Feb. 11, 1930. C. M. SORENSEN 1,746,746

SNAP FIT BOTTLE HOLDER

Filed Feb. 4, 1926

Fig. 1.

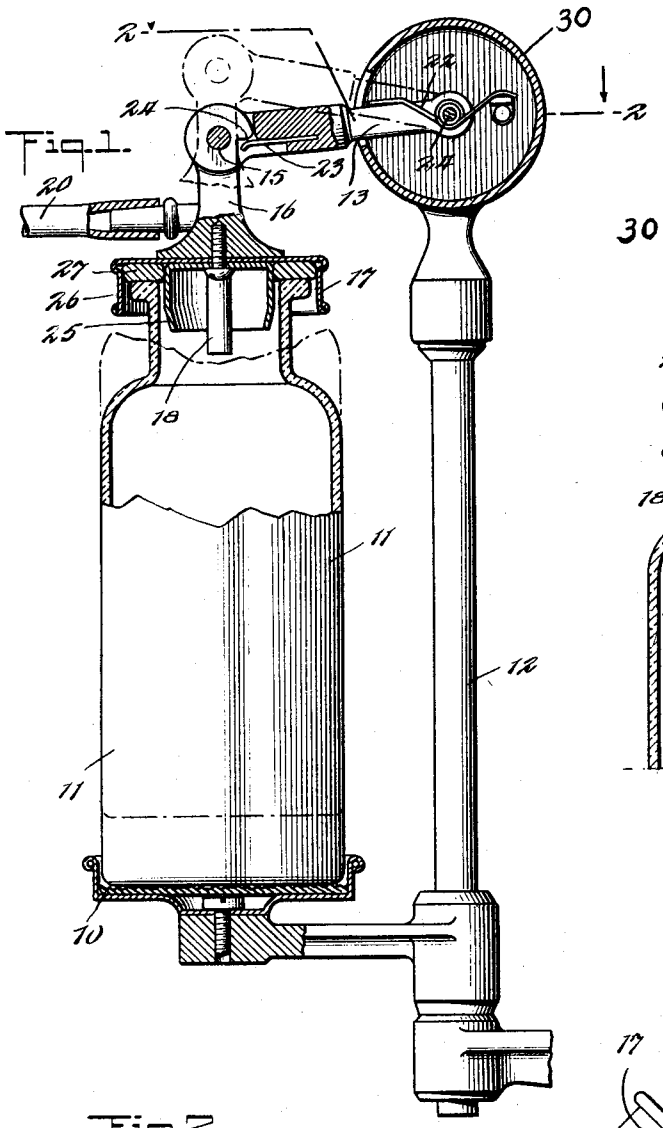


Fig. 3.

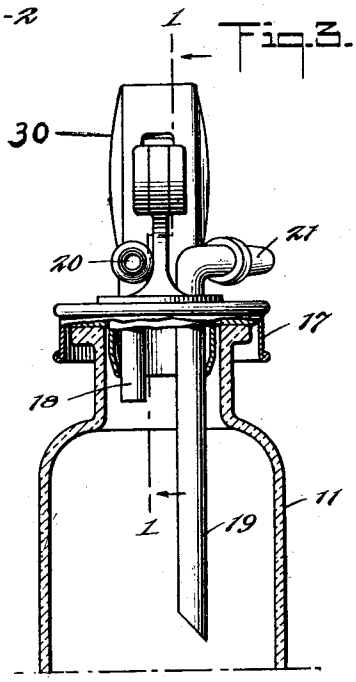


Fig. 2.

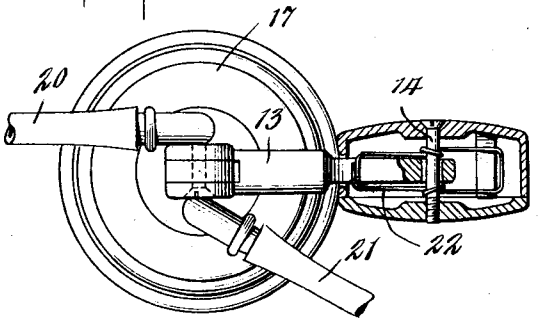
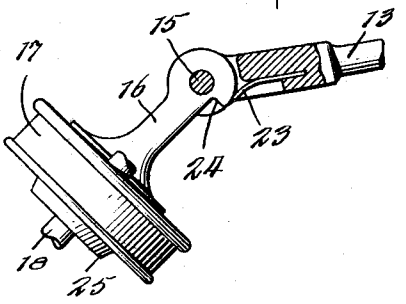


Fig. 4.



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UNITED STATES PATENT OFFICE

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SNAP-FIT BOTTLE HOLDER

Application filed February 4, 1926. Serial No. 85,874.

This invention relates to a quick acting bottle holder and has for its object to provide a simple and efficient construction of holder whereby bottles can be removed and replaced quickly with one hand.

Another object is to provide a simple and efficient construction in which the bottle is tightly held against the cover which is provided with one or more tubes passing into the bottle and with the cover adjustable on the bottle regardless of the irregularity thereof.

The invention in general comprises a bottom support for a bottle, a cover disposed thereabove, the cover carrying a pipe extending into the bottle. The cover and support are mounted for relative longitudinal movement with respect to each other and yet tending to press toward each other in order to hold a bottle tightly therebetween. The cover is constructed and mounted to swing at an angle from its normal position and to be held in this lateral position to receive the mouth of the bottle, after which it can be swung back into normal position. When in normal position the holding means is disengaged and a certain freedom of movement is permitted whereby the bottle engaging members can adjust themselves to the irregularities of the bottle.

Referring to the drawings:

Fig. 1 is transverse section on the line 1—1 Fig. 3.

Fig. 2 is a section on the line 2—2 of Fig. 1.

Fig. 3 is the left side view of the device of Fig. 1.

Fig. 4 is a detail showing the cover in position ready to receive the bottle.

In the drawings, numeral 10 indicates a supporting base for the bottle 11. The column 12 has an arm 13 pivoted thereto at 14 within the housing 30. A second arm 16 is pivoted to the first arm at 15 and the cover 17 for the bottle is carried by this second arm. As shown in Fig. 1 the cover is preferably provided with either internal centering means 25 or external means 26 or both, in order to aline the bottle and cover. A yieldable washer 27 is provided to make an air-tight joint over the mouth of the bottle. Through the cover pass one or more pipes 18, 19. In the form shown flexible hose 20 and 21 are connected to the pipes 18 and 19 leading through the cover. The arm 13 is movable in the vertical plane under the action of spring 22 engaged on the arm, wound around its pivot 14, and secured to the housing as shown in Figures 1 and 2, whereby the arm 13 is pressed down to keep the cover 17 tightly fitting on a bottle 11.

To disengage the bottle 11 it is raised and moved to the left from the position shown in Fig. 1, when the second arm 16 is moved about its pivot 15, and when the bottle 11 is clear of the base support 10 is entirely free. To reinsert a bottle the cover is retained in the position shown in Fig. 4 when the mouth of the bottle can be quickly engaged beneath the cover and then the bottle and cover moved while in engagement to raise the arms 13 and 16, the arm 16 being swung until in a position shown in Fig. 1, when it is over the support 10. To keep the cover in an inclined position as shown in Fig. 4 ready to engage the bottle and prevent its falling by gravity to a horizontal position a friction means is provided between the arms 13 and 16. This friction means or brake includes the flat spring 23 carried by the arm 13, engaging the outer rounded end of the arm 16 and making the arm 16 movable about its pivot 15 with just enough friction to hold the cover in the inclined position shown in Fig. 4. In order to permit the cover 17 to accurately fit over a bottle when its mouth is not level, a notch 24 is cut in the arm 16 so that when the cover 17 is over the supporting base 10 the brake or friction device 23 is inoperative and the arm 16 is free to move about its pivot 15 to assist in making the cover 17 accurately fit on the mouth of the bottle. To permit movement of the cover 17 in adjusting itself in another direction, on bottle 11 the connection of the arm 13 in its pivot 14 is somewhat loose as shown in Fig. 2. In this way if the mouth of the bottle is inclined in any direction, the cover 17 will still fit down on the bottle and conform itself to the in-

clination of the bottle mouth and insure an airtight joint.

In one use of this invention, a suction pump or water exhaust is connected to the pipe 18 in passageway 20 and passageway 21 leading from pipe 19 is led to the patient to receive blood or mucous discharge during an operation. When the apparatus is used for a long operation or during several operations and the bottle gets filled or nearly filled it is only a matter of quickly removing the bottle and inserting another in its place without the loss of time from screwing on any caps or covers. Another use of this invention is in anesthetizing when pressure is connected to the tube 20 and the anesthetic discharged through the passageway 21. One practical construction embodies the use of two-bottle-holders such as that shown and placed side by side, one for use of suction and the other for use of pressure.

Among the advantages of this invention may be mentioned the ease and convenience of operation and the saving of time in inserting or removing a bottle from its holder. The shape of the cover enables the bottle mouth to be readily centered and the spring 22 presses the cover down on the bottle mouth to make the connection airtight. The brake or spring 23 supplies enough friction to retain the cover in the position shown in Fig. 4 where it is adapted to be engaged by a bottle for quickly inserting in the holder. As the bottle has been placed in position, the friction means 23 becomes inoperative in order to allow the cover 17 to be easily moved about its pivot 15 and have the cover adapt itself to the inclination, if any, of the bottle mouth. The loose connection between the arm 13 and its pivot 14 is another feature which contributes to enabling the cover to fit any inclination of the bottle mouth. Having a stationary support 10 makes manipulation of the bottle during insertion and removal easy.

I claim:

1. In a surgical device of the type described, a bottom support for a bottle, a cover having an inlet pipe and an outlet pipe extending therethrough into the bottle, a pivot for said cover, means supporting said pivot to permit the cover to be moved away from the bottom support while normally pressing the cover against the bottle, and friction means cooperating with the pivot to permit the cover to be swung laterally and to hold it in its lateral position.

2. A bottle holder and cover comprising a support, an arm pivoted on the support for movement in a vertical plane, a second arm pivoted to the first for movement in the same plane, a bottom support for the bottle, the cover being attached to said second arm, means engaging the first arm for pressing the cover down on a bottle held by said bottom support, and means tending to hold the cover in a position swung to one side of its normal position.

3. In a surgical device of the type described, a support, an arm pivoted above the support for movement in a vertical plane, a second arm pivoted to the first for movement in the same plane, the cover being attached to said second arm, two pipes on said cover extending therethrough into the bottle, one of said pipes being adapted to be connected to a suction device, the other of said pipes being adapted to be connected to the patient, means engaging the first arm to press the cover downwardly on a bottle held by said support, friction means between the first and the second arms permitting the cover to be tilted at an angle to its normal position and to hold said cover in said tilted position, said friction means being disengaged when the cover is in its normal postion.

4. In combination, a bottom support for a bottle, a cover, a support for the cover, an arm pivotally connected to the cover at one end and to the cover support at the other, means acting on said arm to press the cover against the bottle, and means cooperating between said arm and the cover to hold the cover in a tilted position to engage a bottle off the support.

5. In a surgical device of the type described, a substantially vertical support, a bottom support for a bottle fastened thereto, a cover having an inlet pipe and an outlet pipe passing therethrough into the bottle, an arm pivoted to the first named support for movement in a vertical plane, a second arm pivoted to said first named arm for movement in the same plane, the cover being attached to said second arm, means resiliently pressing the first mentioned arm downwardly whereby the cover is pressed toward the bottom support, and means limiting the downward movement of said first named arm.

6. In a surgical device of the type described, a bottom support for a bottle, a cover having an inlet pipe and an outlet pipe extending therethrough into the bottle, means movably supporting the cover to permit it to swing, means resiliently pressing the cover and bottom support toward each other to hold the bottle and permit it to be inserted and withdrawn, and means tending to hold the cover in a position swung to one side of its normal position.

7. In a surgical device of the type described, a bottom support for a bottle, a cover having an inlet pipe and an outlet pipe extending therethrough into the bottle, means movably supporting the cover to permit it to swing, means resiliently pressing the cover and bottom support toward each other to hold the bottle and permit it to be inserted and withdrawn, and means tending to hold the cover in a position swung to one side of its

normal position, said holding means being disengaged when the cover is returned to its normal position.

Signed at New York in the county of New York, and State of New York this 3rd day of February, A. D. 1926.

CHARLES M. SORENSEN.