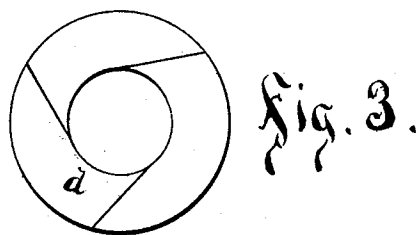
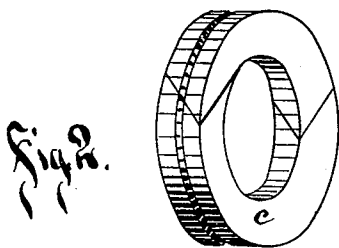
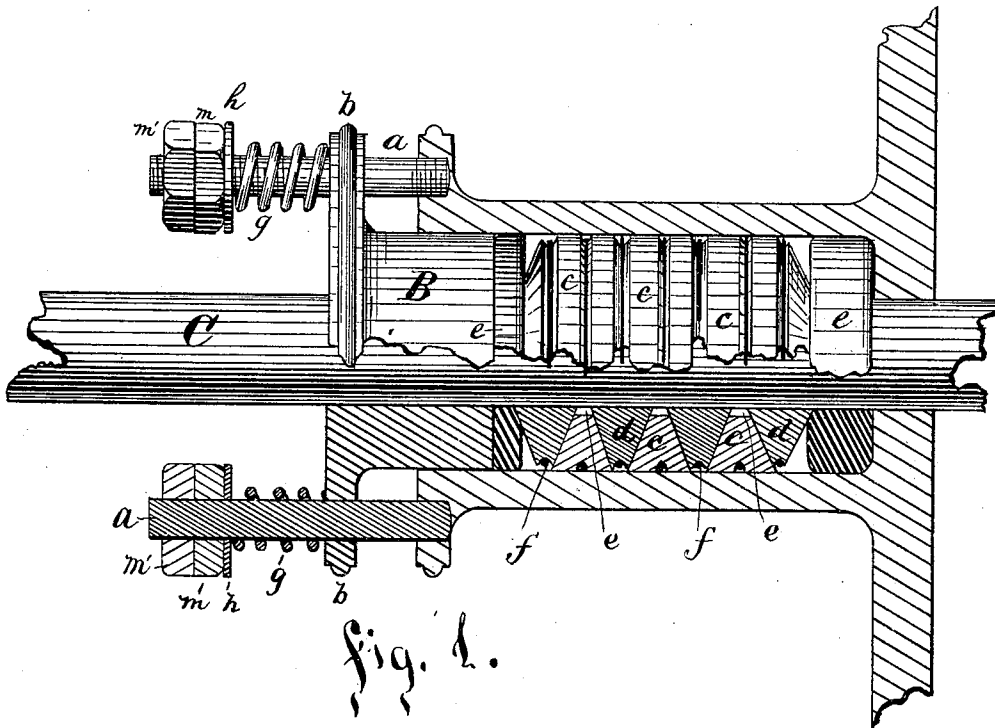


(No Model.)

S. ARMSTRONG.
Piston Rod Packing.

No. 230,986.

Patented Aug. 10, 1880.



Witnesses:

Charles H. Hill

Chas. Morris

Inventor:

Samuel Armstrong,

By O. Drake, Att'y.

UNITED STATES PATENT OFFICE.

SAMUEL ARMSTRONG, OF NEWARK, NEW JERSEY.

PISTON-ROD PACKING.

SPECIFICATION forming part of Letters Patent No. 230,986, dated August 10, 1880.

Application filed May 31, 1880. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL ARMSTRONG, of the city of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Piston-Rod Packing; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to overcome the difficulties experienced, more or less, in the use of the various packings now in the market by more perfectly preventing the escapement of the steam, increasing the durability of the packing, and by rendering it better capable of being readjusted as the said packing wears away.

The invention consists in the combination, in a piston-packing, of one or more metallic rings divided or cut into two or more parts, in a manner hereinafter shown, and inversely beveled, or, in other words, beveled inwardly toward the axis of said ring, and having a groove for the reception of rubber or other packing running around the periphery thereof, with one or more reciprocally-beveled rings also divided and having peripheral grooves for the reception of packing.

It further consists in the combination of the above-named rings with rings of fibrous packing, and, further, in the combination of the same with an improved automatic follower or gland, as will hereinafter be more fully set forth and claimed.

Referring to the accompanying drawings, in which similar letters of reference indicate like parts in each of the several figures, Figure 1 is a view of my invention partially broken away and in section, showing the relation of the several parts to one another. Fig. 2 is a perspective view of an inversely-beveled plate; and Fig. 3, another plate beveled to engage therewith, both plates or rings showing the method of dividing or separating them into parts to allow expansion.

In carrying out my invention, I construct the stuffing-box A, capable of receiving the

bolts or shanks *a*, which pass through the flange *b* of the follower B. Through said box A passes the piston-rod C, around which passes a system of metallic plates or rings, which, to a certain extent, embody my invention. Said rings have their sides inwardly and outwardly beveled (or, as I shall henceforth designate them, "inversely" and "reciprocally" beveled) in such a manner as to engage with and form steam-tight joints with one another, substantially as shown in section in Fig. 1 of the drawings, *c* being the inversely-beveled ring, which is thinner toward the axis, and *d* the reciprocally-beveled ring, thinnest at its periphery. The said rings *c* and *d* are separated into two or more parts by cuts which run both obliquely across the face of the periphery and obliquely or tangentially across the sides of the ring, as shown in Figs. 2 and 3. The said rings, when constructed and combined substantially as shown, leave grooves or spaces *e* and *f* between the rings and the piston-rod and the walls of the stuffing-box, whereby a more perfect adjustment of the packing is effected by reason of the lateral expansion and contraction of the rings thus allowed and resulting from their longitudinal compression. The plates *c* and *d* have encircling their peripheries grooves for the reception of elastic packing, which packing acts not only to prevent the escapement of the steam, but also to hold the rings together while not in their proper combination.

Between the system of rings *c d* and the head of the box, and between said system and the follower B, I place fibrous or elastic packing *e*, which acts as cushions for the rings to press against. The end rings of the system being generally the reciprocally-beveled rings *d*, the tendency is to force the packing *e* outwardly against the box A, as will be plainly understood by reference to the drawings. The rings are held in position by the power brought to bear upon them by the follower B, which receives such power from the spiral springs *g* upon the shank *a*. Said springs have their bearings upon the flange *b* of the follower B and upon the washers *h*, which are held in position by the nuts and lock-nuts *m* and *m'*. By means of these springs thus applied the power is more evenly brought to bear by the follower upon the packing than by the old method in

use. By means of this follower the rings are kept in place and automatically readjusted as the plates or rings wear away.

5 In this invention I do not wish to be understood as claiming, broadly, the peculiar manner of cutting or dividing the ring, the same being shown and claimed in a previous patent granted to me, of which this is an improvement; but

10 What I claim, and wish to have secured to me by Letters Patent, is—

1. In a piston-rod packing, the combination of sectional rings *c* and *d*, beveled or inclined substantially as shown, and peripherally
15 grooved, for the purpose set forth.

2. The combination of the rings *c* and *d*, beveled and grooved, substantially as shown, and elastic or fibrous packing *e*, substantially as set forth.

3. The combination of the series of rings or 20 plates *c*, *d*, and *e*, constructed substantially as described, gland *B*, shanks *a*, and springs *g*, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of 25 May, 1880.

SAMUEL ARMSTRONG.

Witnesses:

OLIVER DRAKE,

CHARLES H. PELL.