

(No Model.)

H. C. HUNT.
PISTON ROD PACKING.

No. 283,711.

Patented Aug. 21, 1883.

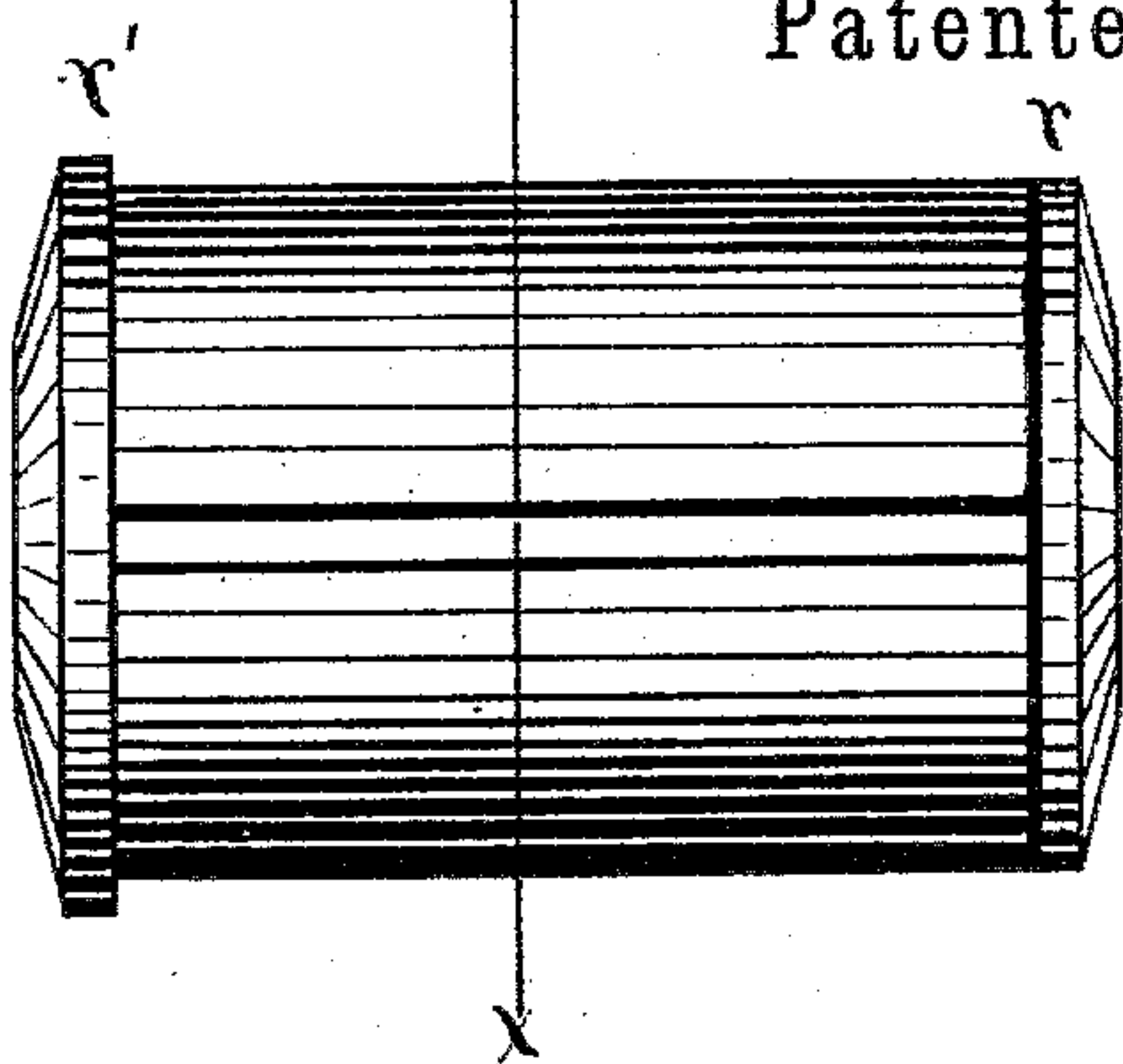
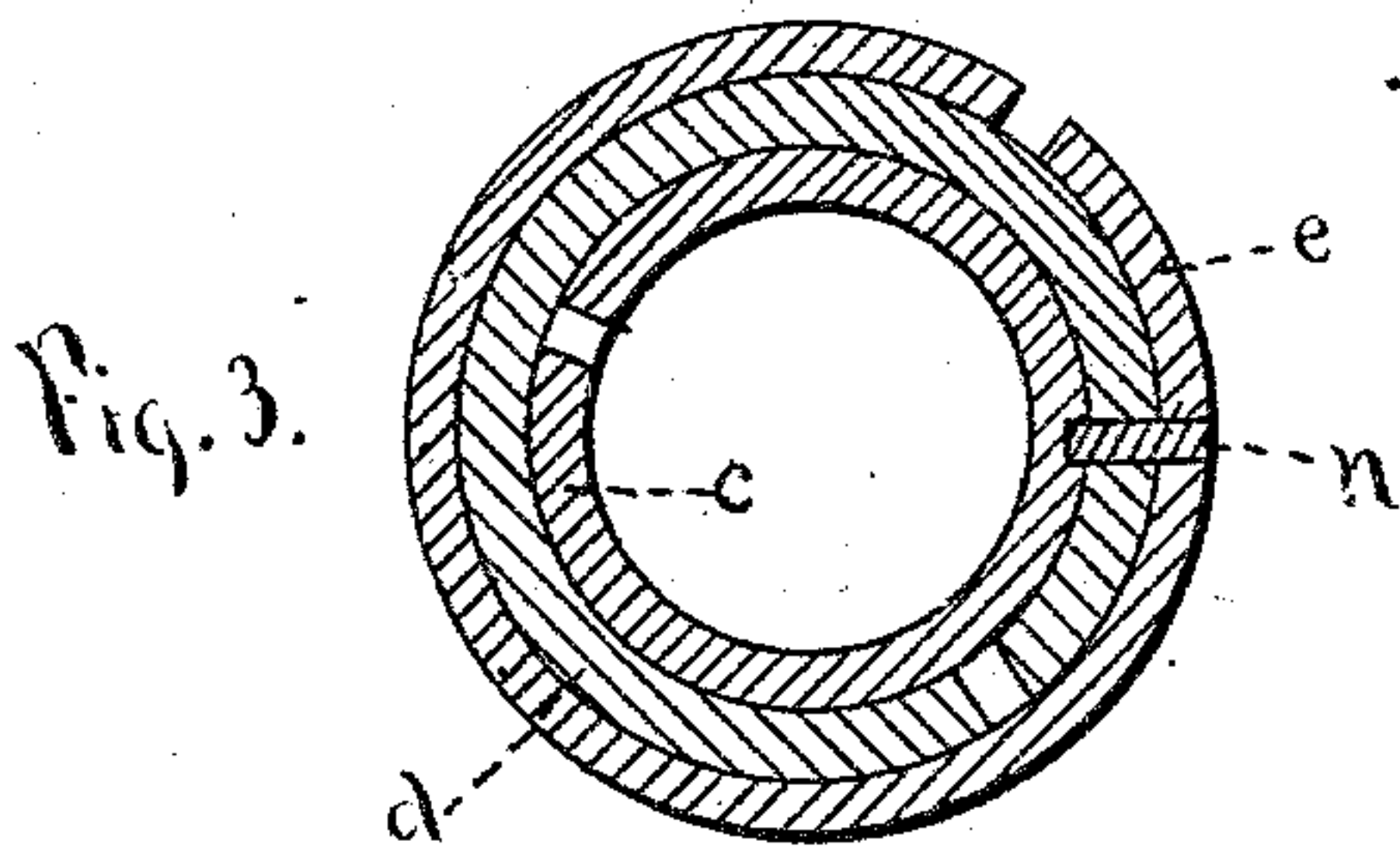
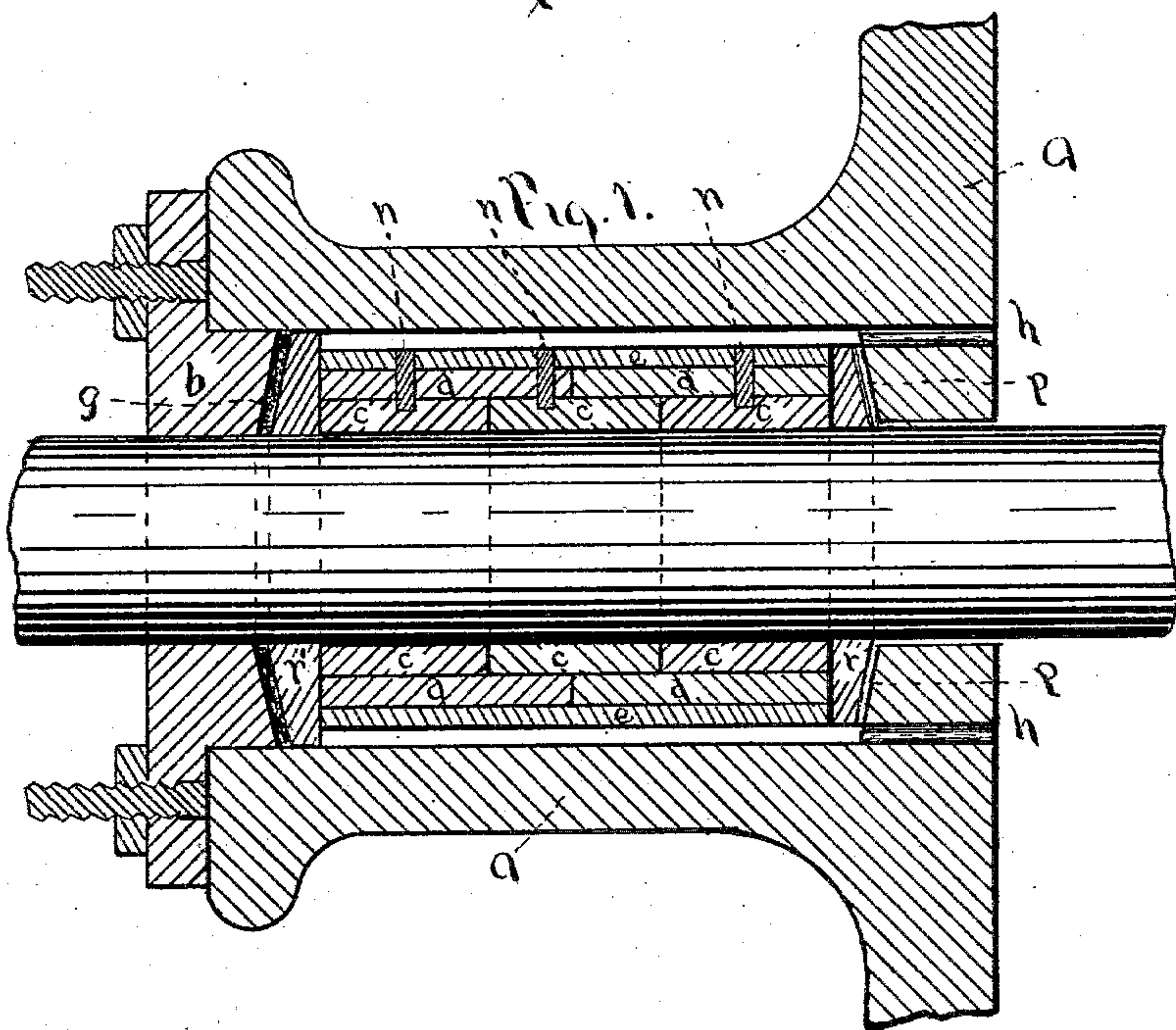


Fig. 2.



Attest.
J. H. Campbell.
Chas. H. H. H.

Inventor.
Henry C. Hunt.
By O. Dratto, Atty

UNITED STATES PATENT OFFICE.

HENRY C. HUNT, OF NEWARK, NEW JERSEY.

PISTON-ROD PACKING.

SPECIFICATION forming part of Letters Patent No. 283,711, dated August 21, 1883.

Application filed February 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. HUNT, a citizen of the United States, residing at 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.

This invention relates to that class of piston-rod packings which are composed, principally, of right-angular metallic rings adapted to be compressed by steam, to cause said rings to hug the rod.

The object of the invention is to more effectually prevent the escape of steam from the cylinder, to more perfectly adapt the packing to a rod which is out of line, to equalize the wear on the packing, and yet to retain all the durability of other metallic packings.

The invention consists in the arrangements and combinations of parts, substantially as will be hereinafter set forth, and finally embodied in the claims.

Referring to the accompanying drawings, in which similar letters of reference indicate like parts in each of the several figures, Figure 1 is a vertical longitudinal section of a cylinder stuffing-box, showing the arrangement of the several rings therein. Fig. 2 is a side elevation of the packing-rings detached from the rod and box; and Fig. 3 is a section of the same, taken through line *x*.

In said drawings, *a* is a stuffing-box, which is formed upon the cylinder in the usual manner.

b is the follower or gland, adapted to cover the projecting end of said box, suitable means—such as the screw-studs and nuts—being provided to hold said follower or gland in position.

Within the stuffing-box are arranged a series of rings, *c c c*, which engage with the rod, and around which are arranged rings—such as *d e*—which cover the joints between the said rings *c*. Three sets of rings are preferably arranged together, the edges of which are all square cut or right angular, as shown, so that any end-pressure will not tend to separate the rings *c*

d e from one another, while at the same time the joints may be readily made steam-tight without the exercise of peculiar skill. All the rings thus described are rendered compressible by being split longitudinally, as shown in Figs. 2 and 3. I prefer to make the outer ring, *e*, of drawn-brass tubing to facilitate and cheapen the production of the packing, which ring, formed of a section of tubing, is cut longitudinally, as shown. The peculiar nature of the tubular sheet of brass (or similar elastic and non-corrosive metal) provides sufficient elasticity to allow the said ring to be “sprung” over the piston-rod and then return to about its normal position, after which it may be arranged to cover the soft-metal sections, binding the same together. The Babbitt metal and lead heretofore used in outer rings are inelastic, and are therefore not adapted for this purpose.

Between the outer compressible ring, *e*, and the wall of the stuffing-box is formed an annular steam-chamber, which is bounded on one side by the interior wall of the stuffing-box and on the opposite side by the outer side or periphery of the said outer ring, to which chamber the steam has direct access by means of steam passages or holes *h*, formed in the partition which separates the cylinder from the stuffing-box, or by means of the usual aperture around the rod. The steam, after passing through the said steam-passages, bears directly upon opposite sides of the said outer ring, so that the impact of the steam is felt on all sides at the same time, whereby the wear on the rings is more evenly distributed and the durability of the packing increased.

I am aware that heretofore right-angular packing-rings, with an overlapping outer ring, have been arranged in and covered by an interior box provided with perforations on one side, the steam being adapted to pass there-through, and by first engaging with one side of the ring, causing it to bear with an unequal strain against the rod. In my device the rings receive an equal compression on all sides at each impact of the steam, as above set forth.

I may, if I so desire, unite the rings by pins or screws *n*, whereby the rings are held together firmly and without changing their relations to one another, while at the same time the rings are allowed to retain their elasticity.

The rings, when placed together, do not or may not completely fill the stuffing-box, the remaining space at the ends of the packing-rings being filled up by end rings, r r' , which engage with the said packing-rings c d e , covering the joints between the same.

The ring r' is equal in diameter to the bore of the stuffing-box, forming a steam-tight joint therewith, either by grinding the parts together or by filling or covering said joint by suitable packing, as g .

The outer faces of the rings r r' may be made to conform to the gland.

The partition separating the box and cylinder is perforated, preferably when the packing-rings completely fill the box; but when the end rings are used and the steam enters the chamber through the rod-aperture grooves or passages p are formed in the end ring r for the same purpose.

If found desirable, springs may coact with the steam or act in substitution thereof to hold the packing-rings into engagement with the rod.

Having thus described my invention, what I claim as new is—

1. The combination, with a series of right-angular soft metallic packing-rings, of an overlapping split metallic ring of drawn-brass tubing, substantially as herein set forth.

2. The combination, with a series of right-angular packing-rings, the joints of which are broken by an overlapping split packing ring or rings, of end rings, r r' , the former of which is provided with steam-passages adapted to allow the steam to enter the steam-chamber,

and the latter of which is of a diameter equal to that of the bore of the stuffing-box.

3. The combination, with the box and gland, of right-angular packing-rings, the joints between which are covered or broken by an outer split packing ring or rings, which latter is or are surrounded by an annular chamber arranged in relation to the steam passage or passages in the cylinder-partition to allow the steam from the cylinder to act on the outer and opposite sides of the last said ring or rings simultaneously and with equal pressure, substantially as herein set forth.

4. In a steam-packing adapted to be placed in a stuffing-box, the combination, with a single ring, as e , cut lengthwise, and concentric rings similarly cut, having right-angled joints, and secured to said single ring by pins or screws, as n , of end rings, as r r' , either beveled or straight, the end ring next to the head of the box having grooves therein, all substantially as set forth.

5. In combination, the right-angular split packing-rings having a steam-chamber between them and the stuffing-box, the end ring r' , the packing g , the follower, and said stuffing-box, all said parts being arranged and operating substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 11th day of January, 1883.

HENRY C. HUNT.

Witnesses:

CHARLES H. PELL,
F. F. CAMPBELL.