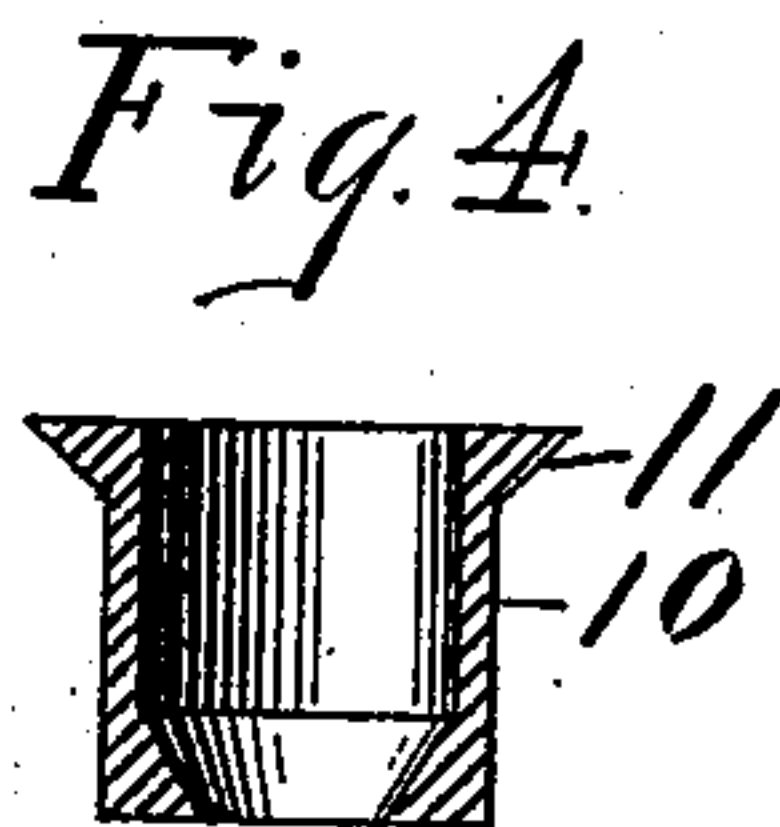
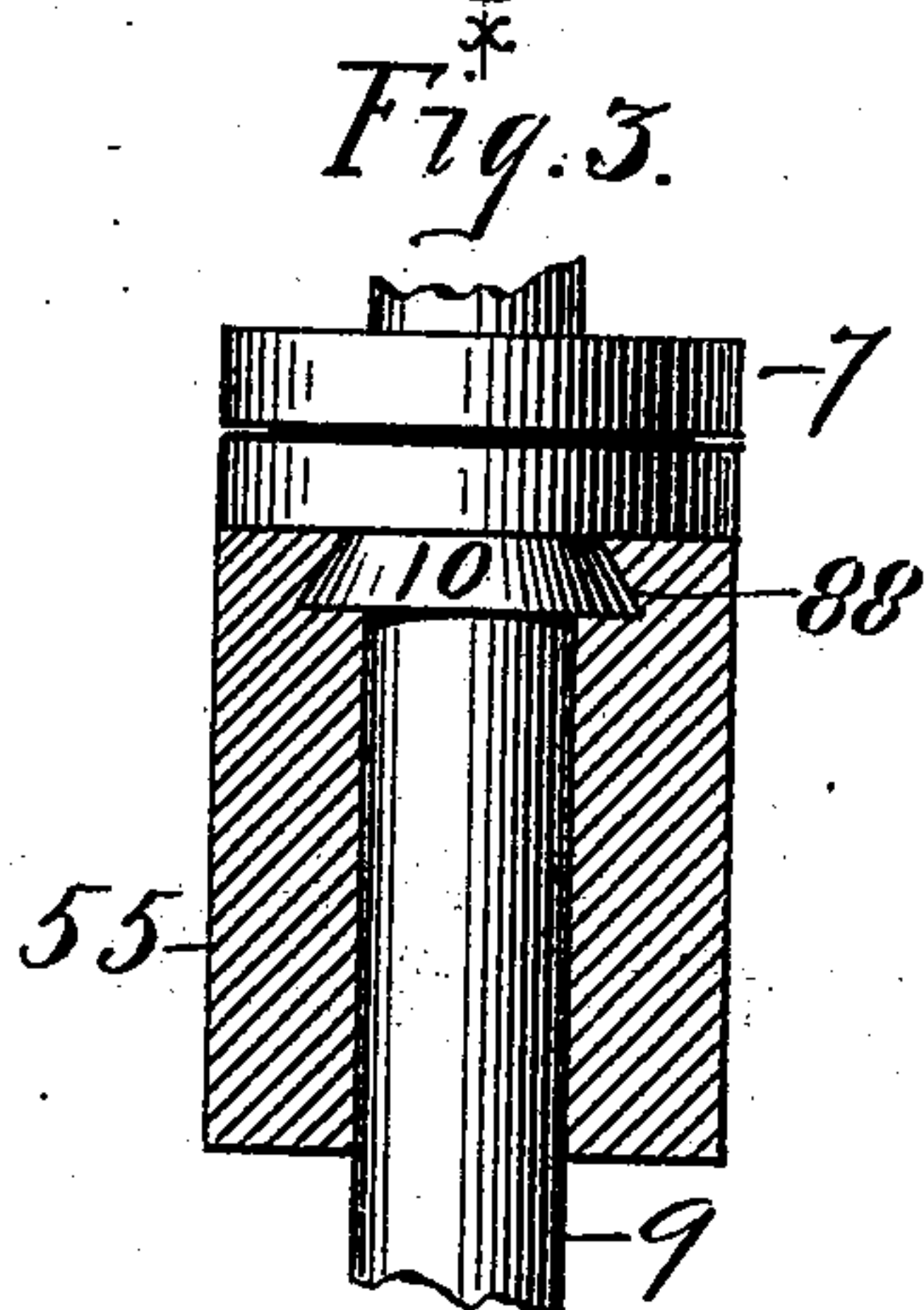
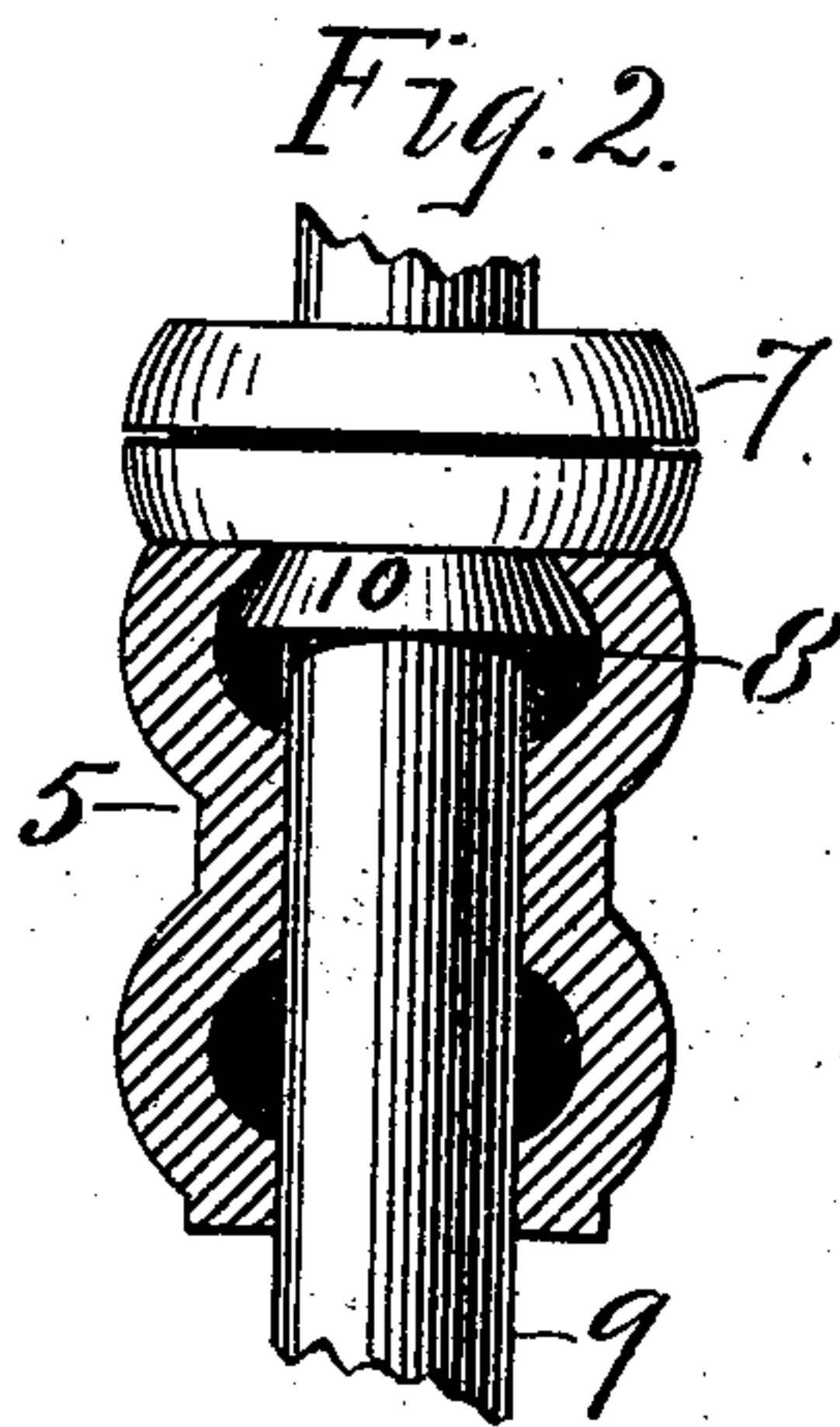
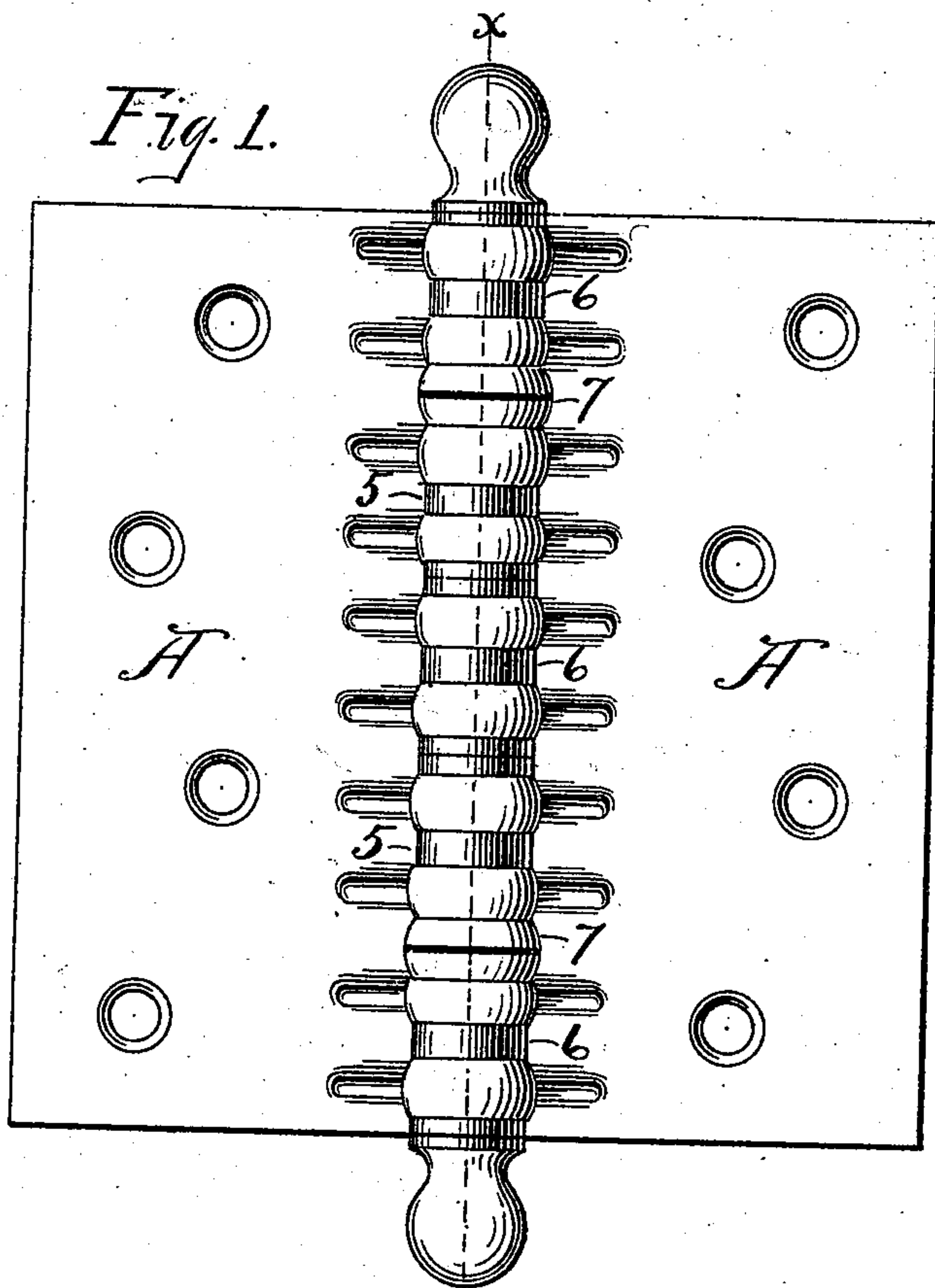


(No Model.)

T. CORSCADEN & F. HOLLAND.
HINGE.

No. 502,706.

Patented Aug. 8, 1893.



WITNESSES

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UNITED STATES PATENT OFFICE.

THOMAS CORSCADEN AND FRANKLIN HOLLAND, OF NEW BRITAIN, CONNECTICUT, ASSIGNORS TO THE STANLEY WORKS, OF SAME PLACE.

HINGE.

SPECIFICATION forming part of Letters Patent No. 502,706, dated August 8, 1893.

Application filed May 3, 1893. Serial No. 472,879. (No model.)

To all whom it may concern:

Be it known that we, THOMAS CORSCADEN and FRANKLIN HOLLAND, citizens of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Antifriction-Hinges, of which the following is a specification.

Our invention relates to improvements in anti-friction hinges, and the chief object of our improvement is to provide a cheap and efficient way of securing the anti-friction devices to the leaves of the hinge.

In the accompanying drawings: Figure 1 is a front elevation of a hinge constructed in accordance with our improvement. Fig. 2 is a vertical section of one of the knuckles of said hinge on the line *x x* of Fig. 1, together with an elevation of a portion of the hinge pin-tle and anti-friction devices secured to said knuckle. Fig. 3 is a like view of the same in a hinge having a plain knuckle. Fig. 4 is a detached vertical section of the attaching sleeve for the anti-friction devices, and Fig. 5 is a like sectional view of the sleeve in its final form.

A designate the leaves of the hinge which may be of any ordinary construction. As shown in the drawings, it is a wrought iron hinge with its knuckles 5 and 6 corrugated or beaded, but our invention is applicable to ordinary hinges having plain knuckles.

7 designates anti-friction devices which consist essentially of two washers, either with or without an inclosed washer, rollers, balls, or other anti-friction devices. A sufficient space is left between part of the knuckles 5 and 6 to insert these anti-friction devices 7 as shown. The devices of themselves are not of our invention, excepting as they are constructed for being secured to the hinge knuckles substantially as hereinafter described. Within one end of the knuckles 5, or the knuckles to which the anti-friction devices are secured, we form an overhanging chamber 8, concentric with the pintle 9.

We secure the anti-friction devices 7 to the end of the knuckle by means of a sleeve 10

which is inserted within this chamber 8 and enlarged at its end so as to secure it to the end of the knuckle as shown in Figs. 2 and 3, even though the pintle 9 be removed.

In Figs. 1 and 2 the chamber 8 is formed within the hollow of one of the beads or corrugations, but this is only incidental to the particular hinge shown. An overhanging chamber can be readily formed in the knuckle of any ordinary hinge, as for example, the chamber 88 in the plain knuckle 55 as shown in Fig. 3, the anti-friction devices being secured therein in the same manner.

In order to assemble the parts, we first form the projecting end of this sleeve 10 with cylindrical sides on its exterior, while the excess of metal is upon the inside as shown in the detached sleeve, Fig. 4. This sleeve is long enough to pass through both of the anti-friction washers and is preferably provided with a head 11 which is let into the outer side of the outer washer, but it is evident that if desired this sleeve might be made integral with the outer washer. After the sleeve has been formed as shown in Fig. 4, the anti-friction devices are placed together on said sleeve and its projecting end is placed within the chamber 8 or 88. A pin or punch is then driven through the sleeve so as to force the excess of metal which is upon the inside of the sleeve outwardly and form the enlarged end as shown in Figs. 2, 3 and 5, thereby changing the metal at the projecting end of the sleeve from the form shown in Fig. 4 to that shown in Fig. 5 in which the excess of metal is thrown from the inside of the sleeve to the outside as shown, and the anti-friction devices thereby secured in place so that they will not be accidentally detached from the hinge leaves.

Other means may be devised for assembling the parts, but the foregoing are the best means known to us for assembling a holding sleeve having an enlarged end within a chamber having overhanging side walls.

By our improvements, we are enabled to cheaply and conveniently secure the anti-friction devices to the ends of such knuckles as

may be desired and in such a manner that they will not be liable to accidental detachment.

We claim as our invention—

5 The herein described anti-friction hinge consisting essentially of a hinge knuckle having a chamber with overhanging walls, the anti-friction devices 7, and a sleeve extending therefrom into the chamber of the knuckle

and having its end enlarged for holding the parts in place, substantially as described and for the purpose specified.

THOMAS CORSCADEN.
FRANKLIN HOLLAND.

Witnesses:

FRANK H. MARSH,
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