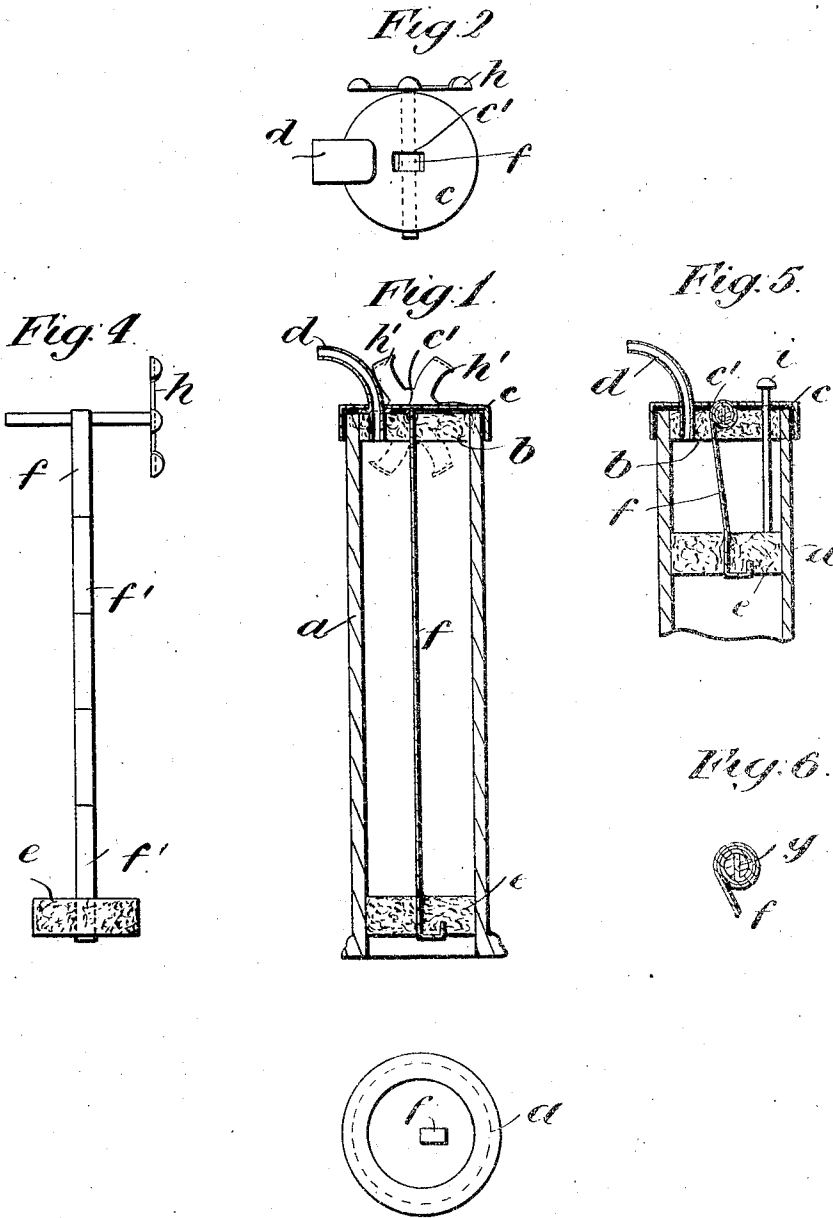


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RECEPTACLE OR CONTAINER FOR SEMI FLUID OR OTHER LIKE SUBSTANCES.

APPLICATION FILED MAR. 20, 1907.

2 SHEETS—SHEET 1.



Witnesses:  
*H. D. Penney*  
*John W. Seifert*

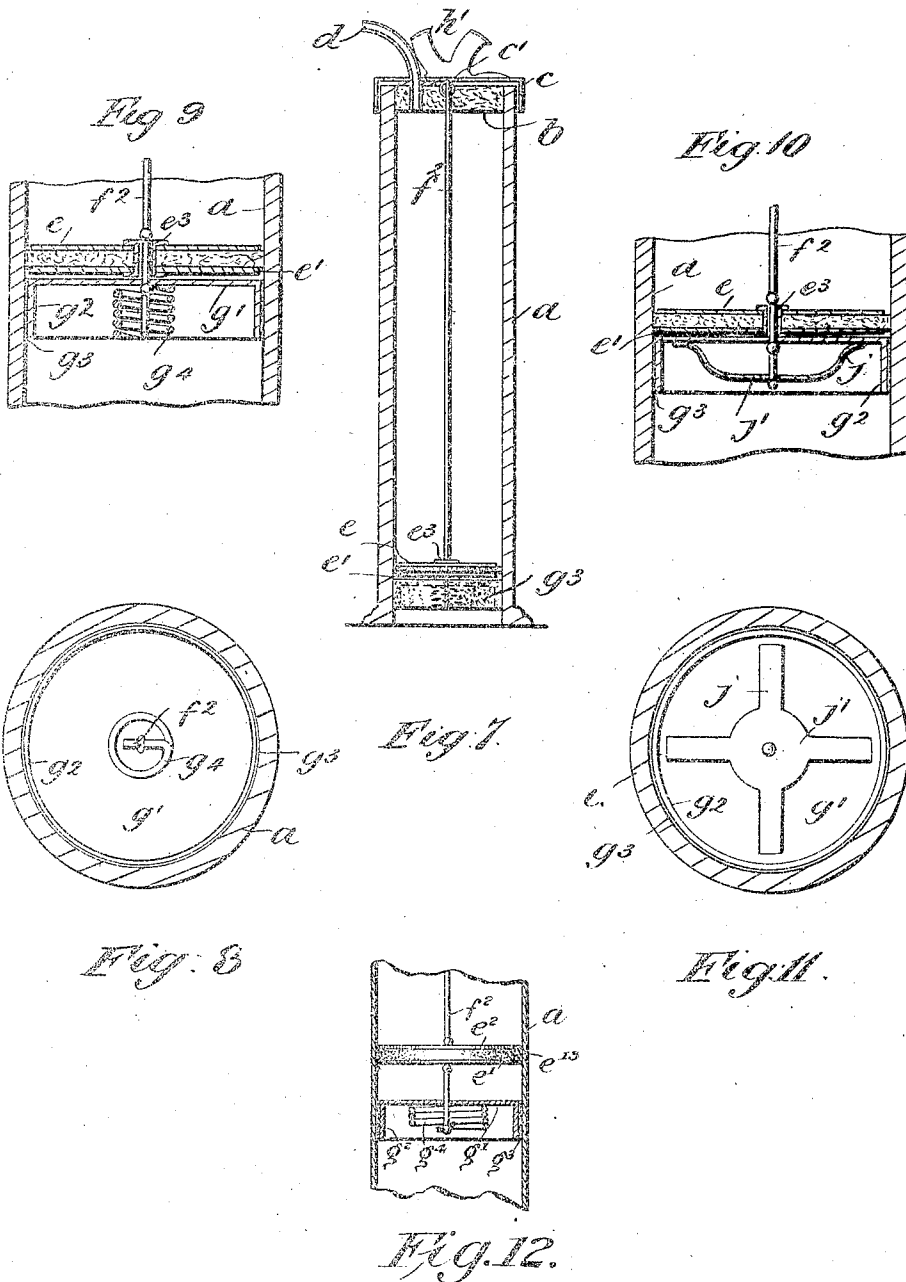
Inventor:  
*F. R. James.*  
 By his Attorney, *J. A. Richards.*

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# UNITED STATES PATENT OFFICE.

FREDERICK REESOR JAMES, OF LONDON, ENGLAND.

RECEPTACLE OR CONTAINER FOR SEMIFLUID OR OTHER LIKE SUBSTANCES.

No. 876,968.

Specification of Letters Patent.

Patented Jan. 21, 1908.

Application filed March 20, 1907. Serial No. 363,489.

To all whom it may concern:

Be it known that I, FREDERICK REESOR JAMES, a subject of the King of Great Britain, residing in city of London, England, have invented certain new and useful Improvements in Receptacles or Containers for Semifluid or other Like Substances, of which the following is a specification.

This invention relates to improved receptacles or containers for semi-fluid or other like substances and it has for its object to produce receptacles from which the contents may be readily discharged in any desired quantity without damaging the said container or soiling the hands.

In order that the invention may be the better understood, drawings are appended in which:—

Figure 1. is a longitudinal section of a form of device constructed in accordance with the present invention. Fig. 2 is a plan of the upper end. Fig. 3 is a plan of the lower end. Fig. 4 shows the disk and operative means therefor removed from the receptacle. Fig. 5 is a sectional view illustrating a means for indicating the quantity of the contents that has been discharged. Fig. 6. is an enlarged cross section of the spindle showing the attachment thereto of the operating strip. Fig. 7 is a longitudinal section of a device provided with means for checking the exudation of the contents of the receptacle after the piston has been operated. Fig. 8 is a plan on an enlarged scale of the underneath of the hollow body with the spring therein. Fig. 9 is an enlarged section of the piston and hollow body connected thereto. Fig. 10 is an enlarged section showing a modified form of spring. Fig. 11 is a plan of the underneath of the parts shown in Fig. 10; and Fig. 12 is a section showing the piston in its upper position.

Referring to the accompanying drawings, *a* indicates a hollow body or receptacle formed of metal, glass, porcelain or any other suitable material and in the present instance of circular cross section. It will however, be understood that the sectional outline of the container may be varied as desired. The body *a* is shown as open at the lower end while at its upper end it is provided with a closure *b* formed of cork or any other suitable material. An outer ornamental cap or cover *c* is provided.

*d* indicates a discharge spout passing through the cover *c* and through the cork *b*

to which it may be secured in any convenient manner. Located within the receptacle is a disk *e* of cork or other suitable material forming a piston. The diameter and thickness of the disk are such that while it is capable of moving freely within the body of the receptacle none of the contents can escape from the top of the disk to the underside thereof. The disk *e* may be regarded as forming a movable bottom to the receptacle. As aforesaid, the lower end of the said receptacle may be left open, by this means the ready access of air to the underside of the disk in order to permit its upward movement is permitted. I may however, close the lower end either by means of a bottom formed integral with the body or by means of a suitable cap. In either case it would be necessary to make provision for the ready access of air to the underside of the disk. This could be conveniently effected by perforating the bottom of the receptacle or the cap as the case may be.

Secured in any convenient manner to the disk *e* is the lower end of a strip *f* of thin sheet metal, the upper end of which is secured to a spindle carried in a recess formed within the upper surface of the closure *b*. The strip may be secured by slotting the spindle and passing the end of the said strip therethrough as shown at *g* Fig. 6. Secured to one end of the spindle is a wheel such as *h* whereby the rotation of the said spindle may be effected when the receptacle is held in the hand by means of the thumb. The wheel may be of any desired form but the form illustrated offers an advantage over other forms inasmuch as while affording a ready means of operation in one direction is provided with points *h'* which, upon attempting to operate the said wheel in the opposite direction will offer sufficient discomfort to the operator to advise him of the fact that the spindle is being turned in the wrong direction. Where the container body is formed of an opaque material it is desirable that some means be provided for indicating the quantity of the substance remaining in the container. This may be effected by coloring the strip *f* for a suitable portion of its length as indicated at *f'* Fig. 4. An aperture *e'* is formed in the cap *c* through which the strip is visible. The strip may also be variously colored for predetermined portions of its length so that an indication may be afforded by the color visible through open-

ing  $c'$  as to whether the receptacle is "full" half full, or  $\frac{1}{4}$  full or the colors may be arranged to indicate any other quantities remaining in the container.

5 Instead of the foregoing arrangement I may employ one or more pins such as  $i$  which pass through the closure and cap and into the receptacle. As the disk moves up-  
10 wards it comes into contact with the pin or pins as the case may be and pushes them out, thereby serving the same purpose as the colored portions of the strip  $f$ .

The operation of the device is as follows:—  
15 On rotating the spindle the strip is coiled thereon pulling up the piston  $e$  and forcing the contents out through the spout  $d$  for which if desired a cap may be provided. As afore-  
20 said it is sometimes necessary that provision is made to insure the cessation of the expulsion of the contents of the receptacle when the movement of the piston has ceased. Arrangements for effecting this object are illustrated in Figs. 7 to 11.

In Figs. 7 and 8 the piston, which in order  
25 to reduce the friction between it and the walls of the receptacle is reduced in thickness and may comprise a simple disk of wood or other material or as shown in the figures referred to, it may comprise two disks  $e'$   $e''$   
30 of a diameter somewhat less than the internal diameter of the receptacle and connected by means of an eyelet  $e^3$  through which passes a wire  $f^2$  a disk of leather or other suitable material  $e^3$  being clamped between them, the  
35 said disk accurately fitting the receptacle  $a$ , and being secured to the flexible body by means of knots formed therein, such knots being disposed one upon each side of the piston. Located beneath the piston is a  
40 hollow body  $g'$  more or less accurately fitting the receptacles and in order to secure a more perfect fit the vertical downwardly projecting wall  $g^2$  thereof may be provided with a  
45 covering of leather or other suitable material  $g^3$ . It is however, not requisite that the contact between the wall  $g^2$  and the interior of the receptacle shall be more than sufficient to hold the hollow body sufficiently tight in the receptacle as to enable it to overcome  
50 the downward pull of the spring  $g^4$  located within said hollow body. The spring  $g^4$  has connected to it at its lower end the end of the wire  $f^2$  the wire passing through the  
55 spring and through the top of the body  $g'$  as shown. The parts normally occupy the position shown in Fig. 7 and 9 the expansion of the spring pulling the piston downwards as soon as the pull upon the wire is released, the knot in the end of said wire effecting the  
60 necessary connection between the piston and the hollow body. Upon the wire being coiled up on the spindle the piston is drawn upwards, the spring is compressed, the frictional contact between the sides of the body  
65 and the receptacle being sufficient to enable

the said compression to take place prior to the movement of the said hollow body. When the limit of compression has been reached, the body and with it the piston, move upwards together and some of the contents of the receptacle are extruded. Should  
70 the pull upon the wire however, be removed, the spring will expand and the piston is pulled back by the spring and the extrusion of the contents ceases. The hollow body  
75 during the expansion of the spring remains stationary. It will be understood that the term "knot" is intended to apply to any enlargement formed in or upon the wire, for the purpose of establishing the requisite  
80 connection between the piston and the flexible body.

Instead of employing a helical spring such as that just described a bow spring may be employed such for example as that shown in  
85 Figs. 10 and 11, where a number of radial arms  $j$  are formed upon a disk  $j'$  said arms being curved and adapted to bear against the underside of the top of the body  $g'$ . The  
90 wire  $f^2$  passes through the center of the disk  $j'$  and is knotted or otherwise formed at its end so that it cannot be drawn through the disk. It is obvious that a tape of flexible material such as that previously described may be substituted for the wire.  
95

Although I have described and illustrated a specific construction and arrangement of parts, it will be understood that I do not  
100 desire to limit the expression of the invention solely thereto, but that I may make such alterations in said construction and arrangement as may in practice be found necessary.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—  
105

1. A receptacle for semi-fluid substances comprising a hollow body closed at the upper end, a discharge spout, a piston within said  
110 body, a body fitting said receptacle, a flexible body connected to the piston, a rotatable spindle upon which the flexible body may be coiled, a means for rotating the spindle and a resilient device also connected to the flexible  
115 body for retracting the piston when the pull on the flexible body is released.

2. A receptacle for semi-fluid substances comprising a hollow body closed at the upper end, a discharge spout, a piston within said  
120 body comprising a pair of disks between which is clamped a disk of leather or other suitable substance, a perforation in the center of the piston, a flexible body passing therethrough, a rotatable spindle to which  
125 the upper end of said body is attached, means for rotating said spindle, a hollow body within the receptacle a spring within said hollow body to which the end of the flexible body is attached and a knot or enlargement in the flexible body whereby connection is  
130

established between the springs and the piston.

3. A receptacle for semi-fluid substances comprising a hollow body closed at its upper end, a discharge spout, a piston within the  
5 receptacle composed of two disks between which is clamped a disk of leather or other suitable substance a rotatable spindle and means for rotating same, a flexible body con-  
10 nected at one end to the spindle and passing through the piston and through a body disposed beneath the said piston, and connected to a spring beneath the said body and a stud or pin projecting through the closure of the  
15 receptacle, and adapted to be moved upwards by the piston.

4. A receptacle for semi-fluid substances comprising a hollow body closed at its upper end and provided with a discharge spout, a  
20 piston within said body, a flexible body passing through said piston, said body being variously coloured, a rotatable spindle to which one end of the flexible body is attached while the other end is secured to a spring  
25 located beneath a body disposed beneath the piston means upon the flexible body for establishing the requisite connection between the spring and the piston.

5. In a receptacle for semi-fluid substances

the combination with a piston adapted to be 30 operated in said receptacle to extrude the contents of a body disposed beneath said piston and containing a spring connected to the operative means for the piston, said spring  
being designed to retract the piston when 35 the pull upon the operative means is removed so as to prevent further extrusion of the contents.

6. A receptacle for semi-fluid substances comprising a hollow body, a closure at the 40 upper end of said hollow body, said closure being provided with a recess, a piston in said hollow body, a rotatable spindle, said spindle being contained within said recess in the said  
closure, a flexible body connecting said pis- 45 ton and spindle, a cap for covering said closure and recess, a discharge spout carried by the closure and passing through the outer cover, and means secured to the end of the  
50 spindle to effect its rotation.

In witness whereof I have hereunto affixed my signature in the presence of the two undersigned witnesses.

FREDERICK REESOR JAMES.

Witnesses:

JOHN H. JACK,  
E. H. HASBERG.