No. 783,943. PATENTED FEB. 28, 1905.

C. C. FROST.

PACKING FOR STEAM JOINTS.

APPLICATION FILED AUG. 6, 1902. RENEWED JAN. 25, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

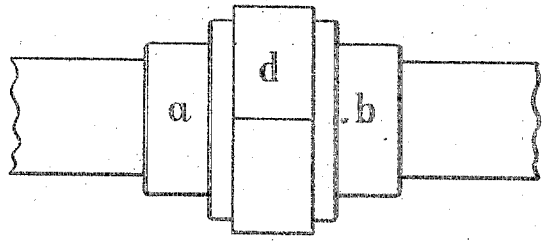


Fig. 2.

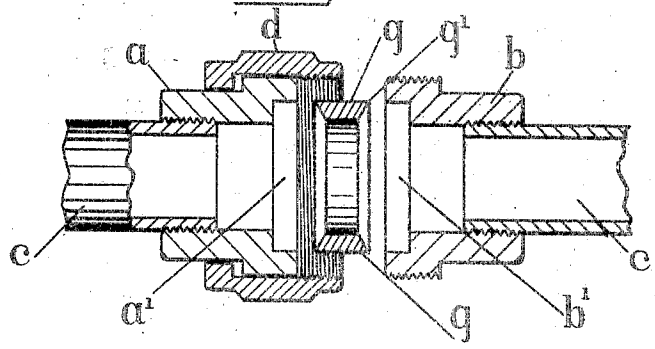
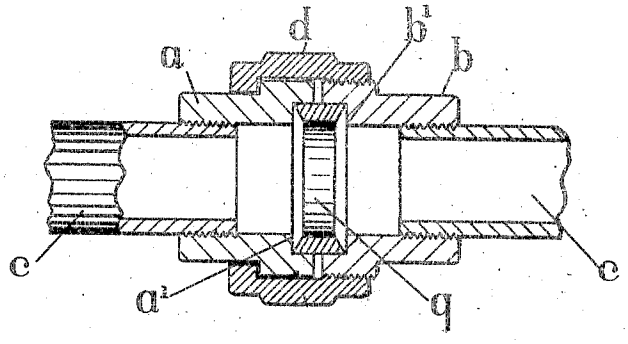


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

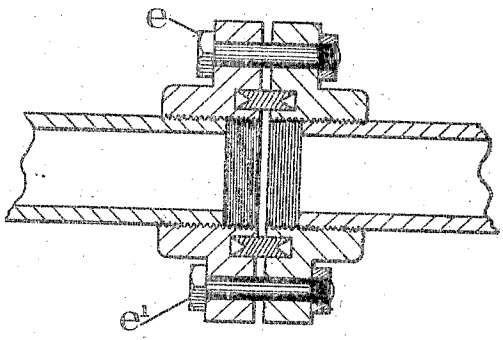


Fig. 5.

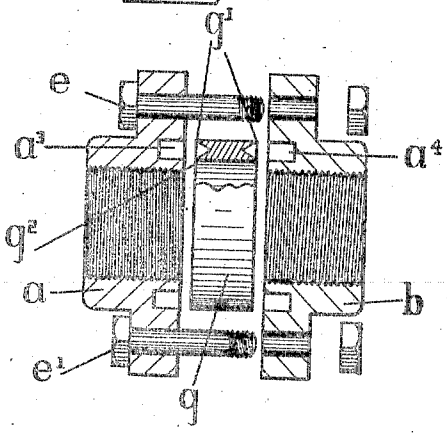


Fig. 6.

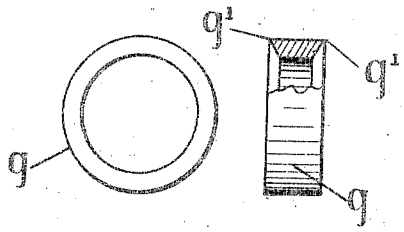
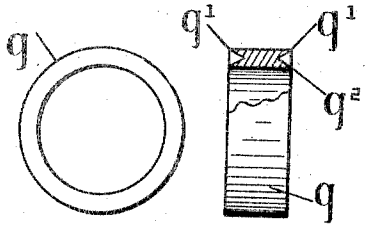


Fig. 7.



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No. 783,943. Patented February 28, 1905.

UNITED STATES PATENT OFFICE.

CLARENCE C. FROST, OF NORWICH, CONNECTICUT, ASSIGNOR TO HIRAM R. MILLS, OF BLOOMFIELD, CONNECTICUT.

PACKING FOR STEAM-JOINTS.

SPECIFICATION forming part of Letters Patent No. 783,943, dated February 28, 1905.

Application filed August 6, 1902. Renewed January 26, 1905. Serial No. 242,079.

To all whom it may concern:

Be it known that I, CLARENCE C. FROST, a citizen of the United States, residing at Norwich, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Packings for Steam-Joints, of which the following is a full, clear, and exact description.

This invention has for its object the provision of a cheap and efficient packing for pipe-joints, cylinder-heads, and the like purposes, my immediate object being to provide a form of packing that will insure a positively tight joint under all conditions.

The drawings annexed hereto illustrate my said invention, Figure 1 being a side view of a pipe-coupling embodying the same, and Fig. 2 is a longitudinal central sectional view of the same parts as they appear when separated. Fig. 3 is a similar view of the said coupling with the parts assembled. In Figs. 4 and 5 I have shown my said invention as applied to an ordinary flange-union, Fig. 4 being a longitudinal central sectional view of the same with the parts assembled and Fig. 5 being a similar view with the parts separated. Fig. 6 illustrates end and edge views of the packing of Figs. 1, 2, and 3, the edge view being partly in section; and Fig. 7 shows similar views of the packing of Figs. 4 and 5.

In the drawings the letters *a b* indicate the two principal members of a pipe-coupling, the same being tapped to receive the threaded ends of pipes *c*. In the coupling of Figs. 1, 2, and 3 the members *a b* are adapted to be drawn together by a nut *d* in the usual manner, and in the flange-union (illustrated by Figs. 4 and 5) the members *a b* are adapted to be clamped together by bolts *e e'*.

In order to provide a tight joint at the abutting faces of the members *a b*, it is customary to insert between the said faces a packing that is ordinarily of ring form and is constructed of metal that is preferably somewhat softer than the engaging metal of which the members *a b* are made. Various forms of packings have been used heretofore, some of simple gasket form, made of copper or the like comparatively soft material, which soon becomes jammed and bruised, and others of more complex forms that are expensive to produce. In contradistinction to these more or less objectionable forms my present packing consists of a simple annulus cut from ordinary brass or iron pipe and suitably beveled at its ends (as I shall explain in detail,) the construction being such that when the packing is inserted between the members *a b* and the latter are forcibly clamped together the thin edges of the said packing seek to expand and become firmly embedded in the members *a b*, and thus provide a positively tight joint.

The ring-packing *g* of Figs. 1, 2, 3, and 6 is beveled from its outer edges inward, thus providing thin edges *g'*, and the packing of Figs. 4, 5, and 7 is channeled, so as to provide thin edges *g' g²*.

In the form of coupling illustrated in Figs. 2 and 3 the confronting ends of the members *a b* are rabbeted, as at *a' b'*, to receive the simple form of packing illustrated in Fig. 6, and when the members *a b* are forcibly drawn together by means of the nut *d* the thin edges *g'* of the ring-packing engage the end walls of the rabbets and are upset and expanded into the angles of said rabbets, thus providing positively tight joints.

In the flanged union (shown in the Figs. 4 and 5) I have provided annular channels or grooves *a³ a⁴* of proper size to easily receive the ring-packing of Fig. 7. When the flanges of the union are drawn together by means of the bolts *e e'*, the edges *g' g²* of the said packing abut the end walls of the annular grooves *a³ a⁴* and are expanded into the angles formed by the end and side walls of said grooves.

Ordinarily the described simple form of rabbet coöperating with the packing having a single thin edge *g'* is sufficient to provide a tight joint; but in cases when the coupled pipes are used to convey steam, water, or air under great pressure packings with double edges, as described, may be utilized.

Having thus described my invention, I claim—

1. In combination, two confronting flanges provided with annular grooves as set forth, a ring packing located in said grooves and

formed with an inwardly-beveled seating edge g', adapted to be upset and expanded, and means independent of said ring packing for clamping the said flanges and packing together.

2. In combination, two confronting flanges provided with annular grooves, a ring packing of substantially the same thickness as the width of the grooves and located in said grooves and having a beveled thin edge adapted to be upset and expanded within said grooves, and means for clamping the said flanges and packing together.

3. In combination, two confronting flanges provided with annular grooves, a ring packing located in said grooves and formed with oppositely-beveled thin edges in the opposite sides of its acting faces to be upset and expanded within said grooves, with the body portion of said ring of substantially the same thickness as the width of the grooves, and means for clamping the flanges and packing together, substantially as and for the purpose specified.

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