

949,811.

J. D. WALSH.
EXPANSION JOINT.

APPLICATION FILED FEB. 16, 1903.

Patented Feb. 22, 1910.

2 SHEETS—SHEET 2.

Fig 3.

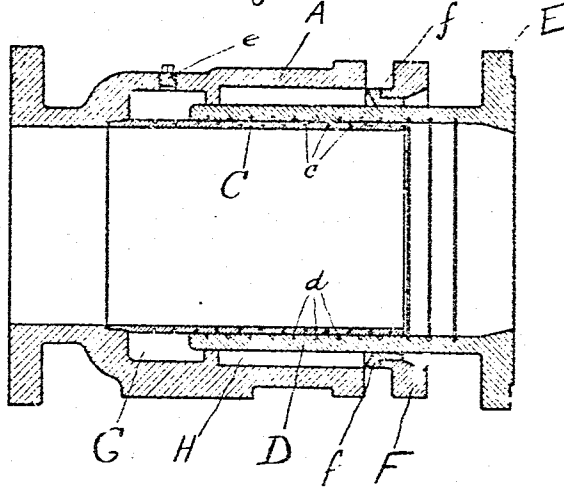


Fig 4

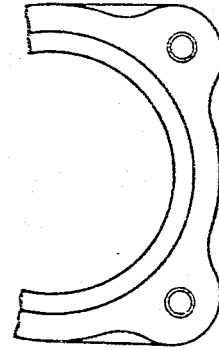


Fig 6.

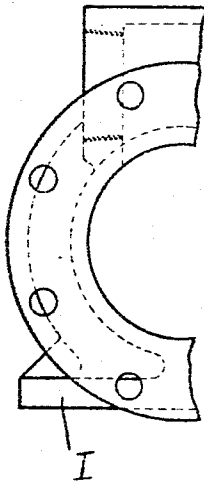
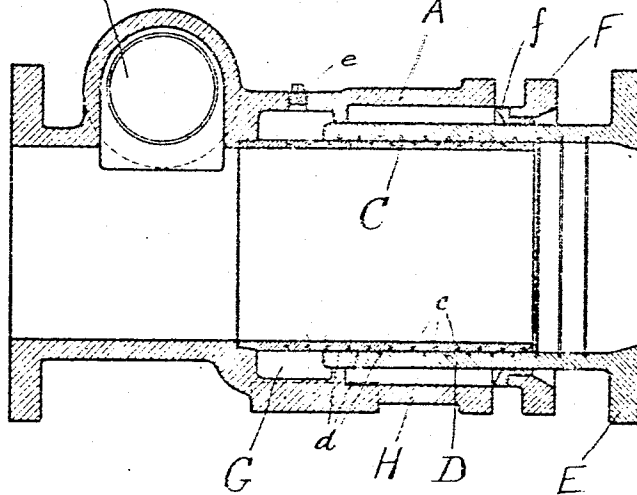


Fig 5.



WITNESSES.

Charles K. Bishop
Robert H. Hall

INVENTOR.

John Daniel Walsh

BY *A. S. Dyreforth*

ATTORNEY.

UNITED STATES PATENT OFFICE.

JOHN DANIEL WALSH, OF LOCKPORT, NEW YORK.

EXPANSION-JOINT.

949,811.

Specification of Letters Patent.

Patented Feb. 22, 1910.

Application filed February 16, 1909. Serial No. 478,175.

To all whom it may concern:

Be it known that I, JOHN D. WALSH, a citizen of the United States, residing at Lockport, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Expansion-Joints; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to improvements in expansion-joints, that is to say, joints adapted to permit the expansion of pipes in steam pipe lines, where variations in temperature, both internally and externally, have a peculiar expanding and contracting effect upon the pipe sections.

All of the expansion-joints now in use, are difficult to keep in working order, and entail considerable time and expense to keep them tight at all times, and it is my present object to present a joint, in which there is little likelihood of its getting out of order, or becoming leaky.

When a great number of expansion-joints employed in a steam-heating system, is taken into consideration, and it is appreciated that each one of these require constant repair and attention with the structures now in use, the large amount of trouble and expense saved by this invention is readily seen, inasmuch as the joints which I employ require very little and practically no care, after once being installed.

With these several objects and advantages in view, my invention in its preferred embodiment, includes the form of construction hereinafter specifically described, and pointed out in the appended claim.

In the accompanying drawings, forming a part of this specification, and wherein like reference characters refer to corresponding parts in the several views, Figure I is a longitudinal sectional view of a double expansion-joint embodying my invention; Fig. II is a similar view of a double expansion-joint, employed in a steam supply system, and including a service opening for tapping the main; Fig. III is a longitudinal sectional view of a single expansion-joint embodying my present improvements; Fig. IV is a detail view showing in partial elevation, the gland which I use; Fig. V is a longitudinal sectional view of a single expansion-joint, constructed according to my present inven-

tion, and provided with a service pipe for tapping the main; and Fig. VI is an end elevation of the form disclosed in Fig. V.

Referring more particularly to the drawing, and to Fig. I, A designates the body portion of the joint, the same having a central depending part B, which is screw-threaded at either side, for a purpose presently to be made clear.

a are internally-projecting rings formed at each end of the body portion A, and intermediate the central portion B and the ends of the body portion.

C are brass tubular slips, screw-threaded at their ends, and adapted to engage the screw-threaded portions of the projecting part B of the body portion, and to lie flush with the innermost surface of said projecting part. The slips C are provided upon their exterior surface with circumferentially-arranged grooves c.

D are tubular slips of iron, which fit in and form a piston between the brass slips C and the internal rings a upon the body portion A. Interiorly of the slips D are the grooves d, which coöperate with the before mentioned grooves c to form a water-packing, similar to that employed in connection with pump pistons. The slips D are provided with flanges E, to which the pipe sections are bolted.

F designates the gland, which is provided with a brass lining f'. The space H between the body portion A and the slip D, is filled with any suitable packing, metal being preferred. This packing is employed simply as a precaution, and is not necessarily essential to the effective operation of the device. The space G, between the body portion A and the internal slip C, is intended to be filled with a liquid-seal of oil, water, or other suitable liquid, which is introduced through the opening e. I indicates lugs formed upon the body portion A, by which the expansion-joint may be secured or anchored to a suitable foundation of cement, masonry, or other material.

In Fig. II, the construction is substantially similar to that of Fig. I, with the exception that the body portion is provided with a pipe A' leading therefrom, in order to afford a means for tapping the main, for obtaining service at the expansion-joint.

In Fig. III I have shown the construction embodied in a single expansion-joint, the arrangement being the same as with the double

expansion-joint structure. Fig. V shows a single expansion-joint, embodying the improvement, but with a service pipe leading from the body portion, as in Fig. II.

- 5 Instead of constructing the device as above described, I may form the inner tubular slips C of iron, making the outer slips D of brass, in which case, the brass lining *f* upon the gland F may be dispensed with. The principal purpose of making this
10 with a brass lining is to carry out the generally desirable principle in steam joint construction, of having dissimilar metal contact with one another in order to avoid rusting and quick destruction.

- The possibility of leakage with this form of joint is practically *nil*. The only way in which the steam can find an exit is by passing down between the inner slip C and outer
20 slip D, thence through the liquid seal in space G, and lastly through the packing box H. Obviously, this is practically impossible, and the advantage of the improvement lies in obtaining this result through such a simple arrangement of comparatively few parts.

- 25 Of course, various other modifications and arrangements may be had, aside from the preferred form hereinbefore pointed out, and I do not desire to be limited to the precise construction which I have disclosed.
30 The claim herewith presented is intended to cover any such changes or departures as

come within the scope and purview of this invention.

What I desire to secure by Letters-Patent 35 and claim is:

An expansion joint of the character described, including a body portion having an inwardly projecting flange, said flange being provided with a threaded shoulder, a
40 threaded slip in engagement with said shoulder and having its inner surface flush with the innermost part of the flange to form a continuous passage, a second cylindrical slip surrounding the first-mentioned
45 slip and spaced from the outer wall of the body portion, the said two slips being provided with cooperating circumferential grooves on their contacting surfaces, a ring formed integral with the body portion and
50 abutting the last-mentioned slip, means for affording a liquid seal between said ring and the beforementioned inwardly projecting flange, and a gland secured to the outer end of the body portion and surrounding
55 the last-mentioned slip.

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

JOHN DANIEL WALSH.

Witnesses:

H. J. BABCOCK,
CHARLES R. BISHOP.