E. Sullivan,

Piston Packing.

No. 97,564. Patented Dec. 7. 1869.

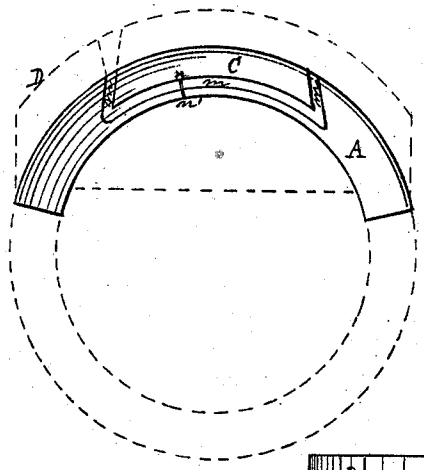
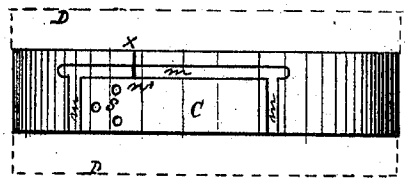


Fig. 1.

Fig. 2.



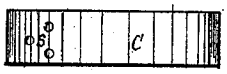


Fig. 5.

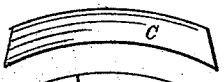


Fig. 4.

Fig. 3.

Attest: James L. Johnston
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EDWARD SULLIVAN, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 97,564, *dated December* 7, 1869.

IMPROVEMENT IN PISTON-PACKING.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, EDWARD SULLIVAN, of Pittsburg, in the county of Allegheny, and State of Pennsylvania, have invented certain new and useful Improvements in Fitting Compound Joints of Piston-Packing; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in covering the joint of piston-packing rings, by making in the ring a recess at its joint, and then placing in it a plate or section of a ring, which is of the same diameter as the outside diameter of the packing-ring, but less in thickness and width, (when viewed in cross-section,) said plate or section of a ring being so suspended or held in said recess in the packing-ring as that a space shall be left between the walls of the recess and the inner edge, ends, and outer surface of said plate or section of a ring, which space is filled by pouring into it a molten metal or alloy, thereby making a perfect "steam-tight joint."

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction.

In the accompanying drawings, which form part of my specification—

Figure 1 is a side elevation of my improvement in fitting a compound joint in a metallic ring, for piston-packing.

Figure 2 is a top view of the same.

Figure 3 is a side elevation of the same, representing a recess in the piston-packing ring.

Figure 4 is a side view of the plate or section of a ring, used in forming the "steam-tight joint.

Figure 5 is a top view of the same.

In the accompanying drawings—

A represents a section of an ordinary metallic ring, used for forming the ordinary expansive metallic packing for pistons of steam-engines, &c.

X represents the joint which is made in the ring, for the purpose of allowing it to expand.

This joint X is often covered by a plate, fitted and secured to the ring.

The joint X is also covered by forming what is known as a "compound joint."

Both of these modes require great care and much trouble and labor in fitting, and are very expensive modes of covering the joint X.

To avoid this labor, trouble, and expense of covering the joint X, I make in the ring, directly opposite to the joint X, a recess, B, as shown in fig. 3.

In this recess I suspend the plate C, (the plate being smaller than the recess,) so as to leave a space between the walls of the recess B and the inner edge, ends, and under-surface of the plate C, as indicated at *m*, in figs. 1 and 2.

By placing blocks of wood on each side of the ring A, as indicated by the dotted lines D, and suspending the plate in the recess, in the manner before stated, and shown in the accompanying drawings, the molten metal—by preference, "Babbit metal"—or a suitable alloy, may be poured into the space *m*, and the molten metal running up into openings *s*, will cause the plate C to be attached to one side of the filling or metal poured in the space *m*.

After the metallic filling has become sufficiently cold or congealed, the blocks indicated by the dotted lines are removed, and the filling in the space *m* is cut through, as indicated at *n* and *n'*, so that the plate C may slide or move in one portion of the metallic filling, thereby allowing the ring to expand, and at the same time keeping the joint X covered by the plate.

The skilful machinist will readily understand how the space *m* may be filled with the molten metal, and will easily devise the means for doing so, from the suggestions herein given.

Having thus described the nature, construction, and operation of my improvement,

What I claim, as of my invention, is—

Making a recess in a packing-ring, at its joint, and using, in combination with said recess, a plate, and a metal or alloy-filling, as herein described.

EDWARD SULLIVAN.

Witnesses:

JAMES J. JOHNSTON,

A. C. JOHNSTON.