

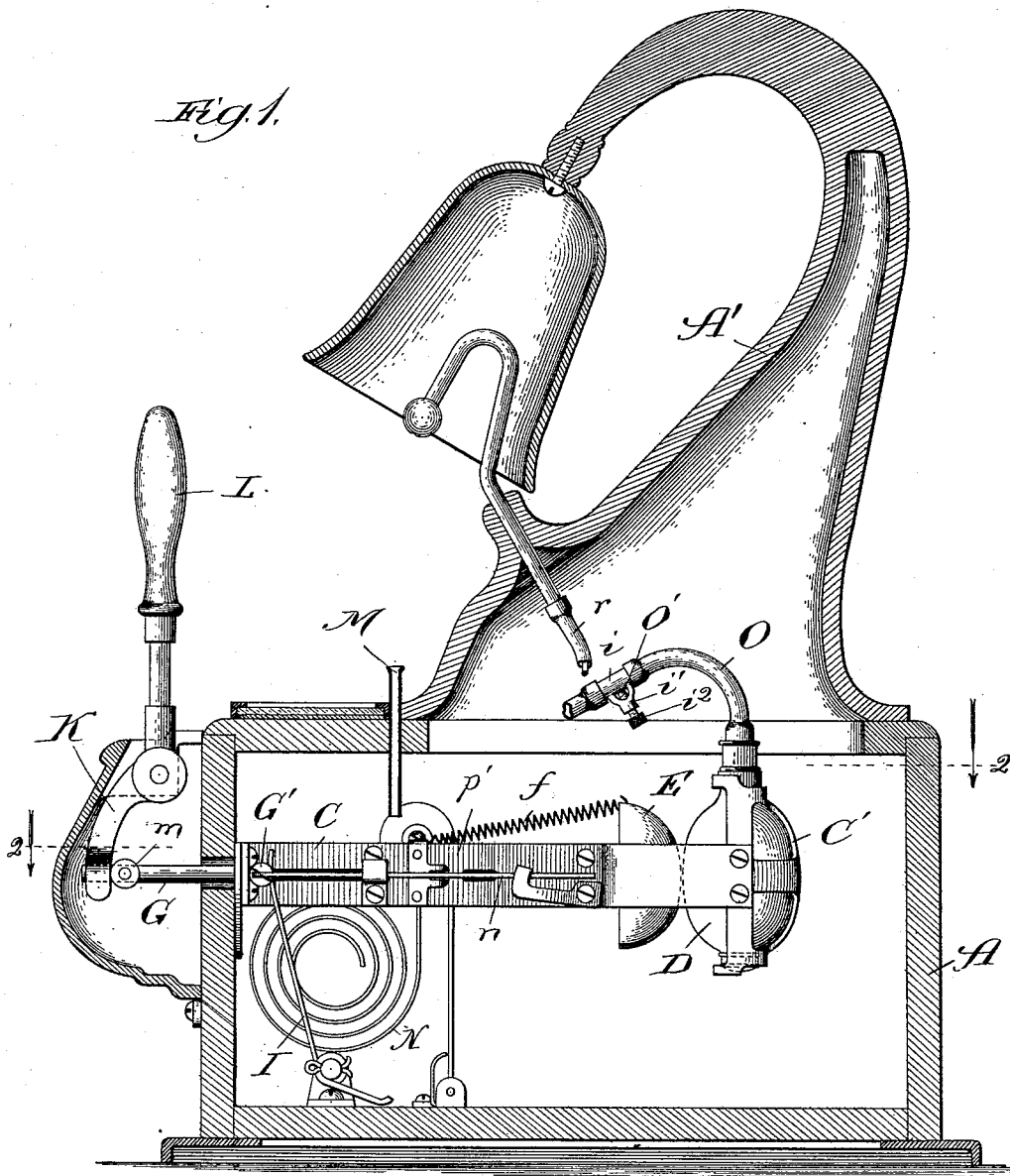
(No Model.)

J. J. BUSENBENZ.
VENDING APPARATUS.

2 Sheets—Sheet 1.

No. 489,432.

Patented Jan. 3, 1893.



Witnesses:
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

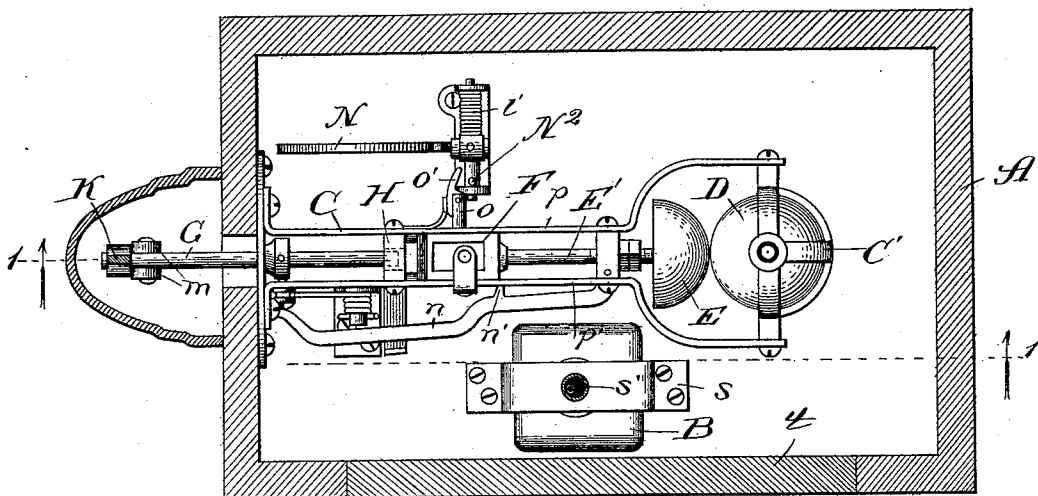


Fig. 3.

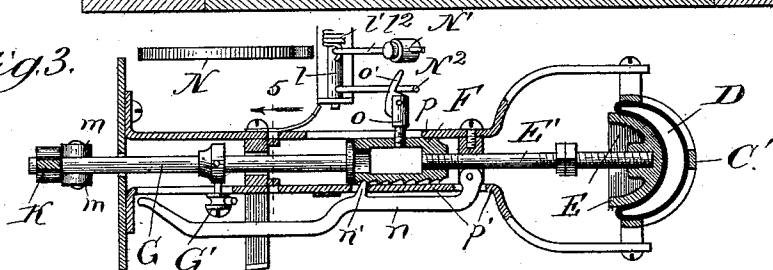


Fig. 4.

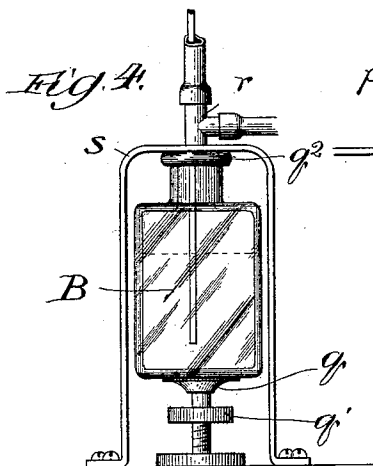
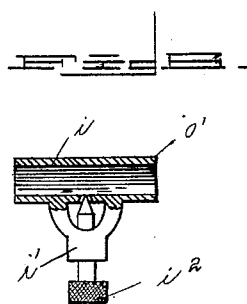
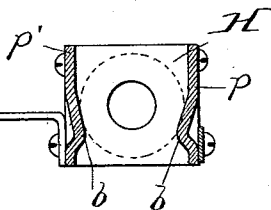


Fig. 5.



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UNITED STATES PATENT OFFICE.

JACOB J. BUSENBENZ, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE AMERICAN PERFUMING MACHINE COMPANY, OF SAME PLACE.

VENDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 489,432, dated January 3, 1893.

Application filed May 28, 1891. Serial No. 394,360. (No model.)

To all whom it may concern:

Be it known that I, JACOB J. BUSENBENZ, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Vending Apparatus, of which the following is a specification.

My invention relates to vending apparatus of the kind in which the operation of delivering the material to be vended is rendered possible by the insertion of a coin of a minimum value, and more particularly to apparatus of this nature organized for the delivery of fluids in the form of a spray; and is in the nature of an improvement upon the apparatus shown and described in Letters Patent No. 430,466, granted to me June 17, 1890.

The purpose of my invention is primarily to simplify and render more perfect in operation the general apparatus, and incidentally to provide a convenient and certain means of controlling the quantity of fluid, such as perfumery to be delivered on a single operation of the machine.

To these ends, my invention consists in an apparatus for vending fluids, combining with an atomizer, connected with a perfume supply, an operating rod arranged to compress the pneumatic bulb after the introduction of a coin; my invention further consists in providing the pneumatic tube with an adjustable vent between the bottle and discharge-outlet, whereby the air-pressure may be relieved and the quantity of perfume delivered from the apparatus reduced to any predetermined quantity; further, in providing a vending device of the character named with an audible signal, as by the employment of a resonant coil, actuated by a moving part of the apparatus on the completion of the delivery; and finally in the general and specific construction and arrangement of parts, all as hereinafter more fully set forth.

My invention is not confined to a device for vending perfume, or the like, but with slight and obvious modifications can be readily adapted to the delivery of liquids in greater quantity and in a continuous stream instead of in the form of a spray; but for convenience of description and to demonstrate the oper-

ation of my invention in its most common embodiment I have shown it applied to a perfume vending apparatus, to be operated on the insertion of a coin of small denomination, such as one cent.

In the drawings—Figure 1 is a vertical central section of a perfume vending apparatus embodying my improvements, taken on the line 1—1 of Fig. 2, and viewed in the direction of the arrows; Fig. 2 is a horizontal section taken on the line 2—2, Fig. 1, and viewed in the direction of the arrows; Fig. 3 is a horizontal sectional view similar to Fig. 2, and showing the position of certain parts at a different stage of the operation; Fig. 4 is a view in elevation of the bottle supporting frame; Fig. 5, a vertical cross section on the line 5, Fig. 3, viewed in the direction of the arrow, and Fig. 6 a detail view of the vent valve.

A represents a box or casing, in which the operative parts are inclosed, said box having the hinged door *t* for affording access to the interior, and surmounted, preferably, with the ornamental top *A'*, through part of which the liquid discharge pipe passes. The box *A* may be given any ornamental exterior configuration which the taste of the manufacturer may direct. In the box and preferably contiguous to the door *t* is provided the bottle-supporting frame *s* centrally perforated in its upper cross piece, as shown at *s'*, for the insertion of the inner end of the pneumatic tube *r*, while in its lower part the frame carries the adjustable bottle support *q*, the raising and lowering of which are accomplished through the medium of the thumb-screw *q'*. Within the frame *s* and resting upon the support *q* is the bottle *B*, containing perfume. At its upper end the bottle bears against the rubber gasket *q²*, which is held in place by being caused closely to embrace the inner projecting end of the pneumatic tube *r* of the atomizer. By this means a convenient construction is provided for withdrawing and replacing the bottle when necessary, and for maintaining at the bottle-outlet an air tight joint.

Supported in the upper part of the box *A* is the supporting frame *C*, comprising a pair of straps parallel to each other in vertical line, and affording at their narrow part a sup-

port for the moving rod and operating device through which the compression of the bulb is performed, and at their inner end spread to a U-form in plan view and carrying the bulb-supporting frame C'. In this frame the pneumatic bulb D is firmly held. The compression of the bulb is accomplished through the medium of the bell-shaped or semi-spherical plunger E, mounted on the inner end of a rod, E', the opposite end of which rod carries the rectangular hollow sliding box F. One side *p* of the frame C is provided with a central longitudinal slot in length equal to the play intended to be given to the plunger. The sliding box F has a laterally-projecting pin, *o*, which passes through the slot in the strap *p*, and carries at its outer end the trip *o'*. The purpose of this trip, as will presently appear, is to operate the bell hammer. On its opposite face, namely, that contiguous to the side *p'* of the frame C, the boxing F is provided with rack teeth, and on the exterior of the frame is supported the spring controlled pivotal crank arm *n* having the inward projecting tooth *n'* passing through a slot in the side *p'* of the frame C, and engaging the rack on the boxing F. A spiral, or other suitable spring, *f*, connects the plunger E with the frame C, and brings about its return to the position indicated in Fig. 2, when the engagement between the tooth *n'* and the rack on the sliding box F is released. The sliding box F has a solid wall at the end nearest to the plunger E, while the opposite wall is perforated to permit the operating rod G to pass freely through the same.

Within the frame C, and permanently supported in a location distant from the normal position of the inner end of the sliding box F, about the width of the coin to be introduced, is a perforated block, H, and adjacent to this block the straps *pp'* have inward projections *b* to afford a ledge for the reception of the coin. The operating rod G passes through a perforation in the wall of the case A, centrally into the frame F, within which and close to the wall of the casing A, it is provided with a collar carrying the laterally extending recessed button G', which extends through a slot formed in the strap *p'* of the frame F. Properly supported to extend upward and engage the button G' is a spring, I, the normal tendency of which is to retain the button and with it the rod G in the position indicated in Fig. 1. At its outer end the rod G is provided with friction rollers, *m*, against which bear the lower end of the duplicate bell crank K operated by the handle L, as shown.

Passing vertically through the upper wall of the case A is a coin-chute, M, the lower end of which is immediately above the inner face of the block H. Suitably supported within the casing is the coil of resonant wire N, and adjacent thereto is the spring hammer N' in the form of a double bent spring wire, one end of which carries the striker N', while

the other part N² projects upward into the line of movement of the trip *o'*. In place of making the striker of a single piece of wire it may be constructed as shown in Fig. 3, namely of a horizontally supported revolving shaft, *l*, controlled by the coil spring *l'* and carrying the upward projecting arms *l²* N², the former of which carries a striker, N'. As will be seen upon examination of Fig. 3, the trip *o'* is adapted to engage and retract the striker in the forward movement of the boxing F until it passes over the rod N², when the striker returns and sounds an alarm, whereas in its return movement the trip *o'* turns on its pivot, when it engages the rod N².

The delivery pipe comprises the usual double tube having one branch O, communicating with the bulb D, while the inner tube enters the liquid in the bottle. In order to enable the quantity of liquid conveyed through the tube *r* to be limited at will, I provide in the branch O a controllable vent, O', consisting of a short metallic connecting pipe, *i*, having the lateral internally screw-threaded bridge *i'*, carrying the screw-threaded needle-valve *i²* entering a perforation formed in the tube *i*. By tightening or loosening the needle-valve, which is provided with a thumb-nut for the purpose, a greater or less relief to the air pressure through the tube O into the tube *r* is accomplished, thus enabling the vender to provide for the delivery of as small or as great a quantity of liquid under one operation of the apparatus as he may determine.

It will be understood that the quantity of liquid projected from the bottle through the delivery pipe depends upon the amount of air pressure introduced through the air pipe upon the surface of the liquid. The vent made controllable through the medium of the needle valve enables the amount of pressure thus exerted to be adjusted at will, so that the automatic operation of the bulb when caused to collapse under the action of a plunger will be to inject a more or less limited quantity of air upon the liquid regardless of the maximum pressure obtained from the bulb.

The operation of the device is as follows: Before the insertion of a coin, the movement of the handle L forcing inward the rod G causes the end of the rod to pass through the block H and through the perforated inner end of the sliding box F as far as the wall thereof, (this being the limit of play possible for the lever L) without compressing the bulb. On the introduction of a coin, however, which passes through the chute N to the ledge formed on the straps *p, p'*, the coin being greater in diameter than the aperture in the sliding box F affords a removable cap against which the rod G impinges, thus permitting the rod in its forward movement to move forward the box F and plunger E to compress the bulb and cause the delivery of the liquid. As the box moves forward it is restrained from recoil by the engagement of the rack with the tooth *n'*. As the plunger reaches the

limit of its forward movement the trip *o'* causes the sounding of the alarm in the manner before described, and the release of the handle *L* by the operator, which then takes place, permits the spring *I* to retract the rod *G* and in its return movement brings about the engagement of the button *G'* with the free end of the crank arm *n*, thereby withdrawing the tooth *n'* from engagement with the rack and permitting the plunger and sliding box to return to their original positions under the action of the helical spring *f*. The withdrawal of the rod *G'* from impingement against the coin permits the latter to fall into the casing below and render the device inoperative for the delivery of liquid until the introduction of another coin.

What I claim as new and desire to secure by Letters Patent is—

1. In a vending apparatus for vending liquid, the combination with the liquid delivery and the bulb and pneumatic tube leading therefrom, to the liquid delivery of an adjustable vent in the pneumatic tube, comprising a perforated section of the tube and a screw-threaded needle valve, whereby the air pressure received through the pneumatic tube may be relieved to a greater or less degree as desired and thereby reduce the quantity of liquid delivered, substantially as described.

2. A vending apparatus for vending liquid, comprising, in combination, a pneumatic delivery pipe and its bulb, a plunger for compressing the bulb, a plunger operating rod

made in two parts, one normally capable of sliding freely within the other, a coin-chute properly adjusted to permit the delivery of a coin between the two parts of the plunger operating rod, whereby the coin may prevent the entry of one part of the rod within the other, a sounder having an extending operating finger and a trip to actuate the sounder mounted upon a moving part of the plunger rod to engage and move the finger in its forward movement and pass the finger on the return, substantially as described.

3. A vending apparatus for vending liquid, comprising, in combination, a pneumatic delivery pipe and its bulb, a plunger for compressing the bulb, a plunger rod made in two parts normally capable of sliding one within another, an operating handle connected with one part of the plunger rod, a rack on the other part, a spring controlled crank arm, carrying a tooth engaging said rack and normally retaining it in its advanced position, a retracting spring connected with the plunger, a retracting spring connected with the detached part of the plunger rod, and a trip on the said part of the plunger rod adapted to engage the crank arm and release the rack on the return movement, thereby releasing the plunger and permitting it to return to its normal position, substantially as described.

JACOB J. BUSENBENZ.

In presence of—

J. W. DYRENFORTH,
M. J. FROST.