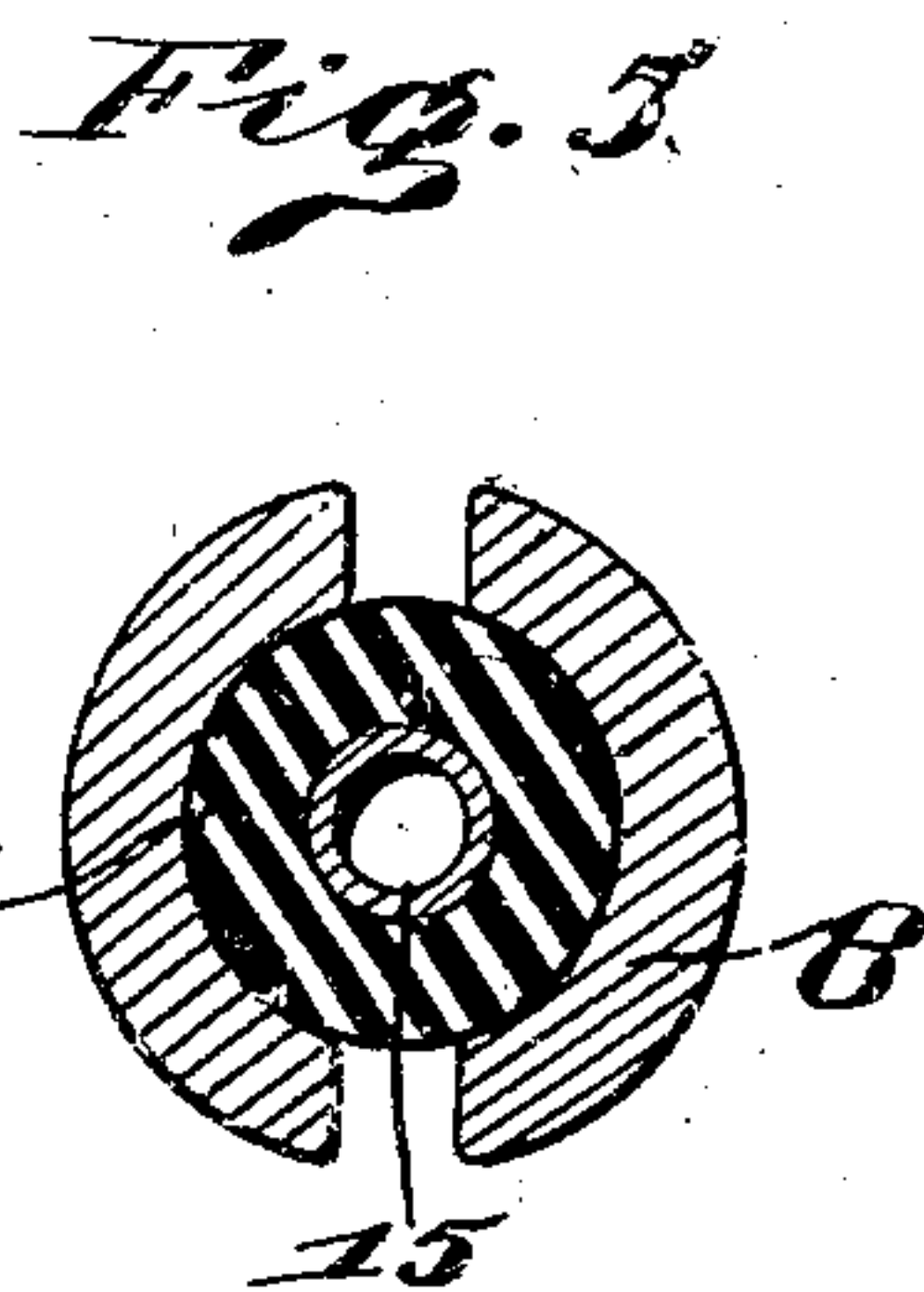
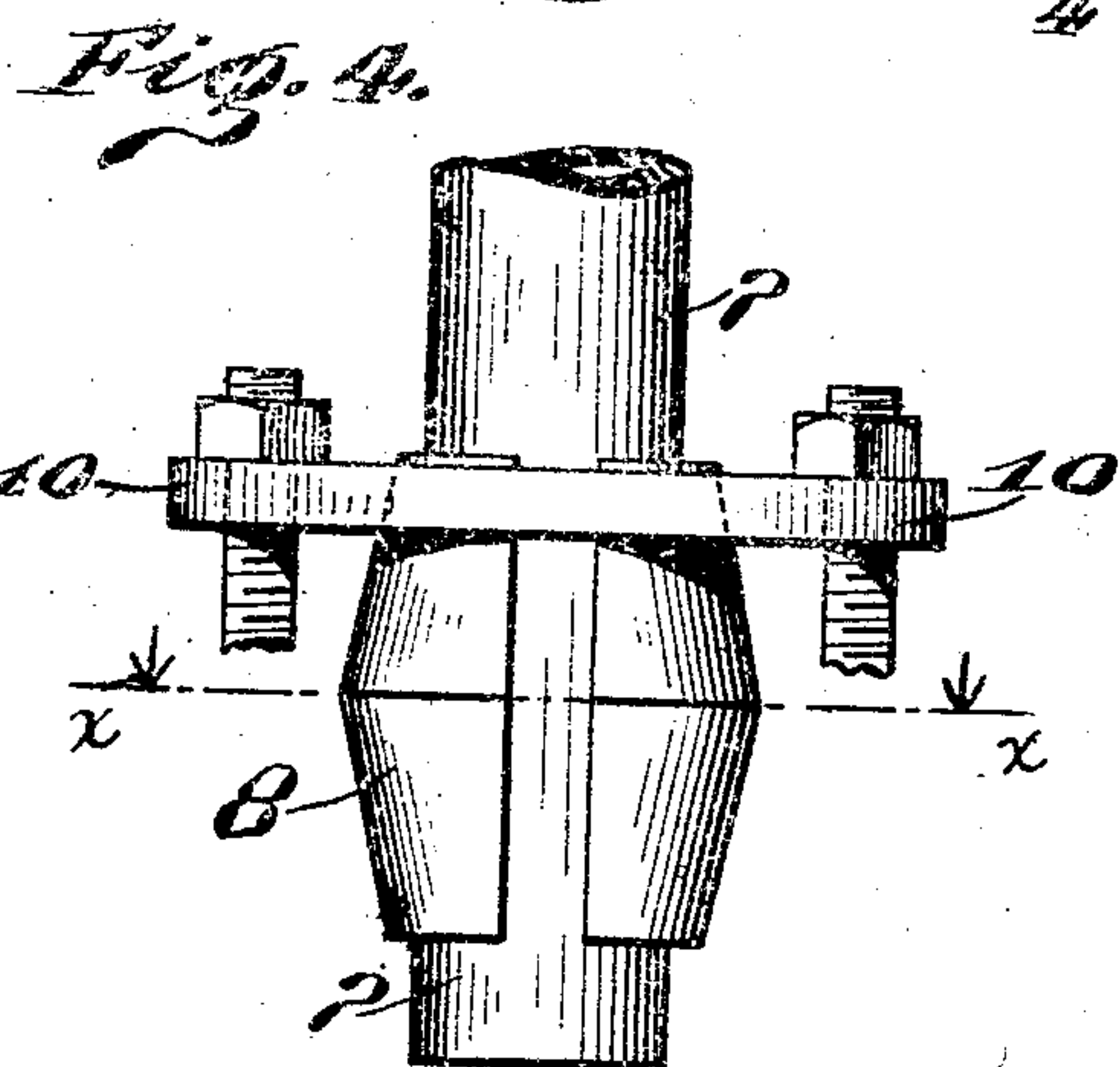
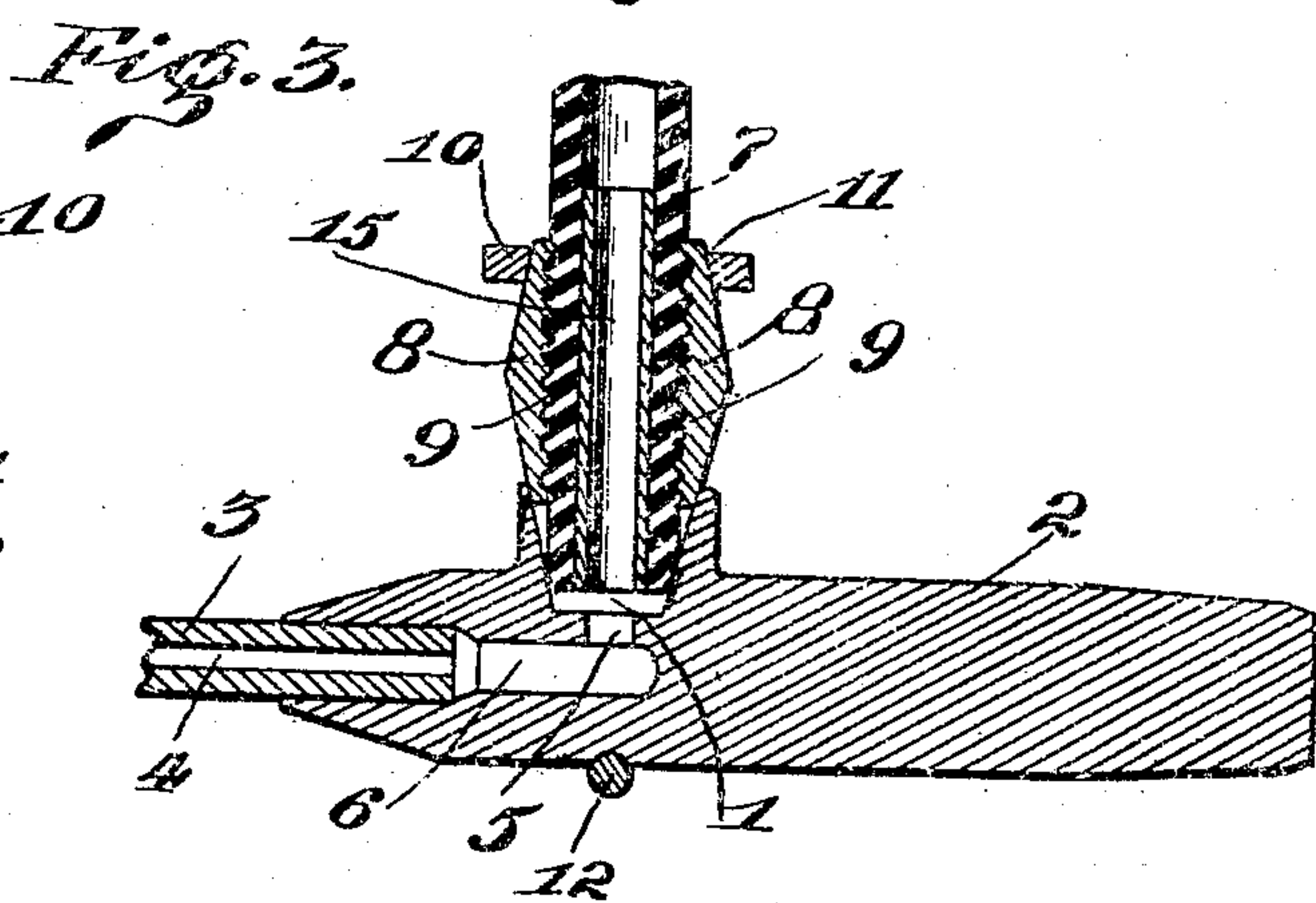
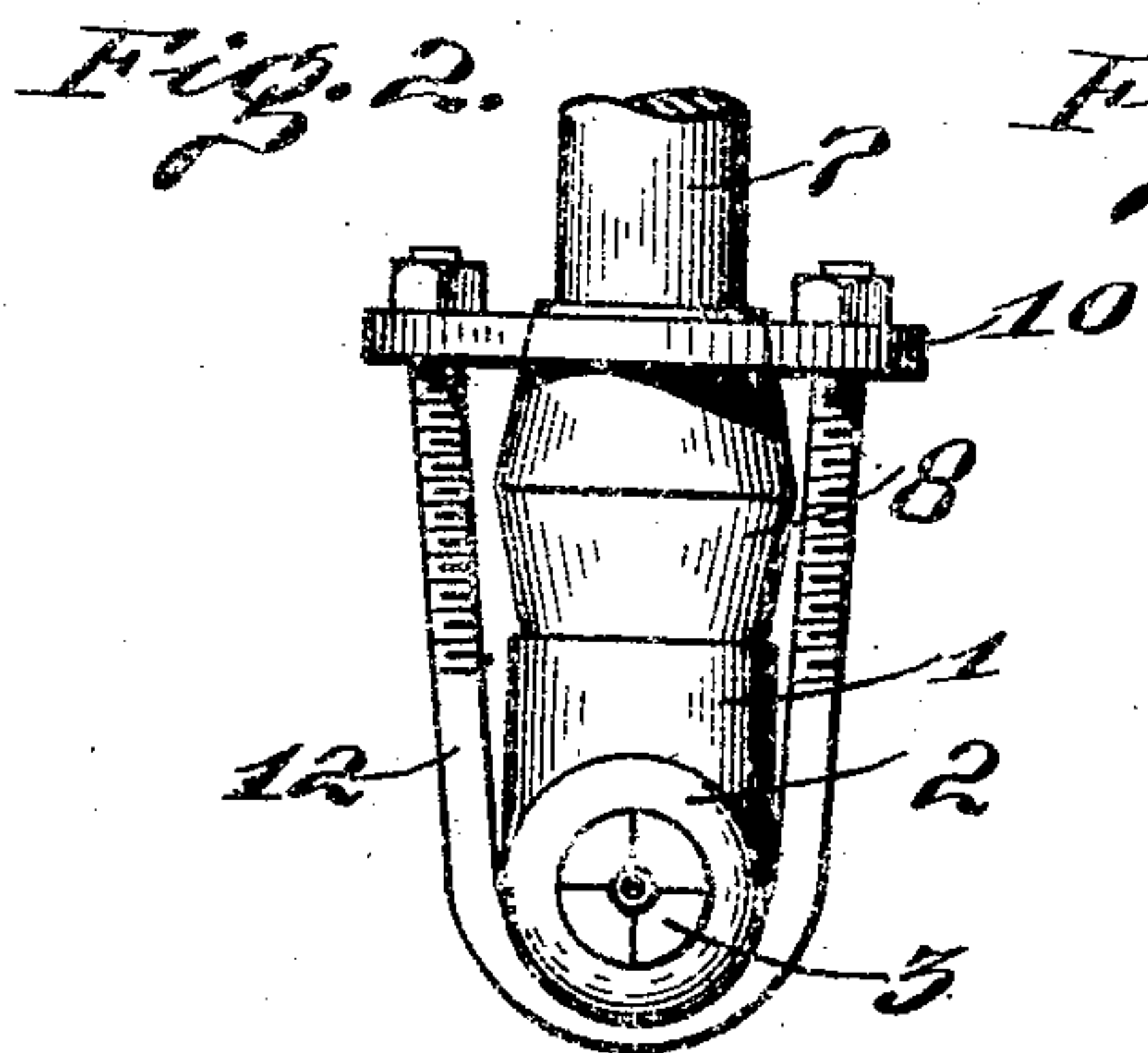
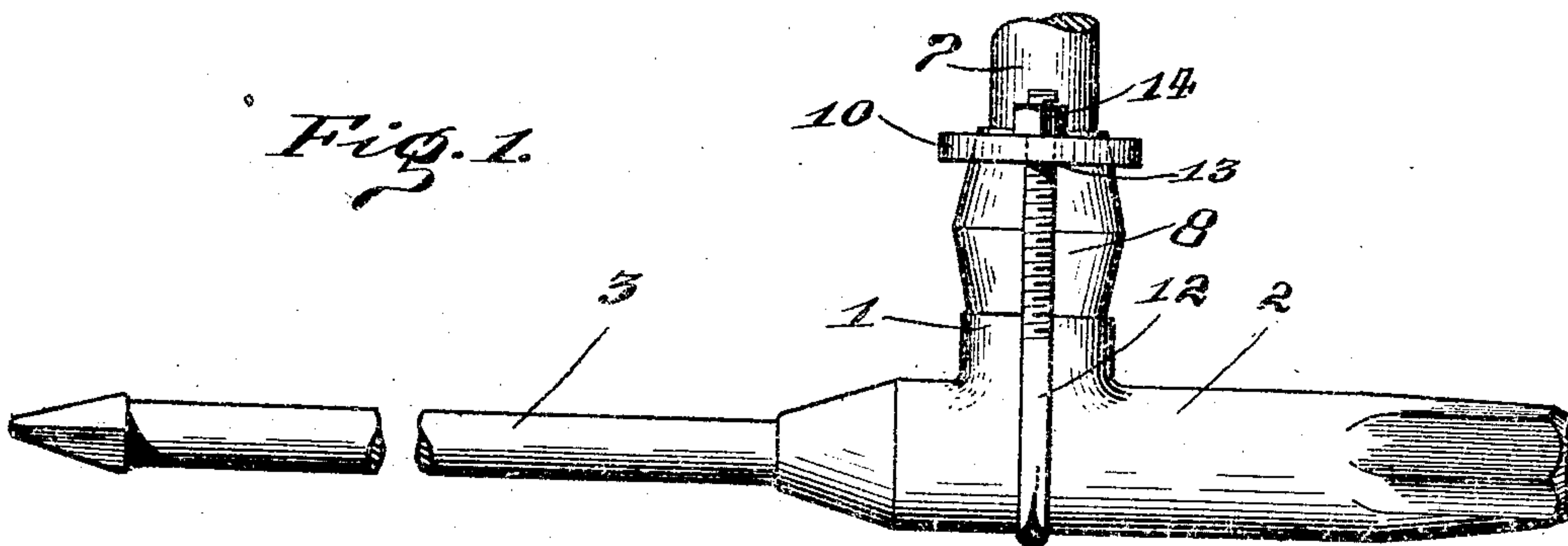


No. 863,901.

PATENTED AUG. 20, 1907.

R. BRUMBAUGH.
COUPLING.

APPLICATION FILED MAR. 7, 1907.



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UNITED STATES PATENT OFFICE.

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COUPLING.

No. 863,901.

Specification of Letters Patent.

Patented Aug. 20, 1907.

Application filed March 7, 1907. Serial No. 361,127.

To all whom it may concern:

Be it known that I, RAYMOND BRUMBAUGH, a citizen of the United States, residing at Fairbanks, in the District of Alaska, have invented certain new and useful
5 Improvements in Couplings, of which the following is a specification.

My invention relates to couplings for hose and like tubular conduits; and, more particularly, to a coupling especially adapted for uniting the end of a steam conduit of hose or other flexible pipe to the head of a steam
10 thawing point.

The steam thawing point used in mining and other operations for thawing frozen earth or gravel consists of a comparatively long point-section of strong steel
15 pipe of small bore pointed at one end and at the other welded into the end of a steel head-section which for a portion of its length is bored longitudinally to provide a passage registering with the bore of the point-section and then forms a solid head for receiving the blows of a
20 sledge by which the point-section is driven into the solid earth. The steam used in this tool is usually supplied through a rubber hose at a pressure of 100 to 125 pounds, and it will readily be seen that the coupling of the hose to the head-section of the tool must not only
25 form a tight joint capable of withstanding this high pressure but must also be strong enough to withstand the strains and rough usage to which it is necessarily subjected in the handling and use of a heavy tool of this character.

As heretofore ordinarily connected the end of the steam hose has been clamped around a nipple which was first headed and welded to one side of the head-section and then bored to provide a passage communicating through the wall of the head-section with the
35 longitudinal passage therein. Such connection, however, has proven objectionable because of the frequency with which this nipple is broken off in the use of the tool, usually close to the head-section, and to the cracking and breaking out of the hose where it is bent
40 over the end of the nipple.

The object of my invention is to remedy the above-mentioned defects and to provide a coupling which will be both tight and strong without increasing materially the weight of the tool, which can be used with
45 varying sizes of tubular conduits, and which can be easily and quickly manipulated; and this object I attain by certain novel features of construction and combinations of parts hereinafter described and illustrated, as applied to a steam thawing point, in the
50 accompanying drawing in which—

Figure 1 is a plan of a steam thawing point provided with my improved coupling; Fig. 2, a front end view of the same; Fig. 3, a longitudinal vertical section of the head-section; Fig. 4, a detail of certain parts of

the coupling; and Fig. 5, a section on the line *xx* of 55 Fig. 4.

Like reference numerals indicate like parts throughout the several figures.

Referring to the drawing, 1 is a conical cup, recess, or chamber, formed in or on one side of, and preferably 60 with walls integral with, the head-section 2 of a steam thawing point to one end of which the point-section 3 is welded in the usual manner; the said chamber being connected at or near its bottom with the small longitudinal bore 4 of the point-section by suitable passages, 65 such as 5 and 6, within the head-section.

The end of the hose 7, or other tubular conduit through which steam is supplied to the tool, surrounded by the double cone wedge-clamp 8 split longitudinally and preferably transversely corrugated or otherwise 70 roughened on its inner surface 9 to prevent slipping, is inserted in the conical chamber the tapering walls of which are adapted to receive and provide a tight seat for the tubular conduit near the bottom of said chamber and, higher up, to receive and cooperate with the 75 tapering outer surface of one end of the wedge-clamp. A plate or gland 10 is provided with a circular orifice 11 through which the steam conduit passes and the sides of which, preferably inclined, are adapted to be seated around and cooperate with the tapering outer surface 80 of the other end of the wedge-clamp. A U-shaped bolt or tightening-clevis 12 embraces the head-section and its ends pass up through holes 13 in the plate or gland and are provided with screw-nuts 14. The end of the tubular conduit may be stiffened, if found desirable, 85 by inserting therein a short section 15 of metal tubing.

When the parts are assembled and the nuts are screwed down on the ends of the tightening-clevis it is apparent that the plate or gland will be drawn toward the head-section and will thereby cause the wedge- 90 clamp to securely grip the tubular conduit and force its end to a tight seat between the tapering walls of the chamber, while the steam within will act to press it out against the walls of the chamber and further tighten the joint. It will also be seen that, owing to the taper 95 of the walls of the chamber, tubular conduits varying more or less in external diameter may be coupled to and used with the same tool, with the same or with a different wedge-clamp.

While I have described my invention as used in connection with a steam thawing point and in what I now regard as its best form, it is obvious that it is well adapted for many other uses and that its several parts can be variously modified, or equivalents substituted therefor, without departing from the spirit or sacrificing 105 the advantages thereof. For example, a single instead of a double wedge-clamp may be employed—a modification so obvious as not to require any description—

and other equivalent means may be used in place of the tightening-clevis and plate or gland for operating the wedge-clamp. Such other modifications can also be made as fall within the scope of the appended claims.

5 What I claim as new, and desire to secure by Letters Patent, is—

1. A coupling for a conduit, comprising a chamber with inwardly tapering walls adapted to receive the end of the conduit and means to grip the conduit near its end and
10 force the end tightly against the walls of said chamber.

2. A coupling for a tubular conduit, comprising a conical chamber adapted to receive the end of the conduit, a cone wedge-clamp adapted to fit around the conduit and, when forced into the mouth of said chamber, to grip the
15 conduit and wedge its end against the tapering walls of said chamber, and means for operating said wedge-cone.

3. A coupling for a tubular conduit, comprising a conical chamber, a cone wedge, a conduit the end of which extends beyond the wedge, and means for forcing the ends
20 of the wedge and conduit into the conical chamber and against its wall.

4. A coupling for a tubular conduit, comprising a conical chamber in the part to which the conduit is to be connected, a cone wedge, a conduit the end of which extends
25 through and beyond the cone wedge, and means for forcing the end of the cone wedge into the mouth of said chamber to grip the conduit and force its end against the wall of said chamber.

5. A coupling for a tubular conduit, comprising a conical chamber in the part to which the conduit is to be con-
30

nected adapted to receive the end of the conduit, a split double cone wedge-clamp adapted to fit around the conduit and cooperate at one end with the mouth of said chamber and at the other end with the sides of an orifice through a gland-plate, and a tightening clevis for forcing said gland-plate towards said chamber to cause said wedge-cone to grip the conduit and wedge its end between the tapering walls of said chamber. 3

6. In a steam thawing point, a head-section having in one side thereof a conical chamber adapted to provide a tapering wedge seat for the end of a steam conduit and in communication with the longitudinal bore of the point-section, a tubular conduit for supplying steam thereto, a split double cone wedge-clamp adapted to fit around said conduit and cooperating at one end with the mouth of said chamber and at the other end with the orifice in a gland-plate, and means for drawing said gland-plate, towards said head-section and thereby cause said wedge-clamp to securely grip said conduit and force its end to a tight seat between the tapering walls of said chamber. 40 45 50

7. In a steam thawing tool, a head-section having in one side thereof a conical chamber communicating with the longitudinal bore of the point-section, a hose for supplying steam to said tool, and means for first clamping said hose near its end and then forcing the end to a tight seat between the tapering walls of said conical chamber. 55

In witness whereof, I have hereunto affixed my signature in the presence of two witnesses.

RAYMOND BRUMBAUGH.

Witnesses:

WM. B. WHITNEY,
ROSALIE E. EDWARDS.