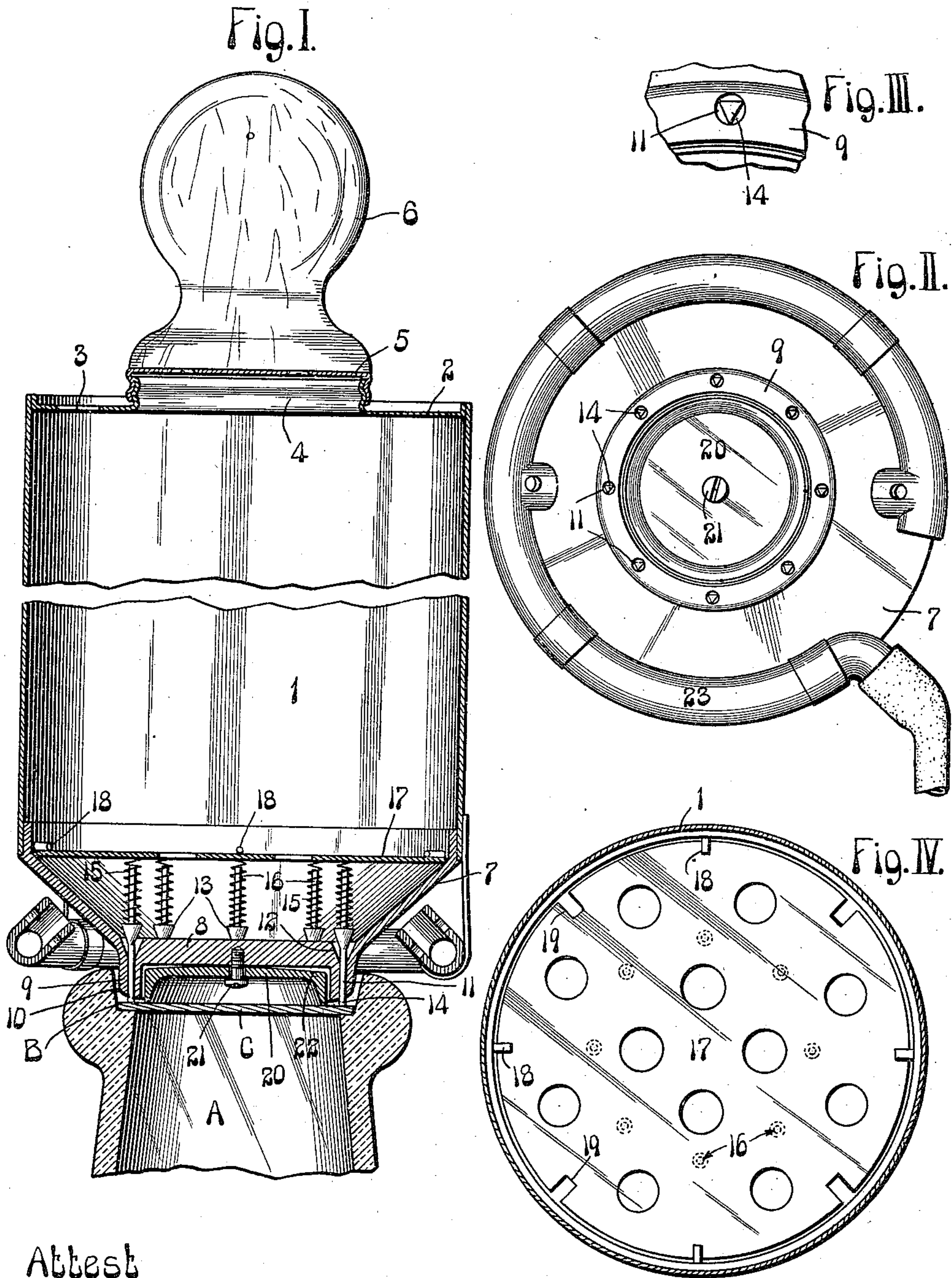


L. J. CRECELIUS.
 DEVICE FOR SEALING BOTTLES.
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Attest
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UNITED STATES PATENT OFFICE.

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DEVICE FOR SEALING BOTTLES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LOUIS J. CRECELIUS, a citizen of the United States of America, residing in the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Devices for Sealing Bottles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a device for sealing bottles in which disk stoppers are used and is more particularly intended for use in sealing bottles in which milk and cream are placed for sale.

The most common method at present in vogue in the sale of milk and cream, especially in cities, is the placing of the milk or cream in bottles that are closed by the introduction into the mouths of the bottles of disks, usually made of paper, and which may be readily extracted from the bottles when their contents are to be used by the consumer. It is a well known fact that the contents of such bottles are frequently tampered with by those by whom milk deliveries are made, so that the customer of the milk merchant is defrauded, the most flagrant tampering being that of the opening of the bottles by the persons employed for making deliveries, the emptying or partial emptying of the contents of the bottles, and the refilling of the bottles so that the contents of them when delivered to the consumer are less valuable than the original contents. By the use of my sealing device, bottles of the kind referred to may be sealed in such a manner as to eliminate the possibility of the bottle stoppers being removed without furnishing a tell-tale of such removal and provision is therefore made for the consumer being advised of the bottles having been tampered with.

Figure I is a vertical section of my bottle sealing device shown applied to a bottle as it appears in the act of sealing the bottle, the central portion of the reservoir of the device being broken out. Fig. II is an inverted plan view of my device. Fig. III is an enlarged fragmentary view of the nozzle of the device at the location of one of the valve controlled ducts. Fig. IV is a cross section through the reservoir of the device.

In the accompanying drawings:—(see

Fig. I) :—A designates the neck of a bottle provided at its mouth with a stopper receiving recess B and C is a disk stopper located at the bottom of said recess.

1 designates the reservoir of my sealing device, at the upper end of which is a cover 2 that is provided with an air vent 3 and has a centrally located neck 4. The neck 4 provides for the introduction of a suitable sealing substance, such as wax, that may include paraffin, or be of a nature similar to paraffin.

5 is a lid detachably connected to the neck 4 at the top of the reservoir and which is provided with a handle 6, through the medium of which the sealing device is carried and manipulated.

At the lower end of the reservoir 1 is a nozzle 7 which is secured to the body of the reservoir in any suitable manner and is preferably so attached to the body of the reservoir as to be detachable therefrom. The nozzle 7 extends inwardly from the wall of the reservoir and is provided with a central bottom portion 8, beneath the edge of which is an annular distributing ring 9 that is preferably curved outwardly and upwardly at its lower surface, as seen at 10, Fig. I. In the bottom portion of the nozzle and extending through the distributing ring 9 are ducts 11, at the upper ends of which are valve seats 12.

13 are valves adapted to occupy the valve seats 12 and capable of being unseated by upward movement to permit the flow of substance from the reservoir and the interior of the nozzle 7 through the ducts 11. Each valve is provided with a stem 14 that extends downwardly through the duct in which the valve is located and is adapted to project beyond the lower face of the distributing ring 9 at the bottom of the nozzle 7. The valves are normally held depressed so that they occupy the seats 12 through the medium of expansion springs 15 that are fitted to rods 16 extending upwardly from the valves.

17 is a perforated diaphragm located within the upper portion of the nozzle 7 and between the lower face of which and the tops of the valves the springs 15 are located, thereby providing for the springs being held under restraint in order that they will serve to lower the valves to their seats when pressure is not exerted against the lower pro-

jecting ends of the valve stems 14. The perforations in the diaphragm permit of the descent of the sealing substance through said diaphragm in order that such sealing substance may flow into and through the ducts 11; and it should be here noted that said valve stems are preferably made of non-circular shape in cross section, as seen in Figs. II and III, in order that the sealing substance may readily flow around the stems to descend through the ducts occupied by them. The diaphragm 17 is held in place in the nozzle 7 by fingers 18 projecting inwardly in the nozzle at its upper end; and to permit of the diaphragm being readily put in place and removed from its seat in the nozzle when such removal is desired, I provide the diaphragm with notches 19 through which the fingers 18 may pass previous to the diaphragm being turned to the position seen in Fig. IV, so that said fingers will be present between the notches and act to hold the diaphragm from movement.

20 designates a guard located beneath the bottom and central portion of the nozzle 7 and within the distributing ring 9 of said nozzle. This guard is of circular shape and is loosely connected to the nozzle by a screw or pin 21 that passes through the center of the guard and is seated in the bottom portion of the nozzle. The guard is preferably of inverted cup-shape and its edge projects beneath the lower surface of the distributing ring of the nozzle 7. The guard is also provided with a convex top surface 22 that opposes the flat surface at the bottom of the central portion of the nozzle, thereby providing for the guard partaking of a rocking motion relative to the adjacent parts of the nozzle.

23 designates a burner located beneath the nozzle of my sealing device and attached to the reservoir or the nozzle in any suitable manner. This burner is adapted to have fuel, such as gas, delivered to it and when in operation, the heat secured from one or more jets of flame from the burner serves to maintain the wax in the reservoir and in the nozzle of my sealing device in a hot and fluid state, in order that it may readily flow through the ducts 11 in the nozzle when the valves 13 are unseated.

In the practical use of my sealing device, the wax present in the device is kept constantly heated through the medium of the burner 23 so that it is in a fluid state and the manipulation of the device involves only the application of the nozzle of the device to the mouth of a bottle in which a stopper has been placed in such a manner as to provide for the valve stems protruding through the lower end of the distributing ring 9 pressing against the stopper, and being moved upwardly to unseat the valves 13 and permit the flow of sealing substance through

the ducts 11 and to the stopper adjacent to its edge. This manipulation is readily accomplished by grasping the handle 6 of the device, and it will be readily appreciated that only a momentary downward movement of the device is necessary to provide for the escape of the sealing substance through the ducts, and that when the device is lifted, the valves are automatically closed due to the action thereupon by the springs 15. As the sealing substance escapes from the ducts 11, it is deposited on the stopper beneath the distributing ring 9 of the nozzle and pressed firmly upon the top of the stopper and also outwardly to the wall of the stopper recess in the mouth of the bottle, with the result that the sealing substance adheres to the stopper and said wall to hold the stopper in place and prevent its removal without detection of the fact of its having been removed being possible. As the sealing substance is deposited in the manner explained, its inward movement beyond the narrow space adjacent to the edge of the stopper is prevented by the guard 20 which rests against the top of the stopper due to its projecting beneath the bottom of the distributing ring, and it will be apparent that due to said guard being loosely attached to the bottom of the nozzle and being provided with a convex upper surface opposing the bottom surface of the central nozzle, said guard is free to rock or oscillate to a certain degree and consequently is caused to find the proper seat upon the stopper, irrespective of whether or not the nozzle of the sealing device is presented in a straight line when applying it to the bottle that is to be sealed by the use of the device.

I claim:—

1. In a sealing device of the character described, a reservoir, a nozzle at the lower end of said reservoir having an annular sealing substance distributing member provided with a plurality of outlets extending directly therethrough, and valves in said outlets having stems protruding beyond the lower end of said distributing member.

2. In a sealing device of the character described, a reservoir, a nozzle at the lower end of said reservoir, having an annular sealing substance distributing member provided with a plurality of outlets extending directly therethrough, valves for controlling said outlets, and a guard attached to said nozzle and located within said distributing member.

3. In a sealing device of the character described, a reservoir, a nozzle at the lower end of said reservoir, having an annular sealing substance distributing member and provided with an outlet, a valve for controlling said outlet, and a guard attached to said nozzle and located within said distributing member; said guard extending be-

yond the lower end of said distributing member.

4. In a sealing device of the character described, a reservoir, a nozzle at the lower end of said reservoir having an annular sealing substance distributing member and provided with an outlet, a valve for controlling said outlet, and a guard located within said distributing member and rockably connected to said nozzle.

5. In a sealing device of the character described, a reservoir, a nozzle at the lower end of said reservoir having an annular sealing substance distributing member and provided with an outlet, a valve for controlling said outlet, and a guard arranged within said distributing member and loosely fitted to said nozzle, said guard being provided with a convex upper face.

6. In a sealing device of the character de-

scribed, a reservoir, a nozzle at the lower end of said reservoir having an annular sealing substance distributing member and provided with an outlet, a valve for controlling said outlet, a guard within said distributing member, and means whereby said guard is loosely connected at its center to the bottom of said nozzle.

7. In a sealing device of the character described, a reservoir, a nozzle at the lower end of said reservoir provided with an outlet and having an annular sealing substance distributing member, a spring actuated valve operable in said outlet, and a diaphragm within said reservoir above said valve.

LOUIS J. CRECELIUS.

In the presence of—

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