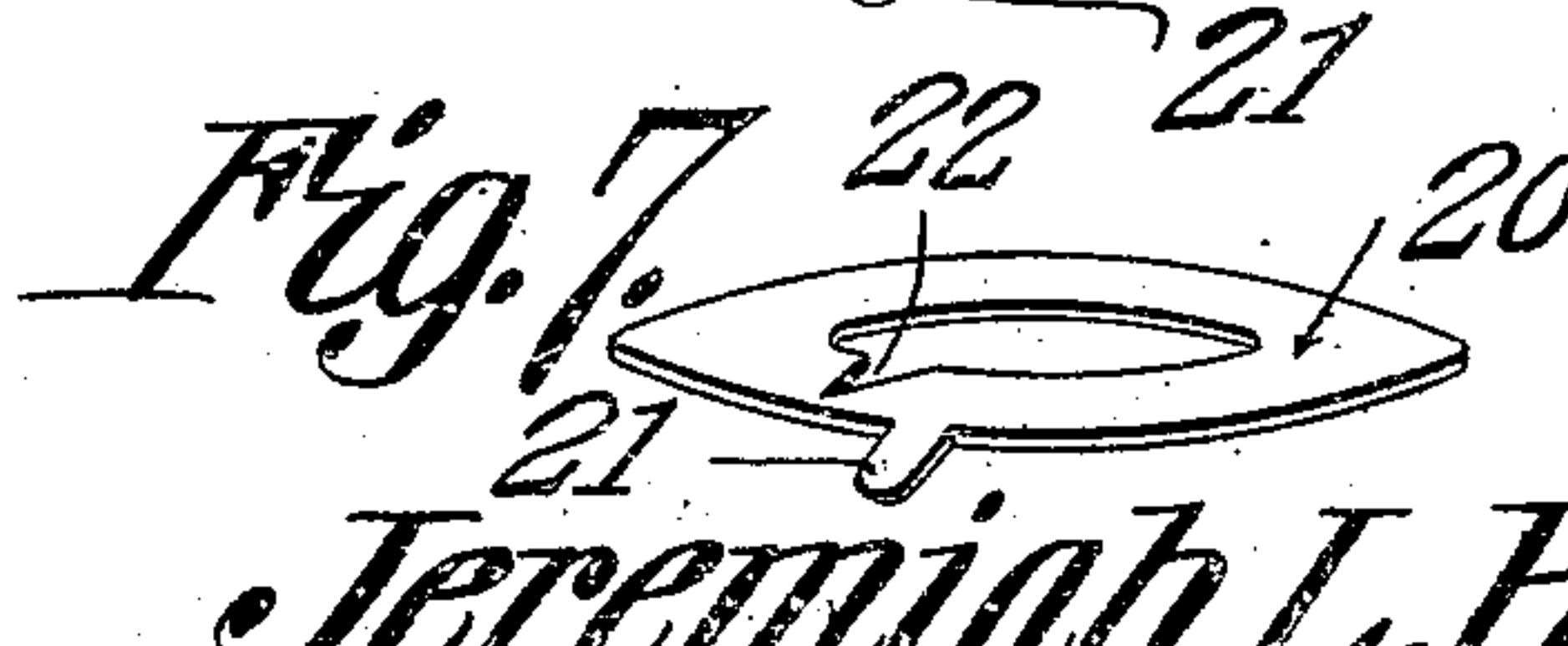
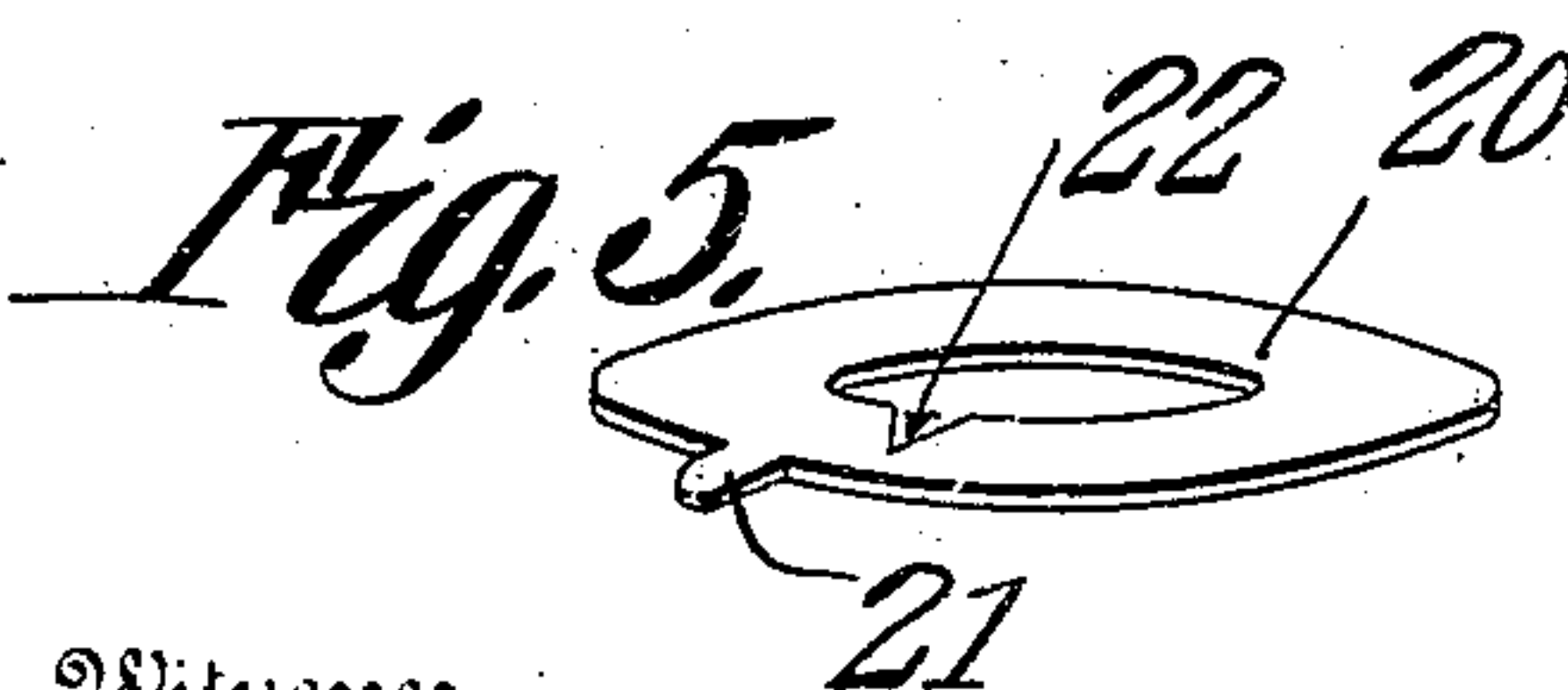
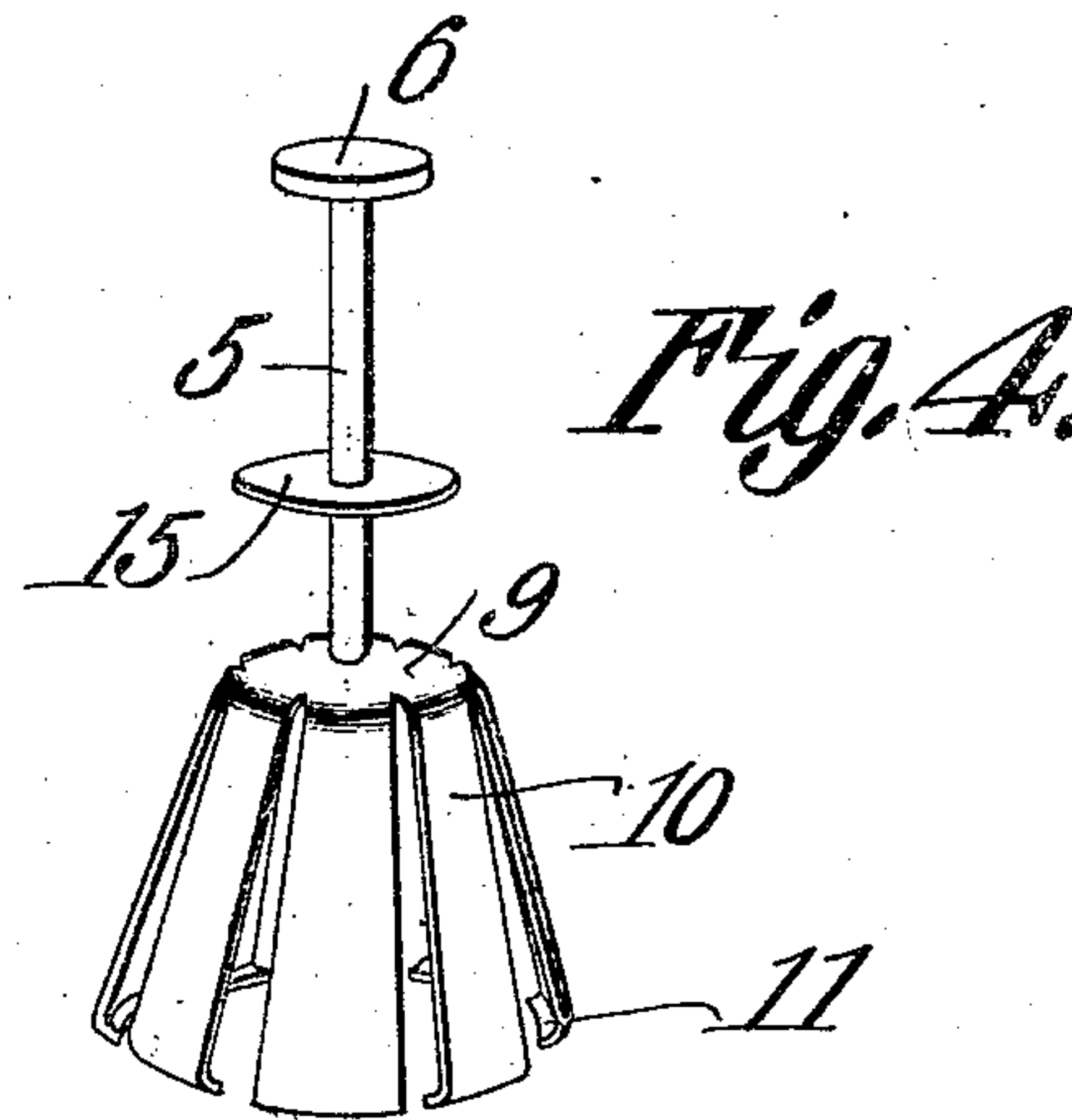
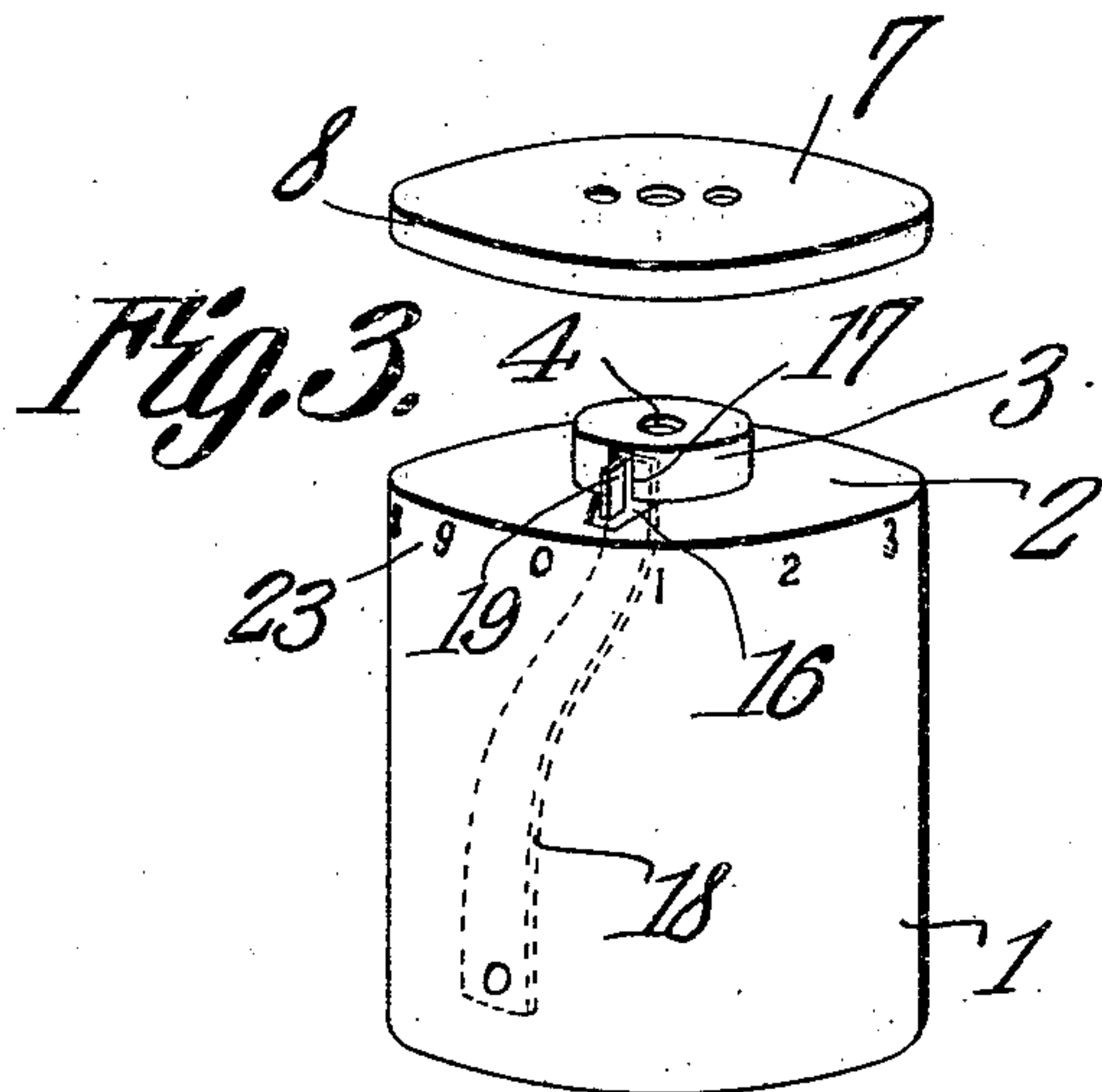
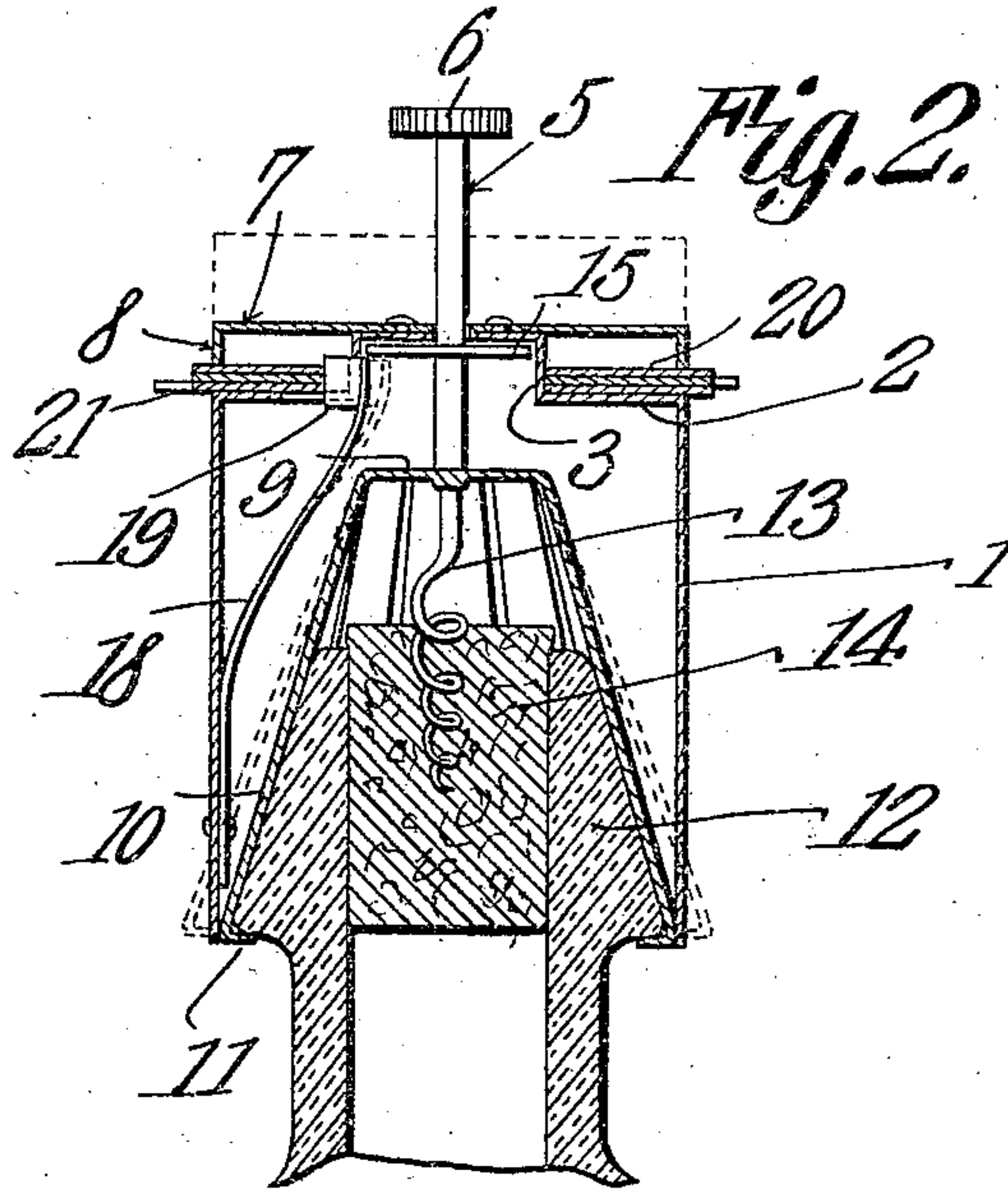
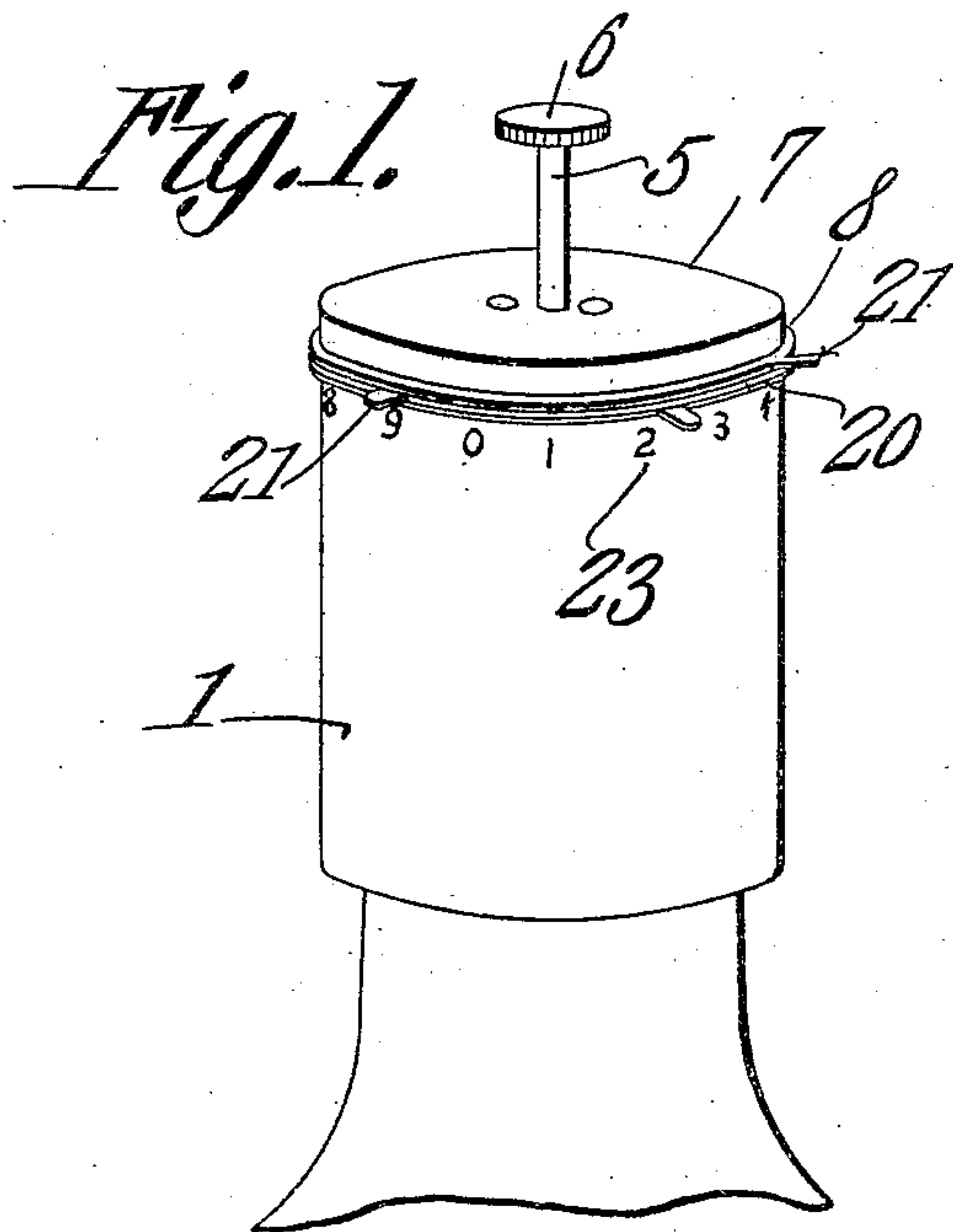


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STOPPER LOCK FOR BOTTLES.
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955,099.

Patented Apr. 12, 1910.



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UNITED STATES PATENT OFFICE.

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STOPPER-LOCK FOR BOTTLES.

955,099.

Specification of Letters Patent.

Patented Apr. 12, 1910.

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To all whom it may concern:

Be it known that I, JEREMIAH L. PETERS, a citizen of the United States, residing at Allentown, in the county of Lehigh and State of Pennsylvania, have invented a new and useful Stopper-Lock for Bottles, of which the following is a specification.

This invention relates to improvements in stopper locks for bottles and is designed to provide a simple form of stopper lock inclosing the mouth of the bottle and coacting with the usual enlargement about the cork-receiving end of the bottle neck to hold the device in place while there is provided a simple form of permutation lock which may be very cheaply made and at the same time is very efficient for the purpose. In addition to the locking feature, the stopper lock includes a corkscrew designed to remove the cork if so desired when the lock is detached from the bottle neck.

With a device of this character valuable or dangerous fluids may be effectually sealed against access whether malicious or otherwise, the contents of the bottle being accessible only to the person knowing the combination of the lock.

The structure may be used again and again as desired and may be so cheaply constructed as to be available for use for all purposes where it is desirable to prevent access to the contents of a bottle except by duly authorized persons.

The invention will be best understood from a consideration of the following detail description taken in connection with the accompanying drawings forming a part of this specification, in which drawings,

Figure 1 is a perspective view of the stopper lock as applied to a bottle, a portion only of the latter being shown. Fig. 2 is a vertical longitudinal section through the device of Fig. 1 with parts shown in elevation. Fig. 3 is a perspective view of certain parts of the lock in detached relation. Fig. 4 is a perspective view of one of the locking elements designed to directly engage the bottle neck. Figs. 5, 6 and 7 are perspective views of the permutation elements or tumblers.

Referring to the drawings there is shown a cylinder 1 constituting the casing of the lock and this cylinder is closed at one end by a head 2 having an axial projection 3 extending outward from the head, this projection being hollow. Centrally through the projection 3 there is formed a perforation 4

and through this perforation there extends a rod 5 terminating at the outer end outside the drum in a head 6.

Applied to the extension 3 is a cap piece 7 of the same diameter as the drum 1 and provided on one face with a peripheral circumferential flange 8 which latter when the cover member 7 is applied to the extension 3 projects toward the head 2 but is of such short length as to leave an annular space between the edge of the flange 8 and the corresponding end of the casing 1.

The stem 5 at the end remote from the head 6 carries a disk 9 from the edge of which projects a conical series of spring fingers 10 spaced apart and terminating at the free ends in inturned members 11. The fingers 10 though shown as in conical series in the drawings need not be so shaped but may be otherwise shaped but should have a tendency to spring apart at their free ends and this tendency to spring apart should be sufficiently pronounced to carry the inturned ends 11 apart to an extent greater than the greatest diameter of the thickened end of a bottle neck such, for instance, as shown at 12 in Fig. 2. Furthermore, the normal positions of the fingers 10 at their free ends are such as to describe a figure of greater diameter than the diameter of the casing 1 so that when the spring fingers 10 are housed within the casing they will be sprung toward each other against their normal tendency and this springing of the fingers together is sufficient to carry the inturned ends 11 under the ledge formed by the inner end of the enlarged portion 12 of the bottle neck, the casing 1 being of sufficient internal diameter to house the free ends of the spring members 11 when the ends 11 have been sprung under the shoulder of the enlarged portion of the bottle neck.

Secured to the end of the stem 5 where the latter carries the disk 9 or secured to the said disk at the center thereof is a corkscrew 13 extending centrally into the space inclosed by the spring fingers 10 and the corkscrew is of such length as to enter a cork such as indicated at 14 when in the bottle neck and the spring fingers are in operative relation to said bottle neck. This corkscrew may serve a double function. One of the functions of the corkscrew is that of an ordinary corkscrew so that when the spring fingers are released from engagement with the bottle neck a pull on the stem 5 will

cause the extraction of the cork. Another function of the corkscrew is to prevent the cork from being forced out of the bottle by internal pressure when the locking device 5 is in place. Carried by the stem 5 is another disk 15 spaced from the disk 9 and of such size as to move freely though snugly into the interior of the enlargement 3 when the casing 1 is moved along the spring fingers 10 until its lower open end is opposite the inturned ends 11 of these fingers.

Formed in the head 2 is a radial slot 16 having a continuation 17 in the adjacent wall of the extension 3.

15 Secured to the inner wall of the casing 1 near the open end thereof is a spring 18 preferably in the form of a leaf spring and this spring extends into the projection 3 but not quite to the end wall thereof. The 20 free end of the spring 18 carries a tooth 19 capable of being moved into and out of the projection 3 and when moved outwardly extending into the slot 16. The normal tendency of the spring 18 is to move the tooth 25 19 outwardly, and when so moved outwardly this spring at its upper end is out of the path of the disk 15, but when the free end of the spring is moved inwardly then it is in the path of the disk 15, but the latter 30 is sufficiently thin so that when housed in the projection or extension 3 in engagement with the outer end thereof the free end of the spring 18, when the tooth 19 is moved inwardly toward the stem 5 against the 35 normal tendency of the spring 18, will then be in the path of movement of the disk 15 toward the open end of the casing 1.

Located in the space between the head 2 and the flange 8 are a number of disk-like 40 tumblers 20 each with a central opening of such size as to fit freely but snugly about the extension 3 and to turn about the same as an axis and each one of these tumblers is provided with a manipulating handle 21 extending radially therefrom. Furthermore, 45 each tumbler 20 is provided with a taper slot 22 extending radially from the central opening of the tumbler toward the periphery thereof, the direction of the keeper being 50 toward the said periphery. The length of each slot 22 is sufficient to accommodate the tooth 19 in its greatest extent of outward movement under the normal action of the spring 18 and the taper or shape of each slot 55 is such that when a tumbler 20 is turned about its axis the side or taper walls of the slot then engaging the tooth 19 will force the latter into the extension 3 against the normal tendency of the spring 18.

60 In the structure shown in the drawings three tumblers 20 are employed and in each the relative position of the slot 22 and the handle 21 is different from that of the others.

65 On the outer wall of the casing 1 in close

relation to the path of the handles 21 are indications 23 which may be in the form of numbers or letters or any arbitrary symbols desired.

The handles 21 may all be of the same 70 length or may be of different lengths to facilitate turning of the tumblers 20 about their axes, and even though a number of locks be provided with tumblers 20 with the groups of three alike although the indi- 75 vidual members be different as to the relation of the slots 22 and handles 21, each lock will have a different combination. By changing the positions of the recesses 22 with relation to the handle 21 in the differ- 80 ent tumblers employed a very great number of combinations may be had.

When it is desired to apply the lock to a bottle the handles 21 are brought into coincidence with the proper symbols 23 and 85 when this is done then all the recesses 22 will coincide and match the tooth 19 so that the latter is moved outwardly under the normal action of the spring 18. Under these conditions the stem 5 may be pushed along the 90 longitudinal axis of the casing 1 until the spring fingers 10 are projected beyond the open end of the casing and expand because of their normal expansive tendency. In this position of the parts the interior diameter 95 of the series of fingers 10 at the inturned ends 11 is greater than the diameter of the neck 12 of the bottle and consequently the device may be applied to the bottle neck and by turning the stem 5 the corkscrew 13 may 100 be caused to be inserted into the cork 14. Now the casing 1 is moved toward the body of the bottle and will force the spring fingers inwardly until the ends 11 are brought under the ledge at the inner end of 105 the thickened portion of the neck 12. When the open end of the casing 1 has come coincident with the inturned ends 11 of the fingers 10 then the disk 15 has become seated against the outer wall of the extension 3. 110 Now on turning one or more or all of the tumblers 20 the taper walls of the recesses 22 engage the tooth 19 and force the spring 18 inwardly until it under-rides the disk 15 and this free end of the spring 18 is held 115 in such position by the engagement of the walls of the inner opening through the tumblers 20 which walls snugly engage the outer wall of the extension 3 so that the tooth 19 cannot be moved into the slot 16 or through 120 the slot 17 and consequently the free end of the spring 18 is locked in the path of the disk 15 so that the casing 1 can no longer be moved with relation to the spring fingers 10. 125

The casing 1 cannot move away from the bottle neck because of the engagement of the inturned ends 11 of the spring fingers 10 nor can it move toward the body of the bottle because of the engagement of the cork- 130

screw 13 with the cork 14 and also because of the engagement of the spring fingers 10 with the side walls of the enlarged portion 12 of the bottle neck. The device is thus held firmly in place upon a bottle neck and can only be removed when the tumblers 20 are again brought into the proper position to permit the tooth 19 to move outwardly under the normal action of the spring 18.

When it is desired to remove the bottle lock then the tumblers are moved as stated until the spring finger 19 is permitted to move into the recesses 22 and so bring the free end of the spring 18 out of the path of the disk 15. Now the casing 1 may be moved in the longitudinal axis of the bottle away from the body thereof and on being so moved the spring fingers 10 will expand under their normal tendency while the casing will also move along the stem 5 until arrested by the head 6.

By grasping the casing and because of the engagement of the corkscrew 13 with the cork 14 the latter may be readily withdrawn from the bottle in the same manner as though an ordinary corkscrew were so used.

It will be observed that the structure is made of but few parts and yet constitutes an efficient lock for the purpose and one which cannot be readily opened except by a person familiar with the combination.

The lock is particularly valuable for the preservation of costly or cherished liquors and for preventing access to bottles containing poisons or other harmful liquids or solids.

What is claimed is:—

1. A stopper lock for bottles, comprising a casing having one end closed and there provided with a central extension, a series of elastic arms provided with means for engaging behind the enlarged end of a bottle neck, said arms having a manipulating stem passing through the central extension

of the casing and carrying a disk adapted to enter the said extension when the casing is moved in one direction along the elastic arms, a cap member on the casing extension, permutation tumblers between the cap and the like end of the casing, and a spring member carried by the casing and adapted to engage the disk on the stem when in the extension and having means coacting with the tumblers to cause the locking or unlocking of the stem and the casing.

2. A stopper lock for bottles comprising a casing having one end closed and there provided with a central extension, a series of elastic arms provided with means for engaging behind the enlarged end of a bottle neck, said arms being adapted to move into and out of the casing and having a manipulating stem passing through the central extension of the casing and carrying a disk adapted to enter the said extension when the casing is moved in one direction along the elastic arms, a cap member on the casing extension and held thereby in spaced relation to the corresponding end of the casing, permutation tumblers surrounding the casing extension between the cap member and the casing and having recesses with inclined side walls, and a spring member carried by the casing and entering the casing extension and adapted to engage the disk of the stem when in the extension, said spring member carrying a tooth coacting with the tumblers and the walls of the recesses therein to cause the locking or unlocking of the stem and casing.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JEREMIAH L. PETERS.

Witnesses:

E. HUME TALBERT,
F. T. CHAPMAN.