G. C. PHILLIPS.

Packing for Stuffing Boxes.

No. 212,739. Patented Feb. 25, 1879.

Fig. 1

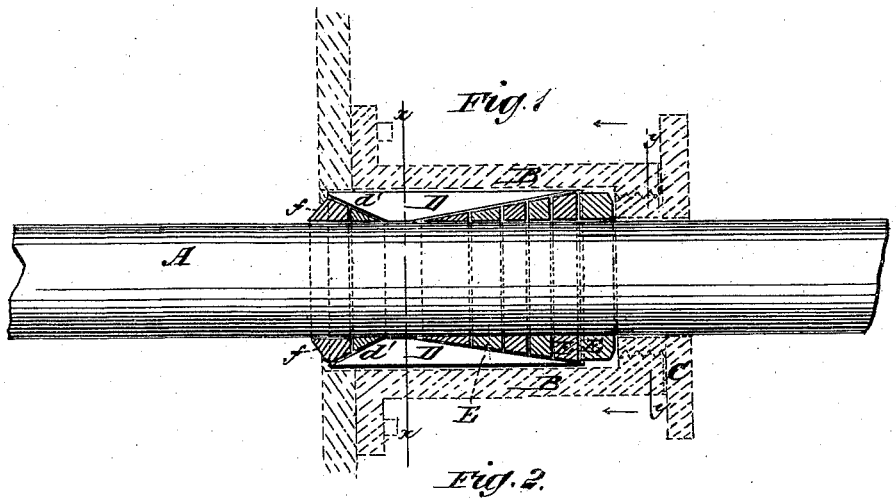



Fig. 2.

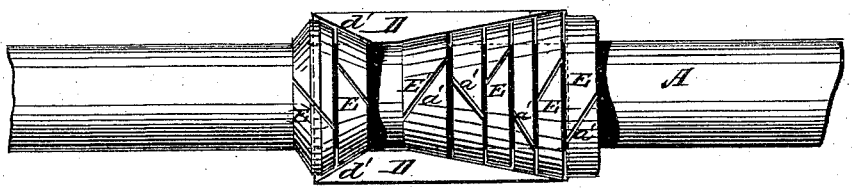



Fig. 3

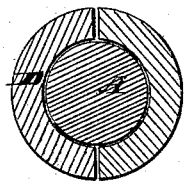
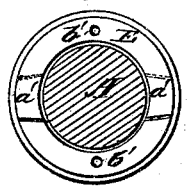



Fig. 4.

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# UNITED STATES PATENT OFFICE.

GEORGE C. PHILLIPS, OF SILVER CITY, ASSIGNOR TO HIMSELF AND WILLIAM D. BRAY, OF GOLD HILL, NEVADA.

## IMPROVEMENT IN PACKING FOR STUFFING-BOXES.

Specification forming part of Letters Patent No. **212,739**, dated February 25, 1879; application filed December 31, 1878.

*To all whom it may concern:*

Be it known that I, GEORGE C. PHILLIPS, of Silver City, in the county of Lyon and State of Nevada, have invented a new and Improved Packing for Stuffing-Boxes, of which the following is a specification:

Figure 1 is a view showing in section the metallic double cone and the contained packing-rings in place within the stuffing-box and around the piston-rod. Fig. 2 is a view showing the plan of the packing-rings, with their diagonal laps or joints, and the inclosing double metallic cone in section. Fig. 3 is a sectional end view of ring and piston-rod. Fig. 4 is an end view of ring on piston-rod.

Similar letters of reference indicate corresponding parts.

The object of this invention is a metallic packing for stuffing-boxes which shall make and retain a steam-tight joint as long as the packing shall endure.

In the drawings, A is a piston rod; B, a stuffing-box of common style, with screw-cap, gland, or follower C. D is a metallic box, divided longitudinally into two parts, closely fitting in the stuffing-box, and corresponding thereto in its outside lines, but on the inside, around the piston-rod, being of a shape which I call the "double cone," hollowed out so as to form two cup-shaped recesses for the reception of the packing-rings.

E E E E are the metallic packing-rings, which are placed around the piston-rod in these cup-shaped recesses, straight on one face and sloping or beveled on the other. They fit closely within the box and against the piston-rod. Each ring is cut with diagonal joints or laps, as shown at $a'$ $a'$ $a'$ $a'$, into two sections, and in each section is a small hole, $b'$ $b'$, into which to insert the tool to adjust it in position.

The box D is put in position within the stuffing-box by first inserting end $d'$, so that the lower ring, $f$, shall rest upon the seat of said stuffing-box, while the rings in the longer conical recess of the box D are pressed down by the screw-cap C or other well-known device.

It will be obvious to any one that the beveled shape of the rings, combined with the diagonal lap, will insure their even wear under pressure and a tighter joint than can be made and held for any considerable time in any other way. As the rings wear and are pressed farther toward the smaller ends of the conical recesses, other rings may be added above, and thus the packing constantly kept in good condition.

It will be evident, too, that while the steam-tight character of the joint is far from being impaired by the diagonal laps of the rings and the separation into two parts of the box D, it derives from these conditions that small degree of elasticity or capacity for lateral movement which is desirable in all but very exceptional cases.

I have found, in practice, that the lower rings in the end $d'$ are of great advantage; that in working the pressure of steam holds them most firmly and closely in place, making so tight and sufficient a joint there that the pressure upon the other rings may be relaxed somewhat. A hole is provided through box D for oiling the bearing.

I am aware that others have invented packing for stuffing-boxes in some measure similar to this, especially Allen and Noyes, in 1847; but the three serious objections to their plan—*i. e.*, the loose vibrating box or cup, which could not entirely prevent the escape of steam, the butt-joints of the rings, which prevented the easy and proper adjustment of the rings as they became worn, and the occasional inefficiency of the single conical group of rings—have all been obviated by my improvements.

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

The combination of the metallic box D, divided longitudinally into two sections, and having a cup-shaped opening in each end, and the metallic bevel-shaped packing-rings E, provided with diagonal laps or joints $a'$, with the stuffing-box B and gland or follower C, and with the piston-rod A, substantially as shown and described, and for the purpose set forth.

GEORGE CROWAN PHILLIPS.

Witnesses:

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PATRICK HENRY.