

No. 817,973.

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C. F. HAUSMANN.
UTERINE DILATOR.

APPLICATION FILED JUNE 6, 1904.

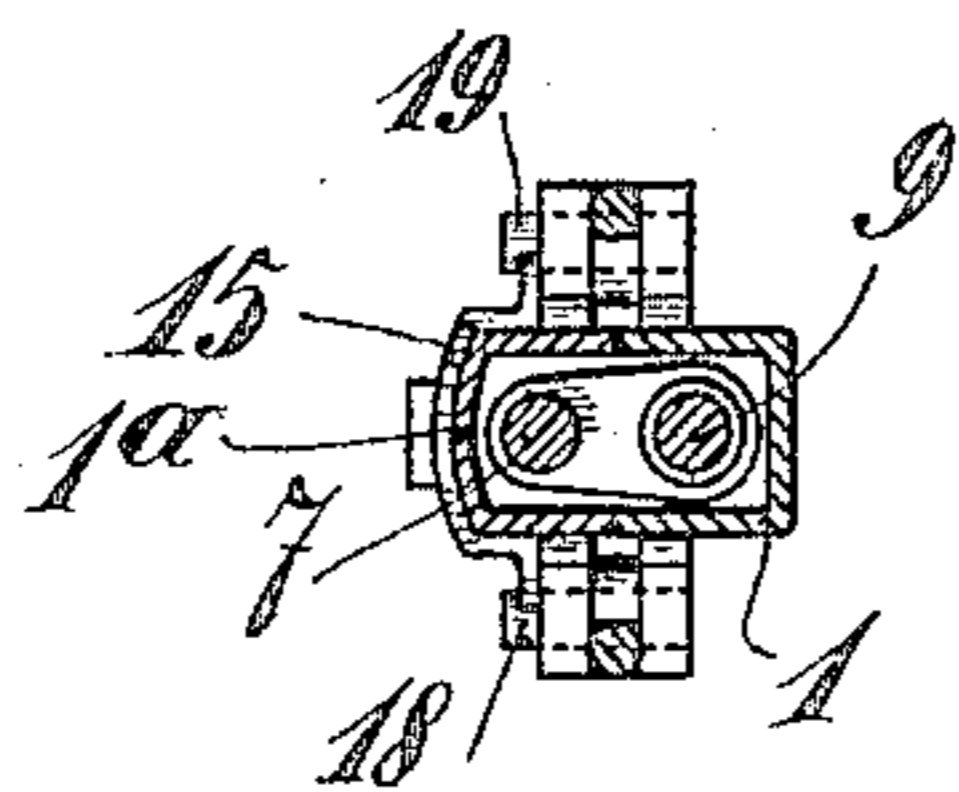
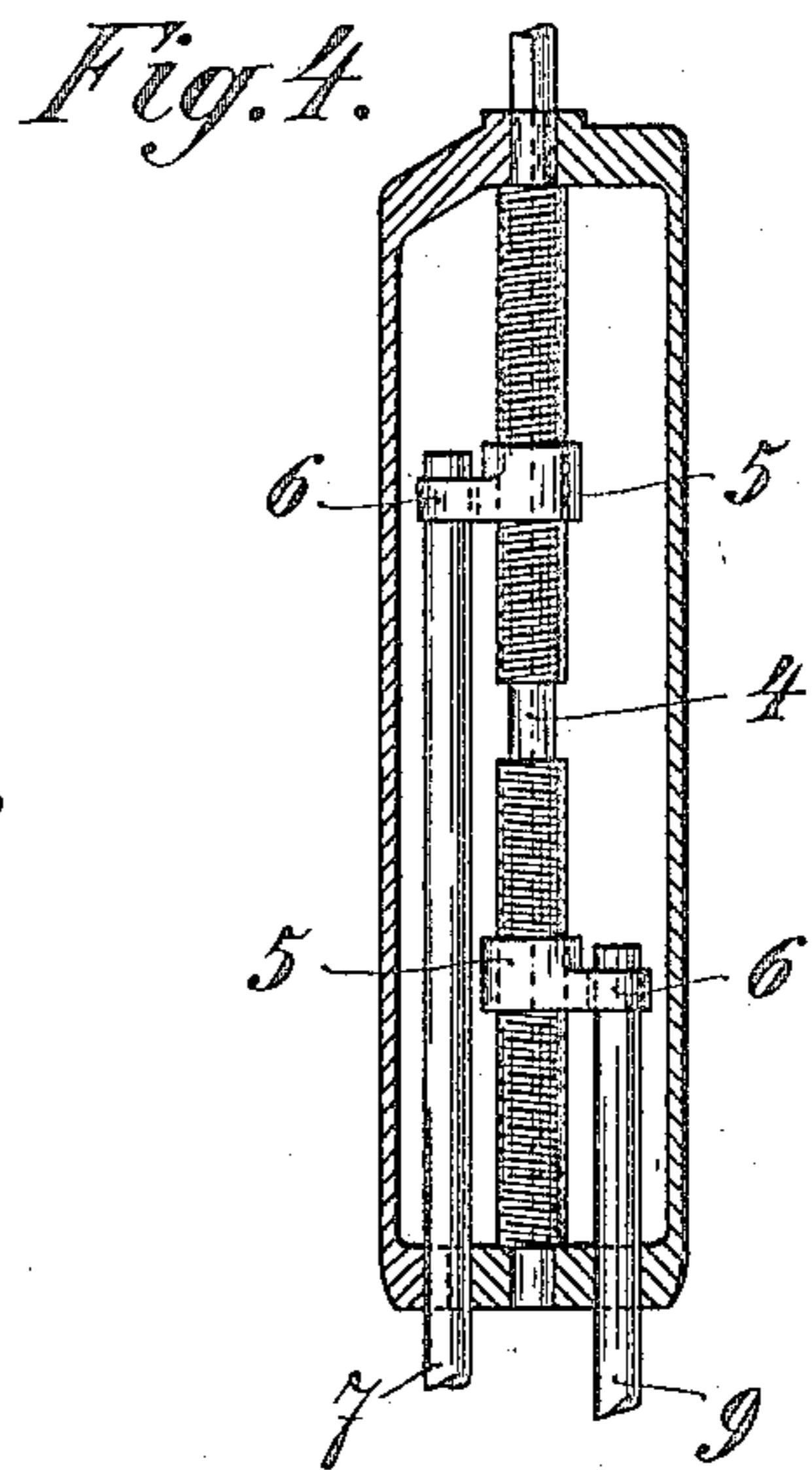
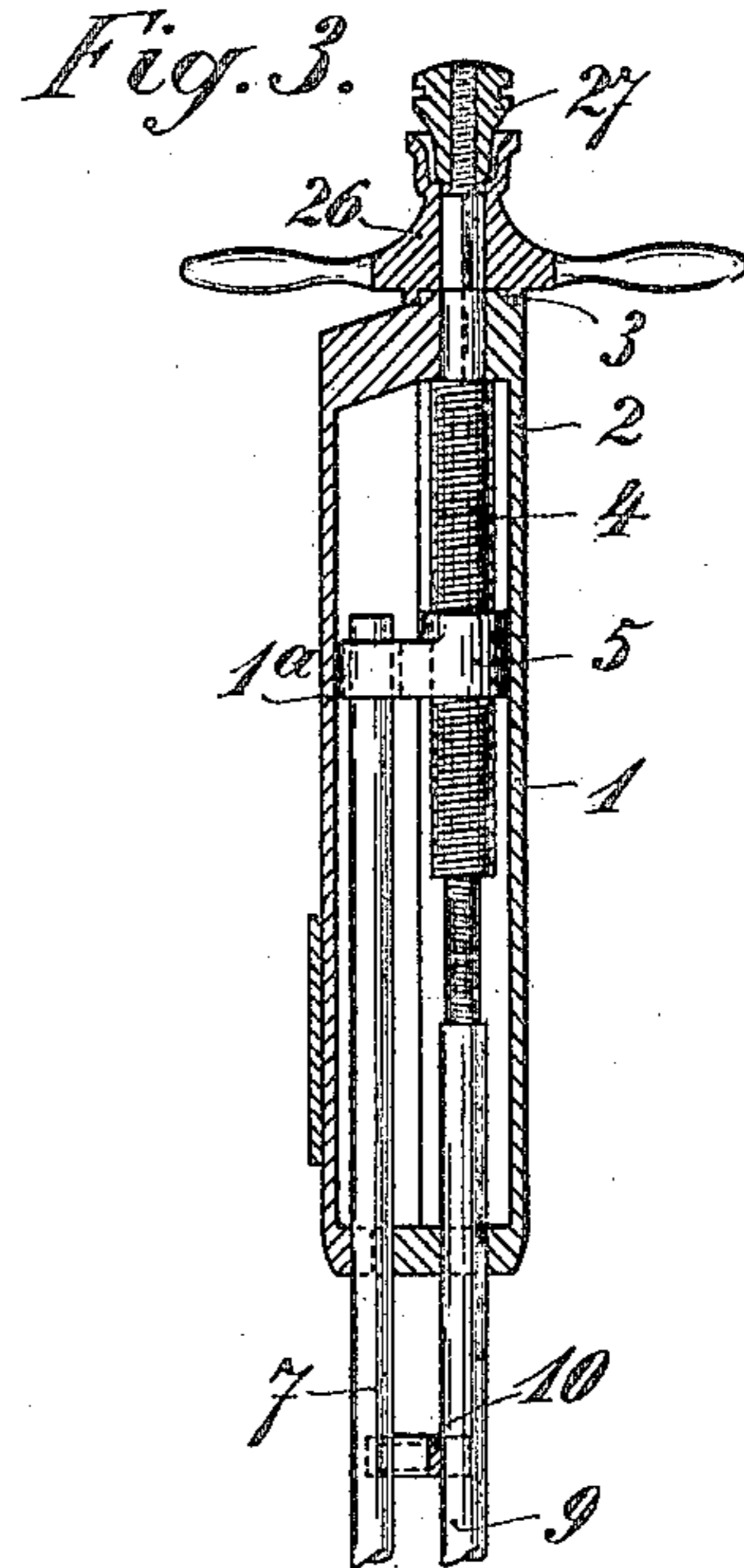
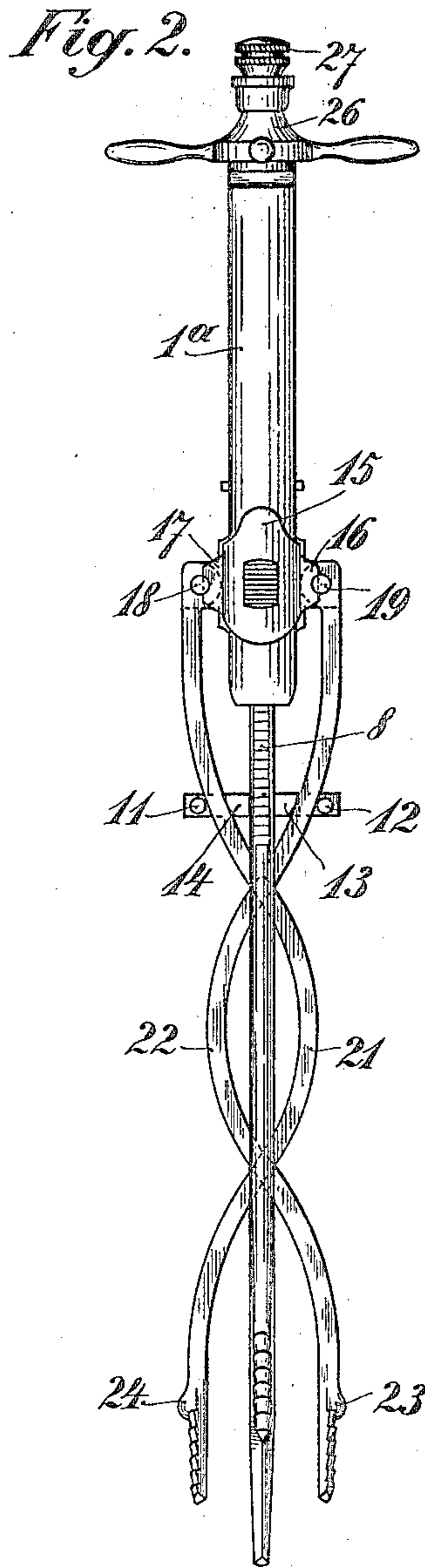
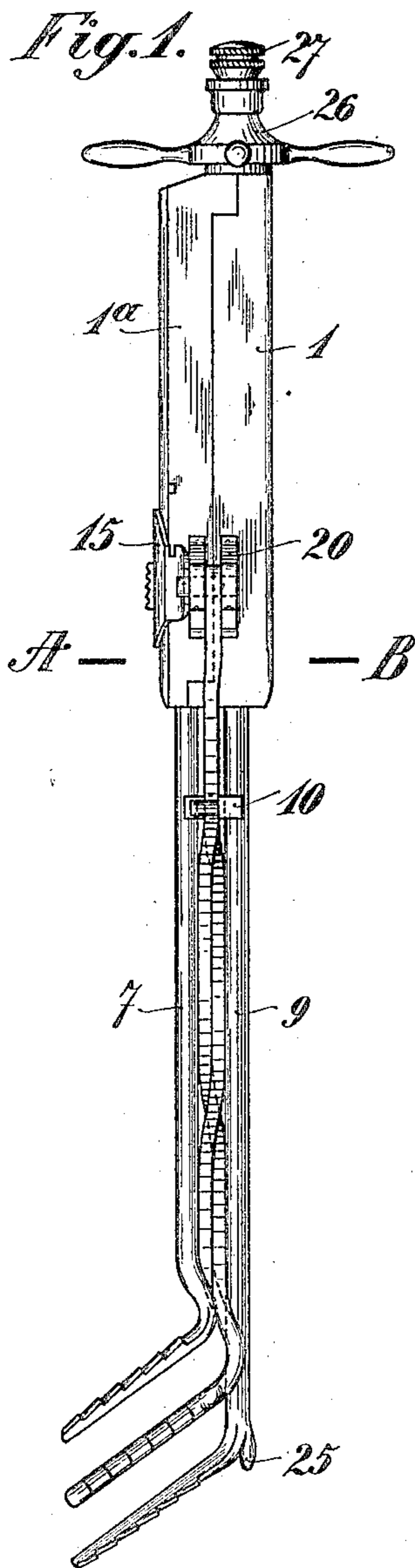


Fig. 5.

Witnesses:

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UTERINE DILATOR.

No. 817,973.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CASPAR FRIEDRICH HAUSMANN, a citizen of the Swiss Republic, residing at St. Gall, Switzerland, have invented certain new and useful Improvements in Uterine Dilators, of which the following is a specification.

This invention relates to an improved construction of uterine dilator having four blades, the ends of which are moved uniformly away from the center when a hand-wheel in connection with the handle is rotated.

The blades can be easily removed and are so connected with the handle that after the operation has been terminated the disconnection of the several parts can be effected while the instrument is in the cervical canal, from which the four blades can be removed singly.

In the accompanying drawings the improved uterine dilator is shown in Figure 1 in side view, and Fig. 2 in ground plan view. Fig. 3 is a longitudinal section through the handle. Fig. 4 shows a modification, and Fig. 5 is a section on line A B of Fig. 1.

The instrument consists of the hollow handle, which may be made in two parts 1 and 1^a, and in the rear end plate 2, of which the journal 3 of a screw-spindle 4 is located. A screw-threaded nut 5, engaging said screw-spindle 4, is provided on its upper surface with a lug 6, acting as a support for the rear end of the upper blade 7. A scale 8 is marked at a suitable place on the upper surface of said upper blade 7. The screw-spindle 4 is hollow and provided with an interior left-handed screw-thread, into which engages the screw-threaded rear end of the lower blade 9.

The upper and lower blades 7 and 9, respectively, are passed through suitable apertures in the front end plate of the handle 1, and to the upper surface of the said lower blade 9 a cross-piece 10 is fixed, having on its upper surface studs 11 and 12, one at each end, and wedges 13 and 14 close to the lower blade, to the right and left of the same. The purpose of the cross-piece will be hereinafter more fully described.

On the handle 1 a ring or slide 15 is loosely mounted, which has lateral perforated flaps or lugs 16 and 17, through which vertical pins or pivots 18 and 19, respectively, are passed, said pivots being fixed to the rear ends of the central blades 21 22. Said central blades are

flat and situated between the upper blade 7 and the lower blade 9. They are so curved that their rear ends pass between the studs 11 and wedge 14 and stud 12 and wedge 13 of the cross-piece 10, respectively. The central blades then cross twice, as shown in Fig. 2, so that their ends are situated to the right and left of the ends of the upper and lower blades. The ring or slide 15, connected to the central blades, is adjustable on the handle 1 and can be secured in the desired position thereon in any suitable manner.

To the rear-end screw-spindle 4 a hand-wheel 26 is keyed and secured in position by a nut 27.

The front ends of the blades 7, 9, 21, and 22 are bent upwardly in the known manner. As the blades can be easily removed from and inserted into the handle, blades of various shapes can be used with one and the same handle.

The instrument is used as follows: The doctor introduces the dilator with one hand into the cervical canal and with the other hand rotates the hand-wheel 26, whereby the nut 5, and consequently the upper blade 7, is moved backward and the lower blade 9 is moved forward, and simultaneously the central blades 21 and 22 are opened or moved laterally by means of the wedges 13 and 14 of the cross-piece 10, which moves forward together with the lower blade 9. The ends of all four blades are thus uniformly extended, the point of the upper blade 7 moving backward, that of the lower blade 9 moving forward, and the ends of the central blades 21 and 22 moving to the right and left, respectively. When the hand-wheel is rotated in the opposite direction, the blades make reverse movements—that is to say, the upper blade 7 moves forward, the lower blade 9 moves backward, and the central blades 21 and 22 are pressed together by the studs 11 and 12 of the cross-piece 10, so that the instrument is closed.

In the modification shown in Fig. 4 two nuts 6 engage the screw-spindle 4, which has two oppositely-threaded portions. Said nuts are connected to the upper and lower blades and are used instead of only one nut and the opposite interior threading of the spindle, as previously described.

The instrument can, if required, be taken to pieces while still in the cervical canal, so that the blades can be removed singly.

The instrument can be easily cleaned and disinfected.

I claim—

1. A uterine dilator comprising in combination a hollow handle rotatable adjusting means comprising right and left handed screw-threads located in said handle, a pair of blades operatively connected with said screw-threads respectively and located to be protruded and retracted respectively thereby longitudinally of the handle, a further pair of blades movable laterally on pivots connected to said handle and means on one of the aforesaid longitudinally-movable blades for opening and closing said laterally-movable blades substantially as described.
2. A uterine dilator comprising in combination a hollow handle, a screw-spindle located and passing through said handle, means on said screw-spindle for rotating same, a nut on said screw-spindle, an upper blade connected to said nut, a screw-thread of opposite direction within said spindle, a lower blade engaging said screw-thread, a slide or ring adjustably mounted on the handle, a pair of central blades pivoted to said slide and means on said lower blade for opening and closing said central blades substantially as described.
3. A uterine dilator comprising in combination a hollow handle, a screw-spindle located in said handle and projecting through the latter, means on the rear end of said screw-spindle for rotating same, a nut on said screw-spindle an upper blade mounted with its rear end in said nut, a screw-thread in said spindle opposite to the exterior thread thereof, a lower blade having its rear end engaging said screw-thread, a cross-piece fixed to the lower blade, studs at the ends of said cross-piece, wedges at the center of the cross-piece

to the right and left of the lower blade, a slide or ring adjustably mounted on the handle, and a pair of flat central blades pivoted with their rear ends to said slide, passing between the studs and wedges of the cross-piece respectively substantially as described.

4. A uterine dilator comprising in combination a hollow handle, a screw-spindle located in said handle and projecting through the rear end plate of the latter, a hand-wheel keyed to the rear end of said screw-spindle, a nut on said screw-spindle, an upper blade mounted with its rear end in said nut and passing through the front end plate of the handle, a scale on the upper surface of said upper blade, a left-handed screw-thread in said screw-spindle, a lower blade having its rear end engaging said screw-thread and passing through the front end plate of the handle, a cross-piece fixed to the lower blade outside the handle, studs at the ends of said cross-piece, wedges at the center of the cross-piece to the right and left of the lower blade, a slide or ring adjustably mounted on the handle, lateral lugs on said slide, and a pair of flat central blades pivoted with their rear ends to said lugs and curved so that they pass between the studs and wedges of the cross-piece respectively, said central blades crossing each other to bring their ends to the right and left of the ends of the upper and lower blades substantially as described.

In witness whereof I have signed this specification in the presence of two witnesses.

CASPAR FRIEDRICH HAUSMANN.

Witnesses:

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