

J. J. Miller,
Piston Packing.
No. 43,950. Patented Aug. 23, 1864.

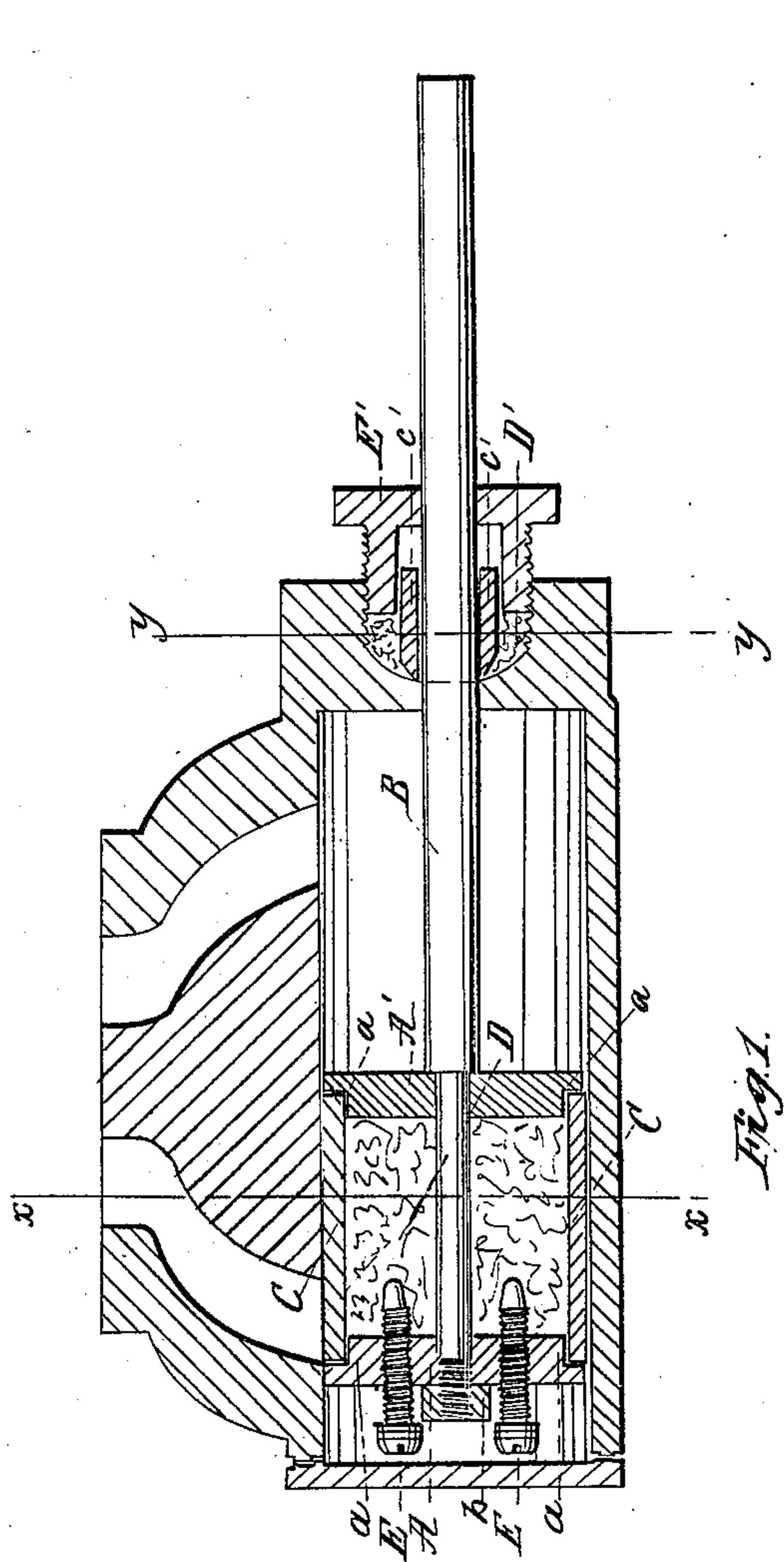


Fig. 1.

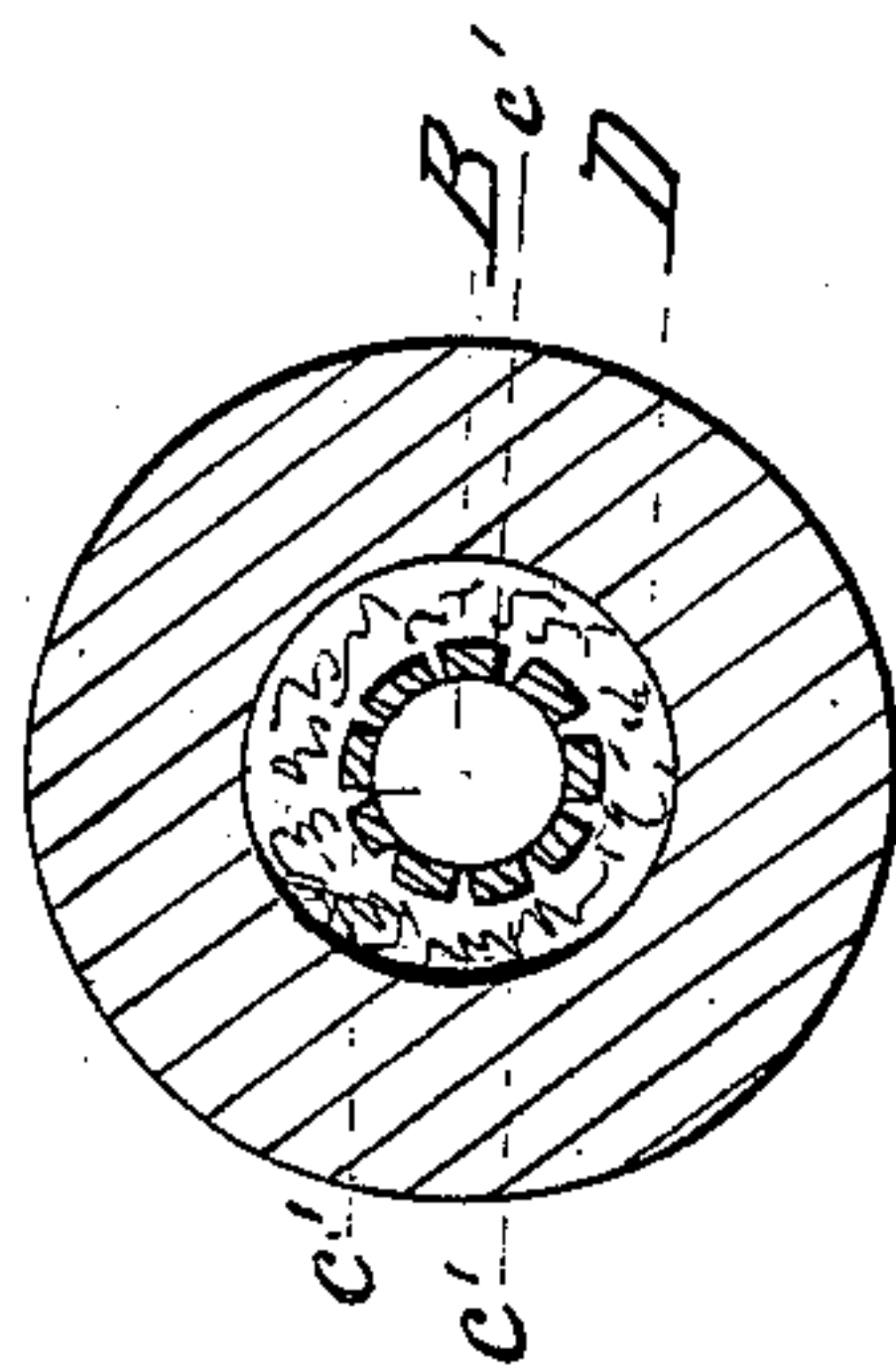


Fig. 3.

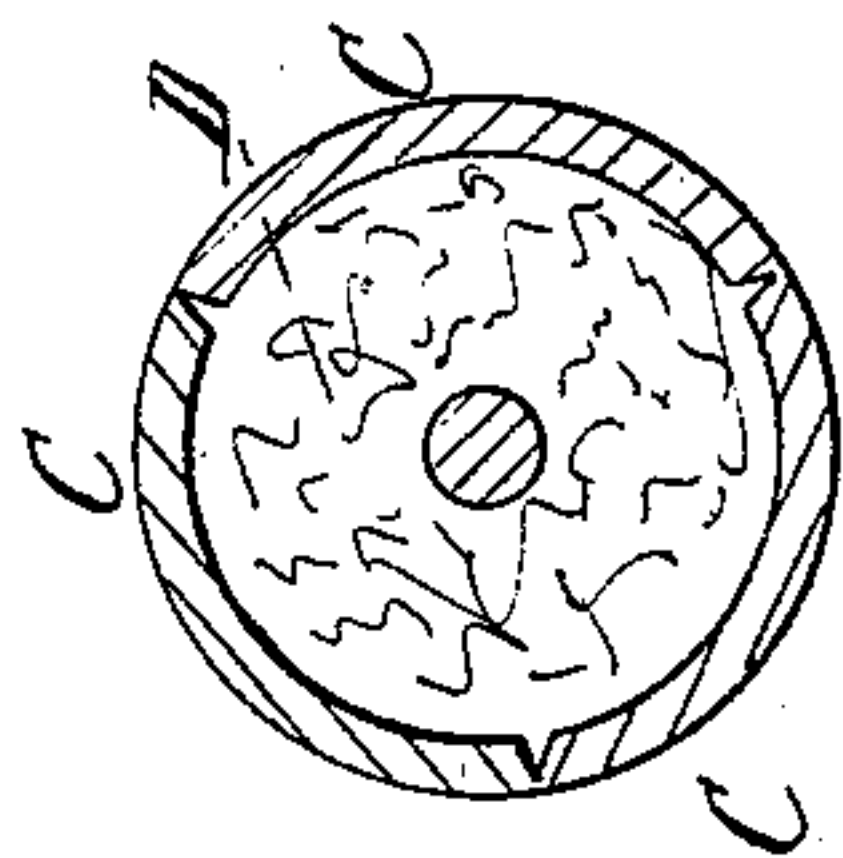


Fig. 2.

Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

JOHN JACOB MILLER, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF AND ERNST PRUSSING.

IMPROVEMENT IN PISTON-PACKINGS.

Specification forming part of Letters Patent No. 43,950, dated August 23, 1864; antedated February 15, 1863.

To all whom it may concern:

Be it known that I, JOHN JACOB MILLER, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful improvement in packing and lubricating pistons, piston-rods, and other moving parts of machinery; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a longitudinal section of a steam cylinder and piston, illustrating two modifications of my invention. Fig. 2 is a transverse section of the piston at *x x*. Fig. 3 is a transverse section at *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts in all the figures.

The subject of my said invention is a packing consisting of cylindrical segments of metal, wood, or other hard substance, combined with hemp or other elastic and permeable material and suitable adjusting-screws, as hereinafter explained.

To enable others skilled in the art to which my invention appertains to fully understand and use the same, I will proceed to describe its construction and operation.

A A' may represent the two heads of an expansible steam-piston, confined by a nut, *b*, upon a rod, B.

C C C are segments, which may be constructed of metal, wood, glass, or any other suitable material, and in any desired number, fitting in rabbets *a* in the heads A A'.

D represents a mass of hemp or other analogous material filling the interior of the piston around the rod B, between the heads A A' and segments C. In this form of the invention the joints between the segments C are made close upon the periphery, but expand inward, so as to expose wide openings toward the filling D.

E E are set-screws for adjusting the expansion of the piston by pressure within the filling D acting indirectly upon the metal segments.

The stuffing-box, which is also shown in Fig. 1, and by a transverse sectional view in Fig. 3, illustrates another form of my invention. In this case the filling D' surrounds the segments C', the latter being placed around and in contact with the rod B. The segments are shown of wood, but may be of any other

suitable material. Their joints are formed to expand outward, so as to expose wide openings to the filling, as before explained. The adjustment is effected by setting in or out the sleeve E', which may be either threaded directly into the cylinder-head or secured thereto by screw-bolts in customary manner.

Operation: In using this invention the filling D D' is thoroughly saturated with oil or any lubricating material which may be preferred. The said lubricating material flows from the filling through the joints between the segments, and is thus constantly supplied to the frictional surface. The compression of the filling forces it into the joints between the segments, so as to form a continuous cylinder, bearing upon all parts of the surface in such a manner as to be steam, air, or water tight. By setting in the screws E or E' the filling is still further compressed, which forces the segments in closer contact with the surface of the cylinder or rod, and at the same time expresses an additional quantity of oil through the joints between the segments. An additional quantity of hemp or oil may be introduced whenever requisite through the apertures occupied by the screws E and E'.

It will be evident that the above-described invention is equally applicable to pumps and various other purposes where moving parts of machinery are required to be protected against the flow of fluids.

I do not desire to be understood as limiting myself to any specific form, size, thickness, number, or material of the segments, nor to any particular substance employed for the fibrous filling.

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

1. The combination of the fibrous or other elastic and permeable filling D or D' with segments C or C', formed with angular or expanding joints, substantially as and for the purposes explained.

2. The regulating-screws E or E', used in the described combination with the segments C or C', and filling D or D', constructed and operating as explained.

JOHN JACOB MILLER.

Witnesses:

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