

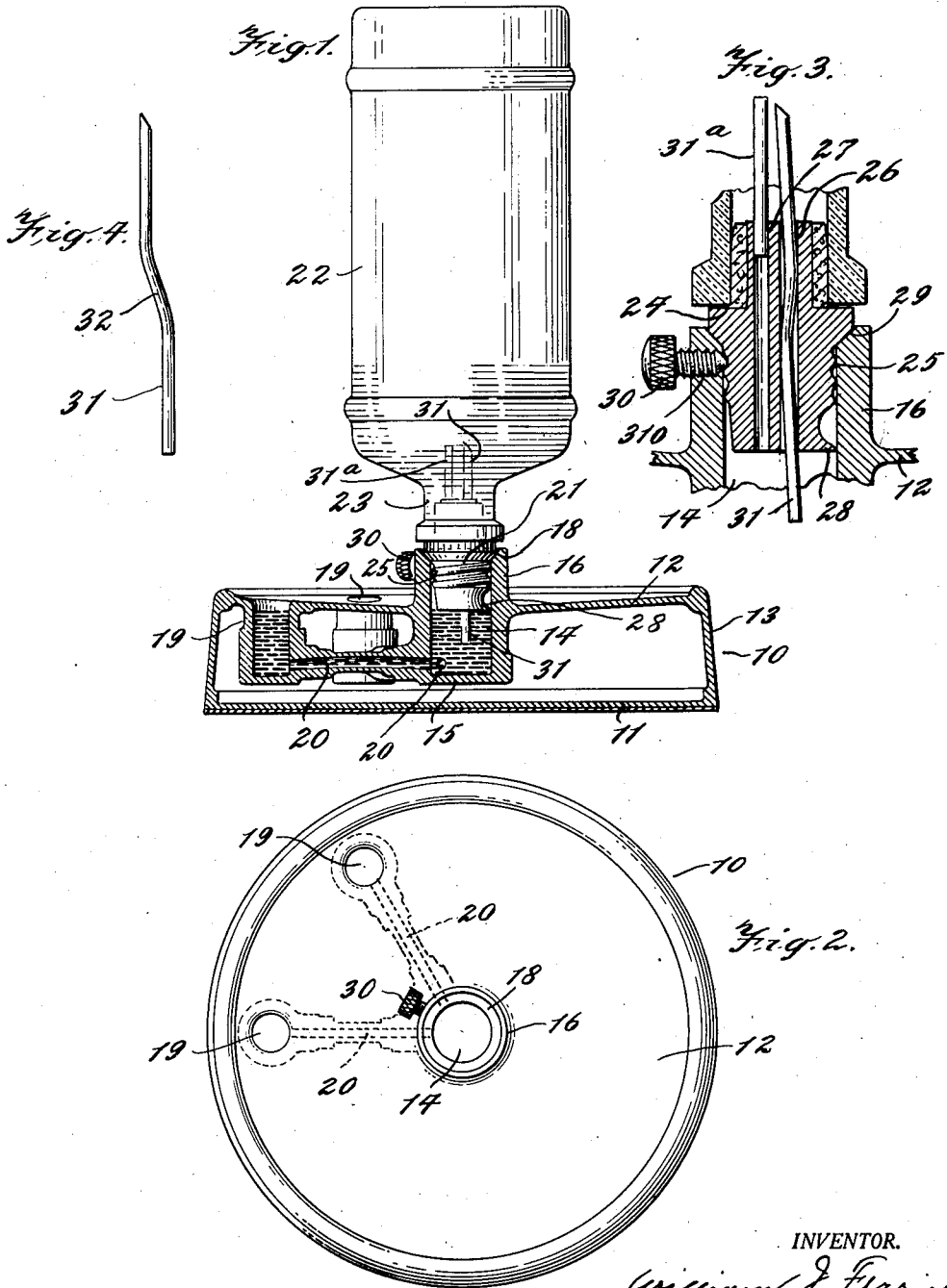
Sept. 29, 1925.

1,555,407

W. I. FERRIS

FOUNTAIN

Filed Dec. 12, 1923



INVENTOR.

*William J. Ferris.*

BY

*Gifford, Bull & Scull*  
ATTORNEY.

# UNITED STATES PATENT OFFICE.

WILLIAM I. FERRIS, OF WESTFIELD, NEW JERSEY, ASSIGNOR TO L. E. WATERMAN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

## FOUNTAIN.

Application filed December 12, 1923. Serial No. 680,112.

*To all whom it may concern:*

Be it known that I, WILLIAM I. FERRIS, a citizen of the United States, and resident of Westfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Fountains, of which the following is a specification.

My invention is particularly applicable as an ink fountain, but obviously not limited thereto.

My invention consists of certain novel parts and combinations of parts particularly pointed out in the claims.

The following is a description of a fountain embodying my invention, in the form at present preferred by me, but it will be understood that various modifications and changes may be made therein without departing from the spirit of my invention and without exceeding the scope of my claims.

My invention will best be understood by reference to the accompanying drawings, in which Fig. 1 is a vertical sectional view through a fountain embodying my invention, and showing the fluid reservoir in side elevation supported thereon; Fig. 2 is a plan view of the fountain; Fig. 3 is a fragmentary section through the orificed end of the reservoir including the stopper, and through the upper portion of the fluid reservoir, and Fig. 4 is a side view of a tube or quill, which is preferably inserted in the stopper.

Like reference characters indicate like parts throughout the drawings.

Referring to the drawings, 10 indicates generally a supporting member for the parts of the fountain, formed of any suitable material, such as hard rubber, and which, in the form illustrated, is substantially dish-shaped on its outer surface. The supporting member is preferably hollow, as shown, and comprises a bottom plate 11 and a top plate 12 joined to the bottom plate by a substantially vertical wall 13. The fountain is provided with a receptacle 14, the walls of which are preferably integral with the top plate 12, as illustrated, and closed at its lower end as at 15, the walls of the receptacle preferably comprising an annular flange 16 extending upwardly above the top plate 12, as best shown in Fig. 1. The upper end of the flange 16 is preferably bevelled upwardly and outwardly from the inner side, as indicated at 18. A well 19

is also preferably formed integral with the top plate 12, and extends downwardly therefrom and communicates with the receptacle 14 by a tube 20. The well 19 is open at the upper end, but may, of course, be provided with a cover, as desired. In the form shown, two wells 19 are provided, but it will be understood that any number of wells communicating with the receptacle at a point below the normal liquid level in the receptacle may be provided. The receptacle 16 is adapted to receive and support the orificed portion 21 of a liquid reservoir 22, which is here shown as the usual ink bottle, in the neck 23 of which is placed the stopper 21. I have regarded the stopper as a part of the orificed portion of the fluid reservoir, as it is obvious that the stopper might be dispensed with, the walls of the reservoir itself forming the orificed portion of the reservoir through which the ink or other fluid is discharged from the reservoir into the receptacle of the fountain. The stopper which may be formed of hard rubber or any convenient material is preferably provided with a shoulder 24, which engages the lower end of the neck of the reservoir, as illustrated in Fig. 3, and is also preferably provided with external screw threads as at 25, and with two passages 26 and 27. The bottle and stopper illustrated is the same as one that is commonly used in practice, and in which the ink is poured from the reservoir through one of the passages, the other passage serving to admit air to the bottle, the lip 28 on the stopper being the lip usually provided for this purpose. The stopper is preferably provided with a bevelled portion 29, which seats against the bevelled portion of the flange 16 to support the reservoir in position. A set screw 30 preferably passes through a tapped opening 31 in the flange 16, the end of the set screw engaging a thread 25 to prevent the receptacle from being readily dislodged from the fountain. Preferably, a tube 31 is received in one of the passages 26, and extends below the lower end of the stopper, and serves to direct the ink to the receptacle. The tube 31 may be curved, as at 32, in order to cause the same to be frictionally retained within the passage 26. By making the passage 26 sufficiently small and the tube 31 which is frictionally retained in said passage 26 of a less diameter than that of

the passage, the bore of the tube is made sufficiently small to produce capillary attraction therein so that when the tube projects below the stopper, as illustrated in Fig. 3, and into the receptacle to a point below the liquid level therein, the capillary attraction starts the flow of the ink in the tube 31 and begins to fill the well. As soon as the ink begins to flow in the tube, it also flows through the passage 26 outside of the tube 31.

A tube 31<sup>a</sup> is also preferably received in the passage 27, the same preferably forming a fairly tight fit therein so as to be frictionally retained in position. This tube may extend only a comparatively short distance into the passage as shown, and extends into the reservoir to assist the air entering through the desired passage, the arrangement of this tube preferably being about the same as that which has hitherto been used.

When the reservoir or bottle 22 containing ink is inverted to the position indicated in Fig. 1, with the orificed end thereof received in the receptacle, the ink flows through the tube 31 into the receptacle 14 and from thence into the well or wells 19, air flowing upwardly through the passage 27 into the receptacle. Fluid continues to flow into the receptacle and into the well or wells until the liquid level rises to the lower end of the stopper to seal the air passage 27. The use of an appreciable quantity of ink from the well will again lower the level of the ink in the well and the receptacle and bring the liquid level below the orifice of the passage 27, thereby causing further ink to flow into the receptacle and the liquid level to be substantially maintained.

I claim:

1. A fluid reservoir for supplying fluid to a well having an orificed end, a stopper for

the orifice provided with two passages leading therethrough, and a small bore tube adapted to extend through one of said passages to a point beyond the stopper at each end thereof and extending within the receptacle to a point below the liquid level therein when the reservoir is inverted.

2. A fluid reservoir for supplying fluid to a well having an orificed end, a stopper for the orifice provided with two passages leading therethrough, and a small bore tube extending through one of said passages, substantially smaller than said passage and frictionally retained in position therein and extending to a point beyond the stopper at each end thereof and extending within the receptacle to a point below the liquid level therein when the reservoir is inverted.

3. A fluid reservoir supplying fluid to a well having an orificed end, a stopper for the orifice provided with two passages leading therethrough, and a small bore tube extending through one of said passages and provided with a curved portion whereby the tube is frictionally retained in position in said passage and extending to a point beyond the stopper at each end thereof, and extending within the receptacle to a point below the liquid level therein when the reservoir is inverted.

4. A fluid reservoir for supplying fluid to a well having an orificed end, a stopper for the orifice provided with two passages leading therethrough, a small bore tube adapted to extend through one of said passages to a point beyond the stopper at each end thereof and extending within the receptacle to a point below the liquid level therein when the reservoir is inverted, and a tube positioned in the other passage and extending beyond said stopper only into the reservoir.

WILLIAM I. FERRIS.