

W. H. PERKINS.
PLUMBER'S FITTING.
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965,008.

Patented July 19, 1910.

Fig 1

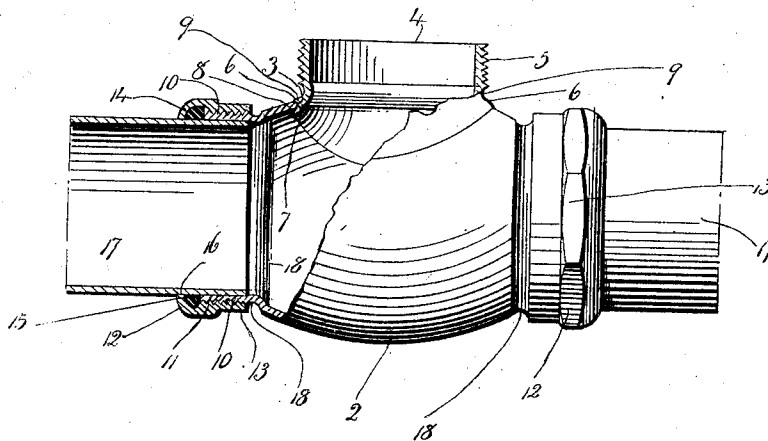
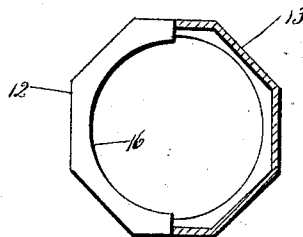


Fig 2



Witnesses
C. J. Reed.
C. L. Reed

Walter H. Perkins
Inventor
by Seymour H. Carey
Attys

UNITED STATES PATENT OFFICE.

WALTER H. PERKINS, OF CHESHIRE, CONNECTICUT, ASSIGNOR TO WATERBURY MFG. CO., OF WATERBURY, CONNECTICUT, A CORPORATION.

PLUMBER'S FITTING.

965,008.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WALTER H. PERKINS, a citizen of the United States, residing at Cheshire, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Plumbers' Fittings; and I do hereby declare the following, when taken in connection with the accompanying drawings and the numerals of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1 a view partly in vertical longitudinal section and partly in elevation of my improved T-coupling. Fig. 2 a sectional view of the nut.

My invention relates to an improvement in plumbers' fittings, and more particularly to T-couplings and nuts therefor, the object being to produce these articles in a superior way from wrought-metal so as to obtain the advantages of cheapness, lightness, freedom from porosity and capacity for high finish, of sheet over cast metal.

With these ends in view my invention consists in certain details of construction and combinations of parts as will be herein-after described and pointed out in the claim.

In carrying out my invention as herein shown, I employ a heavy sheet-metal shell 2 having its central portion symmetrically swelled to increase its strength and enhance its appearance. By the term "symmetrically swelled" I refer to the fact that its curvature is alike on opposite sides of its longitudinal and transverse axes. In this shell I form a large central opening 3 for the reception of a sheet metal sleeve 4 having external threads 5 cut or rolled in it and formed at its lower end, close to its edge, with a winding circumferential abutment-shoulder 6 curved to conform to the external curvature of the central portion of the shell.

I am thus enabled to avoid lifting the shell to form a seat located wholly in one plane for a shoulder at a right angle to the axis of the sleeve 4. The extreme edge of the sleeve 4 after passing through the opening 3 is spun outward to form a clenching edge 7 whereby the tube is rigidly secured in place. If desired this joint may be reinforced by solder applied as at 8. Just above the shoulder 6 the sleeve 4 is struck inward to form

an annular nurl or bead 9 located at a right angle to the axis of the sleeve and forming a stop for preventing a pipe from being carelessly inserted so far into the coupling as to interfere with the circulation of water through the same.

The ends of the shell 2 are shaped to form integral sleeves 10 having external threads 11 cut or rolled into them, the sleeves 10 and the threads 11 corresponding exactly in size to the sleeve 4 and threads 5 so that the nuts 12 applied to them may be interchangeable. Of the sleeves 10 only one is shown, but it may be understood that the other is just like it in every respect. The said nuts 12 are formed from wrought metal shells the inner ends of which are reduced in diameter. The outer end of the shell or partially developed blank, is then subjected to internal pressure whereby the wrench-faces 13 are developed, there being eight of these faces, as shown, giving the nut an octagonal form. The throwing out of these wrench-faces results in the production, within the outer end of the nut, of a capacious internal annular recess 14 for the reception of a packing-washer 15. The outer end of the nut is formed with a central opening 16 a trifle larger than the diameters of the pipes 17 introduced, as shown, into the opposite ends of the shell 2, the said opening 16 being formed in the curved outer wall of the recess 14. The contracted inner portion of the nut is threaded in correspondence with the threads 5 of the sleeve 4, and the threads 11 of the integral sleeves 10. Between the body of the shell 2 and its integral sleeves 10, I form inwardly extending nurls or annular beads 18 to limit the inward movement of the tubes 17 preventing them from being inserted far enough into the coupling to interfere with the free circulation of water therein.

By making the nut as described, that is to say, by starting with a relatively large shell or blank and reducing the inner end thereof to the size required, I am enabled to give more boldness and definition to the wrench-faces 13 than if I depended upon producing them from a shell or blank of smaller initial size. When once in position in the recess 14, the packing washer 15 is secured against displacement or loss, and moreover the washer being closely confined

in the said recess, is prevented from getting out of shape or deforming owing to swelling or hardening, changes which packing washers are likely to undergo in time, particularly when not in use. Under my construction, moreover, the tapping of the nut is rendered easier by the clearance allowed at the bottom of the shell by the recess 14 which makes the use of a bottoming tap unnecessary, a bottoming tap being one which cuts the thread to the bottom of the hole. In using such nuts the inwardly turned outer end wall of the recess 14 compresses the washer 15 against the ends of the sleeves 10 and 4 as the case may be, and compresses the packing so as to crowd the same upon the inserted pipes and secure tight joints. The nut shown has eight wrench faces, but

the number of these faces may be varied as desired.

I claim:—

A wrought metal nut having its circular inner end internally threaded and its outer end enlarged to a greater diameter than its inner end and turned inward to form a packing recess, and the enlarged outer end of the nut having a series of flattened wrench faces.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

WALTER H. PERKINS

Witnesses:

LOUIS C. HOBART,
ADOLPH C. RECKER.