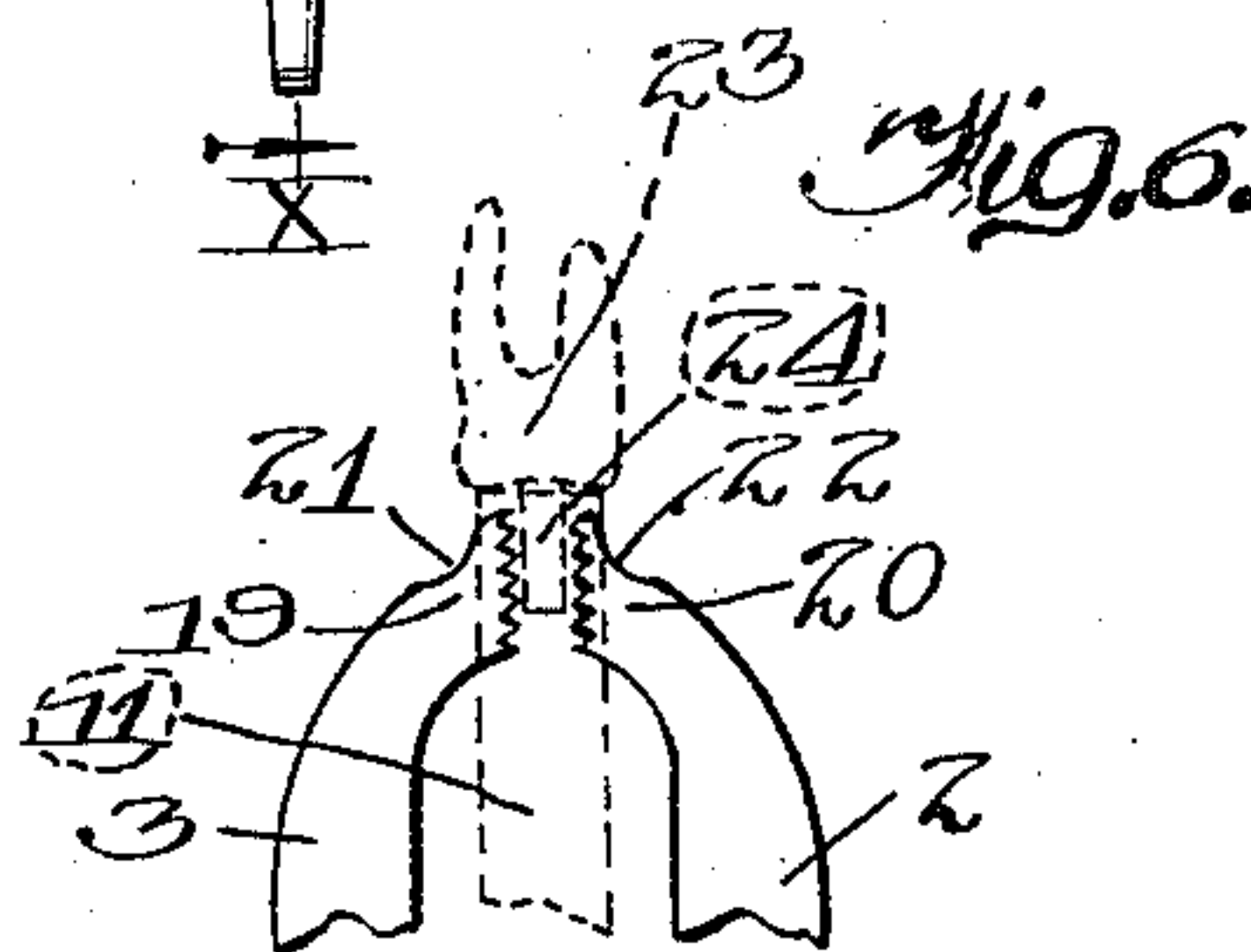
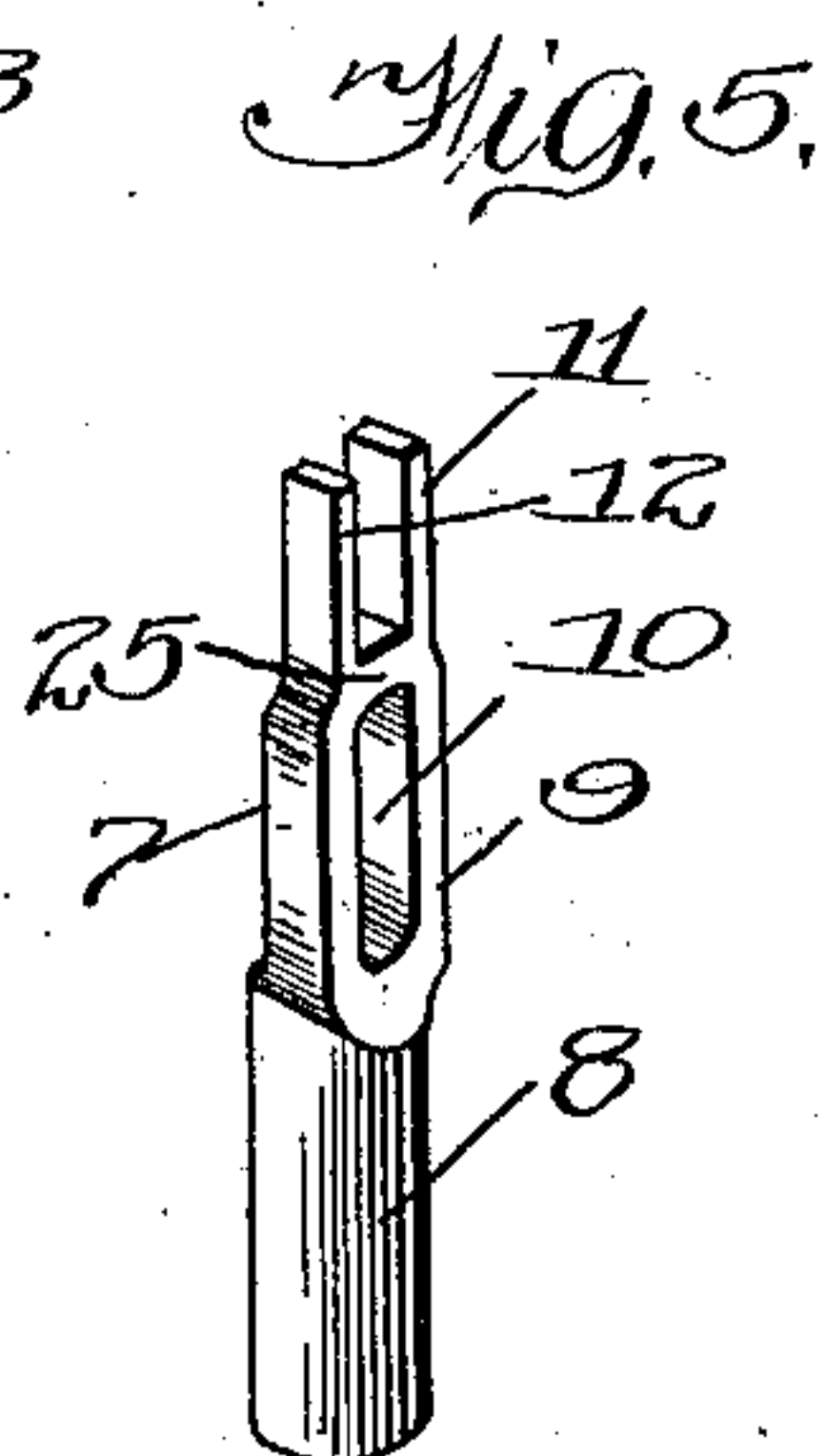
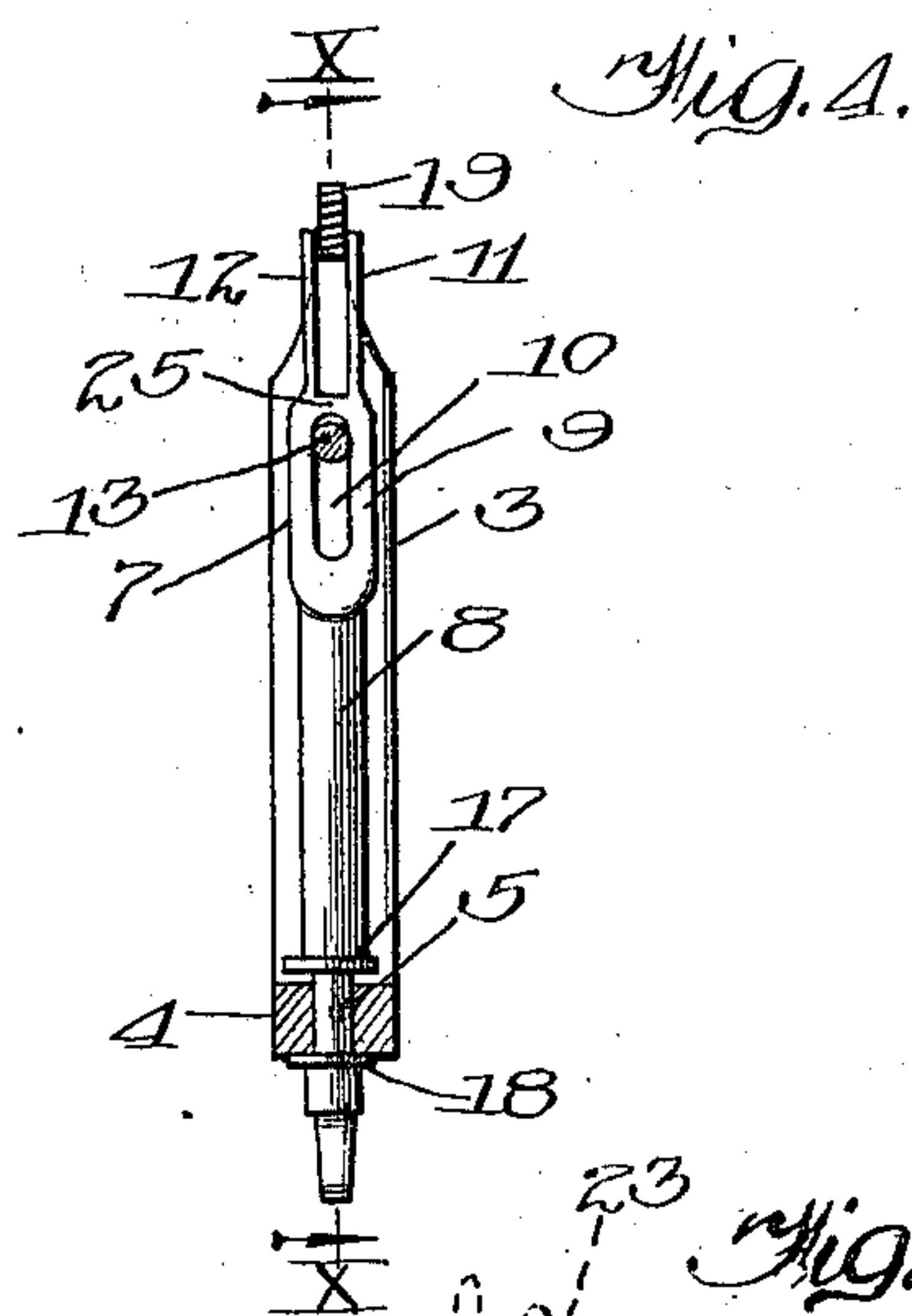
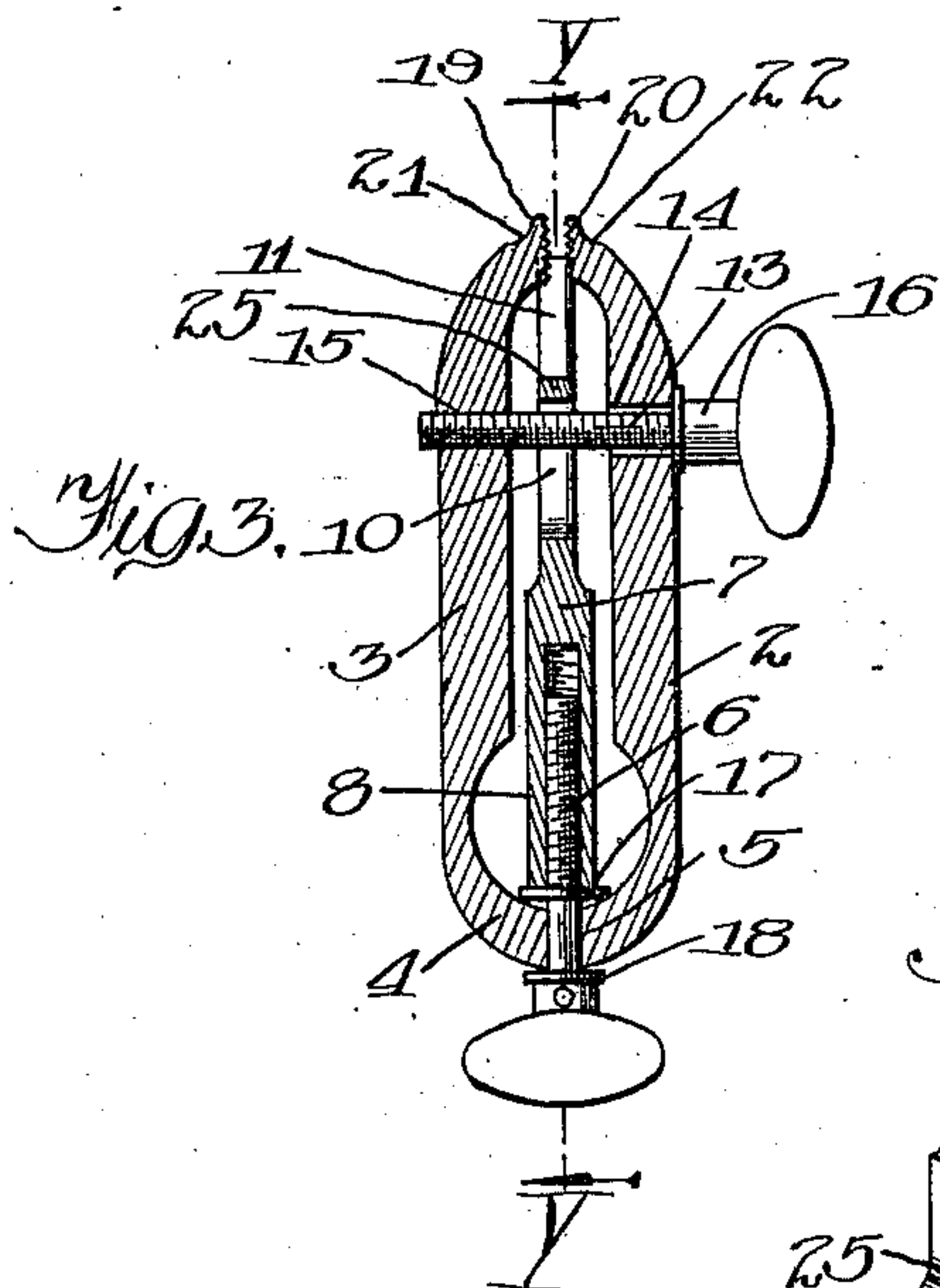
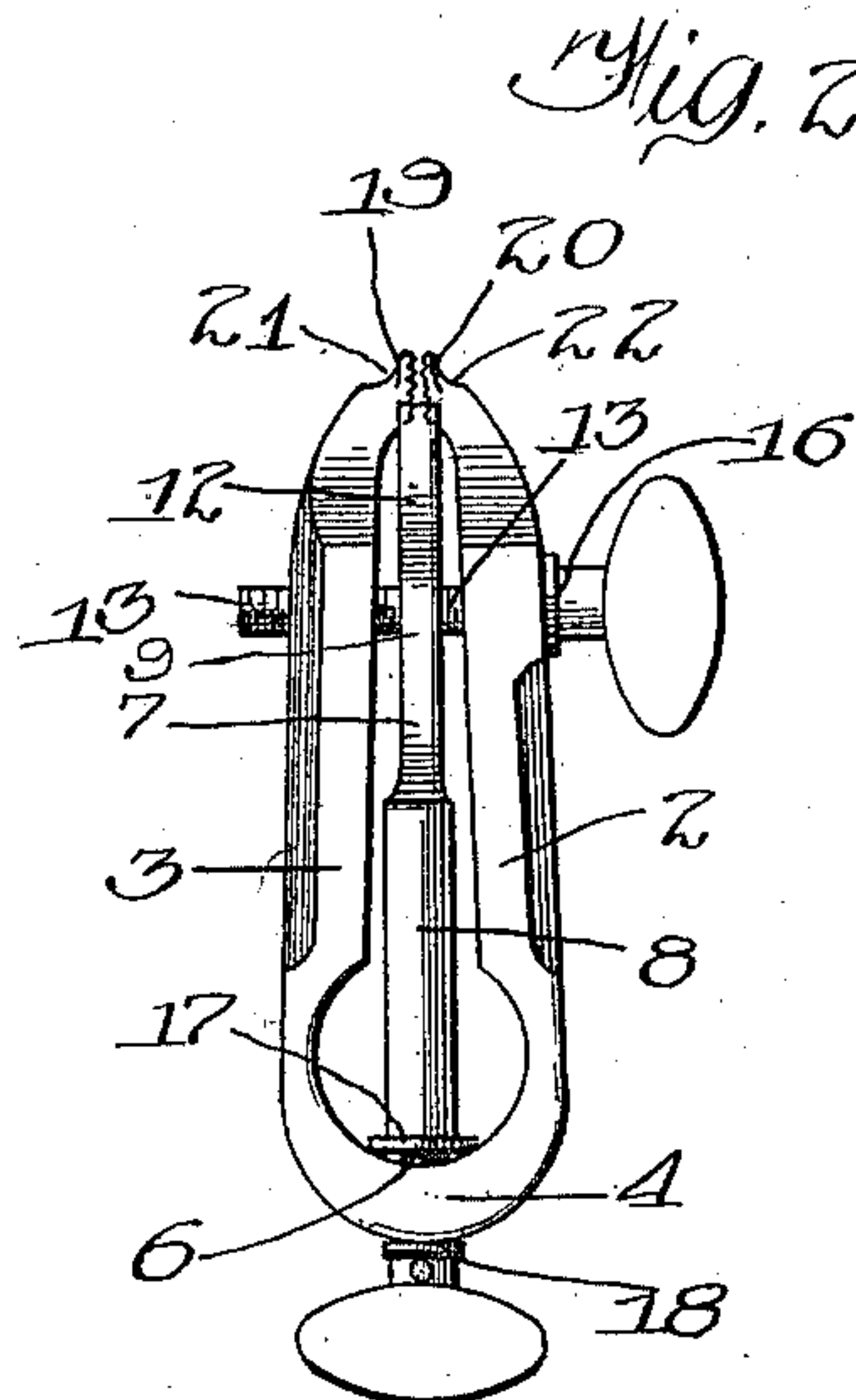
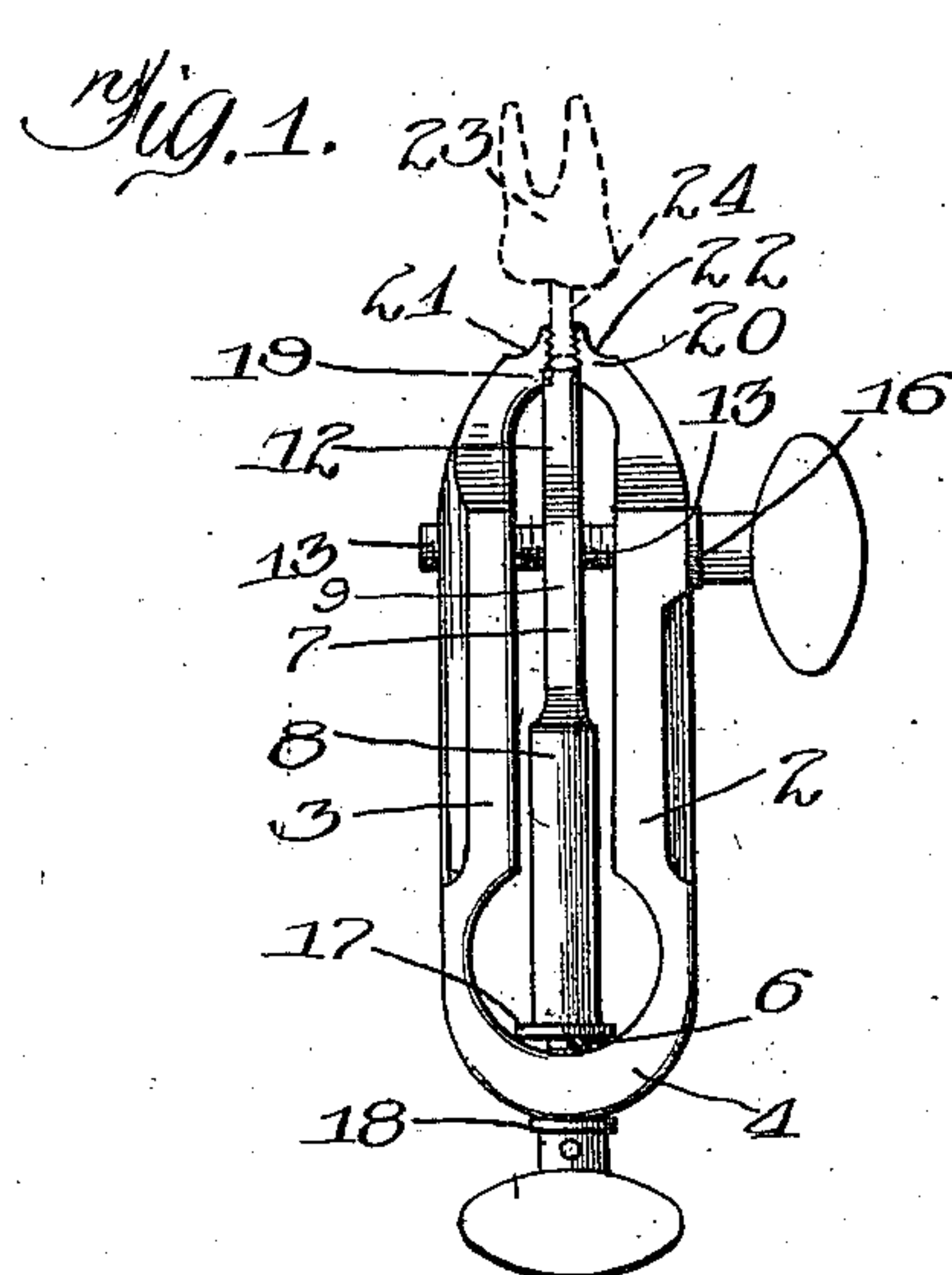


F. H. SKINNER.
DENTAL TOOL.
APPLICATION FILED JULY 1, 1907.

989,882.

Patented Apr. 18, 1911.



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UNITED STATES PATENT OFFICE.

FRANK HAMILTON SKINNER, OF CHICAGO, ILLINOIS.

DENTAL TOOL.

989,882.

Specification of Letters Patent.

Patented Apr. 18, 1911.

Application filed July 1, 1907. Serial No. 381,610.

To all whom it may concern:

Be it known that I, FRANK H. SKINNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dental Tools, of which the following is a specification.

This invention relates to dental tools and has particular reference to crown pin extractors for removing dowel pins from the roots of teeth.

The object of my invention is to provide certain improvements in tools of this class for the purpose of reducing their heretofore excessive cost and at the same time increasing their efficiency and advantages as will hereinafter be described.

With the above-named objects in view my invention consists in the several novel features of construction hereinafter described, illustrated in the drawing and particularly pointed out in the claims.

In the drawing—Figure 1 is a side elevation of a tool embodying my invention showing the jaws open and the beaks gripping the dowel pin in a tooth. Fig. 2 is a similar view showing the jaws closed. Fig. 3 is a longitudinal section taken on line X—X of Fig. 4. Fig. 4 is a section taken on line Y—Y of Fig. 3. Fig. 5 is a perspective view of the central post shown in Figs. 1 to 4. Fig. 6 is an enlarged view of the beaks of the forceps or vise-jaws broken away, together with a tooth and dowel pin being gripped by said beaks.

In the several views 2 and 3 represent a pair of vise-jaws joined by an integral spring portion 4. In the latter is an opening 5 for a screw 6 which has threaded engagement with the driving post 7. The latter consists of an interiorly threaded cylindrical portion 8, a loop 9 providing a slot 10, and prongs 11 and 12. The slot 10 is engaged by a screw 13 passing through a bore 14 in the jaw 2 and having threaded engagement with a threaded opening 15 in the jaw 3. A shoulder or flange 16 on the screw supports the screw against lengthwise movement in the jaw 2 under stress of gripping of the jaws. A pair of collars 17 and 18 secured to or shrunk on the screw 6 holds the latter against longitudinal movement relatively to the spring portion 4 of the jaws, while the post 7 is free to move between the jaws when the screw 6 is turned in the threaded portion 8. At the beaks 19 and 20 of the jaws

2 and 3 depressions 21 and 22 are formed to enable the beaks to enter a very narrow space about a dowel pin 23 in the root of a tooth 24. A cross-piece or bridge 25 arranged between the loop 9 and the tips of the prongs and very closely to the beaks, supports the prongs firmly against springing apart when forcibly brought to bear against a tooth.

The general reciprocal operation of the beaks and prongs is the same as in other devices heretofore constructed for this purpose, but in my invention are found the following advantages: The curved spring base 4, 4, for the jaws 2 and 3, not only sets the latter apart, but affords sufficient elastic movement to prevent breakage at their junction. When these jaws are moved toward each other they take a firm grip on a broken dowel pin with slight projection beyond the tooth. The above-described construction further affords an arrangement and combination which results in a compact construction, convenient manipulation, greater accessibility than heretofore into the limited space that dental tools must operate in, and the tool as a whole is less terrifying or formidable in appearance to a patient than long handled forceps and the like. The compactness of construction is attained largely by not only making the jaws in a single piece (which has been done heretofore), but by also mounting the screw against longitudinal movement relatively to the jaws and by letting the screw which advances the post enter said post and have a long or powerful threaded engagement therewithin. This gives a minimum of exposure to the post advancing screw, which exposure is substantially only the thumb piece thereof. The single piece 7 is centrally arranged with respect to the beaks and with respect to the force applied upon and at a tooth. Said piece is also a container of the advancing screw; it is also a guide cooperating with the screw 13 to support the post laterally (thereby saving special provisions for that purpose,) and in said single piece is also contained the prongs 11 and 12 and the bridge or support 25 for the prongs. In the double prong arrangements heretofore provided the general construction of the tool has not permitted the placing of a prong support near the tips of the prongs, in consequence of which the prongs have sprung apart under the strain of operation and

often caused injury to and suffering of the patient. Additional advantages of the compact constructions are: The power is applied closely to the point of resistance—the beaks—or the place where the work is done; the patient is spared the undue jarrings incidental to large and clumsy tools, and space is saved in the dentist's tool-tray. The last mentioned advantage is by no means insignificant when it is remembered that a dentist's tool-tray must be equipped with a liberal variety of instruments. In pulling a pin from the root of a tooth with the aid of my improved device, the forces are distributed equally on both sides of the axis of the screw 6, which prevents the side strains incidental to single-prong tools, and which strains tend to tilt the tool and cause it to slip and injure the patient.

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

1. In combination with the jaws, of a spring-base common to both jaws, means for moving said jaws toward each other, a post having a part adapted to rest upon the root of a tooth, and means for moving said post.

2. In combination with the jaws, of the spring-base therefor, the screw for moving the jaws toward each other, the pronged central post constructed and arranged to be guided by said screw and means for moving said post.

3. The combination with the jaws, of the wide and resilient spring-base for said jaws, the post having a pair of prongs, and the screws for actuating said jaws and post, respectively, said screws cooperating to support the post longitudinally and laterally.

4. In combination with the jaws having a spring-base common to both and means for moving said jaws relatively to each other, of the post having a part adapted to bear against the root of a tooth, and the screw having threaded engagement with said post and mounted against longitudinal movement relative to said jaws.

5. In combination with the jaws having

the recessed beaks and the operating screw 13, of the wide spring-base therefor, the screw 6 held against longitudinal movement in said base, the post having the cylindrical and interiorly threaded portion which engages said screw 6, said post having the loop 9 which engages said screw 13 and is supported laterally thereby, said post having also the prongs 11 and 12 and the bridge 25 arranged between said loop and the tips of the prongs whereby the latter are firmly supported as set forth.

6. The combination, with the jaws, of a post having prongs arranged to cooperate with said jaws, means for supporting said prongs at the beaks of the jaws as set forth, and means for moving said post.

7. The combination with the jaws joined by the spring-base 4, of the screw journaled in said base, a post having threaded engagement with said screw, said post provided with prongs arranged at the sides of said jaws, said prongs having a bridge or cross-bar 25 arranged near the extremities or beaks of the jaws, whereby said prongs are firmly supported against springing apart under the strain of operation.

8. In a dental tool for removing crown pins, the combination with a vise having spring jaws with tapered ends adapted to engage the pin and screw threaded means disposed transversely of said jaws and adapted to draw them tightly together upon the pin, of a thrust-member slidably mounted in said vise and at one end lying alongside of the pin-engaging ends of said jaws, and means engaging the other end of said thrust-member to effect a relative longitudinal movement between the latter and the vise, substantially as described.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

FRANK HAMILTON SKINNER.

Witnesses:

J. W. BECKSTROM,

M. C. ALLEN.