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No. 771,236. PATENTED OCT. 4, 1904.

P. FARLEY.

RIVETED JOINT.

APPLICATION FILED OCT. 1, 1903.

NO MODEL.

Fig. 3.

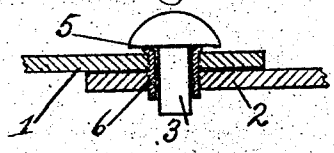


Fig. 1.

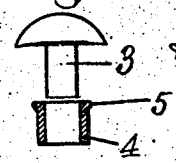


Fig. 2.

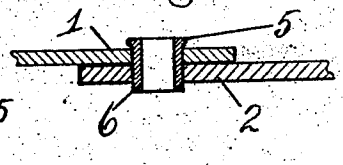


Fig. 4.

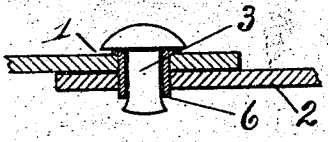


Fig. 5.

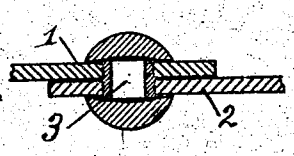


Fig. 6.

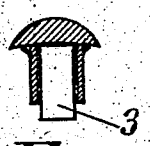


Fig. 7.

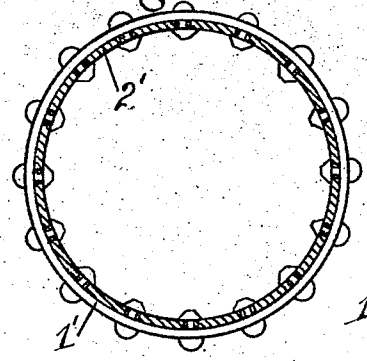


Fig. 8.

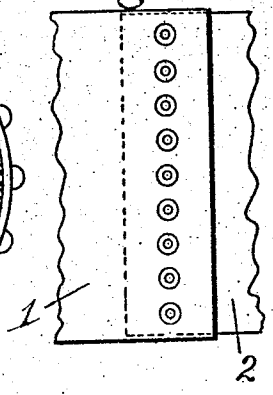


Fig. 9.

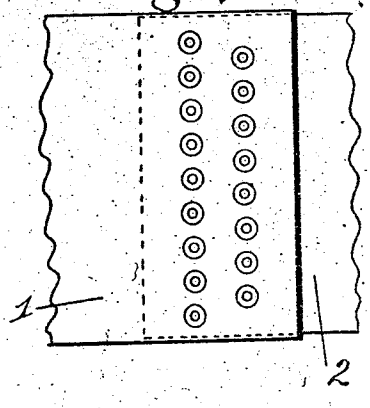


Fig. 10.

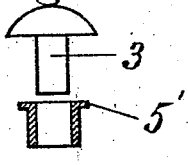


Fig. 11.

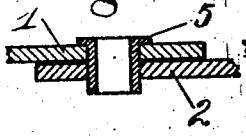
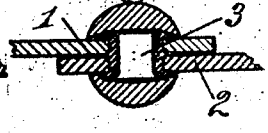


Fig. 12.



Witnesses
J. D. Place
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Inventor
Peter Farley
By his Attorney
Wallace Place

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No. 771,236. Patented October 4, 1904

UNITED STATES PATENT OFFICE.

PETER FARLEY, OF GLENRIDGE, NEW JERSEY.

RIVETED JOINT.

SPECIFICATION forming part of Letters Patent No. 771,236, dated October 4, 1904.

Application filed October 1, 1903. Serial No. 175,287. (No model.)

To all whom it may concern:

Be it known that I, PETER FARLEY, a citizen of the United States, and a resident of Glenridge, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Riveted Joints, of which the following is a specification.

This invention relates to improvements in riveting or holding together metals, and more especially for riveting together the sheets or plates of steel or iron forming water conduits or pipes, ships' hulls, boilers, &c.; and it consists, essentially, of an improved riveted joint.

The object is to make a tight joint, so as to prevent rusting of the rivet or metal and consequent leakage and to avoid "calking" of the joint. These objects are attained in the manner and by the means hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 shows an ordinary steel rivet with my improved calking-sleeve in vertical section. Fig. 2 shows in vertical section the same sleeve inserted in the rivet-hole of two plates of steel or iron ready to be riveted. Fig. 3 shows the two sheets of metal and the improved calking-sleeve in vertical section, the sleeve inserted in the rivet-holes, and the rivet in place in the sleeve. Fig. 4 is the same view as shown in Fig. 3, but with the rivet partially upset. Fig. 5 shows in vertical section the same sheets of metal as shown in Figs. 3 and 4 with the rivet-head formed and the improved calking-sleeve forced into the space between the two heads. Fig. 6 shows the calking-sleeve in vertical section slipped on over a rivet before being inserted into the rivet-holes of the plates. Fig. 7 shows an end view of two lengths of water-pipe riveted together, the inner pipe being shown in transverse section, the whole showing complete my improved riveted joint. Figs. 8 and 9 are plan views of two plates of metal riveted, the first being single-riveted and the second being double-riveted, both riveted in accordance with my invention. Figs. 10, 11, and 12 show a modification in construction of the annular head or shoulder on one end of the improved sleeve forming a part of my improved riveted joint, the first figure showing in vertical section the sleeve with rivet ready to be inserted, the second showing a sectional view of the riveted sheets with sleeve inserted in the rivet-holes, and the third showing the rivet upset and riveted in place.

Similar reference-marks refer to similar parts throughout the several drawings.

The numerals 1 and 2 refer to metal sheets of steel or iron to be riveted together, 1′ and 2′ being similar sheets of a water pipe or conduit.

At 3 I show an ordinary iron or steel rivet of suitable length for riveting together the two iron or steel plates.

At 4 I have a shell or calking-sleeve made preferably of soft copper or brass, or zinc, or some suitable alloy which is soft and pliable and yet of a metal or alloy which melts at a suitably high temperature so that when hot rivets are used they will not melt this sleeve. The preferred construction of this sleeve 4 is as shown in Figs. 1, 2, and 3, with one end of the shell slightly thicker or having thereon an annular head, projection, or shoulder, as shown at 5 and 5′, so that when inserted in the rivet-holes of the metal plates it will not drop through, but will fit tight and rest on the plate 2′ against the shoulder or thick edge 5 or 5′, as shown in Fig. 2. This sleeve 4 not only should fit the rivet-holes tightly and rest on the shoulder 5, but it is made, preferably, longer than the combined thickness of the two plates 1 and 2, so that the end 6 stands out a trifle beyond the plate 2, as shown in Figs. 3 and 4, and the end with the shoulder 5 also stands out a trifle beyond the other plate, 1; but this sleeve is preferably of less length than the shank of the rivet used, as shown in Figs. 3 and 6. The shoulder or annular head 5 or 5′ is necessarily of larger outside diameter than the shell, shank, or main part of said sleeve, but preferably of less outside diameter than the head of the rivet used therewith.

When the rivet is upset or partially riveted, as shown in Fig. 4, the body or shank of the rivet is thickened, and it is made to fill the sleeve tightly, and when the plates are fully riveted together and the rivet-head is formed as shown in Fig. 5 the sleeve 4 is shortened

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and the shell made thicker, so that it is forced into all the grain and inequalities of the edges of the plates 1 and 2 around the rivet-holes and in the inner side of the rivet-heads, thus calking the rivet, as it were. More or less of the metal of the sleeve is also forced into the crevices around the rivet-hole where the two plates come together, the outer surface of the sleeve 4 taking on the shape of the rivet-hole, as shown in Figs. 5 and 12, and filling all the inequalities, and the rivet is "calked," as it were, also by the ends of the sleeve or shell 4 being forced into the under or inner side of each of the rivet-heads, as shown in Figs. 5 and 12. As the rivet cools and contacts this calking is made tighter. No water can get into the shank 3 of the rivet after the rivet is riveted in place when my improved sleeve forming a part of my improved riveted joint is used therewith, nor under the rivet-heads, and the sleeve being made of a non-corrosive metal or alloy thus corrosion and rust and consequent leakage are avoided.

The sleeve 4 should be made of such suitable size so as to fit tightly into the rivet-holes of the plates and also tightly around the shank of the rivet, preferably a driving fit in each case, and it should be of such suitable length so that when the plates are tightly riveted together the heads are set up tightly against the plates, and the surfaces of the two plates are also forced tightly together, and so that the sleeve is forced to fill all the annular space between the rivet-shank and the edges of the plates inside the rivet-holes and the ends well calked against the inner side of both rivet-heads, and the outer edges of the rivet-heads when riveted should preferably lay down close to the outer surfaces of the plates, as shown in Figs. 5 and 12. These advantages are specially secured by use of my improved calking-sleeve, forming a part of my improved riveted joint, when made of the substantially relative proportions as to the rivets used therewith and as to the thickness of the steel or iron plates to be riveted and calked, the relative length of sleeves and the relative diameter of the annular shoulder thereon as to thickness of plates and length of shank of rivets used and diameter of heads thereof being an important feature of my invention.

Having thus described my invention, what I claim as new and original, and desire to secure by Letters Patent, is—

A riveted joint consisting of two overlapped punched plates, a calking-sleeve fitting the holes in the plates, and having an annular head or flange upon each end overlying the adjacent plate, and a rivet having a head at each end, overlying the respective flange of the sleeve, substantially as shown and described.

Signed at Glenridge, in the county of Essex and State of New Jersey, this 19th day of September, A. D. 1903.

PETER FARLEY.

Witnesses:
J. F. PLACE,
JOHN A. BROWN.