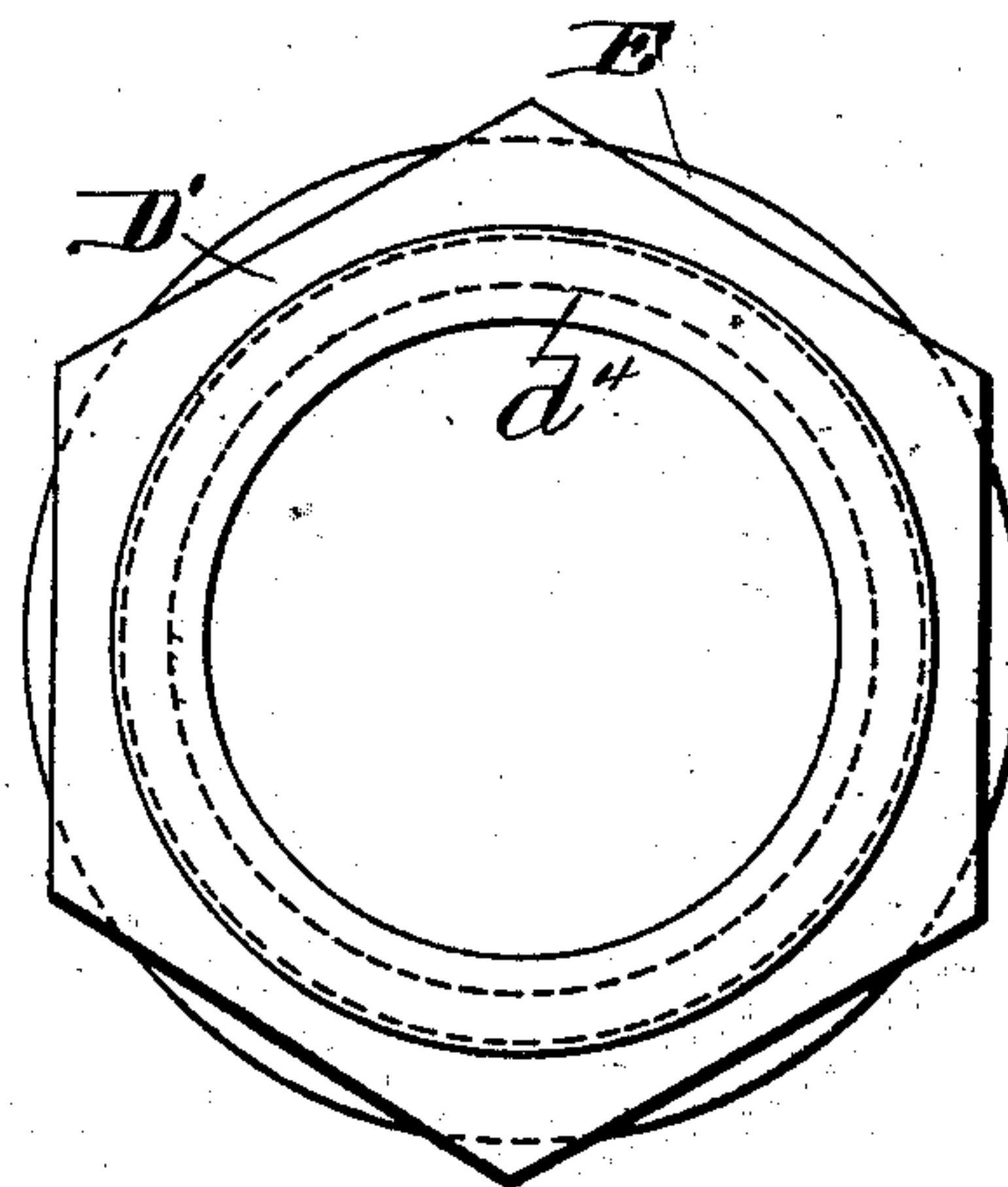
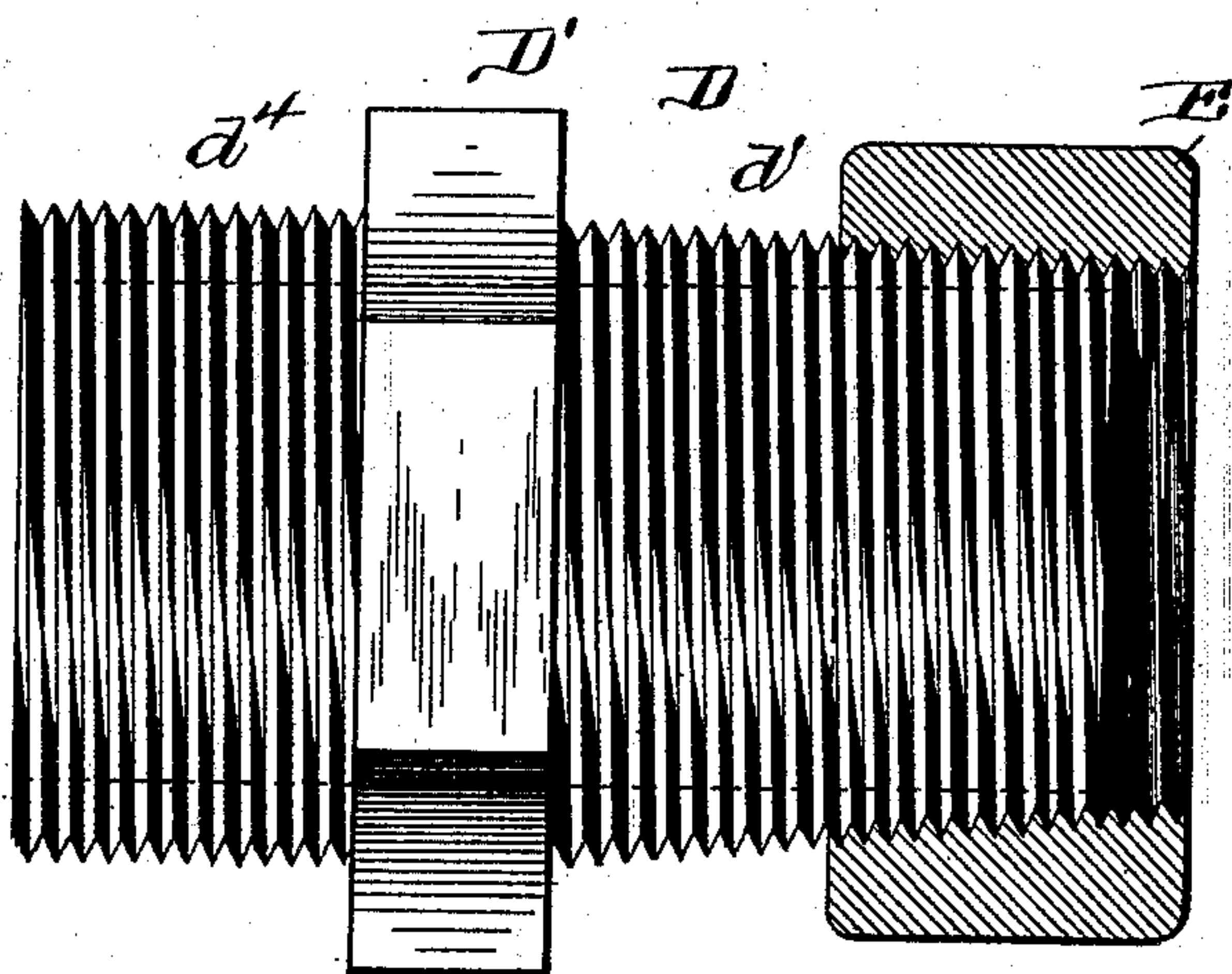
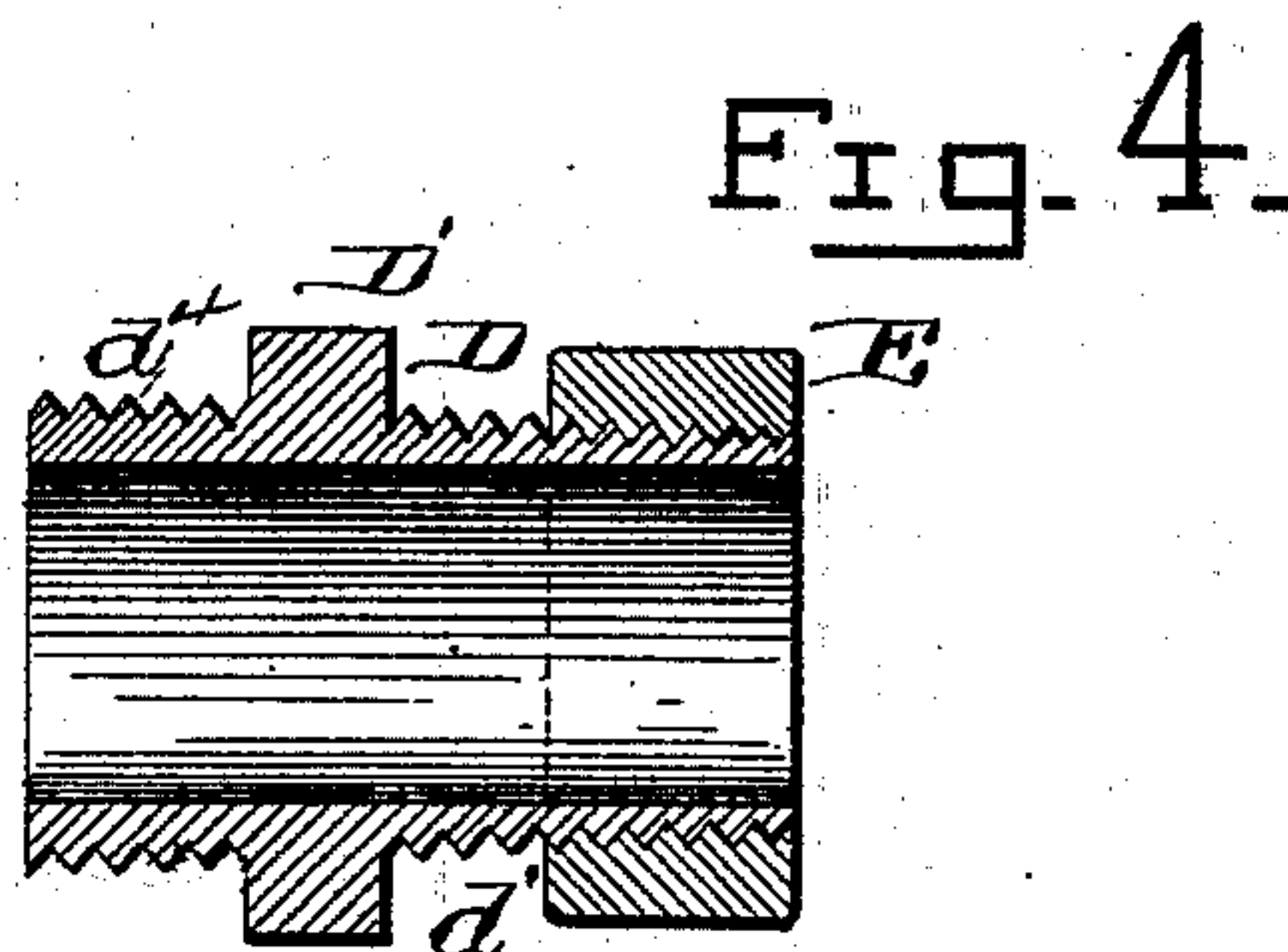
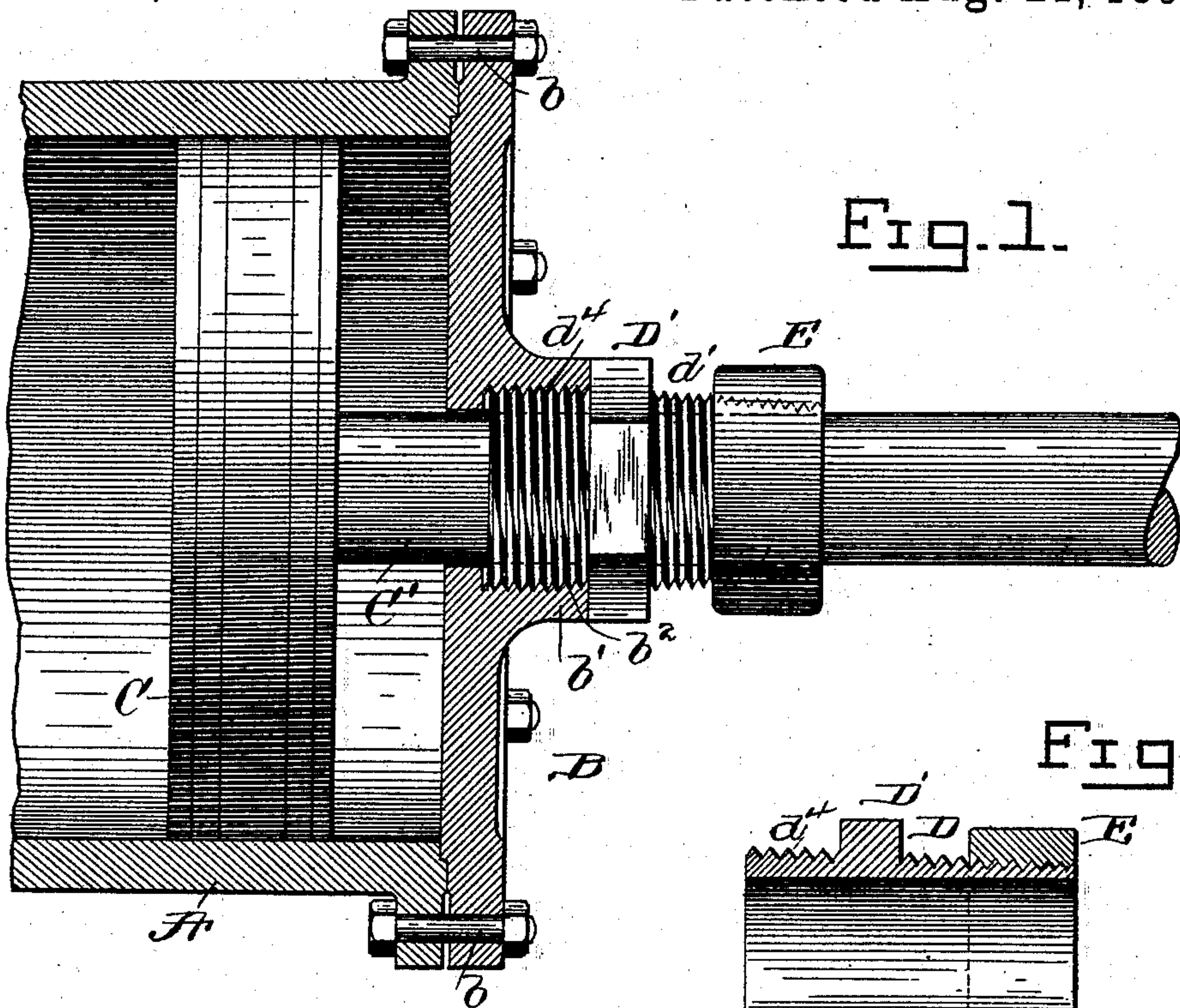


(No Model.)

J. LISTER.
PISTON ROD PACKING.

No. 524,832.

Patented Aug. 21, 1894.



WITNESSES:

Chas. H. LaPorte;
M. B. May

INVENTOR:

Joseph Lister
by A. H. Bliss
his atty.

UNITED STATES PATENT OFFICE.

JOSEPH LISTER, OF CHICAGO, ILLINOIS.

PISTON-ROD PACKING.

SPECIFICATION forming part of Letters Patent No. 524,832, dated August 21, 1894.

Application filed May 19, 1894. Serial No. 511,790. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH LISTER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Piston-Rod Packing; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable
10 others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a vertical sectional view of an
15 engine cylinder and adjuncts having my invention applied thereto. Fig. 2 is a side view of the packing detached. Fig. 3 is an end view of the same. Fig. 4 is a longitudinal section.

20 The object of the invention is to provide a device which can be readily substituted for the ordinary stuffing-boxes employed in connection with piston rods, which shall be durable, easily applied and withdrawn, which will
25 permit an adjustment of the tightness of the packing, and which shall be inexpensive.

In the drawings, A represents a cylinder which may be of any of the ordinary sorts. It contains a piston C, the rod C' of which
30 passes through the cylinder head B, the latter being detachably fastened by bolts as at b.

The head B has a central aperture, and around it on the exterior is the hub-like packing box b' formed with an interior thread at b².

35 It is necessary, as is well known, to provide a steam-tight joint for the piston-rod C'; and to attain this, many means have been employed, or suggested heretofore.

The packing which I have devised consists of a tube having a cylindrical portion
40 d⁴, a conical or tapering portion d' with an intervening flange or polygonal expansion D', these being all cast in one piece, indicated at D.

45 The part d⁴ is provided with an exterior thread adapted to engage with the thread at b² in the packing-box, and it can be driven

tightly into place by applying a wrench to the flange D' so that the joint between the packing and the cylinder-head shall be perfectly tight.

Normally the piston-rod can pass freely through the interior tubular passage-way in the packing, these parts being turned accurately so as to fit closely.

55 After the packing tube has been put in place and the piston-rod passed through it, the collar E is applied to the conical or tapering outwardly projecting part d' of the packing. This collar E is in the nature of a
60 nut having an interior tapering thread corresponding in pitch and radius to that at d'. The part d' is made of a material which shall be comparatively soft so as to be capable
65 readily of uniform compression and yet permit sufficient expansion radially when necessary to allow for regulating the tightness of the joint between it and the piston-rod. For this purpose Babbitt-metal can be employed, or any other which is suitable. The
70 cylindrical part d⁴, the flange part D' and the conical part d' can be all cast in one piece, and it will be seen that the whole packing device is made up of two parts.

When the nut E is advanced along the
75 cone d', the latter will be uniformly compressed, the interior cylindrical surface being pressed toward the axis with its longitudinal lines in parallelism so as to effect a packing
80 over a prolonged surface and one which will be uniform in tension at all places around the center.

I am aware of the fact that packings for this purpose have been heretofore used or suggested, each of which contained a tubular
85 part for surrounding the piston-rod. But so far as I am aware, they were made in several pieces separated on radial planes. In my case the tubular portion is continuous entirely around the axis, so that I avoid
90 entirely the possibility of leakage, and overcome any tendency to unevenness of compression radially and at the same time provide, as above stated, for driving the pack-

ing surface inward uniformly over a prolonged area.

What I claim is—

5 The herein described packing device for a piston-rod, having the cylindrical threaded part d^4 , the conical or tapering threaded part d' , and the flange D' integral with the parts d^4 , d' and provided with the interior tubular opening adapted to fit the piston-rod, in combination with the nut or collar E having an

interior tapering thread adapted to fit the thread on the conical part d' , substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH LISTER.

Witnesses:

E. R. BLISS,

LORING W. POST.