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O. W. SWENSON

3,400,801

REUSABLE INKING CARTRIDGE

Filed Oct. 23, 1965

FIG. 1

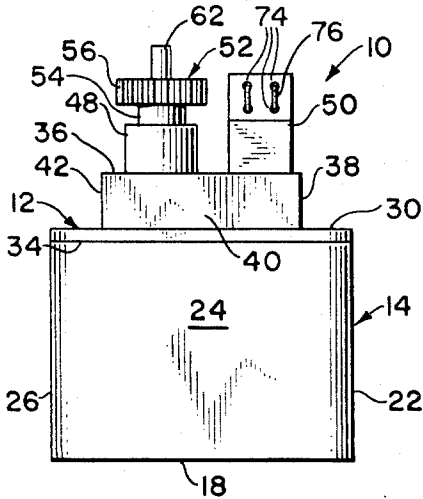


FIG. 2

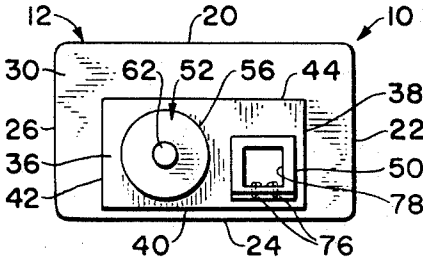


FIG. 3

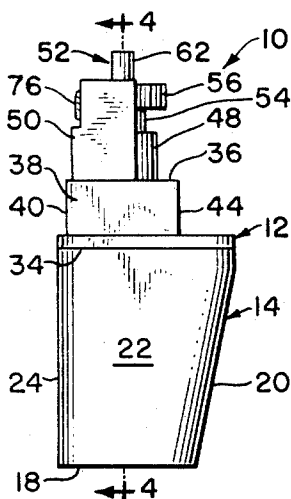


FIG. 4

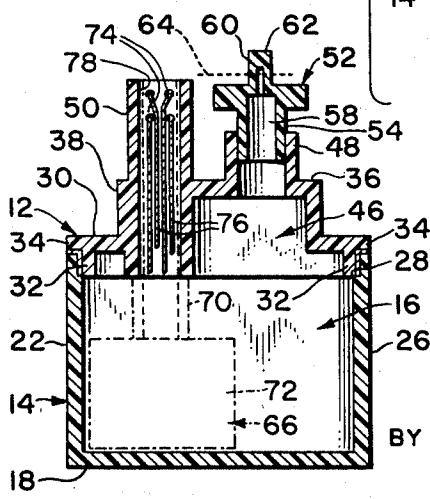
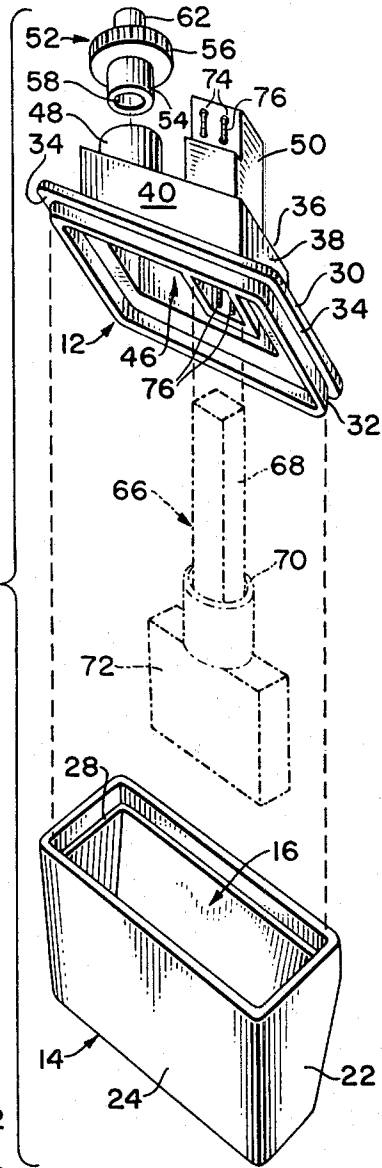


FIG. 5



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**REUSABLE INKING CARTRIDGE**

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4 Claims. (Cl. 197-171)

**ABSTRACT OF THE DISCLOSURE**

Simply stated, the present invention contemplates providing a relatively large wick reservoir having a square or rectangular wick opening to accommodate a flat wick of rectangular cross section. In addition a secondary wick, or transfer wick of substantially slender string-like nature is provided on the cover of the reservoir to remain in contact with the square wick and the printing ribbon on a printing machine so as to actually transfer the ink onto the ribbon at a more controlled rate. In addition a removable stopper on the reservoir also functions as a vent. The removable stopper makes possible refilling and reusing of the reservoir.

The present invention relates generally to ink reservoirs, and more particularly to a novel type of inking cartridge adapted to cooperate with a novel type of wick in supplying a steady flow of ink to the printing ribbon of various printing machines such as a stock quotation ticker or the like.

Such a wick is described and claimed in my copending United States application Ser. No. 481,363, filed Aug. 20, 1965 and assigned to The Western Union Telegraph Company.

In inking devices for the ribbons of machines such as stock quotation tickers wherein the printed ciphers and symbols are potentially in continuous public view during business hours, two characteristics are essential. A steady transfer of ink at a fairly constant rate must be supplied to the ribbon, and if too much ink is transferred, the symbols and cyphers will be blurred. If too little ink is transferred the symbols and cyphers will be pale or illegible. Of equal importance, the desired performance must be maintained for reasonably prolonged periods otherwise the machine will "quit" too frequently and ink reservoir replacement costs will mount.

A flat wick of square or rectangular cross-section as described in the foregoing application Ser. No. 481,363 has been found to be a considerable improvement in the art capable of achieving the foregoing desirable performance.

Simply stated, the present invention contemplates providing a relatively large wick reservoir having a square or rectangular wick opening to accommodate such a wick. In addition a secondary wick, or transfer wick of substantially slender string-like nature is provided on the cover of the reservoir to remain in contact with the square wick and the printing ribbon on the printing machine so as to actually transfer the ink from the main wick onto the ribbon at a more controlled rate. Heretofore reservoirs of this nature have been adaptable only to accommodate the conventionally used round wicks which have been proven to be less effective.

In conjunction with the foregoing improvement a dual purpose removable stopper is embodied in the cartridge which will function as a vent as well. Heretofore empty cartridges of this nature had been discarded. The aforementioned stopper embodied in the cartridge of this invention is removably fitted into the ink cartridge so that refilling and reusing thereof is made possible, and furthermore the stopped embodies vent means which are com-

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pletely sealed until the re-inker is put into use, thereby avoiding spillage in transit.

*Objects*

It is one object of this invention to provide a novel type of inking cartridge adapted to contain a wick having a square or rectangular cross section.

Another object of the invention is to supply an improved inking cartridge for use in conjunction with a stock quotation printing ticker.

Another object of the invention is to provide an inking cartridge of the above indicated nature which may be refilled and reused.

Another object of the invention is to provide an inking cartridge embodying a secondary transfer wick to achieve more controlled transfer of ink onto the printing ribbon of a printing machine.

Another object is to provide an inking cartridge of the above indicated nature embodying a dual purpose vent-like stopper.

Still another object is to provide an improved inking cartridge of the above indicated nature which can be manufactured simply and economically and yet will contain more ink than similar cartridges heretofore.

The foregoing and other objects and advantages will become more apparent to those skilled in the art from a consideration of the detailed description which follows, taken together with the accompanying drawing wherein one embodiment of the invention is shown. It is to be expressly understood however that the drawing and description are for purposes of illustration only and are not to be construed as limiting the scope of the invention, reference being had for this purpose to the appended claims.

Referring to the drawing wherein like reference characters indicate like parts:

FIG. 1 is an elevation view of the novel cartridge assembly of this invention;

FIG. 2 is a plan view of FIG. 1;

FIG. 3 is a side view of FIG. 1;

FIG. 4 is a section view taken along the line 4-4 of FIG. 3 looking in the direction of the arrows;

FIG. 5 is an exploded view of the cartridge assembly of this invention showing an inking wick therein.

Referring now to the drawing and more particularly to FIG. 1, there is shown an inking reservoir assembly generally designated by the numeral 10 comprising a top assembly or cover assembly 12 and a bottom container 14. The bottom container 14 comprises a relatively large rectangular ink chamber 16 defined by a bottom 18 and four substantially vertical walls 20, 22, 24 and 26 (FIGS. 1 and 2), containing a shoulder 28 about the internal periphery thereof (FIGS. 4 and 5).

The cover assembly 12 is constructed in configuration, calculated to mate with the bottom container 14 and embodies a base 30 having a downwardly extending ridge 32 and an overhanging section 34 about the edge thereof. In the assembled and sealed position of the inking reservoir assembly 10 the ridge 32 rests upon the shoulder 28 and the overhanging section 34 abuts against the top of the vertical walls 20, 22, 24 and 26 (FIG. 4). The cover assembly 12 is secured to the bottom container 14 in any approved manner, such as by cementing or gluing.

Referring now to the cover assembly 12, an elevated platform 36 thereon cooperates with vertical panels 38, 40, 42 and 44 to form an enclosure 46 (FIG. 5) which in the assembled position of the reservoir assembly 10, opens into and communicates with the ink chamber 16 so as to increase the capacity of the reservoir assembly.

The platform 36 has a circular boss 48 and a substantially rectangular or square boss 50 emerging therefrom. The circular boss 48 is adapted to receive a dual purpose removable mating stopper 52 having a mating circular

hub 54 adapted to be snugly, as by means of a press fit, but removably inserted into the boss 48, and a knurled shoulder 56 on the hub allows easier manipulation thereof during the insertion and removal of the stopper 52 in the boss 48, and also serves as a stop to prevent the stopper from being inserted too far into the boss.

The dual purpose stopper 52 embodies an interior passageway 58 connecting on one end with a vent hole 60 (FIG. 4) which is initially sealed off by a cap 62. In transit or shipping, when the reservoir 10 is apt to receive the most jostling the vent hole 60 does not communicate with the exterior ambient. When the reservoir assembly 10 is installed for operation however the cap 62 is cut off along a line 64 or thereabouts above the knurled shoulder 56 so that the vent hole 60 will then communicate with the exterior and serve its normal venting function. Furthermore the diameter of the vent hole 60 is relatively small so that it is unlikely that any ink would spill therefrom in normal handling even if the reservoir 10 were momentarily tilted.

Referring now to the square boss 50, the quadrangular configuration thereof is hollow inside and adapted to receive a wick 66 of the type shown and described in United States application Ser. No. 481,363 filed Aug. 20, 1965 by Oscar W. Swenson, having an elongated quadrangular arm 68 (FIG. 5) which fits snugly up into the interior of the boss 50.

The boss 50 extends downwards through the platform 36 and continues through the enclosure 46 to a point flush with the bottom of the downwardly extending ridge 32 (FIGS. 4 and 5). In effect therefore in the completely assembled state of the reservoir assembly 10 with the wick 66 properly positioned inside thereof, the quadrangular boss 50 rests against a constriction or flow control sleeve 70 about the arm 68, thereby insuring that ink from the ink chamber 16 can only flow upward into the arm 68 through a substantially larger wick section 72 rather than directly into the arm.

The quadrangular boss 50 contains therethrough a number of apertures 74 adapted to receive therethrough one or more relatively slender string-like transfer wicks 76 (FIGS. 1, 4 and 5). The transfer wicks 76 (two being shown here) are entwined through the apertures 74 and extend downward along the interior of the boss 50 between an interior wall 78 thereof and the wick 66. The function of the transfer wicks 76 is to remain in contact with both the wick 66 and the printing ribbon (not shown here) on the printing machine. In this manner upward surges of ink through the main wick onto the ribbon are avoided and a more constant and controlled ink flow is achieved.

Having thus described the invention it will now be obvious that to refill the reservoir assembly 10 after it has become depleted, and make possible its reuse, it is only necessary to remove the press fitted dual purpose stopper 52. Heretofore reservoir assemblies employed were discarded once they became empty.

In the installed position of the stopper, the vent hole 60 acts as a vent for the reservoir assembly thus serving a dual purpose.

Hence it will be seen that there are provided means

whereby the several objects of this invention are achieved in a positive and effective manner.

Although only one embodiment and one application of the invention has been illustrated and described it will readily be apparent to those skilled in the art that changes in form and modifications may be made in the relative arrangement of the parts without departing from the spirit and scope of the invention.

What is claimed is:

1. An ink reservoir assembly adaptable for use in conjunction with a first wick having a quadrangular cross section for supplying ink to the inking ribbon of a stock quotation ticker comprising, a bottom container defining a rectangular ink chamber, a shoulder about the internal periphery of said chamber, a cover assembly including a downwardly extending ridge adapted to rest upon the shoulder and secured thereto, an enclosure within the cover assembly communicating with said chamber, a hollow boss emerging from the enclosure a stopper embodying venting means for the reservoir assembly press fitted into said boss in a removable manner to allow refilling of the reservoir assembly through said boss, a hollow square boss having a plurality of apertures emerging from the enclosure and extending interiorly therethrough to the ink chamber, said square boss being adaptable to snugly enclose an arm on said first wick to prevent the ink from flowing directly into the arm, and a transfer wick entwined through said apertures in the square boss and extending therein in contact with said first wick and the inking ribbon so as to transfer the ink from said first wick onto the inking ribbon.

2. The ink reservoir assembly claimed in claim 1, wherein said transfer wick entwines through said plurality of apertures in the square boss and simultaneously contacts the arm on said first wick and the printing ribbon.

3. The ink reservoir assembly claimed in claim 1, wherein said venting means comprise an interior passageway communicating with said enclosure, and a vent hole extending from said passageway upwards through the stopper.

4. The ink reservoir claimed in claim 1, wherein said stopper embodies a sealing cap over the venting means, adapted to be cut off the stopper to render the venting means operable.

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