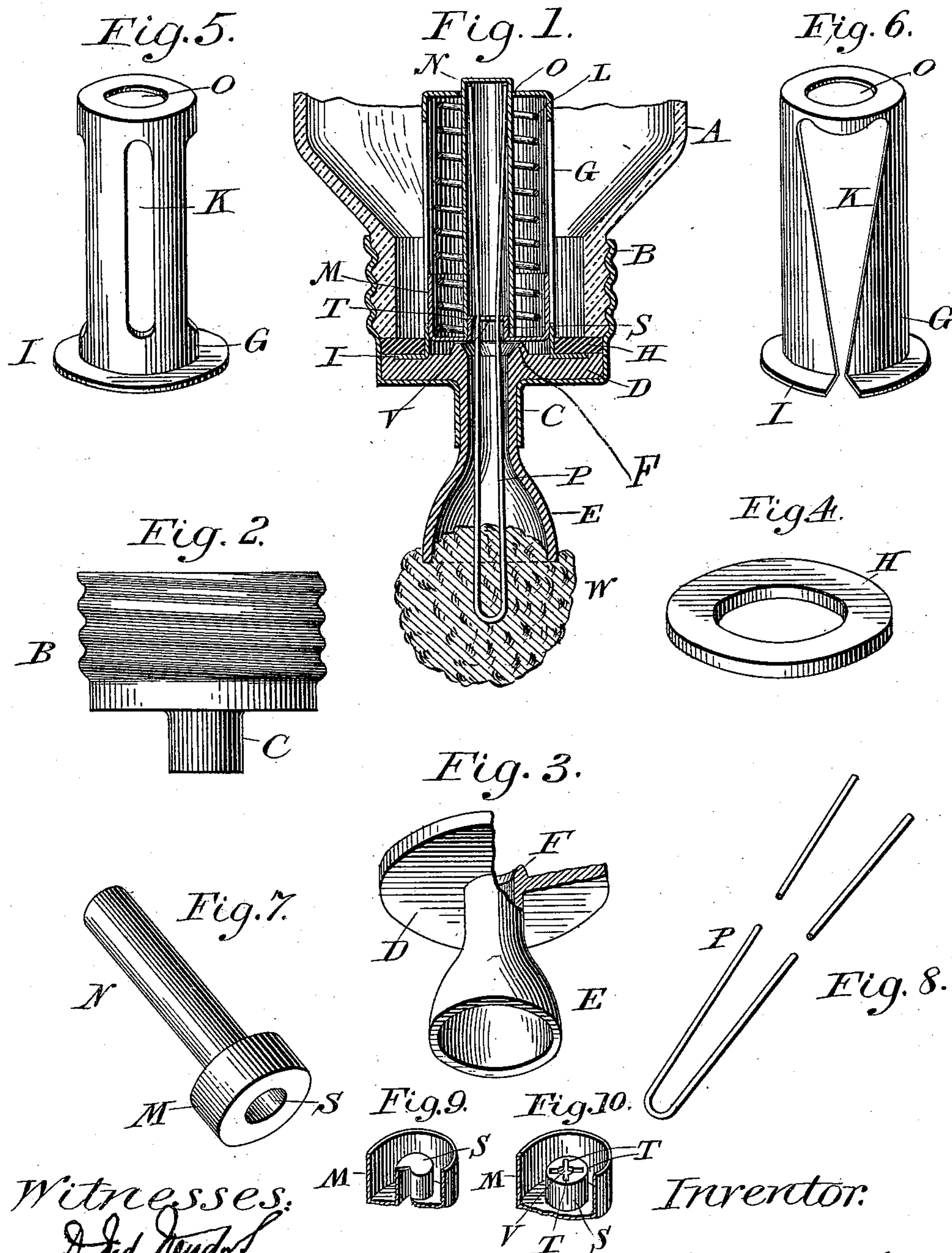


(No Model.)

S. WALES.
FEED FOR RECEPTACLES.

No. 547,976.

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Witnesses:

D. J. Hendon
H. S. Brown

Inventor:

Sigourney Wales

UNITED STATES PATENT OFFICE.

SIGOURNEY WALES, OF CHICAGO, ILLINOIS.

FEED FOR RECEPTACLES.

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To all whom it may concern:

Be it known that I, SIGOURNEY WALES, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful automatic feed for receptacles of liquid blacking and other liquids that may be distributed by means of a sponge or other suitable absorbent placed at the outside of the receptacle, of which the following is a specification.

My invention relates to an improved feeding device for liquid blacking and other fluids of that class in which small quantities of the fluid are fed as required to a sponge or other absorbent body, through the medium of which the blacking or other fluid is utilized, the object of my invention being to produce a simple, reliable, and convenient feeding device of the character described.

With these ends in view my invention consists in a feeding device having certain details of construction, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a broken view in vertical central section of one form which a feeding device constructed in accordance with my invention may assume, the said device being applied to a bottle, which is shown in an inverted position. Fig. 2 is a detached perspective view of the sheet-metal retaining-cap which is applied to the neck of the bottle. Fig. 3 is a detached perspective view of the elastic sponge-supporter, a portion of which is broken away. Fig. 4 is a detached perspective view of the packing-washer. Fig. 5 is a similar view of the valve-casing. Fig. 6 is a similar view of a modified form thereof. Fig. 7 is a detached perspective view of the valve and the coupling-tube thereof. Fig. 8 is a detached view of the valve-rod. Fig. 9 is a broken perspective view of the valve before its central hub is perforated for the valve-rod, and Fig. 10 is a similar view of the completed valve.

In carrying out my invention as herein shown I employ what I shall call a "sponge-supporter." This consists of a disk-shaped body D, having a central opening, a cylindrical neck E, projecting from the center of the outer face of the body in line with the opening therein, and a flaring or bell-shaped mouth, which is virtually an enlarged continuation

of the neck. Upon the inner face of the body D of the said part I form an annular rib F, which constitutes a valve-seat. As thus constructed the sponge-supporter has a central passage throughout its length. By preference I make its several parts or features integral with each other, as shown. By preference, also, I shall form it of rubber, though this is not essential. I deem it desirable, however, that its flaring mouth shall be elastic and yielding, so that it will push back under pressure upon its edge. Over the outer edge of the flaring mouth of the sponge-supporter I locate a sponge W or a body of some equivalent absorbent material. Although not crowded into the said mouth so as to fill the same, the sponge is applied to the edge thereof in such a manner as to effectually close it. The sponge, as shown, is retained in such position by means of the valve-rod P, which, as represented, consists of a piece of wire bent midway of its length to form a loop and two prongs of corresponding length. As shown in Fig. 1, the loop of the valve-rod is passed through the sponge, and this end of the valve-rod normally projects beyond the edge of the flaring mouth of the sponge-supporter, while its prongs extend inward through the central passage thereof and engage at their inner ends with the closed inner end of a coupling-tube N, the open outer end of which is sleeved over and secured to a hub S, formed in the center of the cup-shaped valve M, which rests upon the valve-seat formed by the annular rib F, before mentioned. Of course the sponge might be secured to the rod in some other way than that shown in the said figure. The valve-rod, it should be stated, has longitudinal movement independent of the sponge-supporter and operates when thrust inward by pressure upon its projecting outer end to lift the valve from its seat. The prongs of the rod pass through an opening V, formed in the hub S of the valve, and also through lateral slots T, leading out of the said opening, whereby the valve-rod is prevented from being rotated independently of the valve. The friction developed between the prongs and the said hub of the valve is sufficient to retain the valve-rod against outward displacement in the ordinary usage of the device, but permits the rod to be readily withdrawn from the device

for the renewal of the sponge or for any other purpose. It will be understood that the rod will be gaged in length according to the extent to which it is designed that it shall lift the valve. In Fig. 9 the valve is shown after it is partly developed and before its hub is provided with the openings V and T for the inward passage of the valve-rod. The closed inner end of the coupling-tube N plays back and forth in an opening O, formed in the inner end of a cylindrical valve-casing G, the open outer end of which contains the valve M. A spiral spring L, located within this chamber and encircling the tube N, exerts a constant effort to maintain the valve upon its seat. The extreme outer end of the valve-casing G is provided with an outwardly-turned flange I, which, when the device is assembled, is interposed between the inner face of the body D of the sponge-supporter and the outer face of a packing-washer H, the inner face of which rests upon the flat edge of the bottle or receptacle, A containing the fluid to be fed. A sheet-metal cap B is employed to secure the other parts of the device to the bottle, the flange of the cap being thereto screw-threaded to adapt it to fit over threads formed upon the neck of the bottle, while the outer portion of the cap is adapted to fit over the body of the sponge-supporter and provided with a cylindrical hub C, adapted in diameter to embrace and support the neck E' thereof. When the cap is turned down into position, the edge of the inner face of the body D of the sponge-supporter will be pressed firmly against the outer edge of the outer face of the washer, the outer edge of the inner face whereof will be forced against the flat edge of the neck of the bottle, from which none of the fluid can escape except as the valve is lifted. As shown in Fig. 5, the valve-casing is represented as being drawn into the required form from a suitable blank in the same manner that the shells of metallic cartridges are drawn. After being so drawn long ports K are formed in it to permit the liquid to flow from the bottle into it. In the modified construction shown in Fig. 6, the valve-casing is represented as having been struck up from a sheet-metal blank shaped to form two large triangular openings K', only one of which is shown.

For the operation of the feeding device the bottle is inverted and the sponge or absorbent body W pressed against the surface to which the liquid is to be supplied with sufficient force to cause the valve-rod to be moved inward, and thus through the medium of the coupling-tube to lift the valve against the tension of its spring above its seat, after which the liquid in the bottle will flow through the valve-casing and through the sponge-supporter into the unoccupied space in the flaring mouth thereof, from which it will be absorbed by the sponge and distributed thereby. In using the device sufficient pressure is imposed upon the sponge to cause the flaring

mouth of the sponge-supporter, which, it is to be remembered, is made of rubber or other elastic material, to break down and fold or push back, so that the air which it contains will be compressed and forced into the bottle to take the place of the fluid withdrawn therefrom, whereby the ready feeding of the fluid is insured. If the valve is lifted several times in succession and faster than the liquid is distributed by the sponge, the excess of fed liquid will be collected in the flaring mouth of the sponge-supporter and there retained. In case the mouth of the sponge-supporter should be filled in this way the further feeding of liquid will be prevented, because there would in that case be no air in the sponge-supporter to be compressed and forced into the bottle, and, of course, without forcing air into the bottle to take the place of the liquid withdrawn therefrom, the feeding of the liquid must stop.

It is apparent that in carrying out my invention some changes in the construction herein shown and described may be made, and I would therefore have it understood that I do not limit myself to the exact form represented, but hold myself at liberty to make such changes as fairly fall within the spirit and scope of my invention.

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

1. In a feeding device for blacking and other liquids, a hollow sponge-supporter and adapted to project beyond the neck of the bottle to which the device is applied having a yielding mouth, to the edge of which a sponge or absorbent body is applied, substantially as described, and whereby the said mouth yields under pressure upon its edge.

2. In a feeding device for blacking and other liquids, a sponge-supporter having a disk-shaped body, a neck projecting from the outer face of the said body, and a yielding flaring mouth joining on to the outer end of the said neck substantially as described, and whereby the said mouth yields inwardly, and under pressure upon its outer edge.

3. In a feeding device for blacking and other liquids, a hollow sponge-supporter having a flat disk-shaped body, a yielding mouth projecting from the outer face thereof, and an annular valve seat consisting of a rib located upon the inner face of the said body, substantially as described.

4. In a feeding device for blacking and other liquids, a sponge-supporter having a disk-shaped body, a yielding flaring mouth projecting from the outer face thereof, and a valve-seat formed upon its inner face, the said members being formed of rubber or equivalent material, and integral with each other, substantially as described.

5. In a feeding device for blacking and other liquids, a sponge-supporter having a yielding mouth, a valve-rod projecting at its outer end beyond the said supporter, and movable inde-

pendently thereof, a valve connected with the inner end of the rod, and a sponge or equivalent absorbent body applied to the yielding mouth of the sponge supporter, substantially as described.

6. In a feeding device for blacking and other liquids, having a sponge-supporter, a valve-rod passing through the same and movable independently thereof, a cup-shaped valve connected with the inner end of the said rod, a cylindrical valve-casing for the valve and a sponge or equivalent absorbent body attached to the outer end of the valve-rod, and resting against the edge of the said sponge-supporter, substantially as described.

7. In a feeding device for blacking and other liquids, the combination with a sponge-supporter, of a valve rod passing through the same, and longitudinally movable independently thereof, a valve through which the rod passes, and a coupling-tube receiving the inner end of the rod, and connected with the valve, substantially as set forth, and whereby the valve-rod may be withdrawn from the tube and valve without disturbing the same.

8. In a feeding device for blacking and other liquids, the combination with a sponge supporter, of a valve-rod passing through the same, and longitudinally movable independently thereof, a cup-shaped valve having a central hub, which is perforated for the passage through it of the valve-rod, and means for connecting the inner end of the said rod with the valve, substantially as set forth, and whereby the valve-rod may be removed from the device without disturbing the valve or tube.

9. In a feeding device for blacking and other liquids, the combination with a sponge-supporter, of a valve-rod passing through the same, and longitudinally movable independently thereof, a valve through which the valve-rod passes, a coupling-tube connected with the valve, and receiving the inward thrust of the rod, a spring for maintaining the valve upon its seat, and a sponge or equivalent absorbent body attached to the projecting outer end of the valve-rod, and resting against the outer end of the sponge-supporter, substantially as described.

10. In a feeding device for blacking and other liquids, the combination with a sponge-supporter, of a valve-rod passing through the same and longitudinally movable independently thereof, a valve through which the valve-rod passes, connection between the rod and valve for lifting the latter by the inward thrust of the former, and a valve-casing containing the valve and the connection between

the valve-rod and valve, substantially as described.

11. In a feeding device for blacking and other liquids, the combination with a sponge-supporter, of a valve-rod passing through the same and movable independently thereof, a valve through which the valve-rod passes, a coupling-tube having its outer end connected with the valve, and its inner end impinged against by the inner end of the valve-rod, the inward thrust of which moves the tube and lifts the valve from its seat, and a valve-casing affording a bearing for the inner end of the coupling-tube, and containing the valve, substantially as described.

12. In a feeding device for blacking and other liquids, the combination with a sponge-supporter, of a valve-rod passing through the same, and longitudinally movable independently thereof, a valve connection between the inner end of the rod and the valve, whereby the same is lifted by the inward thrust of the rod, a valve-casing containing the valve, and provided at its outer end with an outwardly projecting flange by means of which it is held in place, and a sponge or equivalent absorbent body attached to the projecting outer end of the valve-rod and resting upon the sponge-supporter, substantially as described.

13. A feeding device for blacking and other liquids, having a sponge-supporter, a valve-rod passing through the same, and longitudinally movable independently thereof, a valve connection between the inner end of the rod and the valve, a valve-casing containing the valve, and having its outer end provided with an outwardly projecting flange resting against the sponge-supporter, a packing-washer between which and the sponge-supporter the said flange is interposed, a spring located in the valve-casing for holding the valve upon its seat, and a cap fitting over the sponge-supporter and engaging with the bottle or liquid receptacle for securing the feeding device thereto, substantially as described.

14. In a feeding device for blacking and other liquids, the combination with a sponge-supporter having a yielding flaring mouth, a neck, and a disk-shaped body; of a cap constructed with an outwardly projecting hub or tubular bearing to fit around the neck of the sponge-supporter and over the body thereof, and adapted to be secured to a bottle or other receptacle, substantially as described.

SIGOURNEY WALES.

Witnesses:

D. IND. NEUDORF,
H. D. O'BRIEN.