

990,841.

Fig. 1.

Fig. 2.

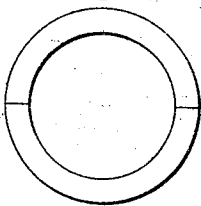


Fig. 3.

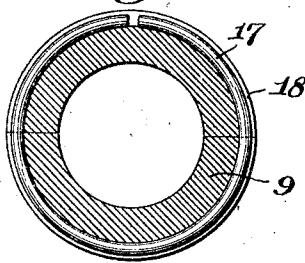


Fig. 4.

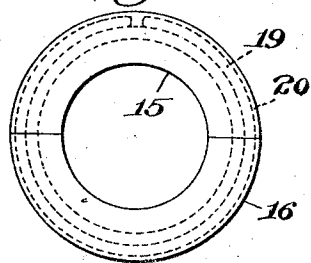


Fig. 5.

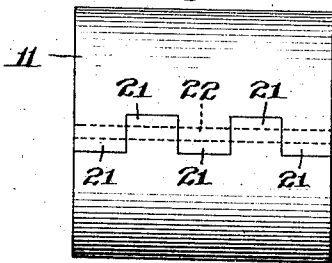
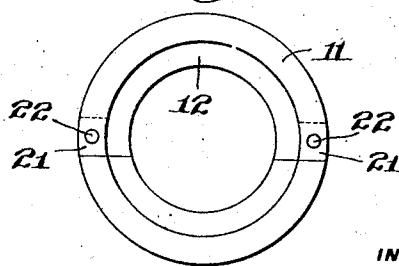


Fig. 6.



Michael Collins

BY

ATTORNEY

WITNESSES

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UNITED STATES PATENT OFFICE.

MICHAEL COLLINS, OF PHILADELPHIA, PENNSYLVANIA.

PACKING MEANS FOR STUFFING-BOXES.

990,841.

Specification of Letters Patent.

Patented May 2, 1911.

Application filed April 23, 1910. Serial No. 557,143.

To all whom it may concern:

Be it known that I, MICHAEL COLLINS, a citizen of the United States, residing at Philadelphia, county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Packing Means for Stuffing-Boxes, of which the following is a specification.

The object of my invention is to provide a novel, simple and efficient packing means for stuffing boxes of piston rods and the like, said means having provision whereby packing compressible longitudinally of the rods may be employed and adjusted to properly pack the rods, and whereby the packing may be readily removed from the box when desired for renewal and for other purposes.

To this end the invention consists in the novel construction and combinations of parts hereinafter fully described and particularly claimed.

In the drawings: Figure 1 is a longitudinal section of a stuffing box and my improved packing means applied thereto. Fig. 2 is an elevation of one of the compressible packing rings. Fig. 3 is a vertical section through the inner end collar. Fig. 4 is an elevation of the follower adapted to engage the compressible packing. Fig. 5 is a side view of the collar surrounding the compressible packing ring. Fig. 6 is an end view of the collar shown in Fig. 5.

2 designates the stuffing box and 3 the rod extending centrally therethrough. The box 2 is provided with an inner beveled end wall 4 which is fitted to the rod 3, as shown, and the outer end of the box 2 is made open.

Surrounding the rod 3 and extending into the outer open end of the box 2 is a follower 5 provided on its outer end with a flange 6. Extending through openings in the flange 6 are the outer screw-threaded ends of rods or bolts 7, the inner ends of which are screw-threaded and screwed into the box 2. Screwed on to the rods 7 outwardly of the flange 6 are nuts 8, which, when turned will engage the flange 6 and force the follower 5 into the box 2.

The stuffing box thus far described is of common and well known construction.

Located within the box 2 is an inner compensating ring 9 provided with an inner beveled face fitted to the beveled face of the wall 4 and provided with an outer face arranged at right angles to the rod 3. Surrounding the rod 3 adjacent the ring 9 is a packing ring 10; and surrounding the rod 3 outwardly of the packing ring 10 and within the box 2 is a cage 11. The main body of the cage 11 surrounds the rod 3 in spaced relation thereto, and is fitted to the inner wall of the box 2; and the cage 11 is provided with an inner end wall 12 which is fitted to the rod 3 and is engaged with the packing ring 10 and closes the inner end of the space between the rod 3 and the main body of the cage 11, the outer end of the space between the cage 11 and rod 3 being open as shown.

Surrounding the rod 3 within the cage 11 are packing rings 14 which are arranged in engagement with each other and also in engagement with the inner end of the cage 11; and surrounding the rod 3 and extending into the outer open end of the cage 11 and engaged with the packing rings 14 is a follower 15, the outer end of which is provided with a flange 16 which is fitted to the inner wall of the stuffing box 2.

The packing rings 10 and 14 may be constructed of any suitable material which is compressible longitudinally of the rod 3; and in constructing these packing rings any well known packing now upon the market having the characteristics of being compressible longitudinally of the rod 3 may be employed.

The parts thus far described located within the stuffing box 2 are all adjustable longitudinally of the rod 3 and relatively to each other and to said rod, and the outer flanged end of the follower 15 is engaged by the inner end of the main follower 5. It will therefore be seen that by turning the nuts 8 the follower 5 and therewith the follower 15 may be forced into the stuffing box 2 toward the end wall 4 thereof, thereby squeezing the

packing rings 14 between the end wall 12 of the cage 11 and follower 15 and forcing them into close contact with the rod 3 and cage 11, and squeezing the packing ring 10 between the collar 9 and the cage 11 and forcing it into close contact with the cage 11 and inner wall of the stuffing box 2 thereby effectually packing the rod 3 and preventing any leakage longitudinally thereof through the stuffing box 2.

It is not usually convenient to apply packing devices to rods from the ends thereof, and therefor in order to permit my improved packing means to be applied to and removed from the rod 3 laterally thereof after said means is withdrawn from the stuffing box 2 longitudinally of the rods, I make the collar 9, cage 11 and packing rings 10 and 14 and follower 15 each in two parts or two halves, as is clearly shown in the drawings, so that by separating the two parts or two halves of the different elements of my device, the same may be readily removed from or applied to the rod 3 laterally thereof. Also the separation of the two parts or two halves of the cage 11 permit the ready removal of the packing rings 14.

The two parts or halves of the collar 9 are held together by a split spring ring 17 arranged within a groove 18 in the collar 9 and embracing the two parts thereof, as shown; and the two parts of the follower 15 are similarly held together by a split spring ring 19 arranged within a groove 20 in the flange 16 of the follower 15 and embracing the two parts of the follower and holding them together. The meeting portions of the two parts of the cage 11 are provided with interprojecting parts 21, as clearly shown in the drawings, and extending through the interprojecting parts 21 and holding the two parts of the cage 11 together, are removable longitudinally arranged rods or pins 22, by the removal of which the two parts of the cage 11 may be readily separated.

While I have herein shown and described my invention in a desirable and practicable form, I do not limit myself to this particular construction, as the same may be greatly modified without departing from my invention.

I claim:

1. The combination of a stuffing box having an inner end wall; a rod extending through the box; packing surrounding the rod and compressible longitudinally of the rod; a two part cage surrounding the packing within said box and having an inner end wall engaged with the packing, said cage being removable from the box; means for holding the parts of said cage together; a two part follower surrounding the rod and movable into and from said cage and having its outer end movable into and from said box; means

for holding the two parts of said follower together; a second follower surrounding the rod and engaged with the first named follower and movable into and from said box; and adjusting means for the last named follower.

2. The combination of a stuffing box having an inner end wall; a rod extending through the box; packing surrounding the rod and compressible longitudinally of the rod; a cage surrounding the packing within said box and removable therefrom; a compressible packing ring surrounding the rod between said end wall and the inner end of said cage, said packing ring being engaged with said box, said rod and said cage, and said packing ring being compressible longitudinally of the rod; a follower surrounding the rod and movable into and from said cage; and adjusting means for said follower.

3. The combination of a stuffing box having an inner end wall; a rod extending through the box; packing surrounding the rod and compressible longitudinally of the rod; a cage surrounding the packing within said box and having an inner end wall engaged with the packing, said cage being removable from said box; a packing ring surrounding the rod between said end walls, said packing ring being engaged with said box, said rod and said cage, and said packing ring being compressible longitudinally of the rod; a follower surrounding the rod and movable into and from said cage; and adjusting means for said follower.

4. The combination of a stuffing box having an inner, beveled end wall; a rod extending through the box; a cage surrounding the packing within said box and having an inner end wall engaged with the packing, said cage being removable from said box; a collar surrounding the rod and having a beveled face engaged with said beveled end wall; a packing ring surrounding the rod between said cage and said collar and engaged therewith and with said rod and said box, said packing ring being compressible longitudinally of the rod; a follower surrounding the rod and movable into and from said cage; and adjusting means for said follower.

5. The combination of a stuffing box having an inner end wall; a rod extending through the box; packing surrounding the rod and compressible longitudinally of the rod; a cage surrounding the packing within said box and removable therefrom; a two-part follower surrounding the rod and movable into and from said cage, the parts of said follower being removable from the rod laterally thereof; means for holding the two parts of said follower together; and adjusting means for said follower.

6. The combination of a stuffing box having an inner end wall; a rod extending through the box; packing surrounding the rod and compressible longitudinally of the rod; a cage surrounding the packing within said box and removable therefrom; a two-part follower surrounding the rod and movable into and from said cage; a split, spring ring engaged with the two parts of said follower and holding them together; and adjusting means for said follower. 10

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

MICHAEL COLLINS.

Witnesses:

A. V. GROUPE,
S. I. HARPER.