

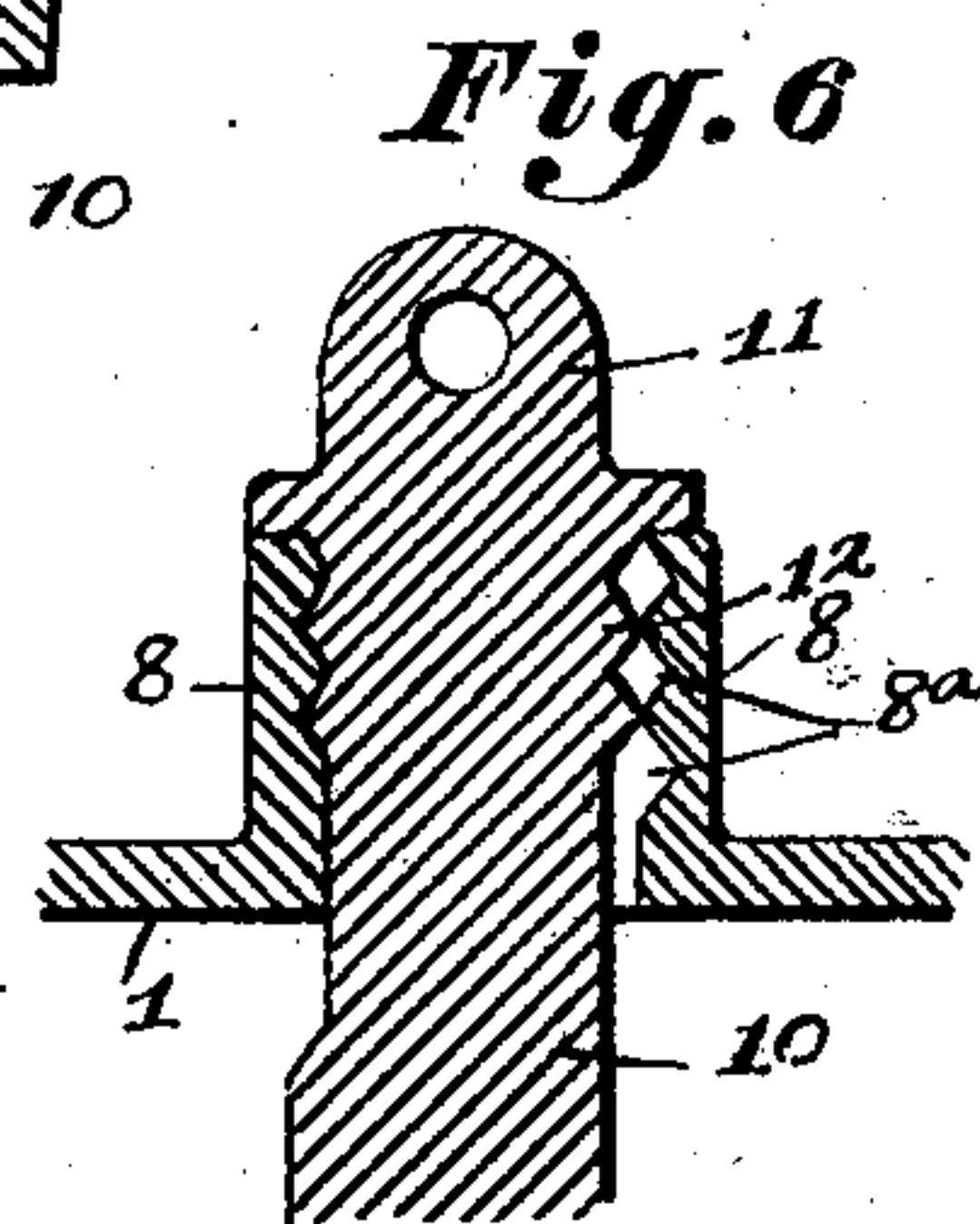
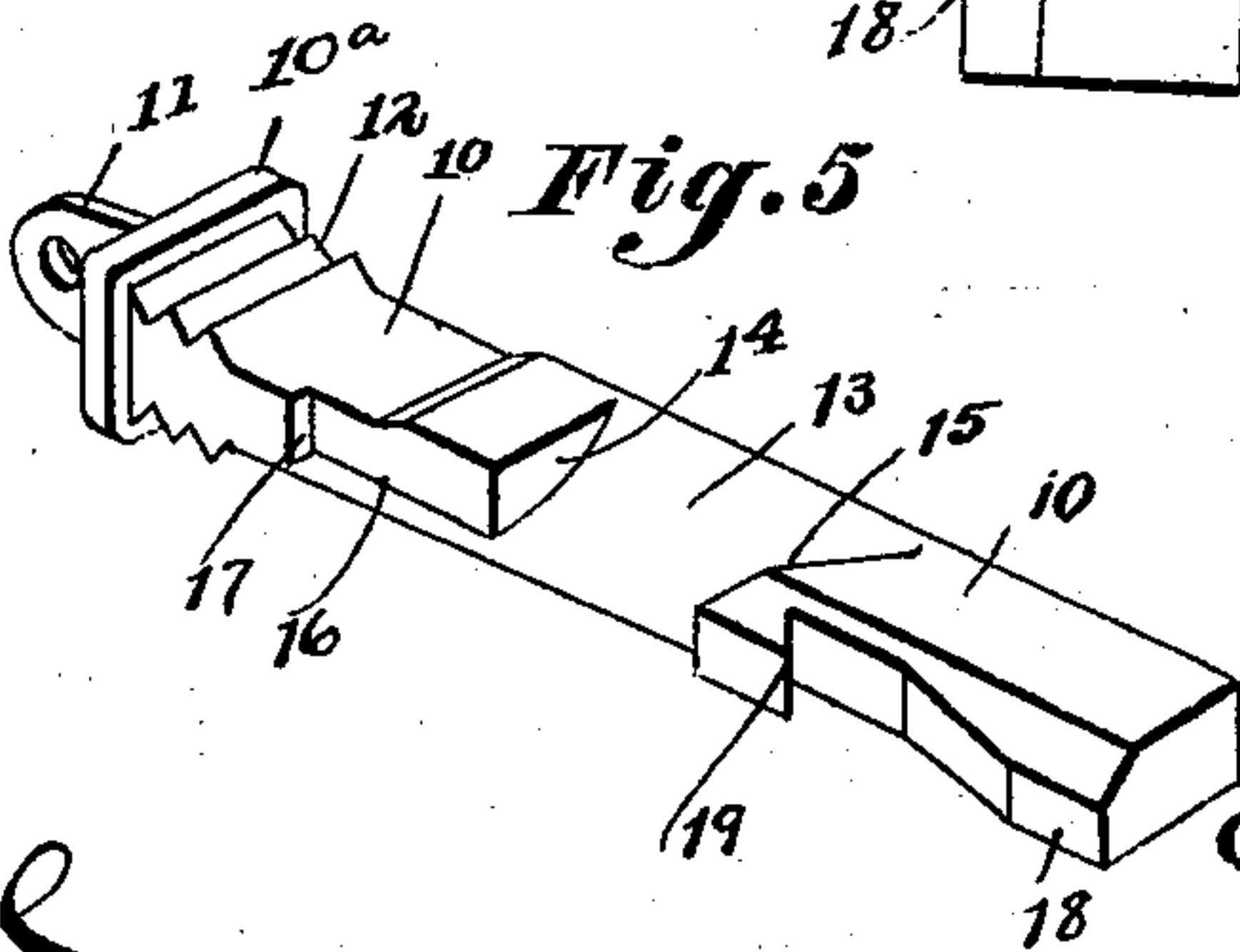
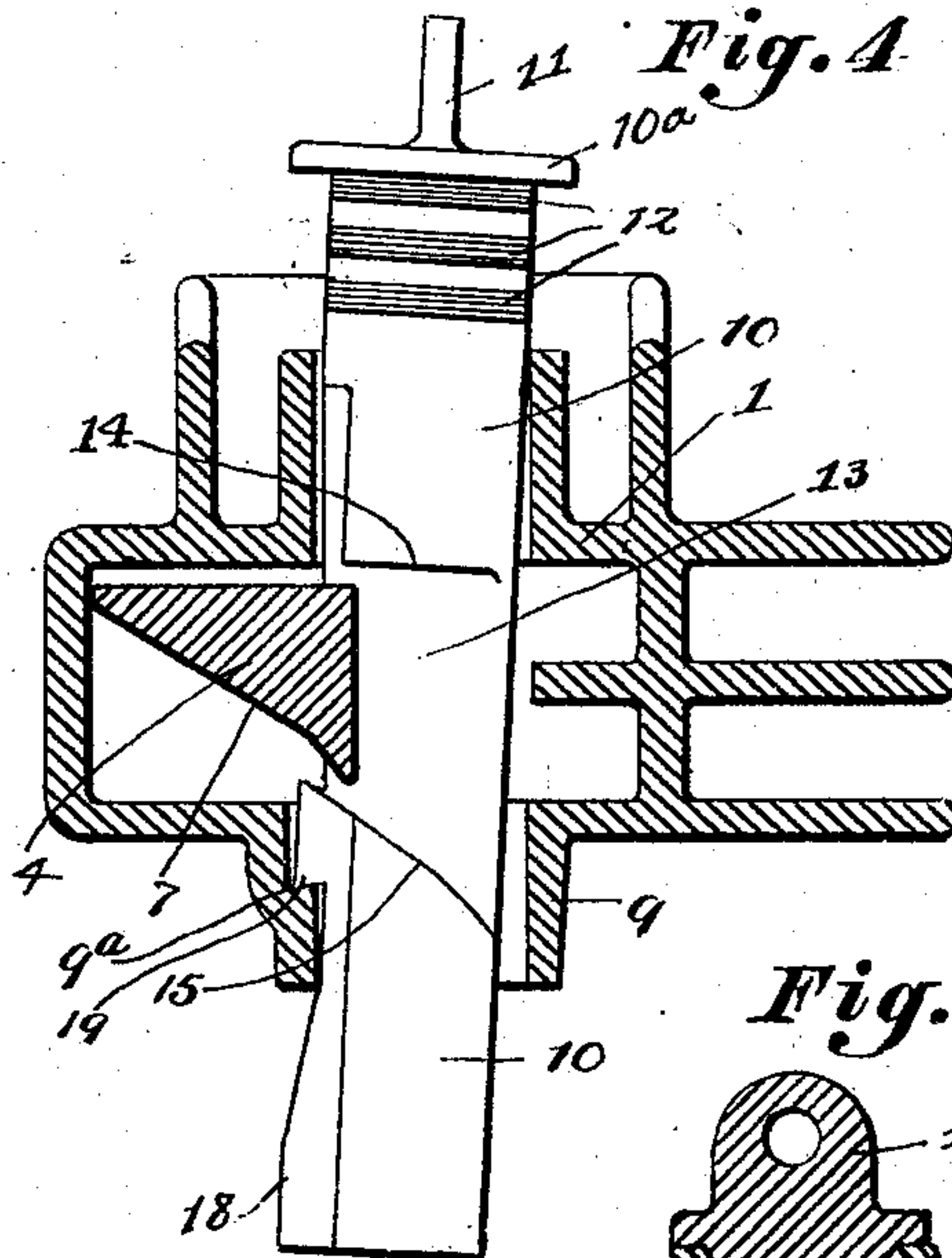
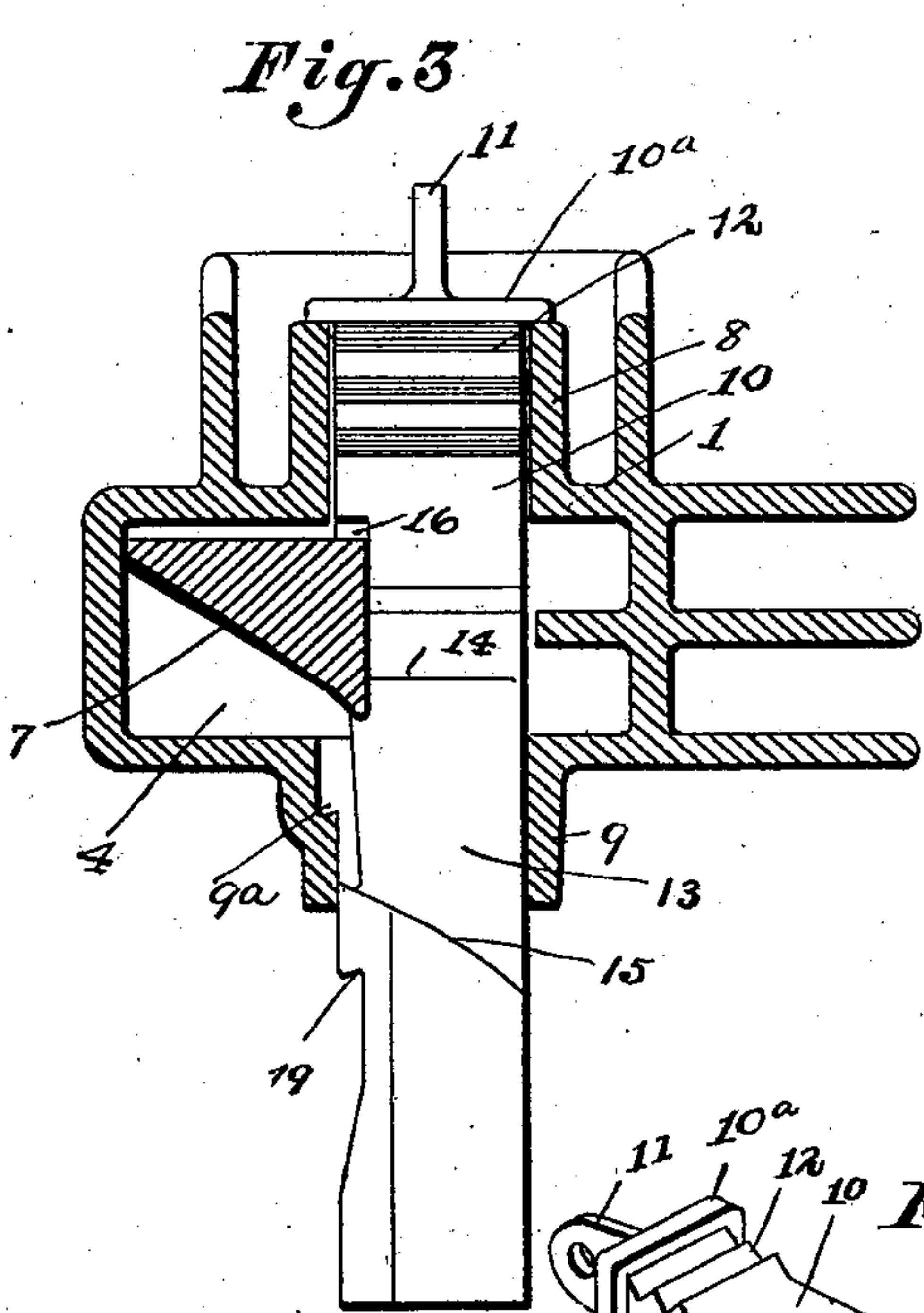
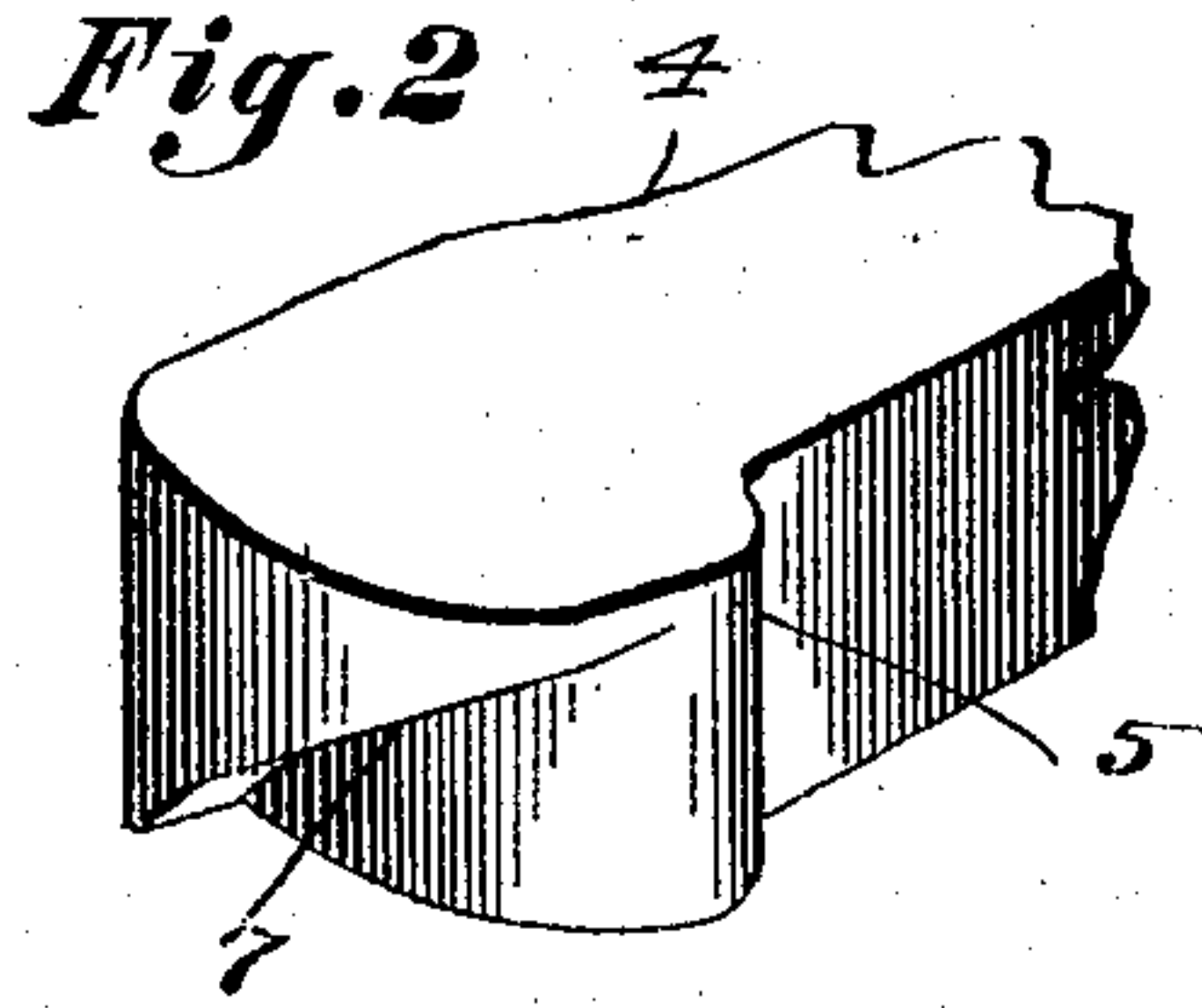
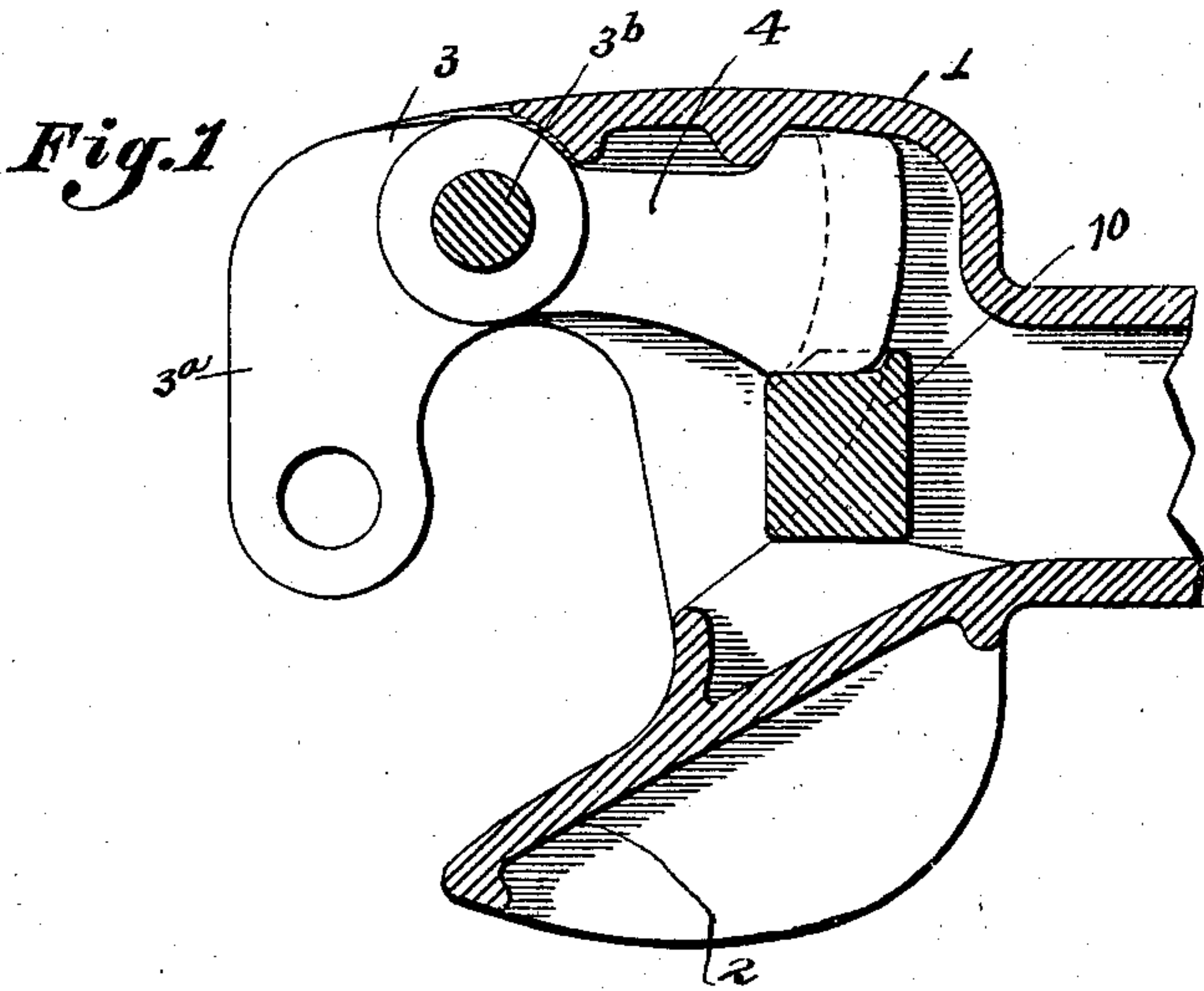
No. 695,683.

Patented Mar. 18, 1902.

E. GRAFSTROM.
CAR COUPLING.

(Application filed Nov. 13, 1899.)

(No Model.)



WITNESSES:

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 695,683, dated March 18, 1902.

Application filed November 13, 1899. Serial No. 736,733. (No model.)

To all whom it may concern:

Be it known that I, EDWARD GRAFSTROM, a citizen of Sweden, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Car-Couplings, of which the following is a specification.

My invention relates to the improvement of car-couplers; and the objects of my invention are to provide an improved car-coupling device of superior construction and arrangement of parts, to provide a lock-pin with improved means for locking and unlocking the knuckle and throwing the latter to the open position, to provide improved means for preventing any tendency of the lock-pin toward working out through its socket in the draw-head, and to produce other improvements, the details of construction and arrangement of parts of which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a transverse section of the draw-head having my improvements therein and showing the knuckle in its locked position. Fig. 2 is a detail view in perspective of the end of the knuckle-tail. Fig. 3 is a vertical section through the draw-head, taken in front of the locking-pin and showing the parts in the locked position. Fig. 4 is a similar sectional view showing the locking-pin elevated or set in position for opening the knuckle. Fig. 5 is a detail view in perspective of said locking-pin, and Fig. 6 is a central vertical section of the upper portion thereof.

Similar numerals refer to similar parts throughout the several views.

My invention has particular relation to what is known as the "Janney" type of car-coupler, and comprises a recessed or hollow draw-head 1, having the usual rigid jaw 2 at one side of its mouth and a fulcrumed coupling jaw or knuckle 3 on the opposite side thereof, which is mounted on a hinge-pin 3^b. The knuckle 3 is of an angular form and has its outer coupling portion of the ordinary shape, as indicated at 3^a. As indicated at 4, the knuckle-body is formed with an arm extension or tail, which is adapted when the knuckle is in its closed position to extend, as shown in Fig. 1, within the body of the draw-

head 1 and adjacent to one side thereof. As indicated more clearly in Fig. 2 of the drawings, I form the end or head of the knuckle arm or tail 4 with a lateral shoulder 5, which is adapted, as indicated in Fig. 1, to engage an inward projection or vertical inner-wall lug 6 of the draw-head 1. It will also be seen that this knuckle-tail 4 has its end surface provided with an inclined shoulder, which is indicated at 7. In forming the draw-head I provide the upper side thereof with a vertical neck or guide extension 8, and on the under side of said body, vertically beneath the neck 8, I provide a downwardly-extending neck. For reasons hereinafter set forth, and as illustrated more clearly in Fig 6 of the drawings, I form the inner surfaces of two opposite walls of the neck portion 8 with a plurality of transverse notches 8^a. On the inner side or surface of the lower neck extension 9 I form an offset or transverse ledge, which is indicated at 9^a.

10 represents a lock-pin, which pin is of a general oblong form and which is designed, as indicated in the drawings, to be inserted through the neck portions 8 and 9 and through the central recess of the draw-head, said pin being provided with a flanged head portion 10^a, which is adapted to engage the upper side of the neck 8, and also being provided with an upwardly-extending ear 11, with which a suitable operating-lever may be connected in any desired or well-known manner. In its upper end portion, immediately below the flanged head 10^a, the pin 10 is provided on opposite sides with projecting parallel teeth 12, which while not projecting sufficiently from the body of the pin to prevent a vertical movement of said pin through the neck 8 by engagement of said teeth with the notches 8^a may engage said notches when the pin is rocked forward or backward. The forward face of the pin near the center of the height thereof is cut away on an incline or bevel, as indicated at 13, resulting in the formation of upper and lower face shoulders 14 and 15, the latter being inclined to the right, as shown. The forward face of the pin 10 is also provided with a vertical recessed portion, (indicated at 16,) the lower end of which communicates with the beveled surface 13 and the upper end of which forms a lateral shoulder 17. On

its left side, or that side of the pin which is provided with the recess 16, the lower end portion of said pin is thickened or enlarged, as indicated at 18, and above this enlarged or thickened portion is formed in said pin a lateral recess, resulting in the production of a tooth or shoulder portion 19. In Figs. 1 and 3 of the drawings I have shown the knuckle in the locked position, and when said knuckle is in such position it will be seen that the locking-pin 10 is inserted in the draw-head until its head portion 10^a bears upon the upper end of the neck extension 8. In this position the lock-pin serves to prevent an outward-swinging movement of the tail of the knuckle, and consequently the knuckle itself, owing to the fact that the right side of said knuckle-tail in its inner end portion is held between said lock-pin and inner wall of the draw-head, in which position the lateral shoulder 5 of the knuckle-tail engages the internal projection 6 of said draw-head. The operation of unlocking the knuckle and throwing the same out consists in raising the pin 10 until the tail of the knuckle is opposite the beveled portion 13 of the pin-face, in which position said knuckle-tail is released from engagement with the recessed side 16 of the pin and is in position for being swung outward. This outward swinging or opening movement of the knuckle is accomplished through a continued lifting of the lock-pin until its beveled shoulder 15 comes into contact with the beveled end shoulder 7 of the knuckle-tail and by such contact forces the latter outward. In case it is desired to set the knuckle in an unlocked position without opening the same, it will be seen that the pin

10 may be raised until its lateral tooth or shoulder 19 is in position for dropping over into engagement with the internal shoulder 9^a of the draw-head extension 9. It is obvious that the slight lateral movement of the pin thus required for causing an engagement of the same with said shoulder 9^a may be attained through a natural tendency of the pin to incline in the direction of said internal shoulder when the lever which ordinarily is used to lift the lock-pin extends from the opposite side of the pin from that on which the shoulder 19 is formed. The pin being thus set in this position, the knuckle is free to move outward from the pull exerted by an adjoining draw-head.

In order to prevent any possibility of the lock-pin raising out of its place in the draw-head through jar or vibratory movement, I have provided the neck-notches 8^a and pin-teeth 12, the latter being adapted to engage with the former when the pin is not pulled vertically from its station in the draw-head.

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

In a car-coupling, the combination with a recessed draw-head and a fulcrumed knuckle therein, said draw-head having a neck extension 8 provided on opposing sides with internal notches, of a knuckle lock-pin adapted to extend through said neck portion, said lock-pin having formed on opposing sides thereof tooth projections, substantially as specified.

EDWARD GRAFSTROM.

In presence of—

C. C. SHEPHERD,
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