adapted to be bent outwardly upon the exterior margin of such opening, a gasket adapted to apply upon such margin and having recesses receiving said bent spurs, a nipple screwthreaded externally and adapted to engage said ring in the unfolded condition, and a flange on said nipple adapted to compress said gasket.

In testimony that I claim the invention above set forth I affix my signature.

TIMOTHY J. FOLEY.