

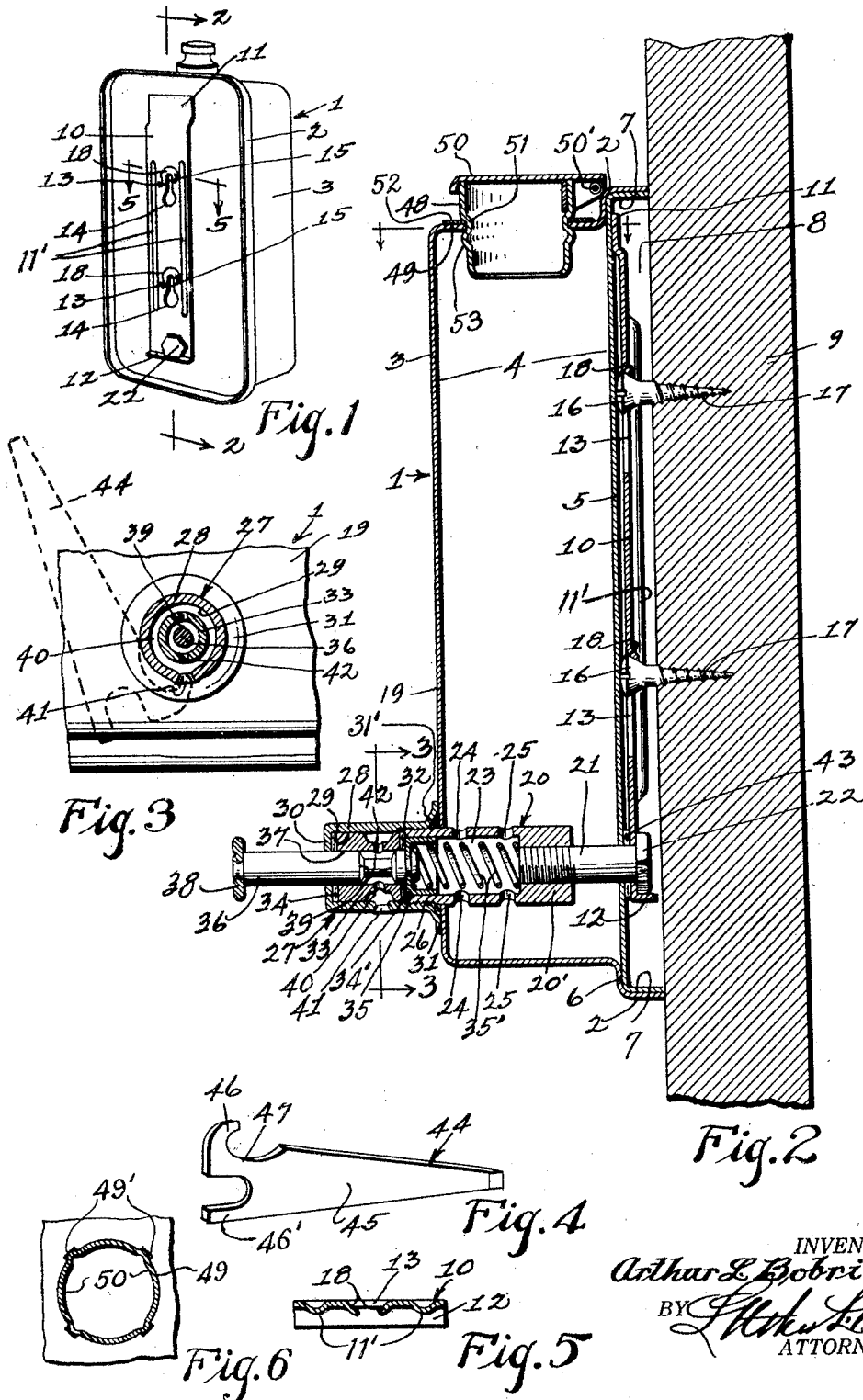
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SOAP DISPENSER

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SOAP DISPENSER

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This invention comprehends the provision of an improved type of soap dispenser, preferably adapted for dispensing liquid soap, and including improved means for irremovably supporting a dispenser on a wall or supporting surface, and a valve mechanism for dispensing the soap therefrom which is bodily removable from the receptacle.

Another object is to provide in a soap dispenser, a receptacle, a dispensing valve mounted on the receptacle, means for attaching the dispenser in position for use, and means rendered effective by the assembly of the valve on the receptacle for irremovably locking the receptacle in position, except by authorized persons.

Another object includes the provision of a suitable key adapted for use for authorizedly removing the receptacle when desired.

Another object is to provide a specially formed attachment plate held on the rear of the receptacle and arranged to irremovably hold the receptacle in position for use on a supporting member, together with an improved type of filling cap and means for attaching the same to the receptacle.

Other objects may appear as the description progresses.

In the accompanying drawings I have shown a preferred form of my invention subject to modification within the scope of the claims, without departing from the spirit thereof.

In said drawings,

Fig. 1 is a perspective view of a dispenser embodying my improvements, as seen from the rear side thereof.

Fig. 2 is an enlarged sectional elevation of the same on line 2—2 of Fig. 1.

Fig. 3 is a transverse section of the dispensing valve on line 3—3 of Fig. 2.

Fig. 4 is a perspective view of the key suitable for attaching and removing the valve from operative position.

Fig. 5 is a transverse section of the attaching means for the dispenser as seen on line 5—5 of Fig. 1.

Fig. 6 is a section of the filling cap on line 6—6 of Fig. 2.

In its preferred form my dispenser in-

cludes a sheet metal receptacle 1 of suitable form and provided with an enlarged encompassing base portion 2 and a front portion 3 within which is a single compartment 4 adapted to contain a quantity of soap. The compartment 4 is closed by a pan like bottom 5 which is welded or otherwise suitably attached to the flat portion 6 of the base, and has an encompassing flange 7 which is similarly secured to the flange 2 of the base. The bottom thus nests snugly in and is irremovably secured to the base 2 and provides a shallow compartment 8 inwardly of the bottom which is closed on its rear side by the surface of a wall or supporting surface 9, to which the receptacle is adapted to be attached for use.

Centrally of the back or bottom 5, I provide a vertical attaching plate 10 which has a foot 11 on its upper end adapted to be welded or otherwise permanently secured to the back, while the portion of the strip below the foot is bent outwardly and is spaced slightly from the back 5. The lower end of the strip 10 is right angularly bent outwardly at 12, and intermediate the portions 11 and 12 a pair of bayonet slots 13, 13 are formed in the strip 10. Said slots have enlarged circular extremities 14 at their bottoms and elongated portions 15 at their tops. The portions 14 are of sufficient size that the heads 16 of screws 17 may be inserted therethru into the space between the back 5 and the plate 10. A pair of longitudinal ribs 11', 11', are formed in the plate 10 so as to render the plate rigid, as hereinafter explained.

When the receptacle is forced downwardly over the heads of the screws 17 the bodies of the screws will seat in the upper extremities of the portions 15 of the slots while the heads will seat in conical depressions 18, as seen in Fig. 5, which are formed at the upper ends of said slots.

The ribs 11' on the attaching plate 10 serve to strengthen the plate longitudinally so as to prevent the buckling of the plate intermediate its ends and to uniformly engage and support the receptacles on the screw heads 16. Were said ribs omitted the plate would bend in the middle to such an extent that it would

be possible to detach the receptacle from the screw heads and the ribs are safeguards against such an act.

Near the bottom of the receptacle 1 I provide a dispenser valve which is mounted partly within and partly without the compartment 4 on the front 19 of the receptacle. Said valve includes an internal barrel like body 20 which is closed at its inner end by means of a screw 21 which is tightly threaded into the rear end 20' thereof. Said screw extends thru apertures in the back 5 and plate 10 and is preferably provided with a square or hexagonal head 22 positioned adjacent the portion 12 of plate 10 so that one of the flats on the head will tightly fit against the portion 12 of the plate. Thus the screw 21 is prevented from turning in the members 5 and 10.

The barrel 20 is provided with an elongated cylinder 23 having two series of inlets, as at 24 and 25 respectively, longitudinally spaced apart, whereby the soap from compartment 4 may enter the cylinder 23. The rear end 20' of the barrel 20 has an outer end portion 26 which projects thru and substantially outwardly from the front wall 19 of the receptacle and is externally threaded, as shown in Fig. 2. The valve further includes a cup shaped cap 27 which has a cylindrical body 28 with a bore 29 therein. Said bore is closed at the outer end of the cap by means of a wall 30, and a conical flange 31 is provided at the inner end of the cap which rests against the front wall 19 of the receptacle. The inner portion of bore 29 is internally threaded at 32 to receive the externally threaded portion 26 of the barrel 20. The flange 31 encloses and compresses a washer 31' against the front 19 of the receptacle and also radially around the portion 26 of the valve barrel, and thus prevents leakage.

When the valve is being assembled, the barrel 20 is tightly screwed into the cap 27 with a cage 33 and washers 34 and 34' interposed between the outer end of the barrel and the wall 30 as shown. Cylinder 23, however, has a piston 35 reciprocally mounted therein and urged outwardly to the end of the cylinder by means of a compression spring 35' which is held in compression between the piston and the portion 20' of the barrel. Said piston has a stem 36 riveted or otherwise permanently attached thereto, which extends thru a bore 37 of cage 33 and a corresponding bore in the end 30 of the cap.

A suitable knob or flange 38 is formed on or attached to the stem 36 and serves as an operating member for the piston. Thus, when the piston is forced inwardly against the tension of spring 35' until it reaches a position intermediate the orifices 24 and 25 of the cylinder, the liquid from compartment 4 of the receptacle will enter that portion of the cylinder outwardly of the piston, and the

tension of spring 35' when pressure on the member 38 is released will restore the piston to its normal position, as shown in Fig. 2.

The stem 36 just forwardly of piston 35 is provided with a wide annular groove 39 which forms an annular compartment in the bore 37 of member 33 when the piston is in normally outward position. The cage 33 also has an annular groove formed therein to provide a chamber within the cap 27, and said chamber has a single outlet 41 on the lower side of the cap. The chambers 39 and 41 are permanently in communication by means of one or more orifices 42 formed in the cage 33, as shown in Fig. 2. Thus when the piston is forced inwardly to a maximum extent the forward end of the cylinder 23 is charged with a quantity of liquid from the compartment 4, and the ensuing outward movement of the piston forces said charge of liquid into the bore 37 of the cage and thence outwardly thru orifices 42 into chamber 40, and finally outwardly thru the single orifices 41 in the cap. When the piston is forced inwardly against the tension of spring 35' any liquid which is present in the cylinder 23 is evacuated thru orifices 24 and 25.

In assembling the dispenser, when the dispenser 1 is loosely mounted on the heads 16 of screws 17, as hereinbefore described, the piston, piston stem, and cage are then mounted in the cap 27, whereupon the barrel 20 is tightly screwed into the cap so that it will be incapable of removal therefrom except by authorized persons or by persons who are familiar with the manner of assembly. The assembled dispenser valve is then bodily inserted thru the aperture in the receptacle 1 and turned in a given direction so as to screw the barrel 20 tightly upon the screw 21.

When this is done the tightening of the screw 21 on the barrel 20 will draw the plate 10 tightly against the back 5 or a washer 43, which may be interposed between the back and the plate, so that it will be impossible to move the receptacle over the heads of screws 17 and therefore impossible to remove the receptacle from the supporting surface 9 without unscrewing the cap 27. Neither the members 20 or 27 are provided with flats or means for attachment of ordinary wrenches or implements thereto, whereby said members may be unscrewed. The washer 43 prevents leakage of the soap around the bolt 21.

The outlet 41 of the cap, however, protrudes substantially from the periphery of the cap and provides a means of attachment for a special type of wrench 44, which may be applied to the cap for removing it. Said wrench is shown in Fig. 4, and in broken lines in Fig. 3, and includes a handle 45 with a hook 46 formed at one end thereof adjacent a recess 47.

When the wrench is applied to the cap 27 for attaching or removing the same from

operative position the hook 46 is inserted in the outlet 41 while the recessed portion 47 rests against the periphery of the cap. As seen in Fig. 3, when the wrench is turned in a clockwise direction it will tightly screw the cap 27 into operative position on the receptacle. When the wrench is placed in a reverse position on the cap it may be employed for unscrewing the cap.

The vibrations 46 and 46' of the wrench 45 may also be employed as a gage for setting the screws 16 so that the heads of the screws will be positioned at equal distances from the face of the supporting member 9. In such case the recess 47' between said vibrations engage the bodies of the screws 16 and the screws are then screwed into the member 9 so that the heads will engage the outer surface of the wrench.

The receptacle 1 may be filled with liquid thru a sleeve 48 which is irremovably held in the top 49 of the receptacle. Said sleeve has a spring held cap 50 enclosing the upper end thereof, which is mounted on a hinge pin 50'. The sleeve has an annular reduced portion 51 which engages the opening in the top 49, and also embraces a flange 52 overlying the top of the receptacle.

The sleeve below the portion 51 is normally straight so that it may be readily inserted in the opening in the top and is then rolled annularly and expanded at 53 so as to underlie the top of the receptacle to prevent the removal of the filling cap. The top 49 of the receptacle may be provided with a plurality of recesses 49' around the opening therein so that when the portion 53 is expanded the recesses 49' will be partially filled with the metal forming the annular portion 53 so as to prevent the turning of the cap in the top.

From the foregoing description of my improvements it will be observed that I have provided a simple, effective, and economical dispensing mechanism for liquid soap or for other materials which is ordinarily incapable of removal for extracting the contents thereof without knowledge of its manner of assembly and possession of the special type of wrench 44 necessary for such purpose. In any event, one seeking to remove the receptacle in an unauthorized manner must know the secret of the combination between the several elements which combine to hold the case in position on the surface 9 and to remove the cap 27 from the receptacle.

While I have shown a suitable form of valve for use in connection with my receptacle, it will be understood that any other suitable form of valve may be employed. The essential characteristics of the valve are such that the valve may be bodily assembled, inserted in and removed from the receptacle, and that the valve may not be removed by the application of an ordinary wrench or tool, for the reason that a special type of wrench is re-

quired. The opening 41 which received portion 46 of the wrench is so formed that a nail or other straight tool will not be effective for turning the valve cap 28. The washers 31' and 43 prevent leakage of the contents thru the openings for the valve barrel and the bolt 21.

What I claim is:

1. The combination with a supporting member having attaching members projecting therefrom, of a closed receptacle having a back spaced from the face of said supporting member, a supporting plate yieldably mounted on the back of said receptacle and having apertures for receiving said attaching members, a dispensing valve mounted on said receptacle, and means associated with the valve for locking said supporting plate on said attaching members against removal.

2. A device of the character described comprising a receptacle having a recessed back, a supporting member therefor, an attaching plate fixedly held on the back of the receptacle at one end and free at its other end, means extending from said supporting member for engagement with said attaching member wherewith to support the receptacle in operative position, and means engaging said attaching member and only authorizedly accessible from the front of said receptacle for locking said attaching member on the supporting member.

3. A device of the character described comprising a receptacle having a recessed back, a supporting member therefor, an attaching plate fixedly held on the back of the receptacle at one end and free at its other end, means extending from said supporting member for engagement with said attaching member wherewith to support the receptacle in operative position, and means engaging said attaching member and only authorizedly accessible from the front of said receptacle for locking said attaching member on the supporting member, said attaching member being provided with means for rendering the body of said member rigid, as described.

4. In a device of the character described, the combination of a receptacle, an attaching member mounted on the back thereof and attached to said back at one end, a supporting member, screws extended from said supporting member, said attaching member having slots for embracing the heads of said screws, and means extending thru said receptacle and engaging the free end of said attaching member for locking the attaching member on said screws.

5. In a device of the character described, the combination of a receptacle, an attaching member mounted on the back thereof and attached to said back at one end, a supporting member, screws extended from said supporting member, said attaching member having slots for embracing the heads of said screws,

and means extending thru said receptacle and engaging the free end of said attaching member for locking the attaching member on said screws, the free end of said attaching member having a projection formed thereon for engagement with and adapted to prevent the rotation of said last mentioned means.

6. A device of the character described comprising a receptacle having a recessed back, a supporting member, an attaching member mounted on and enclosed by the back of said receptacle, one end of said attaching member being affixed to the back of the receptacle and the other end thereof being free, ribs formed on said attaching member to prevent the flexing thereof except near its point of attachment to said back, means carried by said supporting member for inter-locking engagement with the attaching member, and means engaging and adapted to lock the attaching member against removal from said supporting member, said last mentioned means being accessible only from the front of the receptacle.

7. A device of the character described comprising a receptacle having a recessed back, a supporting member, an attaching member mounted on and enclosed by the back of said receptacle, one end of said attaching member being affixed to the back of the receptacle and the other end thereof being free, ribs formed on said attaching member to prevent the flexing thereof except near its point of attachment to said back, means carried by said supporting member for inter-locking engagement with the attaching member, means engaging and adapted to lock the attaching member against removal from said supporting member, said last mentioned means being accessible only from the front of the receptacle, and means for preventing the unauthorized unlocking of said attaching member.

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