

No. 736,184.

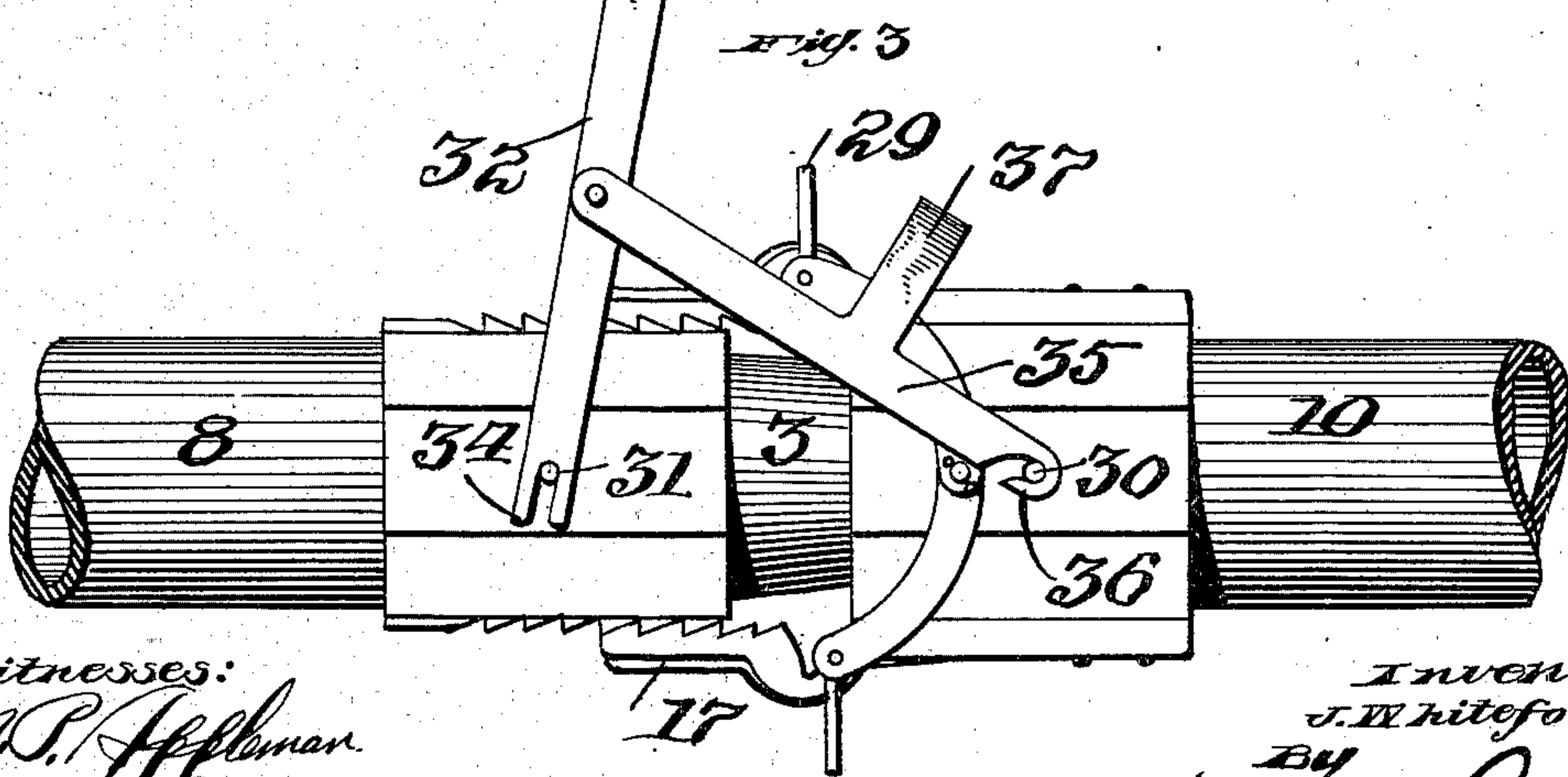
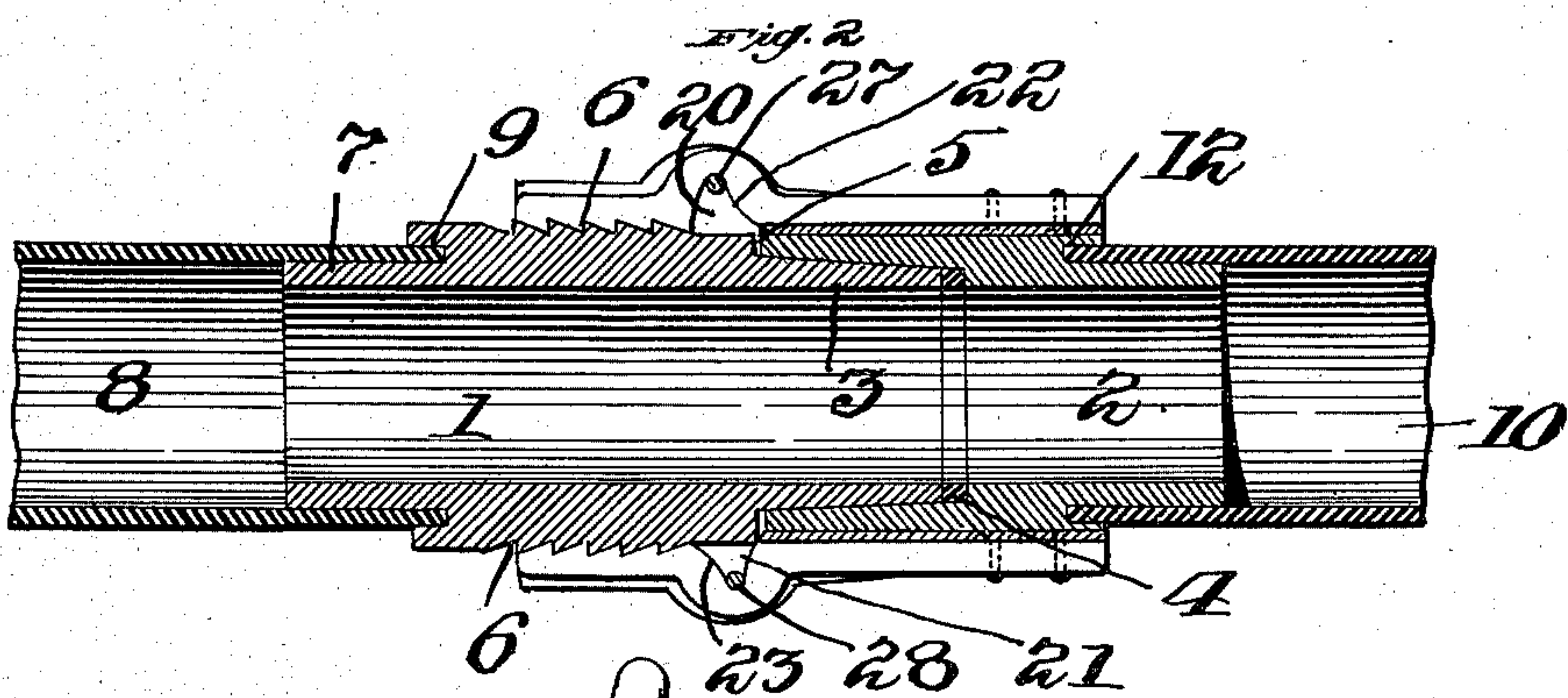
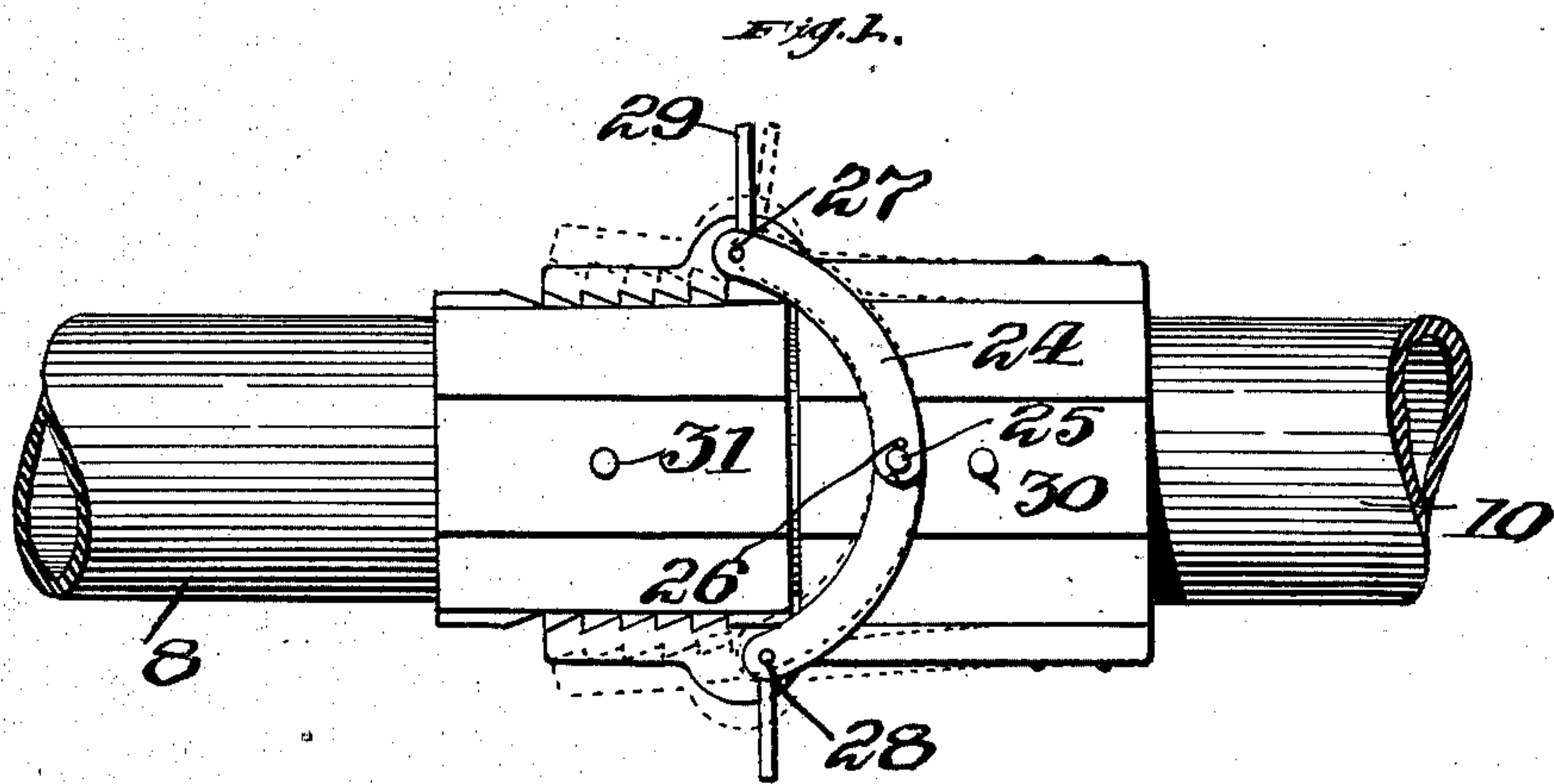
PATENTED AUG. 11, 1903.

J. WHITEFORD.
HOSE COUPLING.

APPLICATION FILED AUG. 28, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

J. P. Hoffman
W. H. Butler

Inventor

J. Whiteford

By

W. E. Corliss

Att'y

No. 736,184.

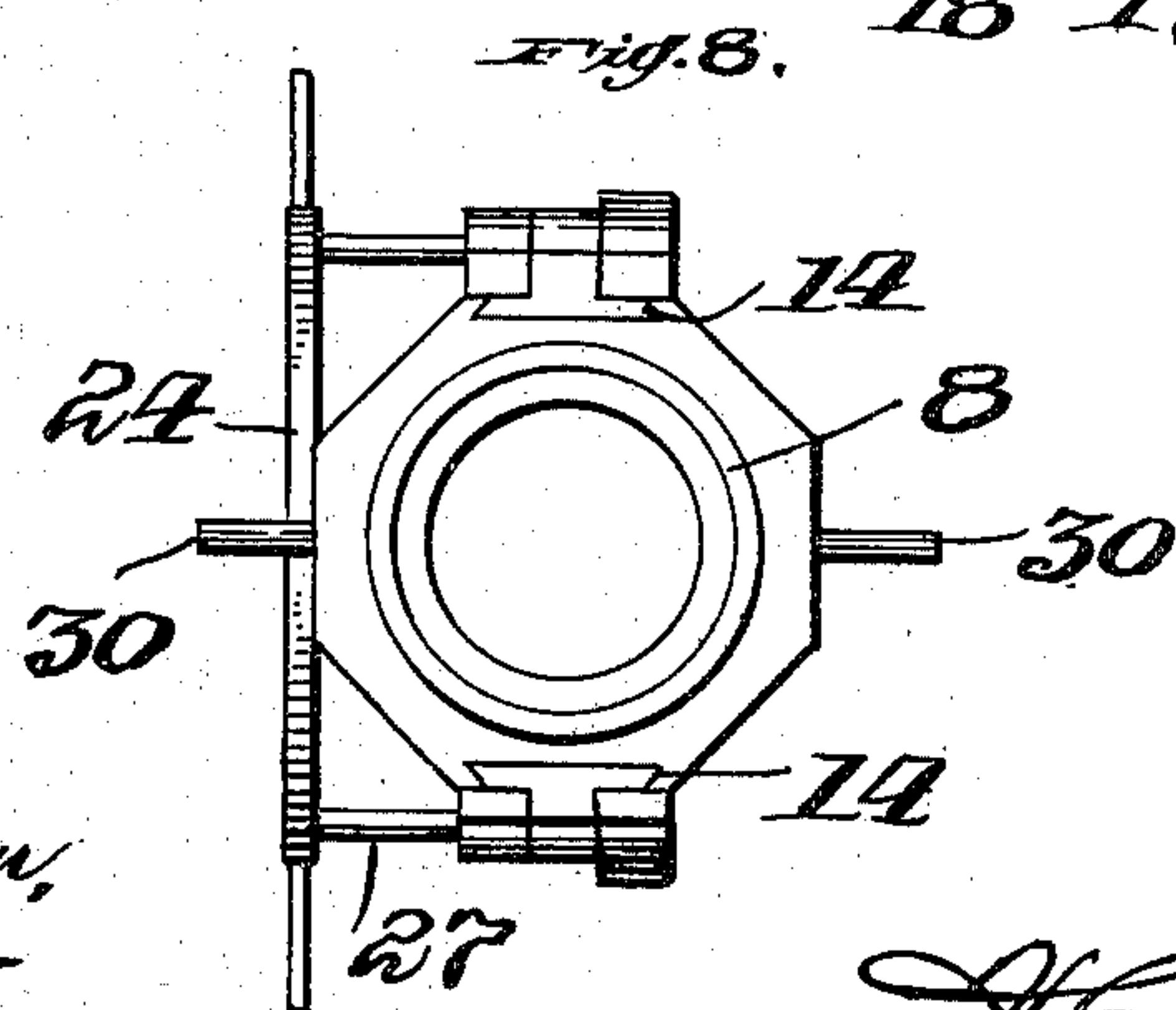
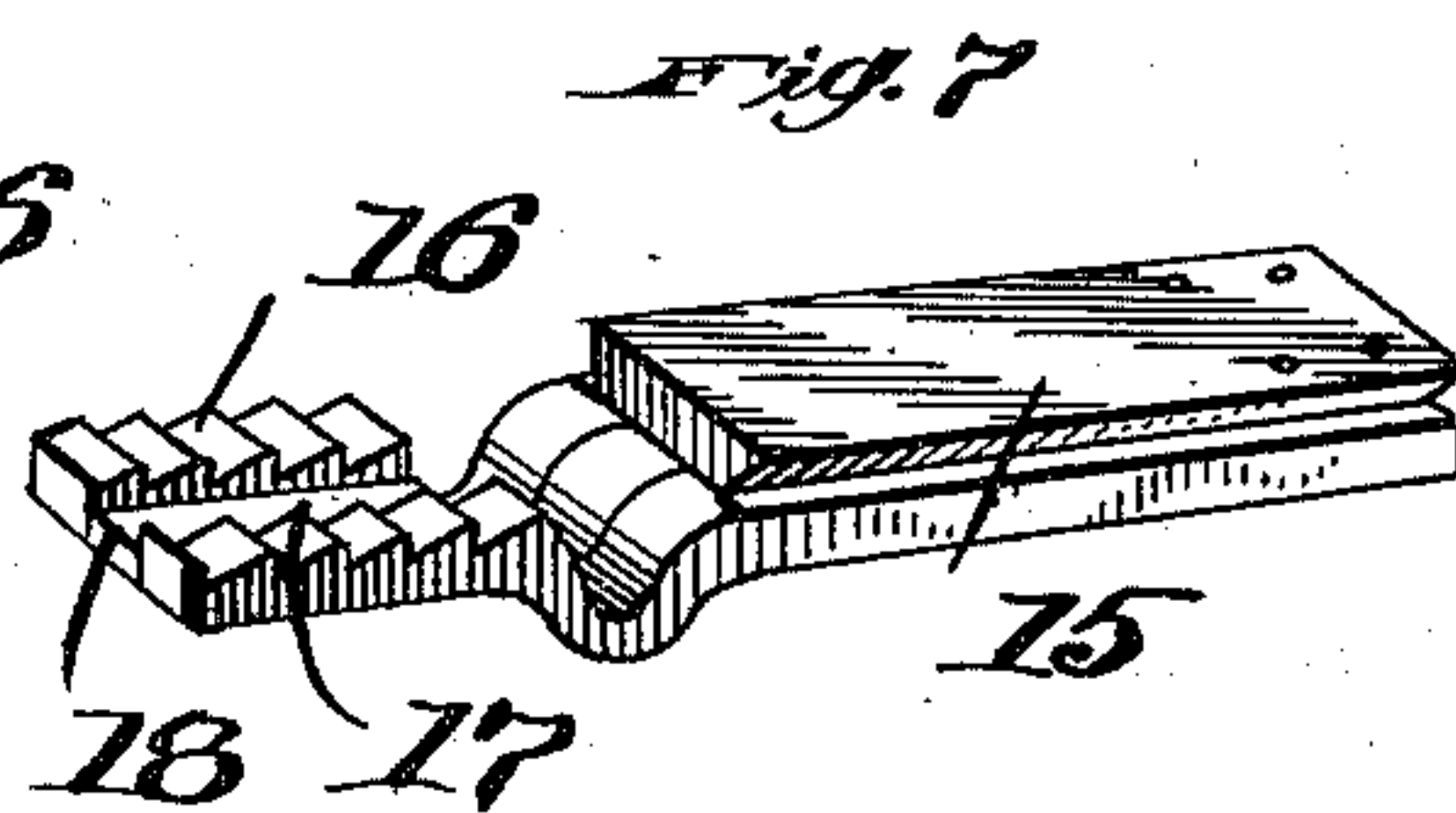
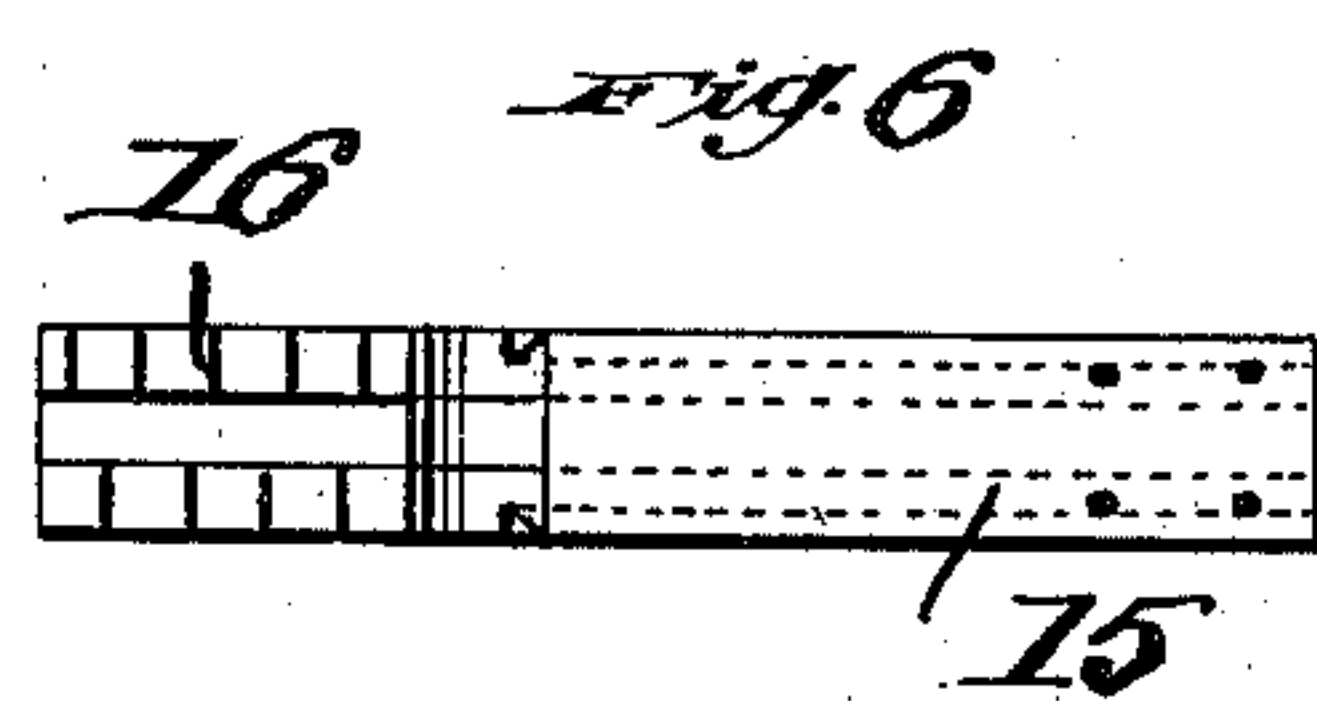
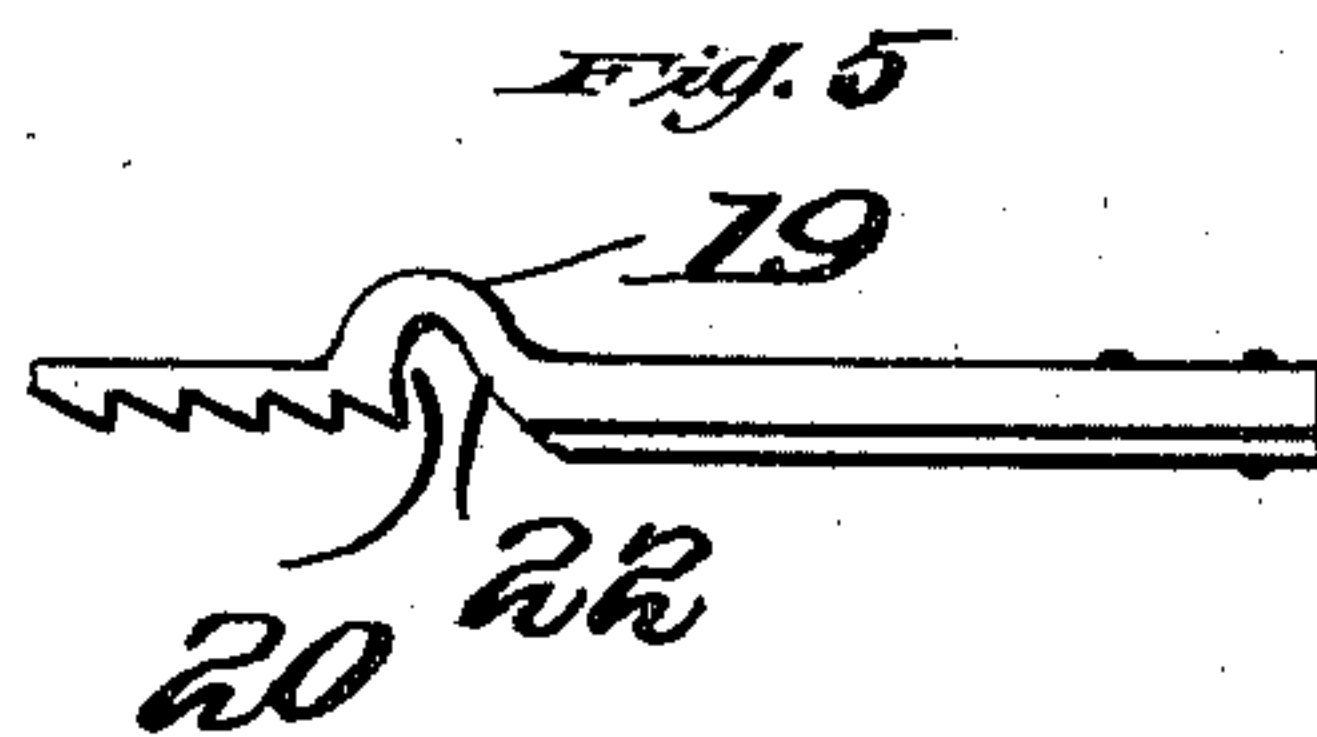
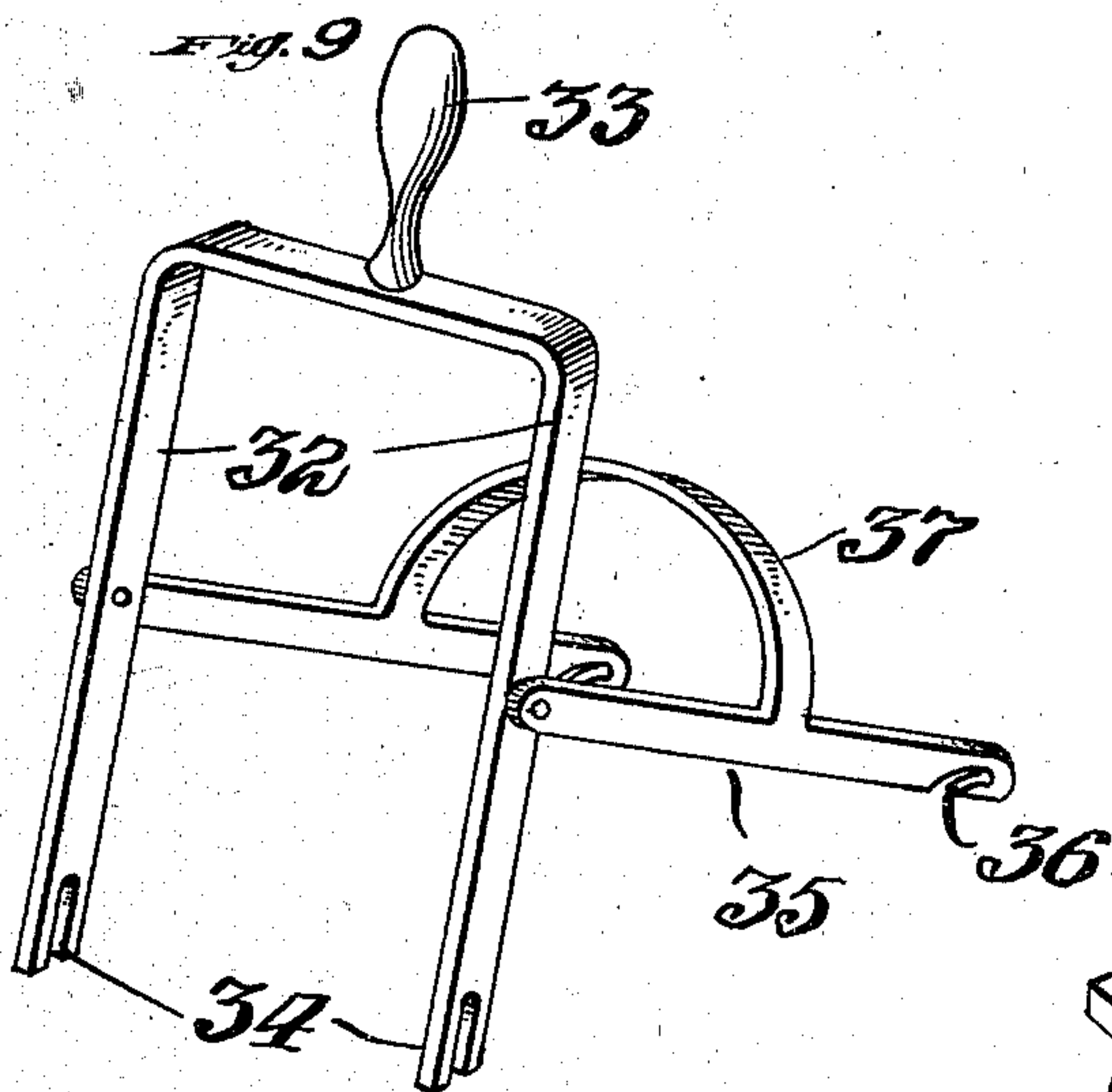
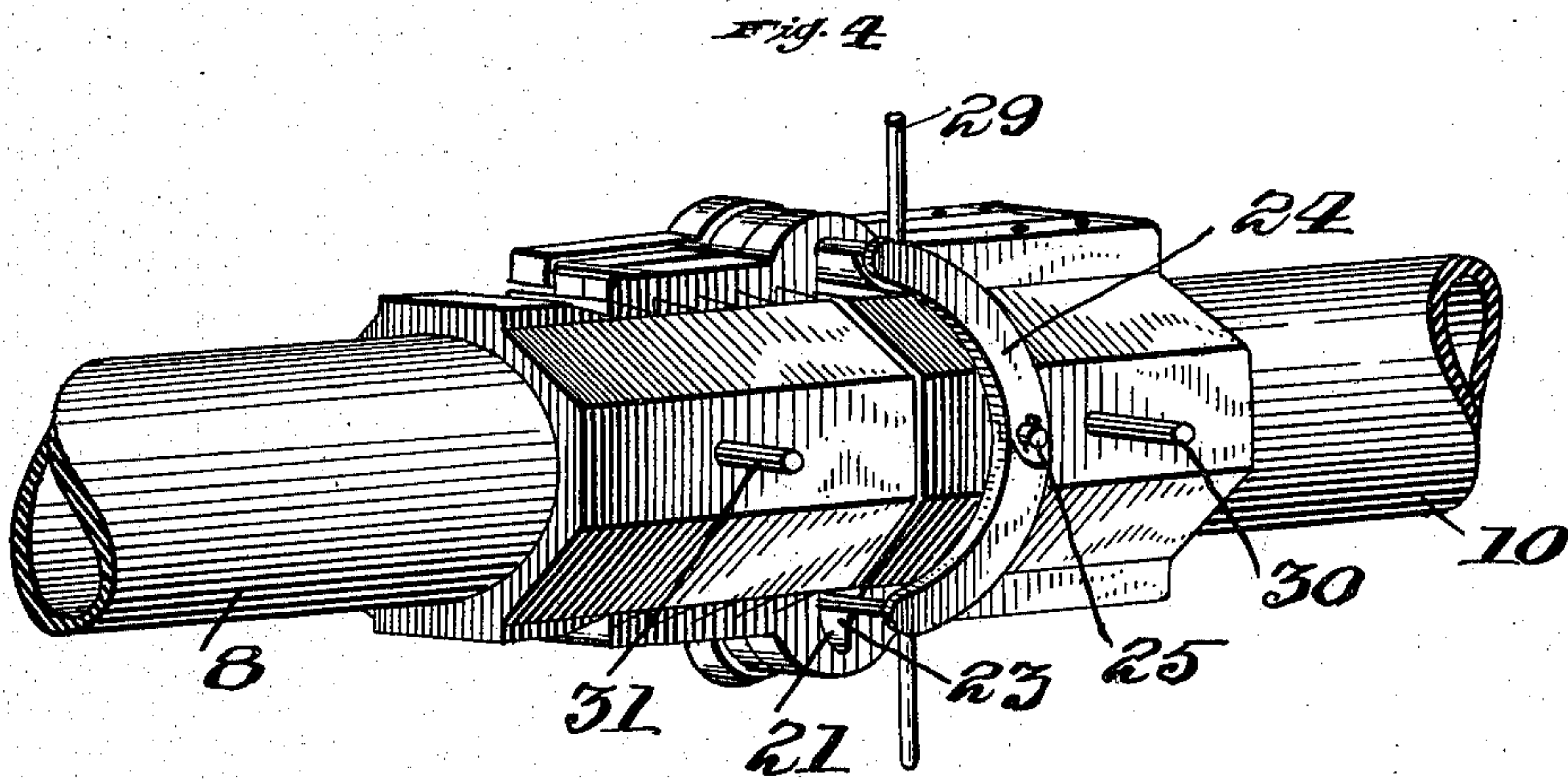
PATENTED AUG. 11, 1903.

J. WHITEFORD.
HOSE COUPLING.

APPLICATION FILED AUG. 28, 1902.

NO MODEL.

2 SHEETS—SHEET 2.



Witnesses:

P. Appleman,
A. H. Butler,

Inventor
J. Whiteford.

H. B. Smith

Att'y's

UNITED STATES PATENT OFFICE.

JAMES WHITEFORD, OF PITTSBURG, PENNSYLVANIA.

HOSE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 736,184, dated August 11, 1903.

Application filed August 28, 1902. Serial No. 121,339. (No model.)

To all whom it may concern:

Be it known that I, JAMES WHITEFORD, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Hose-Couplers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in hose-couplers, and has for its main object to construct a device whereby two sections of hose may be conveniently and securely coupled together and leakage at the coupling absolutely prevented.

The invention aims, further, to construct a coupler which while holding the two sections in secure coupled engagement may be easily operated so as to uncouple the sections when desired.

With the above and other objects in view the invention consists in the novel construction and arrangement of parts, as will be hereinafter more specifically described and then particularly pointed out in the claims, and in describing the invention in detail reference will be had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference will apply to like parts throughout the drawings, in which—

Figure 1 is a side elevation of my improved coupler, showing the same as applied to two sections of hose, coupling the same together. Fig. 2 is a central longitudinal sectional view thereof. Fig. 3 is a side elevation showing the coupler partially uncoupled with the coupling wrench or device applied in position for coupling the two sections or members of the coupler. Fig. 4 is a detail perspective view of the coupler in its applied position. Fig. 5 is a side elevation of one of the rack members carried by the female section or member of the coupler, showing the same detached from the member. Fig. 6 is an underneath plan view of the same. Fig. 7 is a detail perspective view thereof. Fig. 8 is an end view of the coupler applied in position; and Fig. 9 is a detail perspective view of a convenient form of device for applying leverage to the coupler, so as to draw the two members into coupled engagement.

To put my invention into practice, I provide two sleeve members 1 and 2, which I designate as "male" and "female" members, respectively. The male sleeve member has on its one end a tapering extension or nipple 3, while the female sleeve member is constructed in its mutually adjacent end with a tapering socket to receive the extension or nipple 3. The latter is slightly shorter than the socket, and a gasket 4, which may be of rubber or any compressible material, is placed against the inner wall of the socket and is engaged by the inner end of the extension or nipple to form a water-tight joint. It will be observed that when the inner end of the extension or nipple is in engagement with the gasket, as shown in Fig. 2, the inner end of the female sleeve member will not be in engagement with the annular shoulder 5 of the male section, but that a slight space will remain between this annular shoulder and the end of the female sleeve member in order to permit the moving of the sections toward each other as the gasket is compressed under leverage. The male sleeve member 1 is provided on two opposite faces, preferably the upper and lower faces, with teeth 6, which are adapted to interlock with teeth of rack members carried by the female sleeve member, as will later be described. At its outer end the male sleeve member has an extension 7, which receives the section 8 of the hose. This section of the hose is sleeved onto the extension and the end of the hose is received in an annular groove 9. The section 10 of the hose to be coupled is sleeved onto an extension 11 on the outer end of the female sleeve member, and the inner end of this hose-section is received in an annular groove 12 in said female sleeve member in the same manner as the hose-section 8 is secured. This female sleeve-section is provided on two opposite faces, preferably the upper and lower faces, with dovetail grooves 14, and dovetailed into these grooves are rack members 15, the extending portions of which are provided with teeth 16 to interlock with the teeth 6 on the male sleeve member. The rack members are not provided with teeth extending entirely across the width of the rack-bar, as since the rack-bar members are fastened to the female member it would be difficult to disengage from

the teeth 6, and, furthermore, a partial engagement of the teeth 16 with the teeth 6 is sufficient to lock the two members together. To this end I construct the rack-bar members in four pieces—namely, the dovetail block which fits in the groove, two outside bars 17, carrying the teeth 16, and an intermediate member 18, which has no teeth, thus forming a space between the teeth 16 on one bar 17 and the teeth 16 on the other bar 17. (See Fig. 7.) The bars 17 are riveted or otherwise suitably secured near their outer ends to the dovetailed block, and being unsecured throughout the remainder of their length the toothed ends thereof may be elevated sufficiently to disengage from the teeth 6 by means as will later be explained. The intermediate bar 18 is secured to the two outside bars 17, and the teeth 16 on one bar 17 are staggered with respect to the teeth on the other bar 17, so that the teeth of but one bar 17 will be in engagement with the teeth 6 at one time. The bars entering into the construction of the upper rack-bar member are struck upwardly, as at 19, while the bars entering into the construction of the lower rack-bar member are struck downwardly to form channels 20 21, the former having a cam-wall 22 and the latter a cam-wall 23 to be engaged by pins carried by the uncoupling device to now be described.

The uncoupling device comprises a segment 24, which is pivotally mounted intermediate of its ends on a pin or stud 25, carried by the female coupling member, and may be retained in position on said pin or stud by a key 26, passed through the pin or stud, as shown in Fig. 1. The segment 24 carries pins 27 28 near the ends, the former extending through the channel 20 and the latter extending through or into the channel 21. The segment carries near its upper end an upwardly-extending pin 29, serving as a lever to actuate the segment. When pressure is applied to the lever 29, so as to force the same rearwardly, as shown by the dotted lines in Fig. 1, the link 24 is turned upon its pivot-pin 25, fixed to the female coupling. The pin 27 of the upper end of the link engages the cam-face 22 of the upper rack member, forcing the same upwardly and out of contact with the teeth of the male coupling, and at the same time pin 28 of the lower end of the link 24 moves down the cam-face 23 of the lower rack member, forcing the same downwardly out of engagement with the lower rack of the male coupling, owing to the staggered relation of teeth 17 to teeth 16, as shown in Fig. 3 by dotted lines. This movement by the rack member is permitted by their being secured at the opposite end from the rack to the female coupling and being free throughout their length. By the disengagement of the teeth 16 and 17 from the teeth 6 of the male member the latter may be withdrawn from engagement with the female coupling.

In order that the members may be brought

into effectual coupled engagement, as shown in Figs. 1, 2, and 4, I provide means for drawing the two members together. A practical form of this means is shown in the present illustration. It embodies projecting studs or pins 30, carried at opposite sides of the female sleeve member, and like studs or pins 31, projecting from opposite sides of the male sleeve member. I may then employ a lever of the form shown in Fig. 9, embodying a yoke 32, carrying a handle 33 and having its two arms or legs bifurcated at their lower ends, as shown at 34. Pivotally connected about midway of the arms of the yoke are lever-arms 35, the outer ends of which are formed into hooks 36, as shown, to engage with the pins 30. These two arms are preferably connected together by a curved cross-bar 37. This device is placed in position on the pins after the two sections have been partially engaged with each other, as seen in Fig. 3. As the yoke is pushed forwardly in the direction of the arrow, Fig. 3, the female member will be drawn toward the male member, while the latter will be forced toward the female member, as will be apparent by reference to Fig. 3. After being drawn together to the desired position the lever device may be removed. The manner in which the coupling may be uncoupled has been fully described.

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

1. In a hose-coupler the combination with a female member having a tapering socket, a male member having a tapering, shouldered extension thereon adapted to fit within the socket of said female member, teeth upon opposite sides of the male member, rack members secured to the opposite faces of the female member to engage said teeth, said rack members having cam-recesses therein adapted to engage with locking and unlocking means for the coupling, said locking means comprising pivoted link members and levers for operating the same, substantially as described.

2. In a hose-coupling, a male and female member, hose-receiving recesses in each member, said male member bearing teeth upon two opposite faces, a tapering projection thereon adapted to enter a tapered socket in the female member, rack members secured upon opposite faces of said member, cam-faces in said rack members, means to lock and unlock the said male and female members engaging the cam-faces of said rack members, said means comprising a pair of segmental links pivoted together upon the female member of the coupling, and levers engaging the free ends thereof for operating the same, substantially as described.

3. In a coupling for hose, means to secure the same to the members of the coupling, a male member having teeth and a tapered extension thereon, a female member having rack

members thereon, and a tapered recess therein adapted to receive the extension of said male member, cam-faces on said rack members, means for locking and unlocking the coupling, comprising a pair of segmental lugs pivotally secured together on the female member, pins therein to engage the said cam-faces, and a pair of levers for actuating said means, substantially as described.

4. In a hose-coupling, means to draw the members together, and means to unlock the members, comprising rack-pieces secured to opposite faces of the female member adapted to yield outwardly from said faces, teeth upon said members staggered with relation to each other, cam-recesses in said rack members, links secured pivotally to one another and to the female member, levers secured to the other ends of said links for actuating the same, pins therein seated in said cam-recesses and adapted on movement of said link to release the teeth of the rack members from engagement with teeth on a male member.

5. A coupling for hose, comprising a female member with a tapered socket therein, a male member having a tapering extension to fit in said socket, teeth upon said male member, rack-bars carried by the female coupling, teeth upon said rack-bars staggered with relation to each other, adapted to engage the male member of the coupling to draw the same into the female member, means to effect the union of said parts, and unlocking means for the same comprising links secured together at one end and pivoted on the female member, actuating-levers therefor, pins secured to the ends of said links, and cam-recesses on the rack members seating said pins, substantially as described.

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

JAMES WHITEFORD.

Witnesses:

JOHN NOLAND,
K. H. BUTLER.