PATENT SPECIFICATION

533,420

Application Date: Nov. 6, 1939. No. 29506/39.

Complete Specification Left: July 16, 1940.

Complete Specification Accepted: Feb. 12, 1941.

PROVISIONAL SPECIFICATION

A Device for use in the preparation of Ink

We, HENRY C. STEPHENS LIMITED, a British Company, of 57, Aldersgate Street, London, E.C.1, and CHARLES GEORGE TODD, a subject of the King of Great Britain, of the aforesaid Company's address, do hereby declare the nature of this invention to be as follows:—

This invention relates to a device for use in the preparation of ink, especially but not exclusively for mountain pens.

The chief object of the invention is to provide a device which is primarily intended for use in cases or under conditions where the usual bottles of ink are not available, as it offers a ready means whereby a supply of liquid ink can be quickly made from ink powder for filling a fountain pen, particularly of the self-filling type.

According to the invention, the device comprises an outer container or receptacle which is adapted to contain an inner container or receptacle, the latter containing a supply of ink powder and being readily removable from the outer container which can then serve as a receptacle to receive a specified quantity of the ink powder from the bulk supply inner container and also to receive a specified quantity of liquid (obtainable from any available source), which will quickly dissolve the specified quantity of ink powder in the said outer container so as to provide a sufficient quantity of liquid ink for filling a self-filling fountain pen, the nib end of which can be placed in the liquid ink in the outer container to enable the pen to be operated in the usual way to draw the ink into the pen barrel. After filling the pen, the inner container can be fitted in the outer receptacle ready for use again when the pen requires re-filling. The inner container may contain sufficient ink powder for a number, say eight or nine, fillings, and it is so made that when the supply of ink powder has been exhausted it can be readily replaced by another and similar receptacle or refill containing ink powder, the refill being fitted within the outer container or receptacle. Preferably, the ink powder container which may be in the form of a cylindrical tube closed at the bottom end and open at the top end, is adapted to be sealed or closed at the top end by screwing into an internally threaded cap which is externally formed to constitute a closure member for the outer receptacle which is also of tubular form and closed at the bottom end. The lower part of the said cap is preferably adapted to be pushed or plugged into the open end of the outer receptacle, and the upper part of the cap may be formed with a milled or knurled flange or rim. Preferably the outer receptacle is made of a transparent or translucent material, so that when the ink powder is introduced its level can be clearly seen and the receptacle may be provided with a marking or indication to indicate the amount of ink powder which should be introduced for the purpose of providing the requisite quantity of ink. The outer receptacle is also provided with a marking or indication to show the level or amount of liquid that should be introduced. After the requisite amount of the ink powder has been introduced into the outer container, the requisite amount of liquid can then be added to dissolve the powder and thus provide the necessary quantity of liquid ink for filling the fountain pen, the ink being clearly visible through the transparent or translucent tube. The ink powder is capable of being dissolved quickly so that there is no need to wait for a long period of time before filling the fountain pen and therefore the nib end of the pen can be immediately introduced into the liquid ink in the outer receptacle to the requisite extent to ensure adequate filling when the self-filling lever, plunger or the like is operated in the usual way. The amount of liquid ink that is contained in the receptacle, whilst being sufficient to ensure that the pen nib is adequately covered to ensure proper filling, is not sufficient to overflow when the pen is inserted into the liquid ink. As it is necessary to use only a small amount of ink powder from the bulk supply in the inner container to make the requisite supply of liquid ink, the lower end of the outer tubular receptacle or container is formed with a bowl-shaped bottom which reduces the cross-sectional

area of the receptacle at this position and therefore a higher level of powder is visible through the transparent receptacle than would be the case if the bottom of the receptacle were flat. The tubular form may, however, be extended beyond the aforesaid bowl-shaped bottom so as to provide a flat lower part which enables the receptacle to stand on a suitable support as may be required when introducing the powder from the inner container and the liquid, and also during the filling of the pen. After filling the pen, the ink powder container with its screw cap or cover fitted thereon can be re-inserted into the outer receptacle wherein it is retained by pushing the cap or closure member into the sealing or closing position in the upper end of the receptacle. The supply of ink powder in the inner container may be sufficient for say eight or nine fillings, and after the supply of ink powder has been exhausted, a new fully charged inner container or refill can be obtained for insertion or incorporation in the device by screwing the upper end of the refill into the cap and then placing it into the outer receptacle so that the cap fits closely in the latter. The refill may be supplied with a separate closing plug or the like which is removed when the ink powder container is screwed into the aforesaid cap. Ink powder containers with plugs as aforesaid can be sold as independent articles to enable liquid ink to be made from the ink powder by the addition of liquid, and in this case the closing plug or the like may be hollowed out to form a measure into which a quantity of the ink powder can be introduced to enable such measured quantity to be placed in a receptacle, say an egg cup, which when filled with water will dissolve the ink powder to give the required amount of liquid ink.

Dated this 6th day of November, 1939.

HASELTINE, LAKE & CO.,
28, Southampton Buildings, London, England, and
19—25, West 44th Street, New York, U.S.A.,
Agents for the Applicants.

COMPLETE SPECIFICATION

A Device for use in the preparation of Ink

We, HENRY C. STEPHENS LIMITED, a British Company, of 57, Aldersgate Street, London, E.C.1, and CHARLES GEORGE TODD, a subject of the King of Great Britain, of the aforesaid Company's address, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to a device for use in the preparation of ink, especially but not exclusively for fountain pens.

The chief object of the invention is to provide a device which is primarily intended for use in cases or under conditions where the usual bottles of ink are not available, as it offers a ready means whereby a supply of liquid ink can be quickly made from ink powder for filling a fountain pen, particularly of the self-filling type.

According to the invention, the device comprises an outer container or receptacle which is adapted to receive an inner container or receptacle containing a supply of ink powder which occupies substantially the whole of the space in the outer container and is retained therein by a closure member on the inner container, but which is completely removable with said closure member applied thereto, from the outer container to enable a specified quantity of the ink powder to be taken from the bulk supply in the inner container and introduced into the outer container, which latter when the inner container is removed, is adapted to receive a specified quantity of liquid (obtainable from any available source), which will quickly dissolve the specified quantity of ink powder in the said outer container or receptacle so as to provide a sufficient quantity of liquid ink for filling a self-filling fountain pen, the nib end of which can be placed in the liquid ink in the outer container or receptacle to enable the pen to be operated in the usual way to draw the ink into the pen barrel. After filling the pen, the inner container can be fitted in the outer container or receptacle ready for use again when the pen requires refilling. The inner container contains sufficient ink powder for a number, say eight or nine, fillings, and it is so made that when the supply of ink powder has been exhausted, it can be readily replaced by another and similar receptacle or refill containing ink powder, the refill being fitted within the outer container or receptacle.

Further, according to the invention there is provided in combination with the outer container or receptacle and the inner container, a particular form of closure member which is adapted to close both the inner container and the outer one, for example the closure member can screw

onto the inner container which can then be placed in the outer one wherein the closure member fits directly as a plug or stopper. Although the invention is primarily intended to be used in connection with the preparation of ink for use in filling fountain pens, the device can be used for other purposes, as for example, mixing of medicine, etc.

In order that the invention may be clearly understood and readily carried into effect, the same will now be more fully described with reference to the accompanying drawings, in which:—

Figure 1 is an exterior view of one form of the complete device.

Figure 2 is a view showing the outer container or receptacle in section and the inner one with the closure member, partly removed from the outer one.

Figure 3 is a vertical sectional view of the complete device with the different parts fitted together.

Figure 4 is a sectional view of the outer container.

Figure 5 is a sectional view of the inner container and the closure member separated.

Figure 6 shows the outer container or receptacle partly in section with the specified quantity of the ink powder therein.

Figure 7 shows the outer container or receptacle with the specified quantity of water therein to provide the liquid ink ready for filling a fountain pen.

Figure 8 is a view, partly in section, of a refill inner container.

In the said drawings, A represents an outer container or receptacle, B is the inner or ink powder container and C is the closure member which in the example shown serves to close both the inner container B and the receptacle A. The receptacle A which as shown is of cylindrical form, is made of transparent material such as glass or a celluloid substance, and it is closed at one end by a curved portion A^1 forming a bowl-shaped end, but the wall of the receptacle is continued beyond the curved portion to enable the receptacle A to stand on a flat surface. The container B which is cylindrical and closed at one end is made of any suitable material and is of smaller diameter and of less length than the outer container or receptacle A so that it can be fitted easily within the receptacle A. In the example shown the upper end of the inner container B is exteriorly threaded at B^1 to receive an interiorly threaded closure member C. The said closure member C is externally formed at C^1 to form a plug which when the inner container B with the applied closure member C is inserted in the receptacle A fits closely into the mouth of the receptacle A to close the latter. A knurled flange C^2 is provided on the closure member above the plug portion C^1 to facilitate manipulation of the said member both as a plug closure for the receptacle A and as a screwed cap closure for the inner container B. It will be understood that the parts A, B and C can be assembled to constitute a complete self-contained unit as shown in Figures 1 and 3. The inner container B with the closure member C can be readily removed from the receptacle A as a unit as shown in Figure 2, after which the said closure member C can be unscrewed from the container B, thus separating all the parts as shown in Figures 4 and 5. The ink powder indicated at D in Figures 3 and 5 is retained in the inner container by the closure member C when screwed onto the upper end of the container, and the latter, charged with or containing ink powder D, can be inserted in the receptacle A and retained therein by the plug portion C^1 of the closure member C fitting closely in the open end of the receptacle.

When it is desired to use the device for the purpose of filling a fountain pen, the inner container B with the attached closure member C and containing the ink powder, is removed from the receptacle A and after unscrewing the closure member a small quantity of the ink powder is transferred from the container B into the receptacle A, which latter may be provided with a mark or indication A^2 (see Figures 1 and 6) to indicate the amount of the ink powder that should be placed in the receptacle A, the level of the powder being visible through the transparent wall of the receptacle. As only a comparatively small amount of ink powder is required, the cross-sectional area of the container at the closed end is reduced by providing the curved or bowl shaped portion A^1 in order to show a higher level for the ink powder than would be shown if the receptacle A had a flat closed end. Alternatively, the closure member C may be made to serve as a measure to receive the requisite quantity of ink powder which can be poured from the cap into the receptacle A. Having placed the requisite quantity of the ink powder into the receptacle A (as shown at D in Figure 6), water is added to dissolve the ink powder in the receptacle. Preferably the receptacle is marked with an indication A^3 to show the level of the water represented at E in Figure 7 required to dissolve the ink powder. The powder quickly dissolves so that a supply of liquid ink is almost immediately available in the receptacle A for the filling of a fountain pen, which if of the self-filling

type is inserted in the ink in the receptable A and operated by manipulating the filling lever, plug or the like in the usual way. The amount of liquid ink in the receptacle A is such that the insertion of the nib end of the pen, although increasing the level, will not cause the liquid to overflow. Having filled the pen, any liquid ink remaining in the receptacle can be thrown away, and after replacing the closure member C on the container B the latter can be inserted in the receptacle A and retained therein by the plug portion C^1 of the closure member fitting closely in the receptacle A as aforesaid. The container B may contain sufficient ink powder for say eight or nine fillings of an average size pen. The arrangement may be such that when the container B is empty, it can be replaced by a refill (see Figure 8) which comprises a container B similar to that initially provided, which is sold with a separate screw cap closure F which can be removed to enable the closure member C to be applied to enable the refill container to be inserted in the receptacle A ready for use. Instead of providing the refill container with a screw cap such as F, a cork or other closing plug may be used. The device according to the invention is especially useful in places where bottles of ink are not available, especially for troops or others on active service, as it provides a compact and ready means for making a supply of ink for the filling of a fountain pen. The device can be carried in the pocket or in a kitbag or the like so that it is always available for use. The use of ink powder is advantageous as compared with the use of ink pellets, as the former can be dissolved much more quickly than ink pellets so that by the present invention a supply of ink is almost immediately available under all conditions where water can be obtained.

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

1. A device primarily for the preparation of ink for use in filling fountain pens, comprising an outer container or receptacle adapted to receive an inner container or receptacle containing ink powder or the like, which occupies substantially the whole of the space in the outer container and is retained therein by a closure member on the inner container, but which is completely removable with the said closure member applied thereto, from the outer container to enable a specified quantity of the ink powder or the like to be taken from the inner container after removal of the closure member, and then introduced into the outer container, which latter, when the inner container is removed, is adapted to receive a specified quantity of liquid for dissolving the introduced quantity of the powder or the like, thus providing in the case of ink powder a supply of liquid ink into which a fountain pen or the like can be inserted for filling purposes.

2. A device primarily for use in the preparation of ink for use in filling fountain pens, comprising a tubular outer container or receptacle having a closed lower end, a tubular inner container or receptacle also closed at its lower end adapted to occupy substantially the whole of the space in the outer container but adapted to be completely removable from the latter, the upper and open ends of both the containers being adapted to receive a closing member which closes the inner container and remains on the latter when being removed from the outer container, and can also engage directly with the outer container to close the latter and retain the inner container within the outer one.

3. A device as in claim 1 or 2, in which a closure member is screw threaded on to the inner container and fits as a plug in the outer container.

4. A device as in any of the preceding claims, in which the outer container or receptacle is formed with an interior bowl shape at the lower and closed end, and is made of a transparent substance which is marked to indicate a level for ink powder and a level for the liquid required to dissolve the powder.

5. For use with a device as in any of the preceding claims, a refill container for ink powder having a closure member which can be removed and replaced by a closure member which is adapted to close both the inner and outer containers when the former is fitted in the latter.

6. A device primarily for use in the preparation of ink for use in the filling of fountain pens, constructed and arranged substantially as described with reference to the accompanying drawings.

Dated this 16th day of July, 1940.

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Agents for the Applicants.

Leamington Spa: Printed for His Majesty's Stationery Office, by the Courier Press.—1941.

Fig. 1.

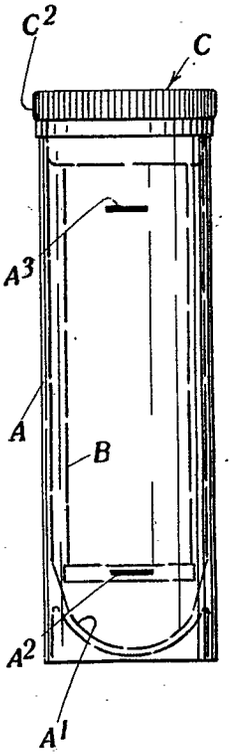


Fig. 2.

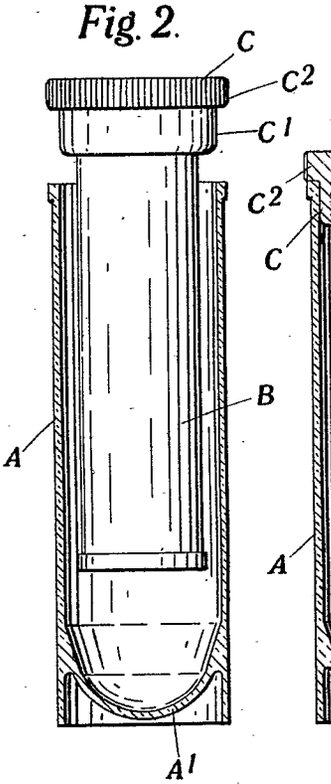


Fig. 3.

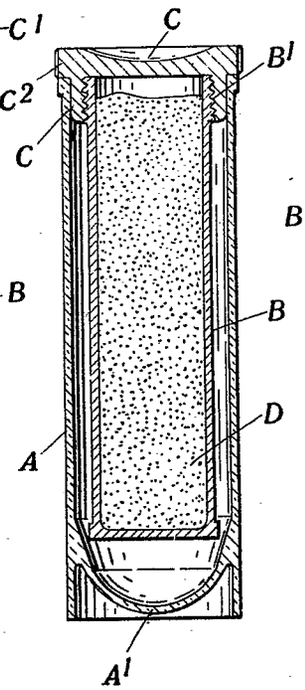


Fig. 8.

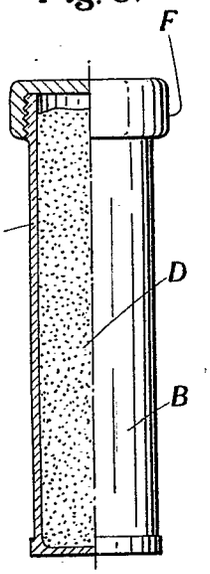


Fig. 7.

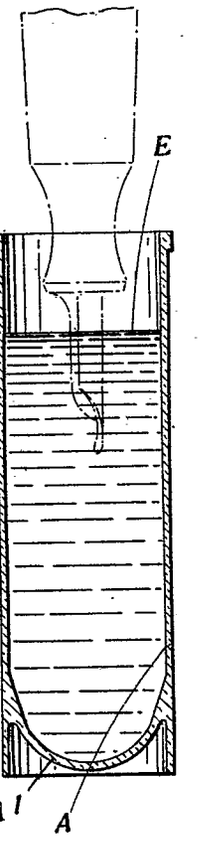


Fig. 4.

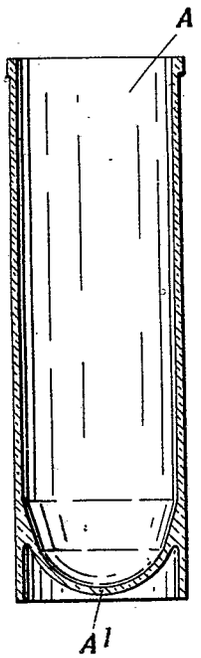


Fig. 5.

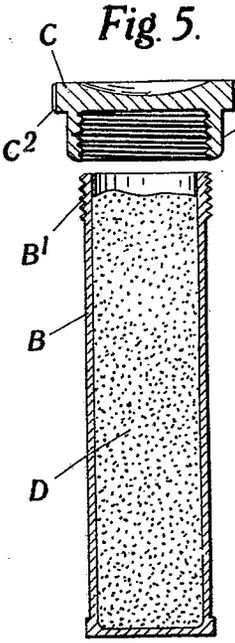
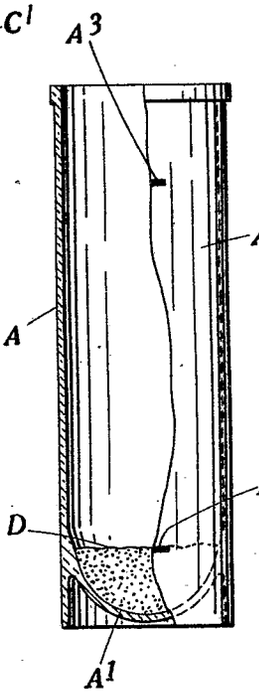


Fig. 6.



Malby & Sons, Photo-Litho.