April 7, 1964 J. L. LA MURA 3,127,630

FOUNTAIN MARKER

Filed Jan. 24, 1963

FIG. 1

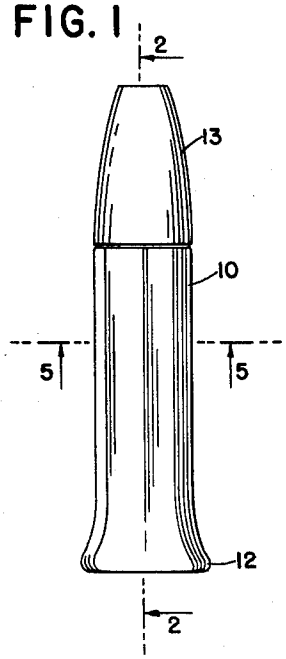



FIG. 2

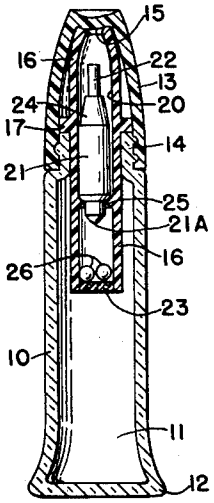



FIG. 3

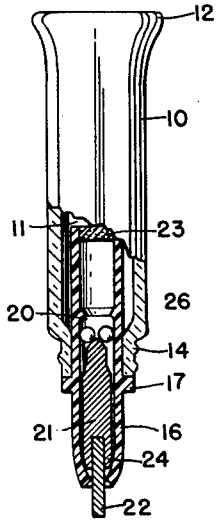



FIG. 4

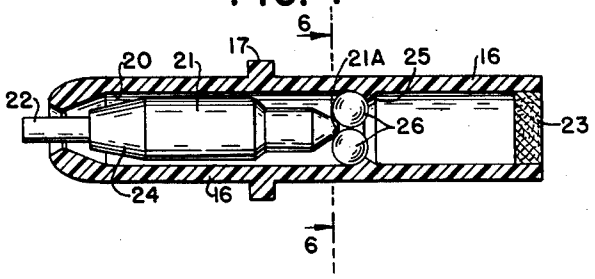



FIG. 5

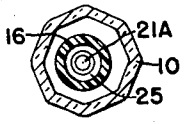
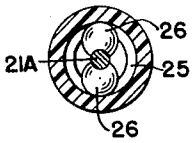



FIG. 6




JOSEPH L. LaMURA
INVENTOR

BY Ralph E. Bitner.
ATTORNEY

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# FOUNTAIN MARKER

Joseph L. La Mura, 367 Passaic Ave., West Caldwell, N.J.

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This invention relates to a fountain marker which can be employed to apply ink to various surfaces for identifying purposes. The invention has particular reference to a locking means for retaining a marking wick in operative position when the marker is inverted.

Many structures have been designed and used for marking various objects with ink for identification purposes. The usual type of marker arrangement includes a supply of ink in a storage container connected to a wick which is generally made of felt or some similar substance. Prior markers have used a wick which is permanently secured to the supply container and always extends beyond the end of the container where it is available for marking purposes and also in a position where the ink or marking fluid may evaporate and render the device inoperative. Some markers have been provided with a cap which helps to keep the fluid from evaporating but, even in such structures, the wick or marking stylus is liable to get hard and fail to operate. The present invention includes a movable wick or marking member which moves into a recessed chamber when not in use. A close-fitting cap seals the unit from evaporation and prevents the wick from losing its effectiveness. When the device is to be used for marking, the cap is unscrewed and the device is inverted thereby permitting the wick to protrude beyond the end of the marking device, and then when pressure is applied to the marking felt, an automatic ball lock retains the wick in its extended position so that pressure may be exerted on the wick without its receding into its enclosing chamber. After the marking operation is completed, the device is turned to its erect position and the wick moves to a retracted position where it is completely enclosed and protected. The cap may then be applied for sealing the entire device.

One of the objects of this invention is to provide an improved fountain marker which avoids one or more of the disadvantages and limitations of prior art arrangements.

Another object of the invention is to provide an enclosed fountain marker which cannot leak or evaporate and which will be ready for instant use.

Another object of the invention is to provide a fountain marker having a wick which is retractable and can be repositioned within the marking container so that it will never dry out.

Another object of the invention includes an automatic locking arrangement which retains the marking wick in its extended position when inverted.

Another object of the invention is to provide an automatic arrangement whereby the marking wick is moved to its retracted position whenever the container is turned slowly to its erect position.

Another object of the invention is to retain the marking felt in a closed compartment when not in use so that it will retain its moisture and desired brushing texture.

Another object of the invention is to supply a sufficient amount of marking liquid to the felt at all times so that it may be used continuously.

The invention includes a container having an internal reservoir for the storage of marking fluid. A piston chamber is secured to the upper end of the container for the passage of the fluid. A piston is positioned within the piston chamber and is free to move in a longitudinal direction when the container is inverted. Automatic locking means are provided for retaining the marker in an extended position when the container is



retained in its inverted position. The locking means is disengaged when the container is moved to its upright position thereby permitting the piston and the marker to recede within the piston chamber so that a cap may be applied to the device to seal it against evaporation of the marking fluid.

For a better understanding of the present invention, together with other and further objects thereof, reference is made to the following description taken in connection with the accompanying drawings.

FIG. 1 is a side view of the container with its cap attached.

FIG. 2 is a cross sectional view of the marker shown in FIG. 1 taken along line 2—2 of that figure.

FIG. 3 is a side view, partly in section, without the cap showing the fountain marker in an inverted position with the marking felt ready for the application of marking fluid to an external surface.

FIG. 4 is a cross sectional view, to an enlarged scale, of the piston chamber and the piston showing how the ball lock arrangement locks the piston in an extended position.

FIG. 5 is a cross sectional view of the marker shown in FIG. 1 and is taken along 5—5 of that figure.

FIG. 6 is a cross sectional view of the piston shown in FIG. 4 and is taken along line 6—6 of that figure.

Referring now to the drawings, the fountain marker is shown in FIGS. 1, 2, and 3 and includes a cylindrical container 10 which is formed with a reservoir 11. The container is closed at the bottom and has an enlarged base 12 which is employed for supporting the marker in a vertical position when not in use. The top portion of the container is normally closed by a conical cap 13 which is removed when the marker is to be used. As can be seen in FIG. 2, the cap 13 is threaded to the top portion 14 of the container and the inside top surface 15 makes contact with a portion of a piston chamber 16 thereby sealing the chamber and its contents from loss of liquid and from evaporation.

The piston chamber (see also FIG. 4) includes a rim 17 which makes contact with the upper edge of the container 10 and a lower portion of the piston chamber extends downwardly into the reservoir 11. The piston chamber 16 is pressed into the upper opening or neck 14 of the container and remains in this position at all times. The piston chamber is formed with a cylindrical axial space 20 and a metallic piston 21 is positioned within this space, generally free to move in a longitudinal direction, but having means for retaining the piston within the chamber at all times. The piston chamber 16 has a small opening at its upper end for the passage of a marker wick 22 when in its operative marking condition. The piston chamber is closed at its other end by a permeable disk 23 which may be of felt. Disk 23 may be perforated with one or more small holes but it has been found by experiment that a coarse felt provides the necessary penetration to permit the marking fluid from the reservoir 11 to enter the interior of the piston chamber at a rate sufficient to supply the wick 22 for continuous marking of exterior surfaces.

The wick 22 is secured to a small depression in the piston 21 and the piston is prevented from moving through the upper hole in the piston chamber by a shoulder 24. When the piston 21 is in its retracted position and the marker is in its vertical position, the lower portion of the piston limits against an annular construction 25 formed in the piston chamber. It will be noted that while the piston 21 is free to move in a longitudinal direction it cannot move any lower than the position shown in FIG. 2 and cannot move outwardly farther than the position shown in FIG. 3.

In order to retain the piston and its marking wick in marking position, two balls 26 are positioned within

the piston chamber and when the container is inverted and the piston **21** falls to its extended position with wick **22** extended beyond the piston chamber, the two balls fall into contact with the rear end **21A** of piston **21** and then, when pressure is exerted on the wick **22** by applying it to an external surface, the piston and balls are moved to the position shown in FIG. 4 where the balls act as interponents between the end of the piston **21A** and the upper surface of constriction **25**. This locking means retains the wick **22** in its extended position and permits considerable pressure to be exerted upon it during a marking operation without having the wick retracted.

In order to move the piston and wick to its retracted position after the marking operation is finished, the container is raised and then slowly turned to its erect position. During this operation the balls are first loosened and then permitted to roll, one by one, into the volume between the constriction **25** and the permeable material **23**. The piston then is free to move to its fully retracted position as shown in FIG. 2 and the cap **13** may be screwed into position to seal the marker and prevent evaporation of the marker fluid.

It has been found by experiment that two balls present the most satisfactory arrangement for producing the lock described above. However, three balls may be used and give good results.

From the above description it will be evident that the fountain marker can be used as described to exert considerable pressure on a marking wick having a continual supply of marking fluid. The wick is retained in its operative position by simply inverting the container. The entire internal system may be secured against evaporation and hardening by inverting the container and replacing the cap.

The foregoing disclosure and drawings are merely illustrative of the principles of this invention and are not to be interpreted in a limiting sense. The only limitations are to be determined from the scope of the appended claims.

I claim:

1. A fountain marker comprising, a cylindrical container closed at its lower end and defining an internal reservoir for the storage of marking fluid, a piston chamber secured to the upper end of the container and supporting a movable piston therein, said chamber formed with an opening at its upper end which permits the passage of a marker wick but retains the piston, said chamber closed at its lower end by a permeable disk for the passage of marker fluid from the reservoir into the chamber, an annular constriction intermediate the ends of the chamber for limiting the motion of said piston and to aid in locking the piston in a marking position, means for securing the marking wick to the upper end of the piston and at least two spherical balls also within said piston chamber for retaining the piston in a marking position when the container is in an inverted position by limiting against said annular constriction, said balls also adapted to move into the space between the constriction and the permeable disk to permit the piston to move to its fully retracted position within the piston chamber when the container is in its upright position.

2. A fountain marker comprising, a cylindrical container closed at its lower end and defining an internal reservoir for the storage of marking fluid, a piston chamber secured to the upper end of said container and enclosing a movable piston therein, said chamber open at its upper end for the passage of a marker wick, said piston chamber also formed with an annular constriction intermediate its two ends for limiting the motion of said piston and to aid in locking the piston in a marking position, said wick secured to the piston at its upper end, and a single spherical ball enclosed in said piston chamber for retaining the piston in a marking position when the container is in an inverted position by limiting against the annular constriction, said single ball also adapted to permit the piston to move to its fully retracted position within the piston chamber when the container is in its upright position.

3. A fountain marker as claimed in claim 2 wherein said piston is closed at its lower end by a permeable disk which permits the passage of marker fluid from the reservoir into the chamber.

4. A fountain marker as claimed in claim 2 wherein a closure means is provided for sealing the open end of the piston chamber when not in use.

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