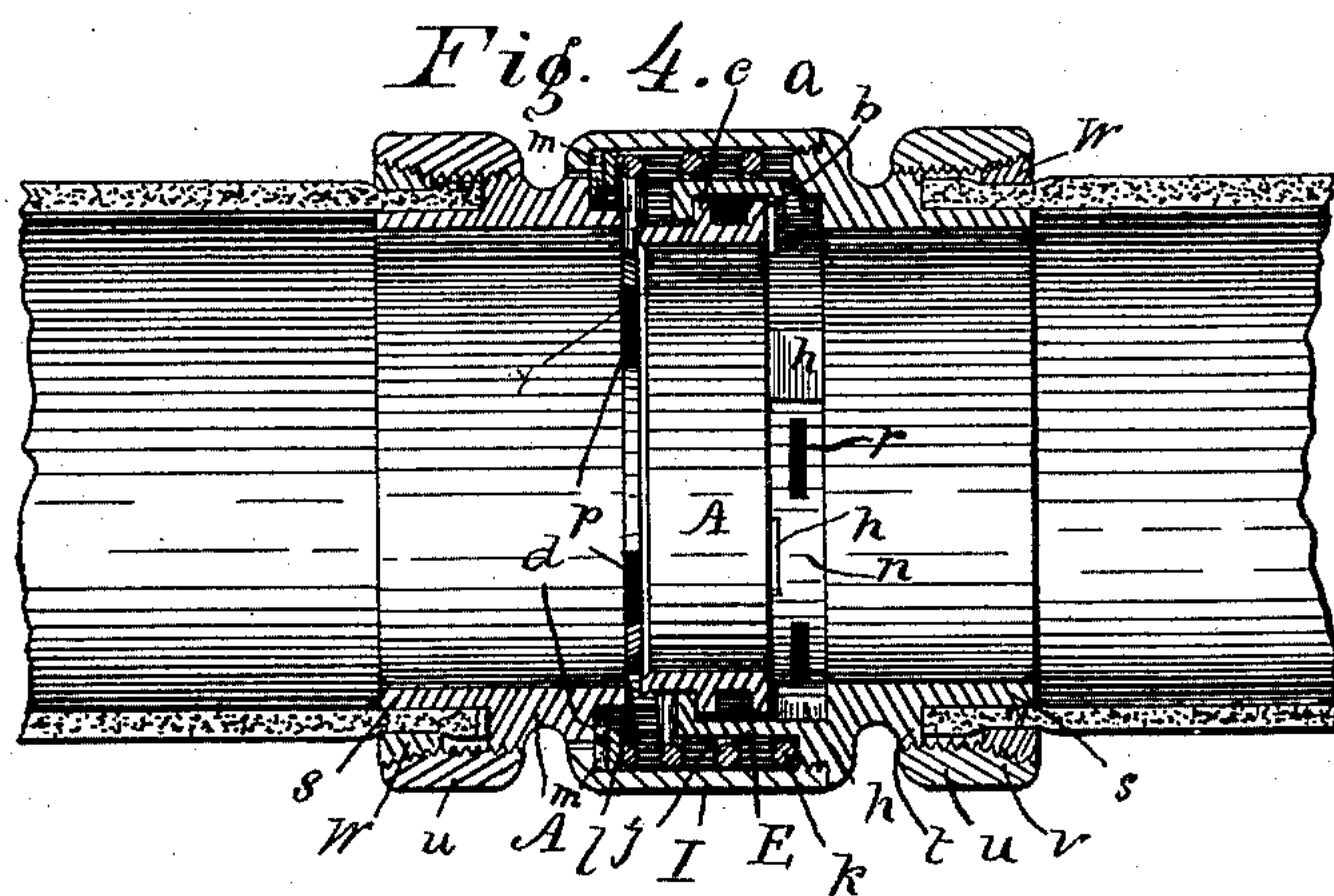
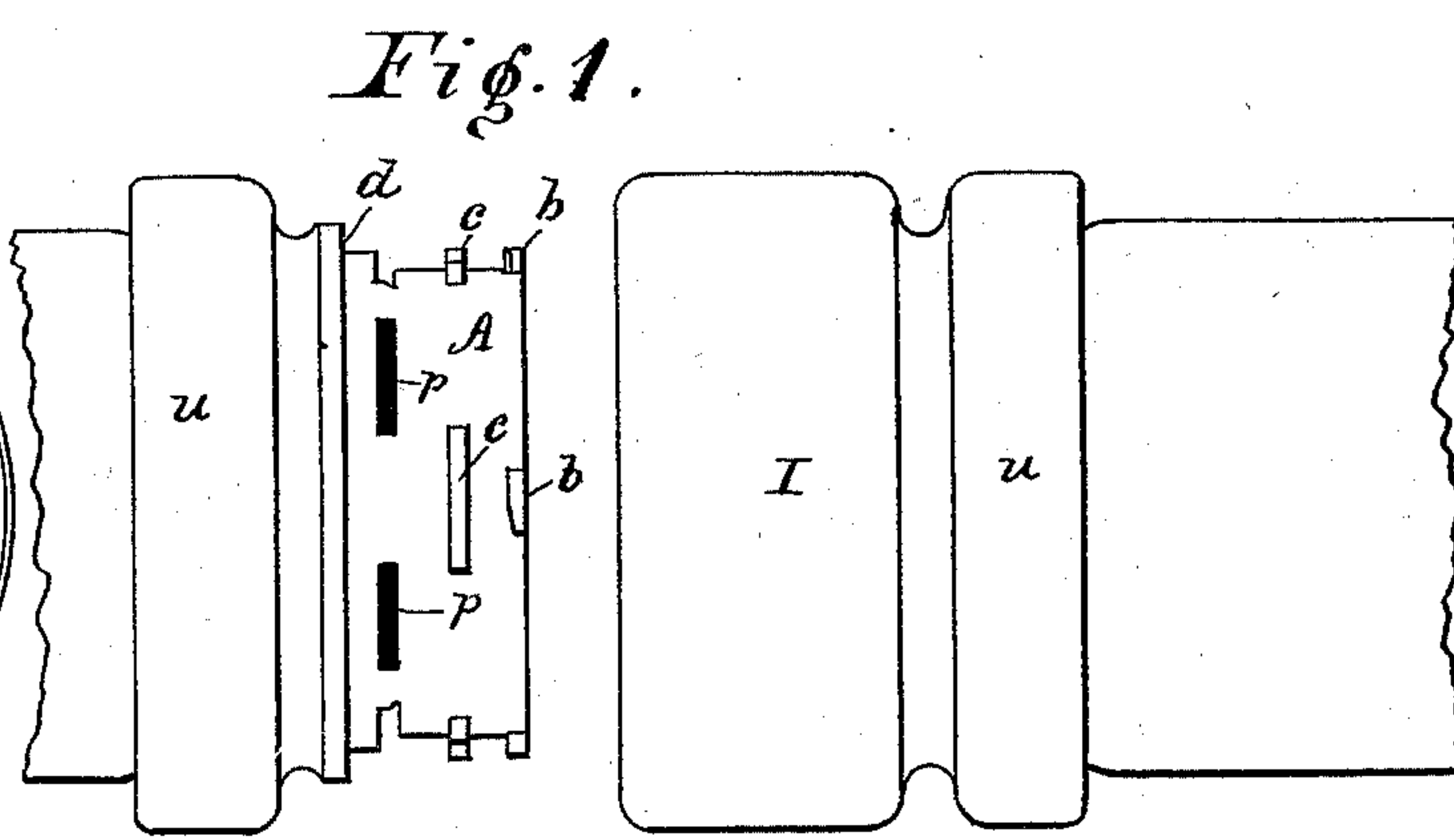
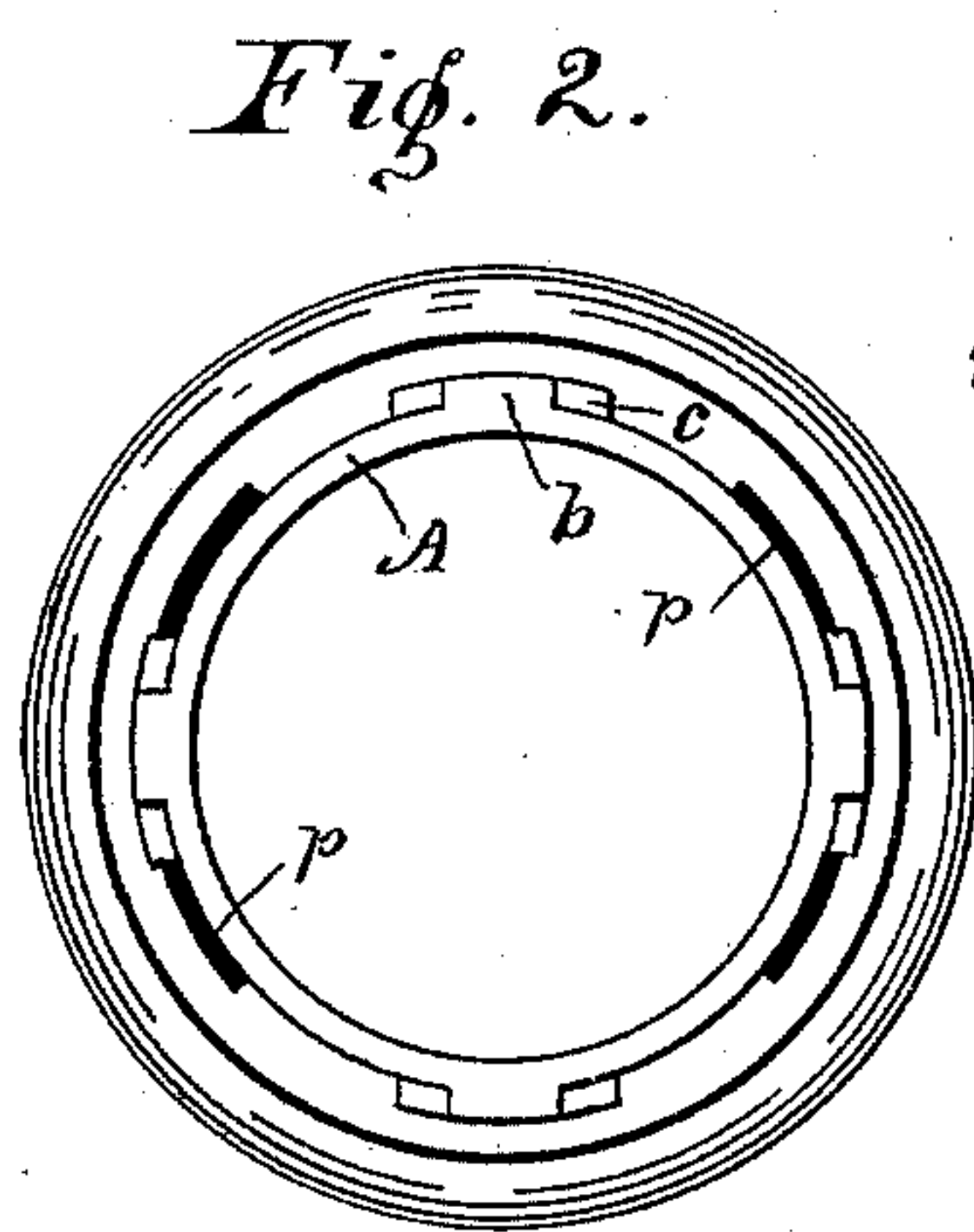
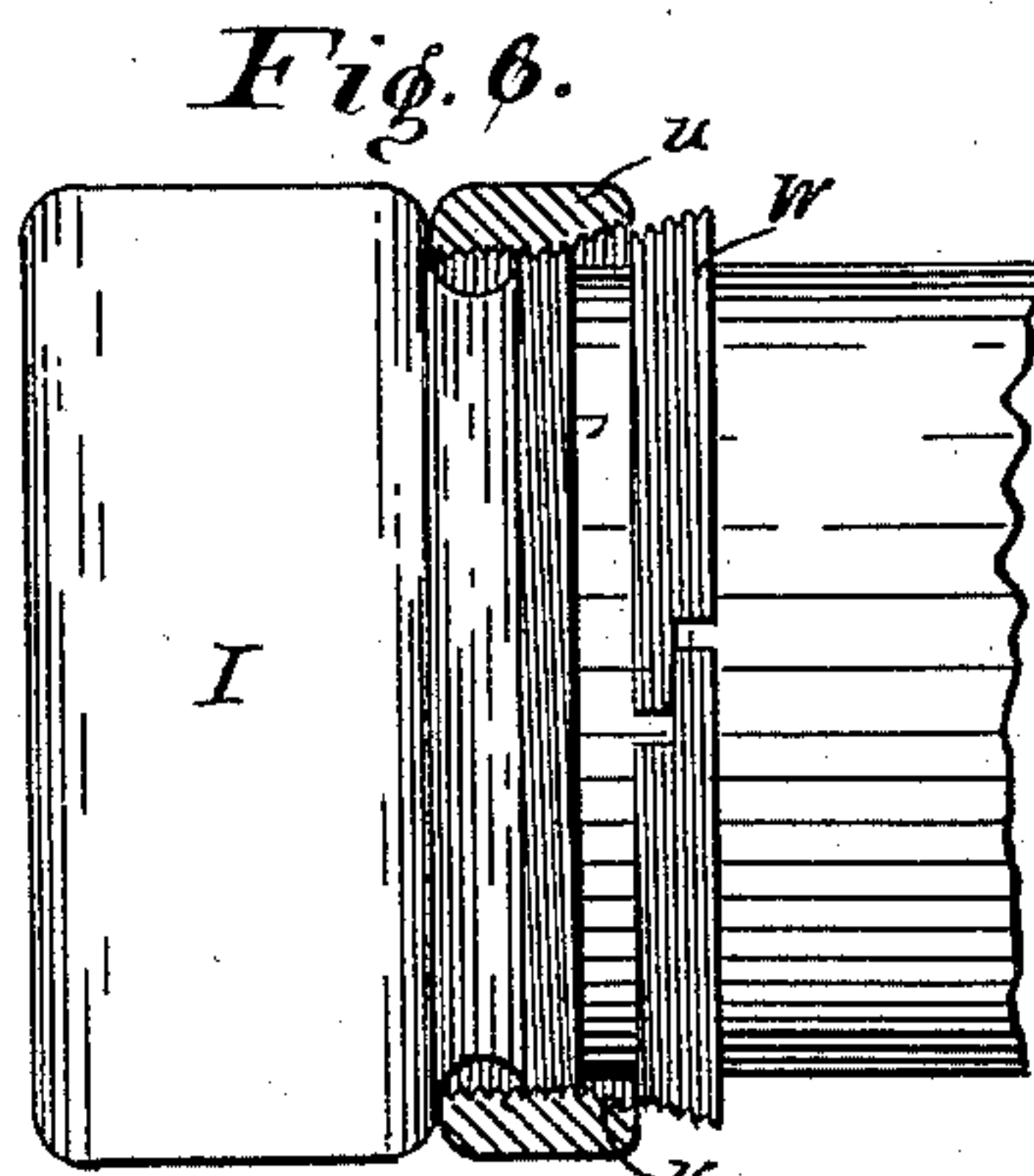
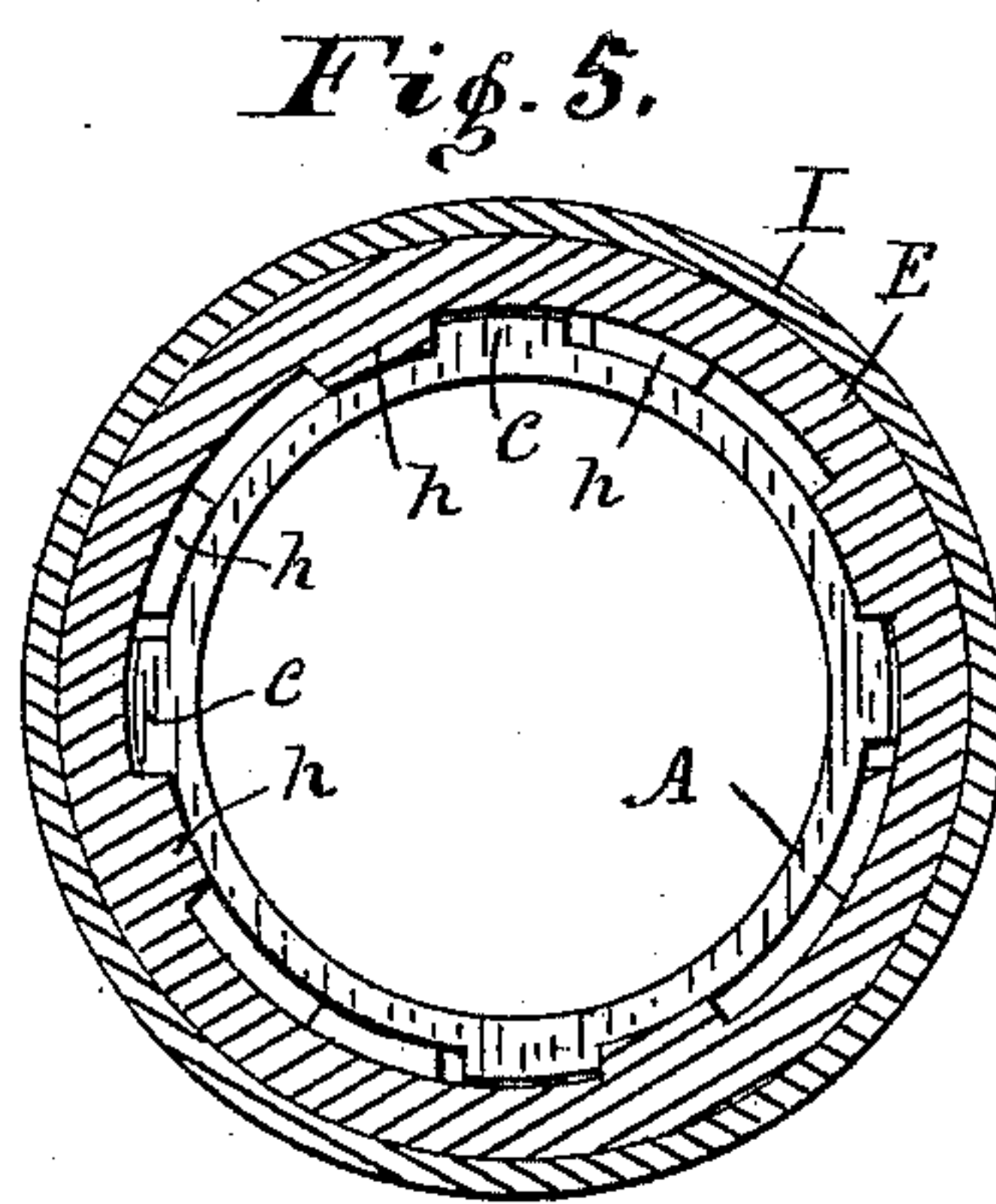
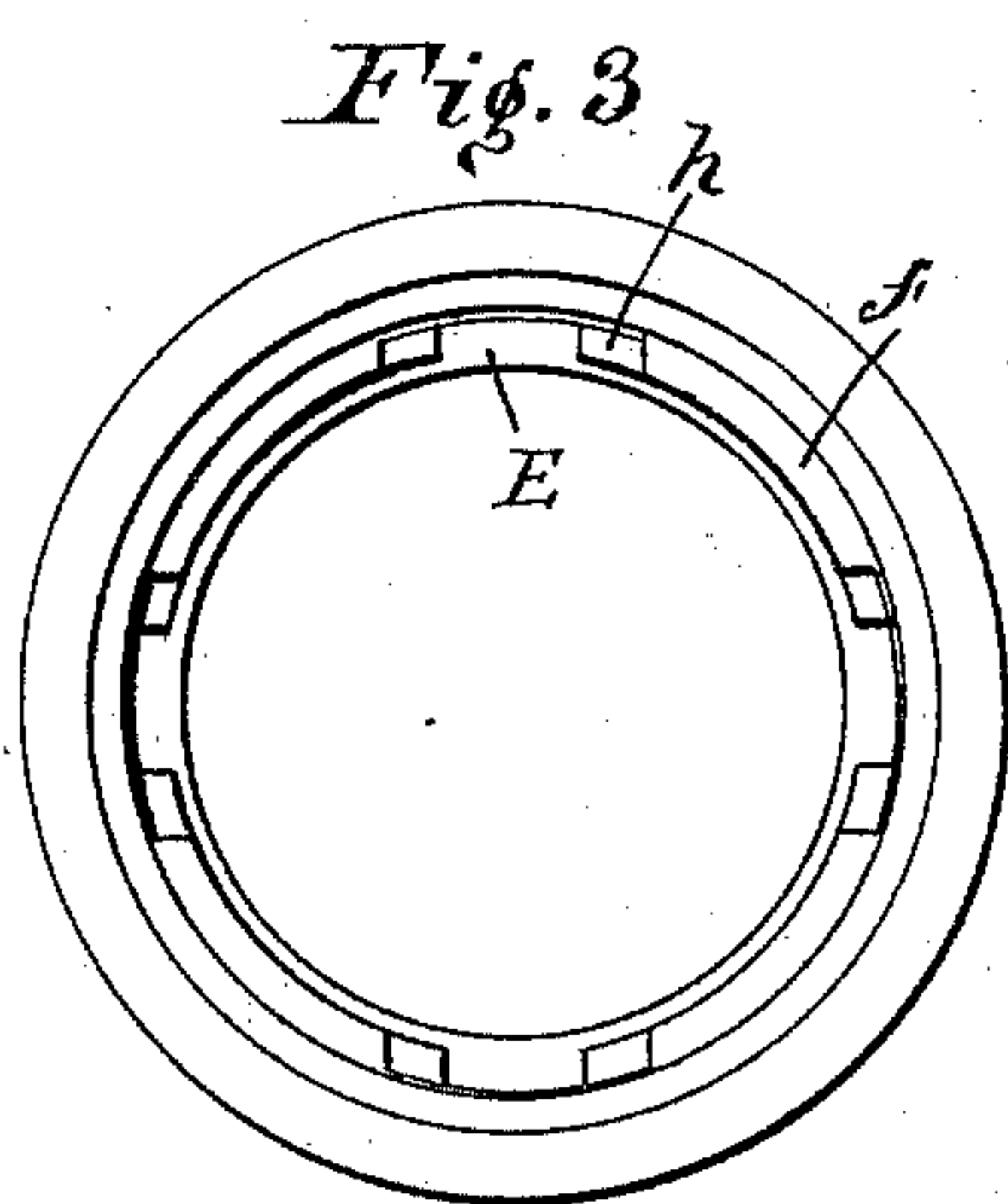


(Model.)

L. J. RICE.
HOSE COUPLING.

No. 426,515.

Patented Apr. 29, 1890.



Witnesses
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Inventor
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UNITED STATES PATENT OFFICE.

LEWIS J. RICE, OF INDIANAPOLIS, INDIANA.

HOSE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 426,515, dated April 29, 1890.

Application filed January 10, 1890. Serial No. 336,514. (Model.)

To all whom it may concern:

Be it known that I, LEWIS J. RICE, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improvement in Hose-Couplings, of which the following is a specification.

My invention relates to an improvement in a hose-coupling for which Letters Patent No. 418,225 were issued to me December 31, 1889.

The objects of my present improvement are to provide certain stops which shall operate to make the operation of coupling more convenient and certain, to cause a circulation of water in the coupled members, and thereby prevent the members from freezing together, and to provide improved means for securing the coupling members to the hose, all as herein-after fully described.

The accompanying drawings illustrate my invention.

Figure 1 represents a side elevation of two hose-sections with their coupling members disconnected. Figs. 2 and 3 represent, respectively, end views of the male and female coupling members. Fig. 4 represents a central longitudinal section of the hose-sections and their coupling members coupled. Fig. 5 represents a transverse section of the female member of the coupling at *a*, Fig. 4. Fig. 6 represents a longitudinal section, showing the position of the parts preparatory to securing the hose to the coupling member.

The coupling proper consists of a cylindrical male section *A*, having on its periphery two series of exteriorly-projecting annular ribs *b* and *c* and an annular shoulder *d*. The female section is provided with a hollow cylindrical portion *E*, which is adapted to receive the male portion *A* and is provided with two series of short interior annular ribs *f* and *h*, adapted to interlock with the ribs *b* and *c* of the male portion. The female member is further provided with an exterior cylindrical shell *I*, which forms an annular chamber *j*, in which is a spiral spring *k*, an annular washer *l*, and an annular packing-ring *m*. The arrangement is such that when the portion *A* is inserted in portion *E* the ribs *b* and *c* on *A* pass between the ends of ribs *f* and *h* on *E*, and shoulder *d* comes in contact with packing-ring *m*. Upon pushing *A* still farther

into *E* until ribs *b* and *c* pass beyond the planes of ribs *f* and *h* spring *k* is compressed, and, the members *A* and *E* being turned on each other until the ribs *c* come opposite the next spaces between ribs *h* and opposite to ribs *f*, the parts are moved longitudinally outward by the recoil of spring *k* until ribs *b* stop against the inner surfaces of ribs *f*, and ribs *h* and *c* are in the same plane, thus locking the parts together, as fully shown and explained in my Letters Patent No. 418,225, above mentioned. In the device there shown when the parts are forced together for uncoupling there is nothing to prevent the ribs *c* from rotating beyond the point where they will pass out between the ends of ribs *h*. For the purpose of avoiding this difficulty I thicken every alternate one of the ribs *h*, so as to close the annular space *n* beyond them, thus forming a positive stop to the rotation of ribs *c* when they are exactly opposite the space between ribs *h*. When the hose is filled with water, chamber *j* becomes filled with water, which circulates but feebly, and hence is liable to freeze quickly.

For the purpose of causing an active circulation in chamber *j*, I make several perforations *p p* in the cylindrical portion *A* of the male coupling in such a position that they will register with the space between washer *l* and the outer end of *E*. I also contract the interior area of *A* at this point, so that the flow of water is interrupted, and provide in *E* just beyond the end of *A* a series of perforations *r*, so that a portion of the current is diverted through perforations *p*, chamber *j*, and perforations *r*.

For the purpose of securing the hose to the coupling each of the coupling members is provided with a tubular extension *s*, adapted to fit the interior of the hose, a screw-threaded flange *t*, and a ring *u*, having a portion of its interior surface parallel with the axis of the coupling and screw-threaded, so as to fit and screw onto flange *t*, and a portion of its interior surface tapered outwardly and also screw-threaded, as at *v*.

W is a split ring having its interior surface parallel with its axis and its exterior surface tapered and screw-threaded to correspond with the tapered portion of ring *u*.

In securing the hose to the coupling ring *u*

is screwed onto the flange *t*, as in Fig. 6, so as to expose extension *s*. Extension *s* is then thrust into the hose. Ring *W* is then placed in position outside of the hose and over extension *s*. Ring *u* is now screwed forward on flange *t*, the screw-threads of its flaring portion *v* engaging at the same time the threads on ring *W*. As the ring *u* moves forward ring *W* is contracted, and the hose is securely clamped to the coupling.

I am aware that wedge-shaped split rings secured within a sleeve have before been used; but, so far as I am aware, the construction has been such that the ring must slide longitudinally on the hose as the compression progresses. In my device the split ring is simply compressed by the forward movement of the ring or sleeve *u* and is held at all times in a fixed relation to the hose and flange *t*.

I claim as my invention—

1. In a hose-coupling, the combination of the male section *A*, having on its periphery two series of exteriorly-projecting annular ribs *b* and *c*, and the female section having the hollow cylindrical portion *E*, adapted to receive the said male section, and having the interior annular ribs *f* and *h*, adapted to inter-

lock with ribs *b* and *c*, each alternate rib *h* being thicker than the others, so as to project into the path of rotation of the ribs *c* to form stops therefor, substantially as set forth.

2. In a hose-coupling, the combination of the male section having cylindrical portion *A*, provided with perforations *p* and contracted portion *x*, and the female section having chamber *j* and hollow cylindrical portion *E*, provided with perforations *r*, whereby water conveyed in the hose is caused to circulate in chamber *j*, as set forth.

3. In a hose-coupling, the combination of the hose, the coupling member having the tubular extension *s* and screw-threaded flange *t*, the ring *u*, having a portion of its interior surface parallel with its axis and screw-threaded to fit said flange, and having also the screw-threaded flaring portion *v*, and the split ring *W*, wedge-shaped in section and having its outer surface screw-threaded to fit ring *u*, all arranged to co-operate as and for the purpose specified.

LEWIS J. RICE.

Witnesses:

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