

(No Model.)

G. E. MITCHELL.
Piston Rod Packing.

No. 230,317.

Patented July 20, 1880.

Fig. 1.

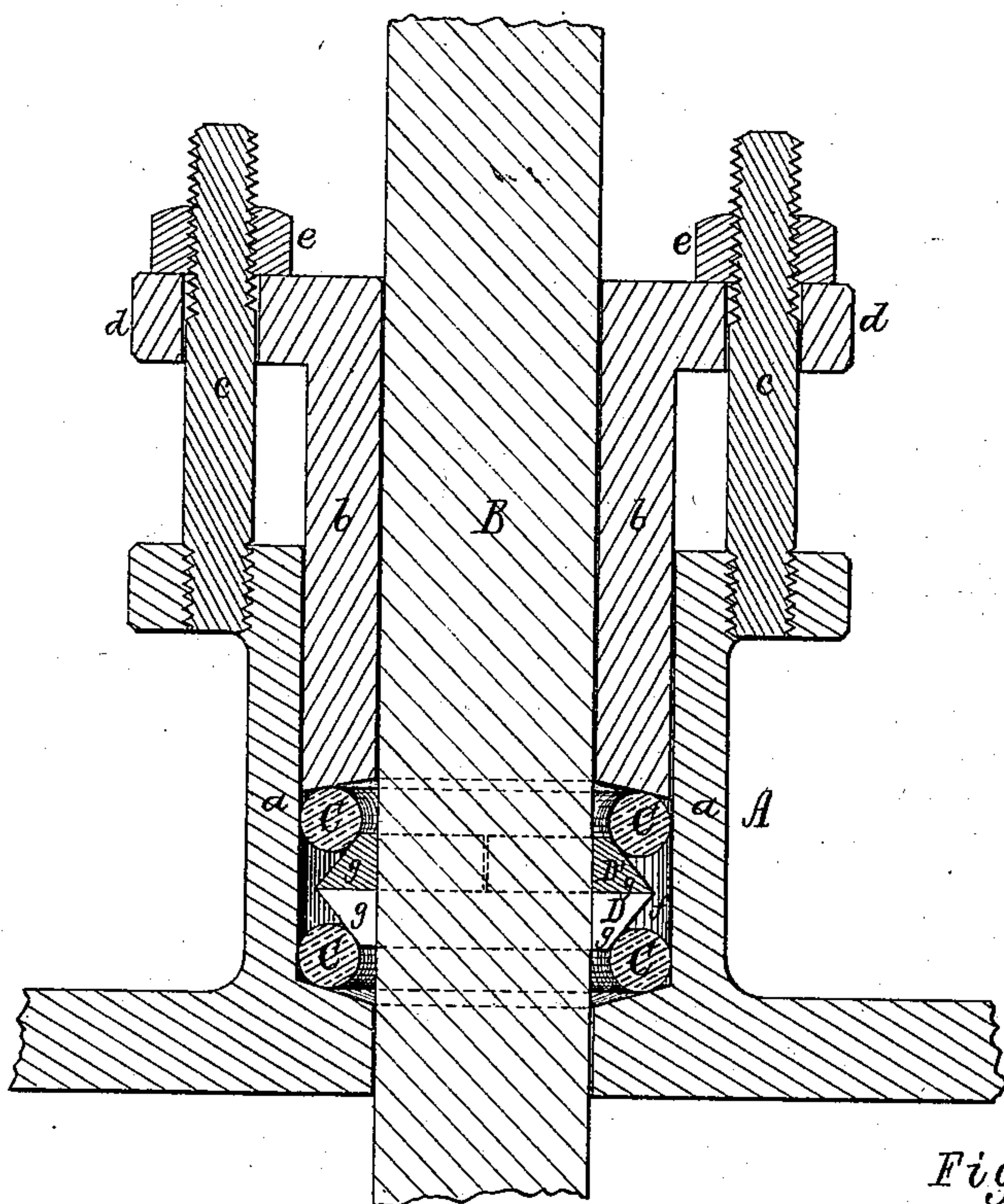


Fig. 4.



Fig. 2.

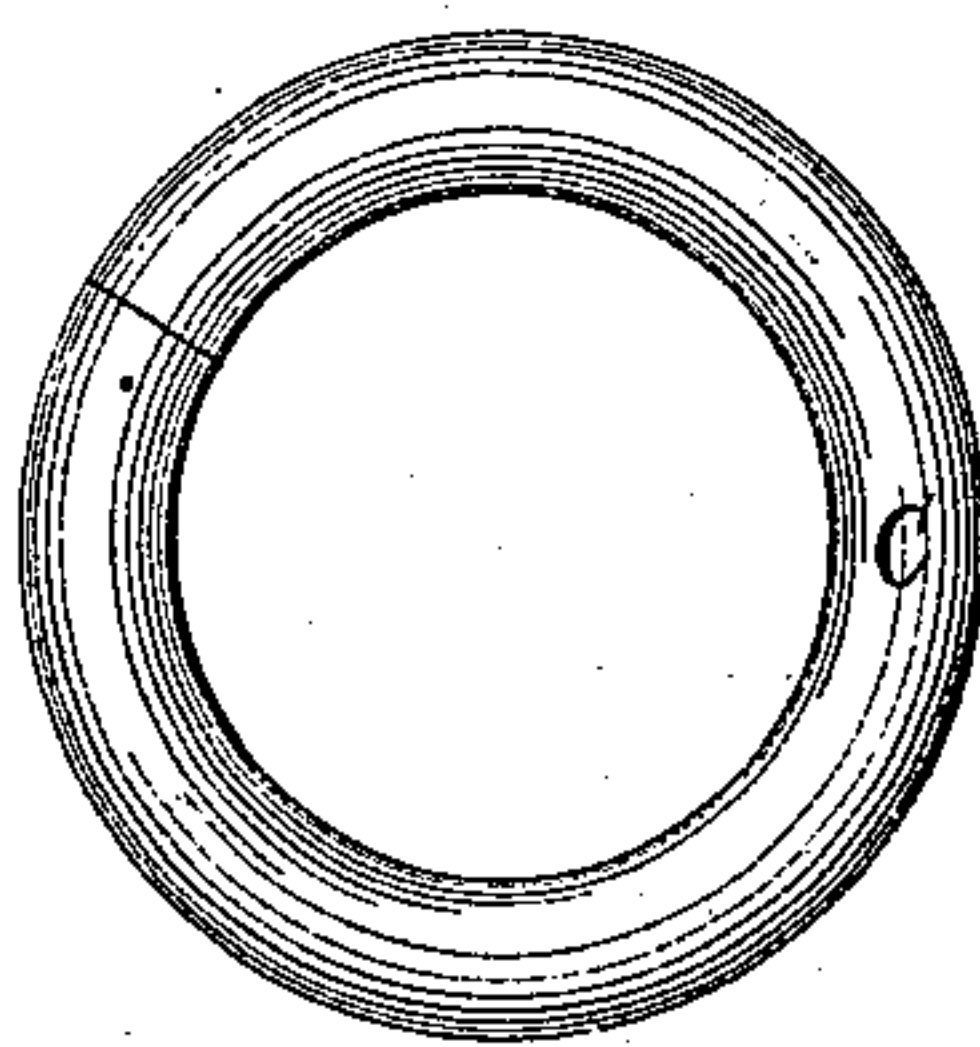
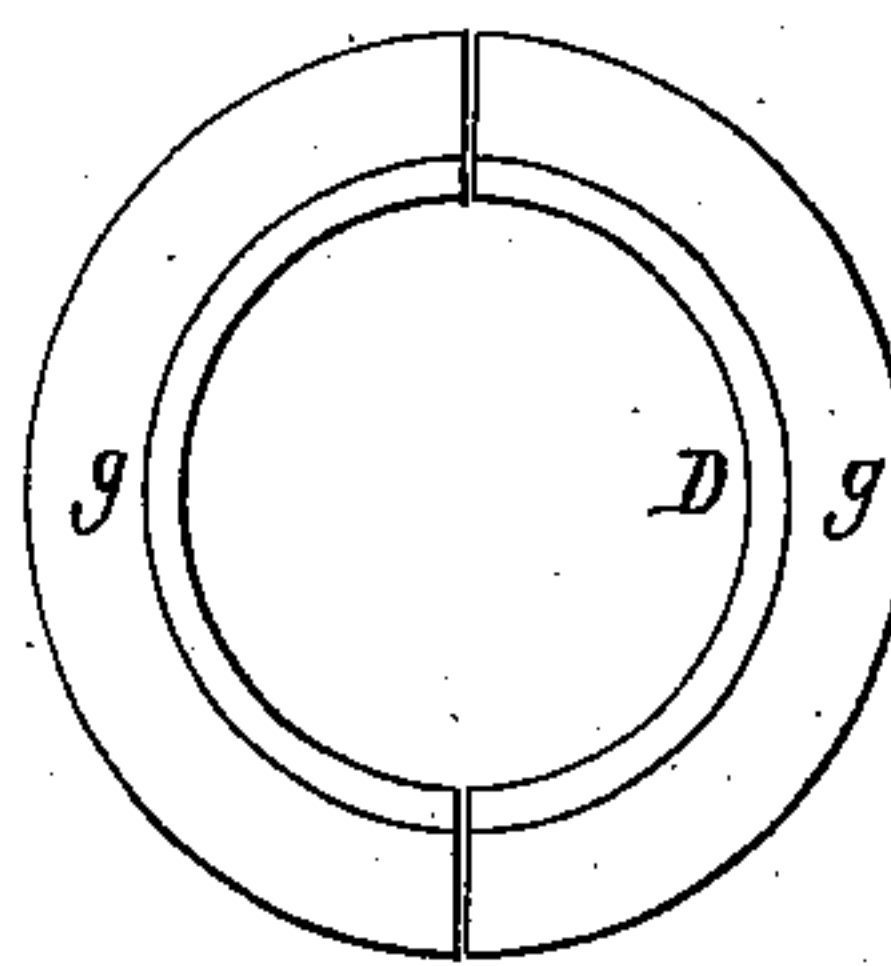


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE E. MITCHELL, OF CHELSEA, MASSACHUSETTS.

PISTON-ROD PACKING.

SPECIFICATION forming part of Letters Patent No. 230,317, dated July 20, 1880.

Application filed May 21, 1880. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. MITCHELL, of Chelsea, of the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Piston-Rod Packings; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a vertical and transverse section of a stuffing-box and part of a piston-rod therefor provided with my improved packing. Fig. 2 is a top view of one of the elastic rings. Fig. 3 is a top view, and Fig. 4 a transverse section, of one of the tapering metallic rings, to be hereinafter described.

The said packing is composed of two or more elastic rings and one or more sets of tapering metallic annuli, the latter being constructed in sections and arranged substantially in manner and to operate with the said elastic rings in manner as specified.

In the drawings, A denotes a stuffing-box of ordinary construction, and B its piston-rod, the latter being extended through the box concentrically.

The said box is formed in two parts—viz., the chambered portion *a* and the gland *b*, the part *a* having screws *c c* projecting up from it through the flange *d* of the gland, and furnished with nuts *e*, as shown.

At and on the bottom of the chamber *f* of the part *a*, I arrange a split ring, C, which is to be composed of a material or materials to render it elastic. Directly over and upon such ring, and to encompass the piston-rod, I place, with its taper downward, a metallic ring or annulus, D, made in two semicircular sections, *g*, the said ring being triangular or trapezoidal in its cross-section, as represented.

On the base or upper face of the ring D, I place another such sectional ring, D', having its taper upward, but with its sections arranged to break joints with those of the under metallic ring, the arrangement of the two sectional rings being as represented in Fig. 1. On the upper of the said metallic rings, and to encircle the piston-rod, I arrange another

elastic ring, C, on which the gland is to rest and bear.

Each elastic ring I usually construct of india-rubber or such and cloth, properly arranged, and each of the other rings is to be made of soft metal, usually termed "anti-friction metal," such as is generally employed for the linings of journal-boxes.

On depressing the gland on the packing by means of the nuts and screws the elastic rings, by their action on the metallic rings, will force them into close contact with each other and with the piston-rod, especially as the metallic rings from time to time may become worn, the elastic rings aiding in forming close joints.

It will be evident that three or more of the elastic rings may be used with two or more sets of the metallic sectional rings, provided the stuffing-box be of sufficient size to hold them and they be arranged substantially as above specified.

The metallic rings of each set have a diameter somewhat less than that of the stuffing-box chamber in which they are placed, such being in order that they may allow the piston-rod to vibrate or play laterally as occasion may require.

I am aware of the piston-rod packing described and shown in the United States Patent No. 216,131, it being composed of elastic rings and metallic sectional rings, in which case there is only one sectional ring between the elastic rings; whereas I have in my improved packing a set of two of the metallic sectional rings or annuli between each elastic ring and that one next to it, the sections of one ring of the set being arranged to break joints with those of the other. This renders it unnecessary to have any packing between the ends of the abutting sections.

I claim as my invention as follows, viz:

1. My improved piston-rod packing, substantially as described, consisting of elastic rings and one or more sets of two tapering metallic annuli, each of the latter being made in sections and with its fellow arranged between each elastic ring and another next

thereto, and all being constructed to operate essentially as specified.

2. The combination of the stuffing-box and the elastic rings disposed in it, as shown, 5 with the tapering metallic annuli arranged with each other and the said elastic rings, as represented, and each made in sections, and having a diameter sufficiently less than that

of the stuffing-box chamber to allow of lateral play of the annulus and piston therein, as is specified.

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Witnesses:

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