No. 702,578. Patented June 17, 1902.

T. W. MITCHELL.

ROD PACKING.

(Application filed Sept. 16, 1901.)

(No Model.)

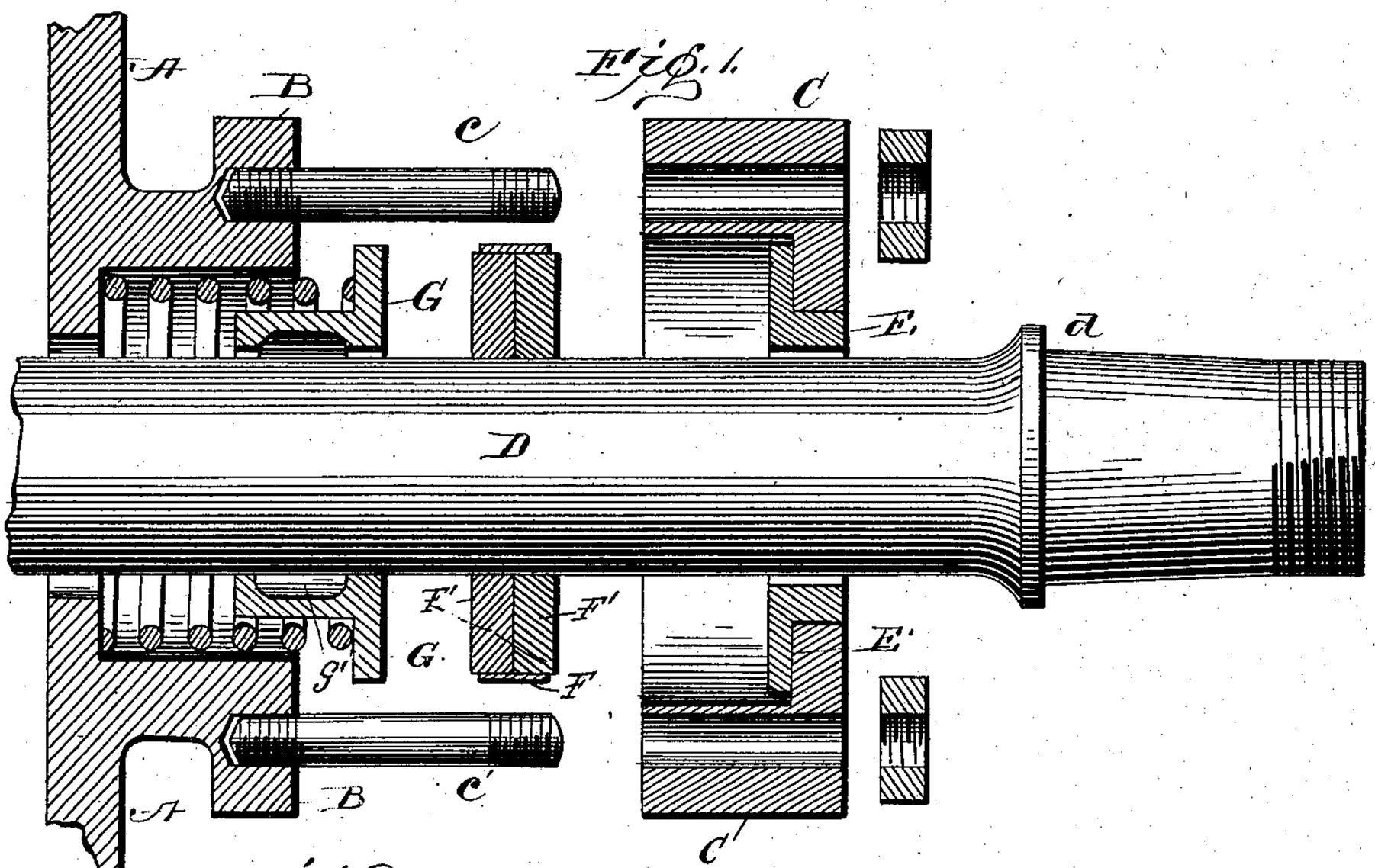


Fig. 1.

Fig. 2.

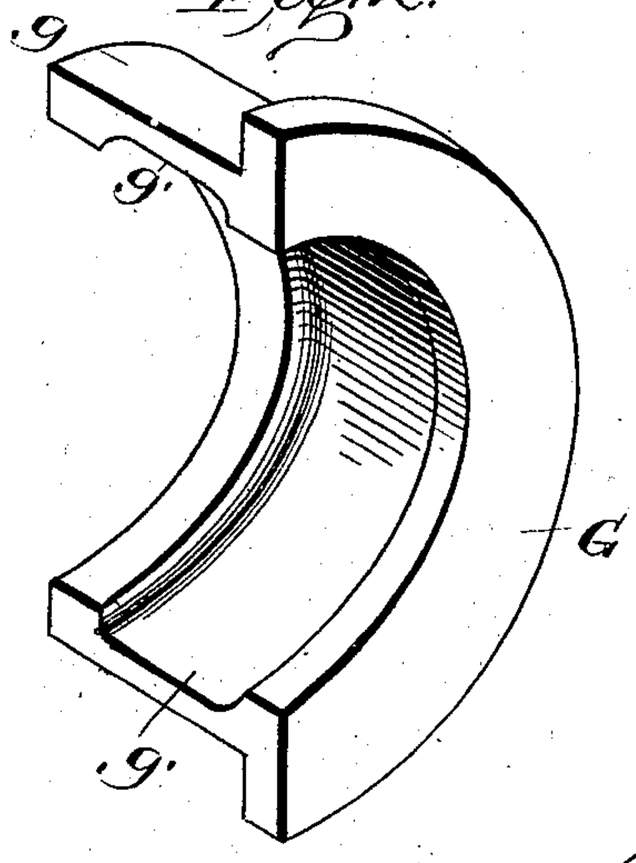


Fig. 3.

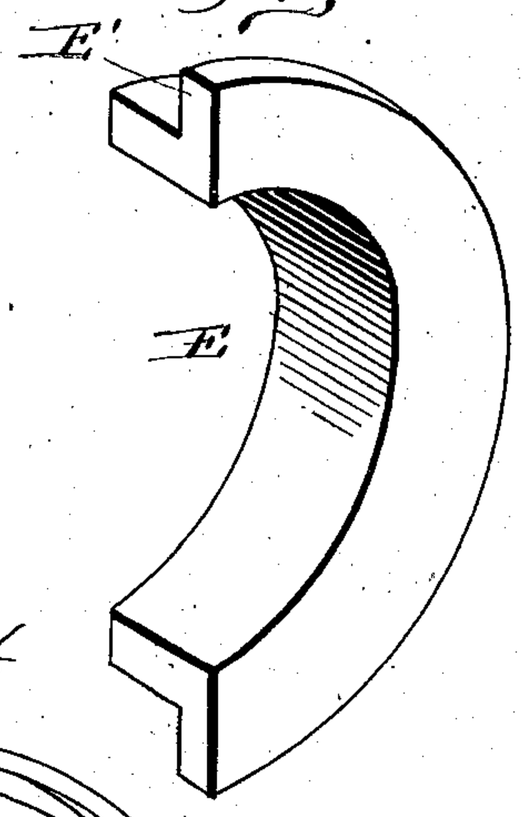
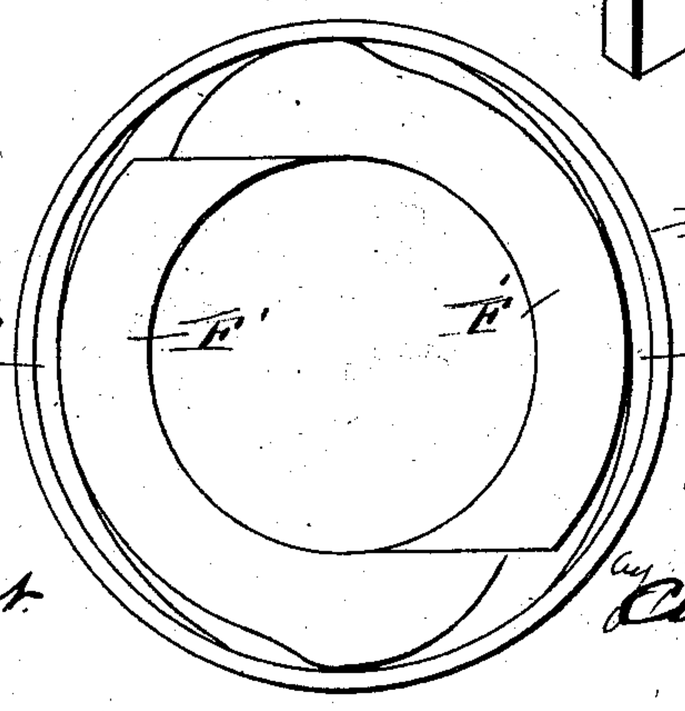


Fig. 4.



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UNITED STATES PATENT OFFICE.

THOMAS W. MITCHELL, OF OMAHA, NEBRASKA.

ROD-PACKING.

SPECIFICATION forming part of Letters Patent No. 702,578, dated June 17, 1902.

Application filed September 16, 1901. Serial No. 75,522. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. MITCHELL, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Rod-Packing; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates to improvements in packings for making steam or gas tight joints around connecting or sliding rods, the object of the invention being to provide an exceedingly simple and durable and efficient packing adapted to permit of the insertion of a rod having enlargements or heads thereon.

The invention consists in certain novel details of construction and combinations and arrangements of parts, all as will be now described, and pointed out particularly in the appended claims.

Referring to the accompanying drawings, Figure 1 is a sectional view through a packing embodying the present invention with the parts separated. Fig. 2 is a perspective view of one section of the follower for the packing-rings. Fig. 3 is a similar view of one section of the split bushing. Fig. 4 is an elevation of the packing-ring.

Similar letters of reference in the several figures indicate the same parts.

The letter A indicates the cylinder-head, having the stuffing-box B thereon. This stuffing-box B may be of any usual or preferred type in so far as its mechanical construction and application to the cylinder-head is concerned; but it should have a cylindrical integral chamber for the reception of the working parts of the packing, as will presently appear. The head or cover C of the stuffing-box may also be of any ordinary construction and held in place by any usual fastening means—such, for instance, as the bolts *c*. A cylindrical chamber is formed in the head C, preferably of somewhat-larger diameter than the chamber in the stuffing-box itself, and the rod-openings in the bottom of the stuffing-box and cover are of sufficient diameter to permit of the passage of the head or heads *d* on the rod D. The size of the opening in the cover C is reduced by a split bushing E, preferably formed in two sections, as shown, and having a flat-faced flange E′ seating against the inner face of the cover C. The outer face of the flange E′ forms the seat against which the packing-ring presses.

The preferred type of packing-ring employed is that embodied in my prior patent, No. 647,313, dated April 10, 1900, and consisting of a retainer-ring F, with segments F′, each having pivotal contacts with the ring at one end and a sliding contact with the other segment at the opposite end. Springs F^2 are provided for holding the segments up to their work. These segments surround and contact with the rod, and they are pressed against the flat face of the bushing by a follower G, which surrounds the rod, but is formed in sections, (see Fig. 2,) so as to be readily applied to the rod, and the sections are held together and pushed against the packing-ring by a spiral spring H. To facilitate the holding of the sections of the follower together, it is formed with a cylindrical prolongation *g* of a diameter to fit tightly within the first few coils of the spring, and to lighten the structure this cylindrical prolongation may be chambered out at *g′*. The spring and cylindrical prolongation of the follower work in the chamber in the stuffing-box, while the head of the follower and packing-ring preferably occupy the chamber in the cover and may thus be of somewhat-larger diameter, although this is not essential.

It will be observed that the pressure of the follower is parallel with the movement of the rod and serves to render the joints between the packing-rings and cover or bushing tight, while the packing-ring segments operate at right angles to the line of movement of the rod and serve to form a tight joint about the same. With such construction there is no wedging action, such as would be liable to cause the parts to stick, and all wearing-faces are plain and smooth, whereby no shouldering occurs. Thus not only is the construction much simplified, but the life of the packing is much prolonged. The wearing parts are few and simple, and hence to renew the packing it is a simple and inexpensive mat-

ter to remove the cover and supply those parts found to be worn or defective in any particular.

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

1. In a rod-packing, the combination with the stuffing-box, a cylindrical chamber therein and a removable cover, with an opening through said stuffing-box and cover of sufficient diameter for the free passage of the rod, of a packing-ring adapted to embrace the rod and having bearing-faces on its opposite sides of a follower adapted to press said ring against one end of the chamber, said follower being formed in sections with a cylindrical prolongation, and a spring surrounding said prolongation to hold the section together and bearing against the opposite end of the chamber for advancing the follower; substantially as described.

2. In a rod-packing, the combination with the stuffing-box having the chamber therein, the removable cover having a chamber therein, said stuffing-box and cover having openings for the free passage of the rod and a sectional bushing for reducing the size of one of said openings, of a packing-ring having segments with springs for advancing the same into contact with the rod and parallel flat bearing-surfaces on opposite sides, a sectional follower for advancing the ring against the bushing, having a cylindrical prolongation, a spring surrounding said prolongation to hold the sections together and bearing against the opposite end of the chamber to advance the follower parallel with the rod; substantially as described.

3. In rod-packing, the combination with the stuffing-box having a cylindrical chamber therein, the removable cover having a cylindrical chamber therein of larger diameter than the chamber in the stuffing-box and a sectional bushing for reducing the size of the rod-opening in the cover and having a flat-face flange, of the packing-ring segments seating against said flat face with springs for advancing them against the rod, a sectional follower bearing against the side of the packing-ring opposite the bushing and having a cylindrical prolongation extending back into the chamber in the stuffing-box, and a spring located in said last-mentioned chamber for advancing the follower and having its forward coils around the cylindrical prolongation of the follower for holding the sections of the follower together; substantially as described.

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