

(No Model.)

R. J. McILHENNY.  
PACKING.

No. 516,547.

Patented Mar. 13, 1894.

Fig. 1.

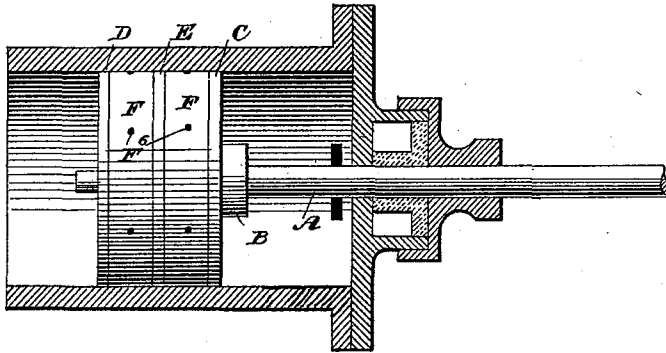


Fig. 3.

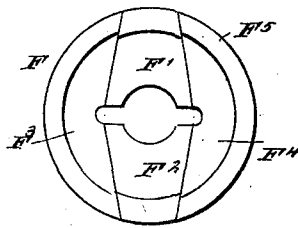


Fig. 2.

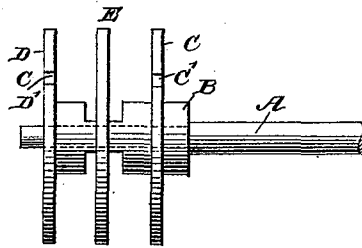


Fig. 5.



Fig. 4.

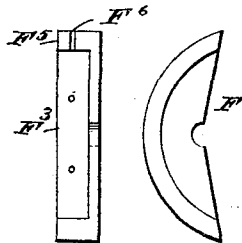
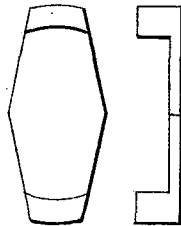


Fig. 6.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

RICHARD J. McILHENNY, OF WILMINGTON, NORTH CAROLINA.

## PACKING.

SPECIFICATION forming part of Letters Patent No. 516,547, dated March 13, 1894.

Application filed June 6, 1893. Serial No. 476,788. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD J. McILHENNY, of Wilmington, in the county of New Hanover and State of North Carolina, have invented a new and Improved Cup-Packing, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved cup packing, which is simple and durable in construction, perfectly steam-air and water tight, arranged to reduce the friction to a minimum and adapted for use on pistons, stuffing boxes, and other joints admitting of movement.

The invention consists of certain parts and details, and combinations of the same, as will be hereinafter described and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement as arranged for a piston in the cylinder, the latter being shown in section. Fig. 2 is a side elevation of the same with the sectional disks removed. Fig. 3 is a face view of one of the sectional disks. Fig. 4 is a side elevation and face view of one of the disk sections. Fig. 5 represents like views of another section; and Fig. 6 represents similar views of the blanks for forming two of the sections.

The improved cup packing is applied to a piston which is provided with the usual piston rod A, formed with a hub B, carrying the circular heads C and D, between which is arranged a partition disk E, located a suitable distance apart from the heads D and C. In the spaces thus formed between the heads C and D and the middle disk E are placed sectional disks F, each formed with an annular flange abutting against the inner surface of the cylinder and corresponding in diameter to the diameter of the heads C, D and disk E. Each sectional disk F is made of the sections F', F<sup>2</sup>, F<sup>3</sup> and F<sup>4</sup>, filling the space between the heads and middle disk, the opposite sections F' and F<sup>2</sup> being fitted on the hub B with side openings.

The rim or flange F<sup>5</sup>, of the sectional disk

F is of a width corresponding to the distance between the inner surfaces of the corresponding head and middle disk E, the web of the disk being rested against the face of the middle disk E, so that the flange F<sup>5</sup> extends outwardly toward the corresponding heads C and D. In the latter are formed apertures C' and D' respectively, for the entrance of the motive agent to the sectional disk so as to exert its pressure against the annular flange thereof, to press the individual sections outwardly in frictional contact with the inner surface of the cylinder in which the piston operates.

It will be seen that the sides of the sections F' and F<sup>2</sup> are beveled, so that when an outward movement of the several sections takes place no gap whatever is formed between the sections, as the bevel compensates for the increase of the diameter of the sectional disk F. In the annular rim of each disk F and near the top of the same, are formed apertures F<sup>6</sup>, so that water filling into the disk will float oil on its surface and through the said openings to the peripheral surface of the cylinder in which the piston works.

It will be seen that by the wedge-shaped sections F' and F<sup>2</sup> closing the spaces between the sections at the annular flange of the respective disk, all wear is taken up and leakage is prevented from one end of the cylinder to the other through the piston, as the motive agent holds the individual sections in close frictional contact with the interior surface of the cylinder to prevent such leakage. Now, it will further be seen that according to the increase of pressure of the motive agent in the cylinder, an increase of pressure on the individual sections of the disks takes place, so that the frictional contact of the piston with the cylinder corresponds to the pressure of the motive agent. By this arrangement a self-adjusting metallic cup packing is provided, which can be used on any kind of device, and is effective when acted upon by any pressure from the smallest amount of force just equal to that required to overcome the inertia of piston and rod alone, to as great a force as can be confined in any cylinder. When force or pressure is lessened in the cylinder the friction is also reduced in pro-

portion, consequently the most delicate device is rendered successful by the use of this piston packing.

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

1. A cup packing, comprising a hub provided with disks having openings therein, and a packing arranged between the disks  
10 and formed of flanged sections having beveled adjacent edges, and provided with apertures in said flanges, substantially as described.

2. A cup packing, comprising a hub, apertured heads on the hub, a disk between the  
15 heads, and a packing between the heads and

disk, said packing consisting of sectional disks, the sections having beveled adjacent edges and provided with annular apertured  
20 flanges, substantially as described.

3. The herein described cup packing, consisting of the hub B, the heads C D, provided with apertures C' D', the disk E between the heads, and the disks F between the heads and the disk E, the disks F each being formed  
25 of the sections F' F<sup>2</sup>, F<sup>3</sup> and F<sup>4</sup> having beveled edges and provided with the annular flanges F<sup>5</sup> having apertures F<sup>6</sup>, as specified.

RICHARD J. McILHENNY.

Witnesses:

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C. W. WORTH.