

No. 846,615.

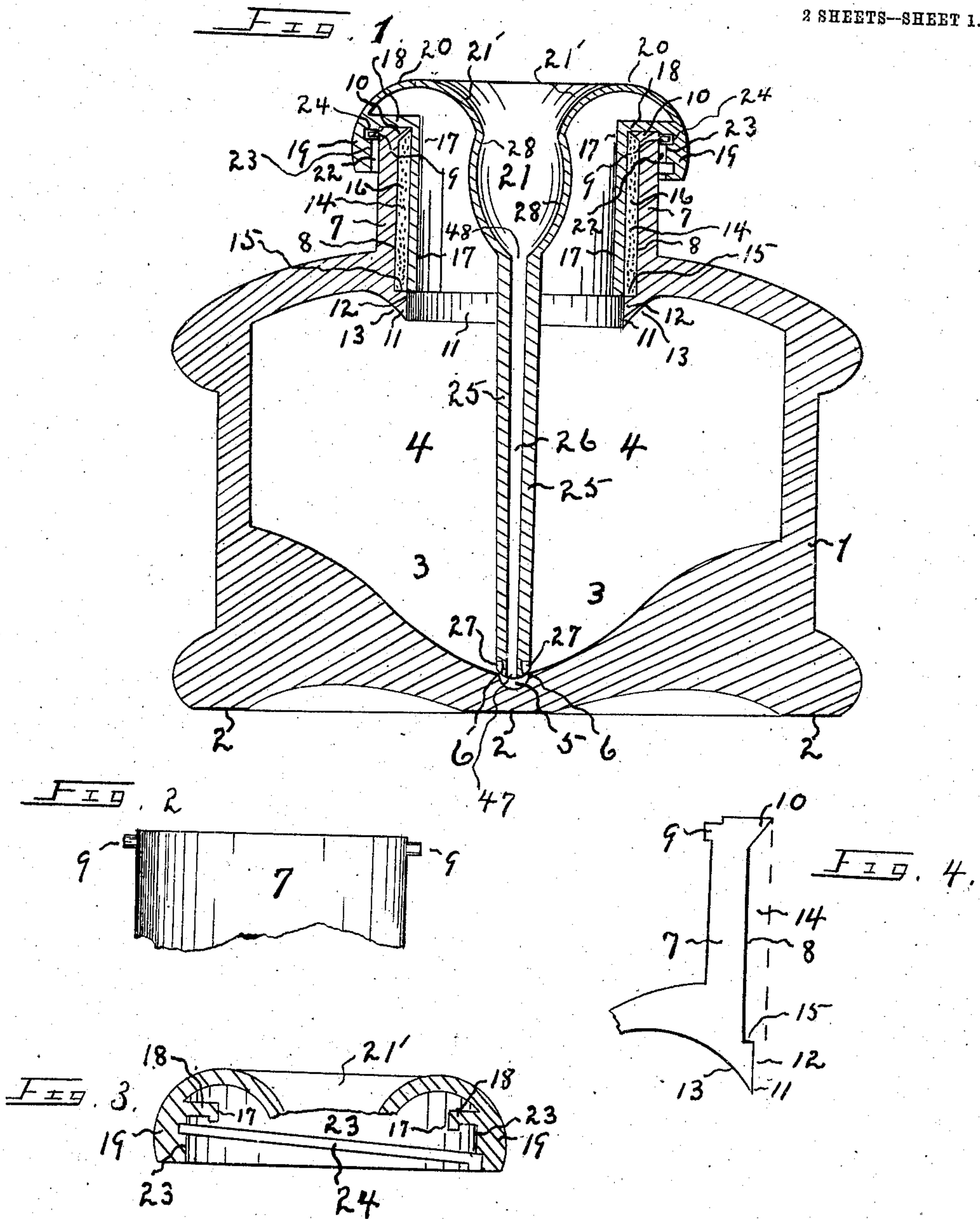
PATENTED MAR. 12, 1907.

J. B. RANDOLPH.

INK WELL.

APPLICATION FILED APR. 30, 1906.

2 SHEETS--SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 5.

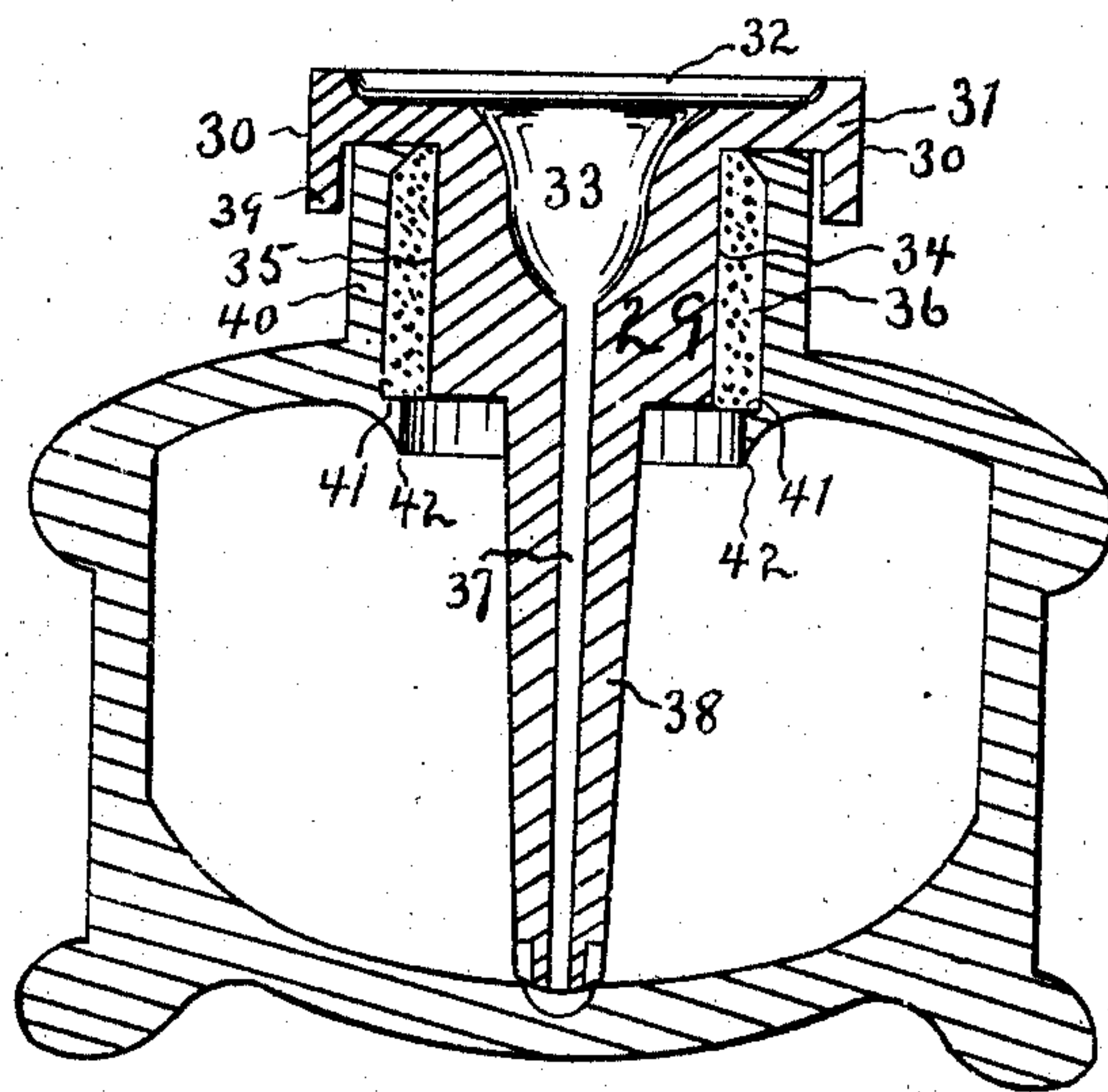
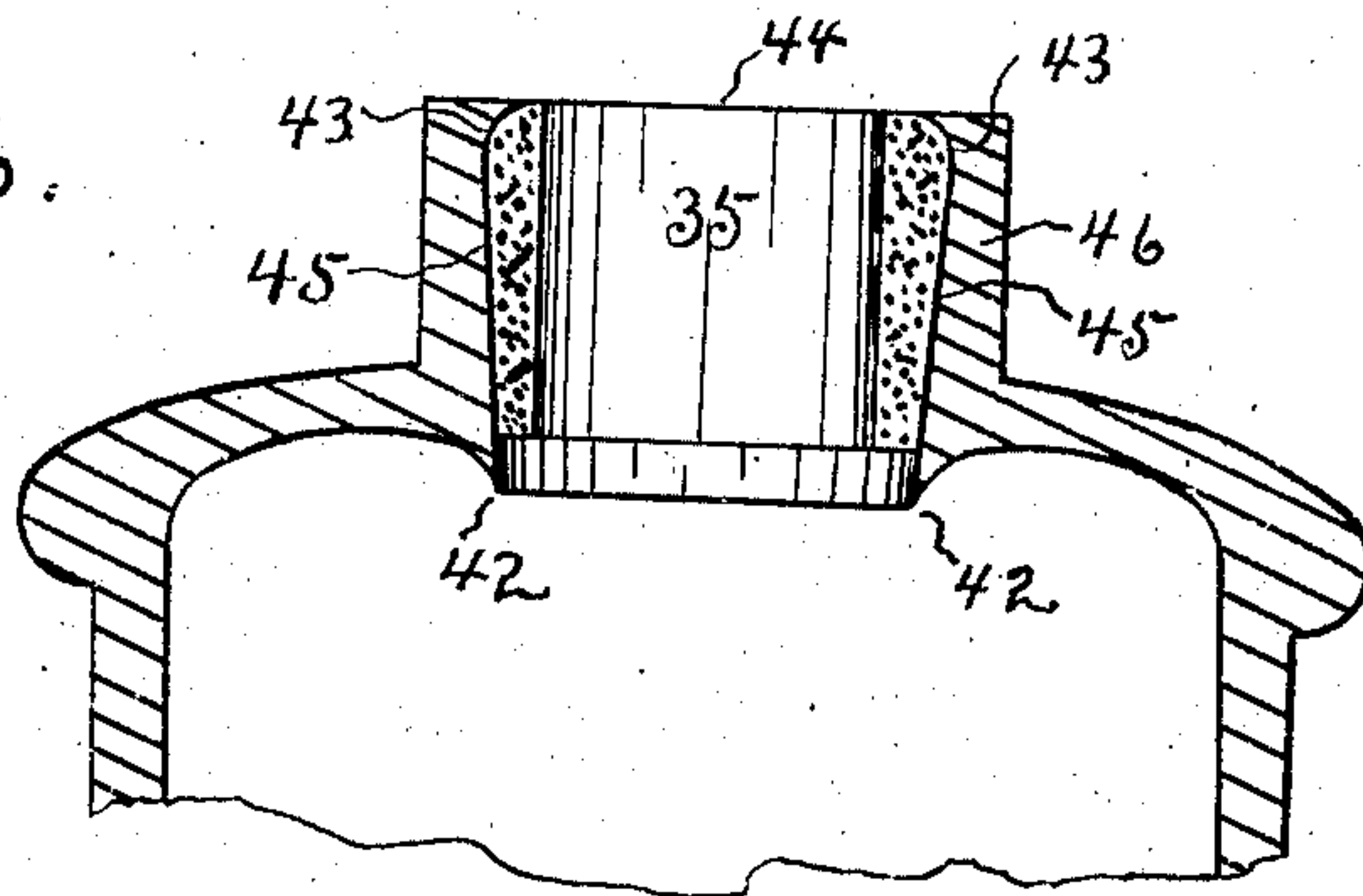


Fig. 6.



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# UNITED STATES PATENT OFFICE.

JEPHTHA BURTON RANDOLPH, OF OMAHA, NEBRASKA.

## INK-WELL.

No. 846,615.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed April 30, 1906. Serial No. 314,581.

*To all whom it may concern:*

Be it known that I, JEPHTHA BURTON RANDOLPH, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Ink-Wells, of which the following is a specification.

My invention relates to improvements in ink-wells of the class where the supply of ink in the receiver is under control from air-pressure.

The object of the invention is to provide a new and improved construction whereby the expense of manufacture may be reduced.

The invention includes means for dispensing with the use by the consumer of corks or stoppers and includes means to control the degree of altitude of ink in the ink-column, including a closure of the column in a manner highly effective and simple in management.

With these and other objects in view the invention presents a new construction and arrangement of parts, as disclosed herein and illustrated by the drawings, wherein—

Figure 1 represents a vertical elevation of the invention centrally sectioned. Fig. 2 represents a side view of the neck or the upper portion thereof to show clearly the location of lugs formed thereon. Fig. 3 is a view of the interior wall of the hood, partly in section, to illustrate the inclination of spiral grooves. Fig. 4 is a detail of Fig. 1 to clearly show formation of the annular cavity hereafter mentioned and described. Fig. 5 represents a vertical elevation, centrally sectioned, of an ink-well, being a modified construction of the invention. Fig. 6 represents a sectional view of a portion of the walls of an ink-well and cork filler within the neck to illustrate an economical construction, being a modified form of parts of the invention.

I construct the body 1 of an ink-well, having walls preferably of circular shape, with flat base portions 2, and employ the contracted portion 3 near the bottom of the principal chamber 4, which terminates in the cup-like cavity 5, having a sharp projecting wall 6. The principal chamber 4 has a capacity for containing the ink-supply and also operates as an air-chamber. The neck 7, having a vertical inner wall 8 extending upwardly and angularly from the body, has a uniform diameter and is provided with lugs 9, oppositely disposed upon its circumference

near its upper rim. An annular bead 10 is also formed upon the rim of the neck as a part of its inner surface. I employ the projection 11, formed as an inwardly and downwardly pointed rim having an inner wall 12, extending parallel with but having a less circumference than the wall 8 of the neck. The projection 11 is also provided with the concaved wall 13, and as thus described the body-walls, neck, and parts mentioned may consist of a single or integral construction and may be cast or molded as such at very small expense, using glass, porcelain, metal, or other suitable material.

Since the wall 12 of projection 11 has less diameter than inner diameter 8 of the neck, there is formed an annular cavity 14 within neck 7, and I provide the angularly-formed annular ledge 15 upon the lower part of wall 8 and seat within the annular cavity 14 a filler 16. This filler may be of any resilient substance tending to resist percolation of ink. The annular projection 11 is intended as an aid and operates in a measure to prevent the upward passage of ink along the walls of filler 16, and this projection to a large extent prevents contact of ink upon the base of the filler, since a movement of ink within chamber 4, caused from vibration and sudden lateral agitation or jars coming toward the center from the side walls, will by function of the concaved wall 13 be thrown or deflected downward before reaching the base of the filler.

I construct a plunger adapted to be inserted within the ink-well, which consists of several parts now to be described. The plunger is formed as a sleeve, having the vertically-disposed circular wall 17 extending within the neck 7 and making contact with the surface of filler 16, this contact being sufficiently close to prevent the passage of air therebetween. Wall 17 has an angular extension 18, passing outwardly to form an integral construction with the hood 19. The hood 19 consists of a shell-like structure having a convexed outer surface 20, terminating in a depressed inner wall 21, forming a circular basin 21 and operating as an ink-receiver. The outer perimeter of the hood is extended downward and overhangs neck 7, forming an annular recess 22 between the inner vertical wall 23 of the hood and outer wall of neck 7, and I provide the spiral groove 24, which is formed in wall 23 of the hood, (best shown



by Fig. 3,) within which spiral groove lugs 9 may be seated.

The lifting-tube 25 is constructed integrally with the lower walls of basin 21 and is placed upright to occupy the central part, substantially, of the cylindrical walls of the plunger, passing also within the center of chamber 4. The lifting-tube is provided with the lengthwise opening 26 and is provided at its lower extremity with a contact-ring 27, adapted to make contact with projections 6 adjacent to cavity 5, and as thus constructed the plunger is provided with a convenient dipping-cup 21, having the con-  
vex wall 28.

Having thus fully described the parts, operation will be readily understood. When filling the ink-well, the plunger is first removed by suitably rotating the plunger and disengaging lugs 9 from grooves 24. The lower part of the well or chamber 4 is then filled with ink to an altitude equal to the projection 11. The plunger is then partly inserted, so that there is a complete contact of the lower part of wall 17 within the upper rim of filler 16. The ink-well and plunger are then inverted while in this relative position until the plunger is completely inserted by manually pushing it between the walls of neck 7, and by an opposite rotation of the plunger, and when the plunger is completely inserted the contact-ring 27 will be seated upon projection 6 of cavity 5. The ink-well thus filled is ready for handling or shipment without further attention, and there will be no loss of ink fluid through the opening 26 or dipping-cup 21 during this manipulation, for the reason that the tendency of air from outside while inverted is to pass within the receptacle. The holding capacity within the neck of the receptacle is equal to or greater than the holding capacity of the portion 3 of chamber 4, and while inverted the free end of lifting-tube 25 occupies air-space within portion 3, and while some ink at this time is within opening 26 of the lifting-tube it will not pass out while inverted, for the reason that the air within portion 3 prevents such movement, the tendency at that time of the air in portion 3 being to form a vacuum.

In order to cause an elevation of ink in tube 25 and cup 21 when desired, a suitable rotation of the plunger is made while the receptacle is resting on its base, and since this rotation causes an elevation of tube 25 a small quantity of air will pass downward through aperture 26 of the tube and will be added to the air within the ink-well, thereby causing a corresponding elevation of ink in the tube, and in practice a slight reverse rotation of the hood will cause the ink to descend in tube 25, which causes evacuation of the dipping-cup and decreases evaporation, and at this time the ink-well may be tilted or inverted and no ink will escape, for reasons

given, and by reason of the construction, as explained, the ink is supplied to the market in these wells and at all times handled without making a closure of the orifice or cup 21.

It will be noted that by reason of the annular ridge 10 and the angularly-formed wall 15 a convenient annular recess 14 is formed as a seating for the filler 16 and the wall 17 of the plunger is adapted to make close contact, so that air may not pass between the filler and wall 17. The groove 24 has a moderate inclination, and the annular recess 22 causes a non-contact of the hood with the outer wall of neck 7, and therefore the hood has an easy rotative movement upward and downward. The ink, it will be observed, is under entire control of the operator for evacuating the receiver or entirely cutting off the supply, and it will be noted that an outer closure for the ink-well may be dispensed with.

A modification of the invention is shown in Figs. 5 and 6, and this construction results in economy of manufacture, since it dispenses with spiral grooves and lugs and employs a less expensive hood. This construction shows a plunger 29 formed as a solid body, except where apertured, adapted to be rotated, lowered, or elevated manually, as by thumb-and-finger grip upon the wall 30 of hood 31. The basin 32 is formed leading to the dipping-cup 33 in the plunger, the latter depending upon frictional contact of its outer wall 34 upon the inner wall 35 of filler 36 for maintaining its raised or lowered position, the other parts being substantially the same as those already described. The operation of filling the receptacle and for raising or lowering the ink within aperture 37 of tube 38 or dipping-cup 33 is practically the same as already described, except a slightly less quantity of ink is placed in the well at time of filling. Since wall 39 of the hood incloses the neck 40, a convenient grip may be made for adjustment of the plunger. The ledge 41 above projection 42 may be dispensed with for economical purposes by employing the construction shown in Fig. 6. The inner wall of neck 46 is therefore formed concavely at 43 near the orifice 44, the balance of the inner wall 45 being continued convergingly to the point of projection 42, thereby affording practically a rigid seating for the filler. The modifications shown by Figs. 5 and 6 are not considered departures from the invention, but are introduced to show economical construction.

It will be noted that aperture 26 of tube 25, Fig. 1, is formed with a less diameter at 47 near the lower end of the tube than at 48, where the tube joins the basin 21, the function of this particular construction being to prevent ejection of ink which might be occasioned by a sudden downward movement of the plunger.



What I claim as my invention is—

1. In combination, an ink-well as described, comprising a neck portion having seated upon its upper wall-surface oppositely-disposed and outwardly-projecting lugs and having an inwardly-projecting annular bead formed upon its upper rim and a downwardly-projecting annular rim formed upon its inner, lower surface, and having an annular groove formed upon its inner surface between said inwardly-projecting annular bead and downwardly-projecting annular rim, the lower boundary of said annular groove being formed as an angular, annular ledge; a floor portion having a central cavity formed thereon with a projecting wall 6; a plunger formed with a sleeve adapted to have a seating within said neck portion, the upper end of said sleeve having an angular, annular extension passing outwardly and from its perimeter extended upwardly and convergingly with a convexed outer surface, and terminating in a manner to form a circular basin within the planes of the sleeve; the angular, outward and annular extension of the sleeve being extended from its perimeter downwardly and adjacently to said sleeve to form an overhanging wall having upon its inner surface a lug-engaging, spiral groove, and to form between said overhanging wall and sleeve an annular recess adapted to seat therein the upper end of said neck portion; a downwardly-extending tube formed centrally upon said circular basin of the plunger and having a lower end adapted to have a seating upon the projecting wall 6 of said central cavity of the floor portion; said downwardly-extending tube having an aperture gradually increasing in width from its lower end to its junction with said circular basin.

2. In combination, an ink-well as described, comprising a neck portion having seated upon its upper wall-surface oppositely-disposed and outwardly-projecting lugs and having an inwardly-projecting annular bead formed upon its inner rim and a downwardly-projecting annular rim formed upon its inner, lower surface, and having an annular groove formed upon its inner surface between said inwardly-projecting annular bead and downwardly-projecting annular rim, the lower boundary of said annular groove being formed as an angular, annular ledge; a floor portion having a central cavity formed therein; a plunger formed with a sleeve adapted to have a seating within said neck portion, the upper end of said sleeve having an angular, annular extension passing outwardly and from its perimeter extended upwardly and convergingly with a convexed outer surface, and terminating in a manner to form a circular basin within the planes of the sleeve;

the angular, annular and outward extension of the sleeve being extended from its perimeter downwardly and adjacently to said sleeve to form an overhanging wall having upon its inner surface a lug-engaging, spiral groove, and to form between said overhanging wall and sleeve an annular recess adapted to seat therein the upper end of said neck portion; a downwardly-extending tube formed centrally upon said circular basin of the plunger and having a lower end adapted to have a seating within said central cavity of the floor portion.

3. In combination, an ink-well as described, comprising a receptacle having a neck portion and a floor portion; said neck portion having an inwardly-projecting, annular bead formed upon its upper rim and a downwardly-projecting annular rim formed upon its inner, lower surface, and having an annular groove formed upon its inner surface between said inwardly-projecting annular bead and downwardly-projecting annular rim, the lower boundary of said annular groove being formed as an angular, annular ledge; a sleeve seated within said annular groove of said neck portion; a rotatable and vertically-adjustable plunger seated within the sleeve of said annular groove and formed as a central basin therein, said plunger being downwardly extended from said basin as a tube having an aperture gradually convergent from the basin to its lower end; the lower end of said tube adapted to have a seating upon said floor portion of the receptacle.

4. In combination, an ink-well as described, comprising a receptacle having a neck portion and a floor portion; said neck portion having an inwardly-projecting, annular bead formed upon its upper rim and a downwardly-projecting annular rim formed upon its inner, lower surface, and having an annular groove formed upon its inner surface between said inwardly-projecting annular bead and downwardly-projecting annular rim, the lower boundary of said annular groove being formed as an angular, annular ledge; a sleeve seated within said annular groove of said neck portion; a rotatable and vertically-adjustable plunger seated within the sleeve of said annular groove and formed as a central basin therein, said plunger being downwardly extended from said basin as a tube having a lower end adapted to be seated upon said floor portion of the receptacle.

In testimony whereof I affix my signature in presence of two witnesses.

JEPHTHA BURTON RANDOLPH.

Witnesses:

CHARLES B. FROST,  
W. E. JUDSON.