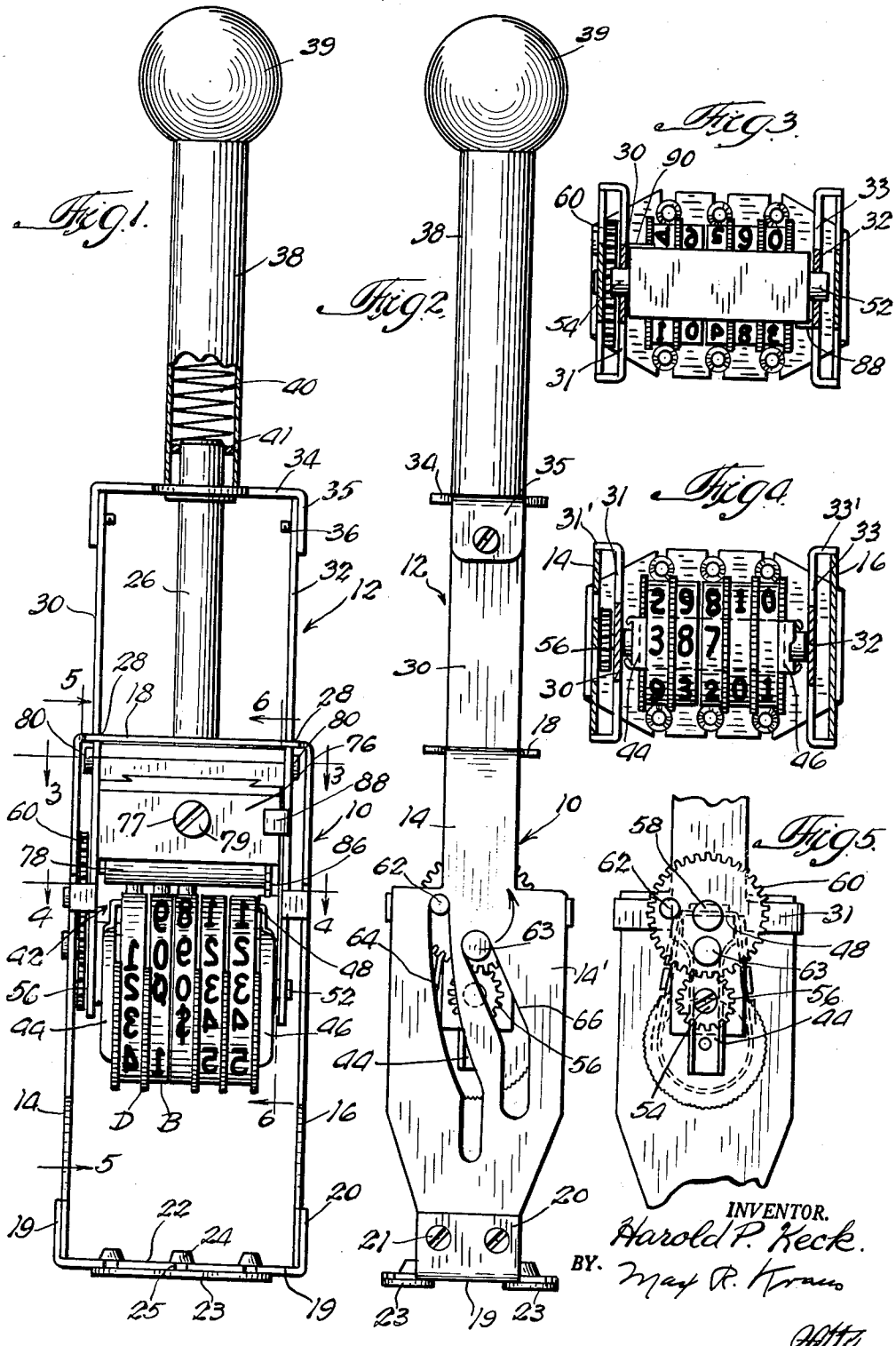
May 21, 1963 H. P. KECK 3,090,305

SELF-INKING HAND STAMP

Filed Aug. 5, 1960

2 Sheets-Sheet 1

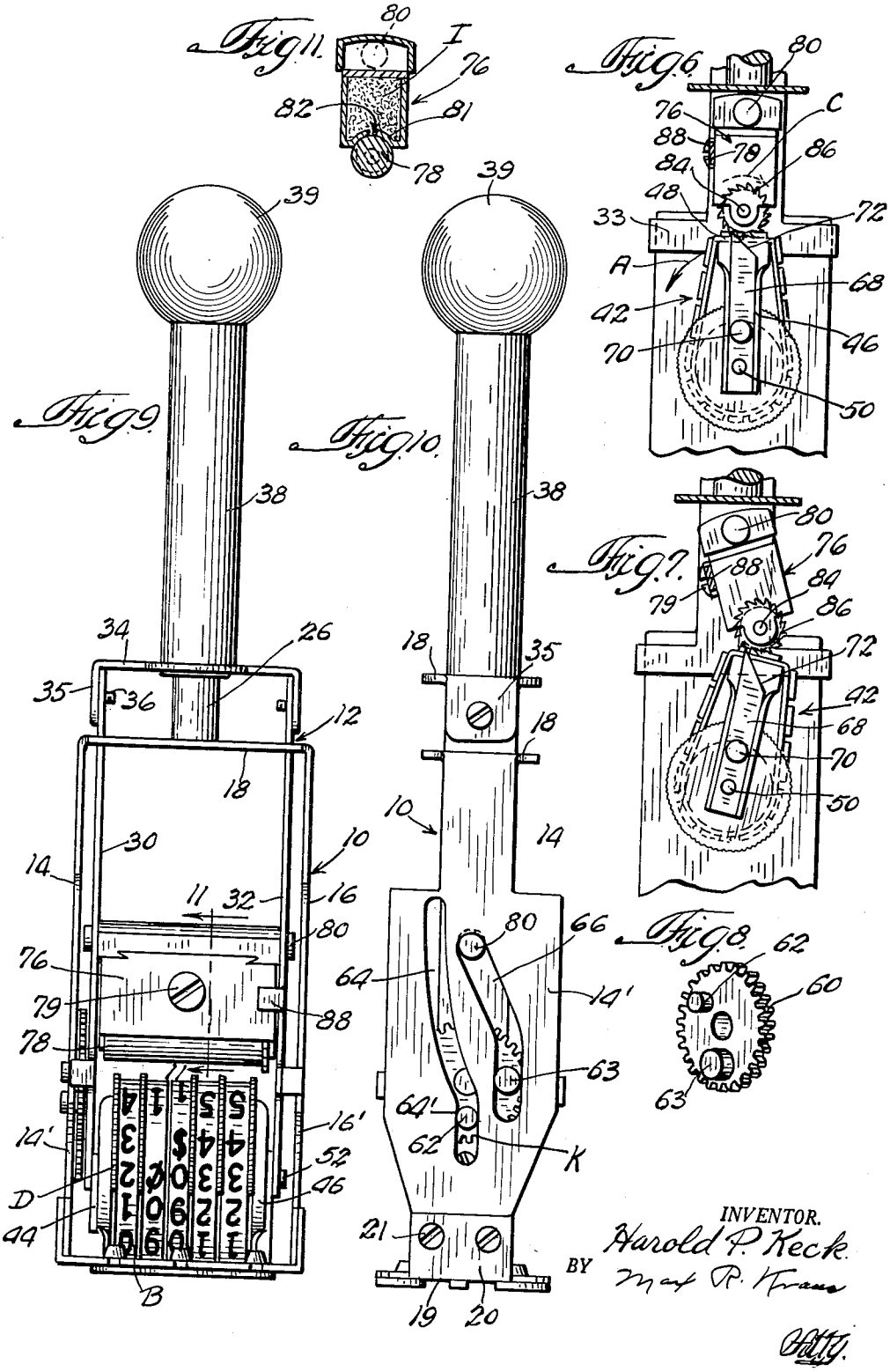


May 21, 1963 H. P. KECK 3,090,305

SELF-INKING HAND STAMP

Filed Aug. 5, 1960

2 Sheets-Sheet 2



United States Patent Office 3,090,305 Patented May 21, 1963

3,090,305

SELF-INKING HAND STAMP

Harold P. Keck, Crystal Lake, Ill., assignor of one-half to Jack W. Robbins and one-fourth to Bernard Robbins, both of Chicago, Ill.

Filed Aug. 5, 1960, Ser. No. 47,750
6 Claims. (Cl. 101—334)

This invention relates to a self-inking hand stamp.

One of the objects of this invention is to provide a self-inking hand stamp having an ink container and a roller whereby ink is fed to the roller and the roller is rotated with each actuation of the hand stamp to present a new inking surface for engagement by the printing unit, thus providing for an even, uniform and continuous distribution of ink to the printing unit.

The present day hand stamps have been found very deficient in that the printing unit repeatedly engages the same surface portion of the inking pad, which causes serious objections in that the ink from the pad is used up in a relatively short time; also, the pad becomes worn. As a result of this condition the ink pad must be reinked after a relatively short period of use. In addition, present ink pads will not only ink the type but will also ink the band and other portions of the printing unit which is not required, consequently the printing unit becomes messed up with unnecessary ink. These objectionable features are entirely eliminated with the present invention in that there is provided an ink container positioned above the printing unit, the ink container having a roller at the lower end thereof whereby the flow of ink to the roller is by gravity feed and the construction is such that with each actuation of the hand stamp the roller is rotated to expose a new inking surface, thus, as the hand stamp is operated a new inking surface is presented each time for engagement with the printing unit and the ink from the roller surface is uniformly spread only to the type on the type band of the printing unit. The objections inherent in the prior art devices are eliminated with the use of the present invention.

Another object of this invention is to provide a unit in which the ink container may be readily replaced or refilled and wherein messy handling of same is entirely eliminated, as is customary in the case where ink pads or the like are used with present day constructions.

Other objects will become apparent as this description progresses.

In the drawings:

FIGURE 1 is a view of the hand stamp in its up position.

FIGURE 2 is a side view of FIGURE 1.

FIGURE 3 is a view taken on lines 3—3 of FIGURE 1.

FIGURE 4 is a view taken on lines 4—4 of FIGURE 1.

FIGURE 5 is a view taken on lines 5—5 of FIGURE 1.

FIGURE 6 is a view taken on lines 6—6 of FIGURE 1, but showing the printing unit in engagement with the inking roller and the tripping member in position to actuate the inking roller.

FIGURE 7 is a view similar to FIGURE 6, but showing the position of the printing unit just prior to the completion of the upstroke of the depressible frame and the position of the ink container before it is returned to its center position.

FIGURE 8 is a perspective view of the gear on the depressible sub-frame.

FIGURE 9 is a view similar to FIGURE 1, but with the hand stamp in depressed or printing position.

FIGURE 10 is a side view of FIGURE 9, and

FIGURE 11 is a cross-sectional view of the ink container and inking roller.

The unit comprises a main base frame generally indicated at **10**, and a depressible sub-frame generally indicated at **12**. The depressible sub-frame **12** carries the printing unit, as well as the ink container and inking roller and is so constructed that the printing unit is normally positioned in its up position in off-center relation to the inking roller, and when the depressible sub-frame is depressed the printing unit will move through center engaging the inking roller to ink the printing type, and the printing unit will then continue downwardly to printing position. As the printing unit moves from its initial off-center to center position the inking roller will be rotated to present a new inking surface to the printing unit. On the return or upstroke of the depressible frame the printing unit in returning to its initial position passes the center position of the ink container and roller, thereby pivoting the ink container to off-center and allowing the printing unit to move to its normal off-center position, ready for the next manual actuation of the stamp. The ink container and roller will return to its center position.

The main base frame **10** has a pair of side members **14** and **16** connected by a top cross-member **18**. A portion of each of the side members is widened as at **14'** and **16'**. A bottom plate **19** with upwardly extending ears **20** is secured by suitable screws **21** to the side members **14** and **16**. The bottom plate **19** has an enlarged rectangular shaped opening **22** to accommodate the printing unit on the downstroke. Rubber gaskets **23** having projections **24** are secured in slots **25** in the bottom plate **19**.

Secured to the top cross-member **18** of the main base frame **10** and extending upwardly thereof is a rod **26**. The top cross-member **18** has a pair of spaced slots **28** to slidingly accommodate the sides of the depressible sub-frame, to be described.

The depressible sub-frame generally indicated at **12** includes a pair of spaced side members **30** and **32** which are slidable in the slots **28**. A top cross-member **34** having side ears **35** is secured to the sides of the depressible sub-frame by fastening members **36**. A tubular handle **38** is rigidly secured in a circular opening in the top cross-member **34**. A knob **39** is secured to the top of the tubular handle **38**. A coil spring **40** is positioned inside the tubular handle **38** with the lower end resting against a washer **41** secured to the rod **26** and the upper end against the inside of the knob **39** to normally cause the depressible sub-frame **12** to assume the position shown in FIGURE 1, that is in up position.

The side members **30** and **32** of the sub-frame **12** each has a side extension **31** and **33** extending from the opposite ends of the side members with the opposite ends turned outwardly to form ears **31'** and **33'**, respectively, which slidingly engage the ends of the widened portions **14'** and **16'** of the side members **14** and **16** of the main base frame **10**.

The printing unit generally indicated at **42** includes a frame having a pair of spaced side members **44** and **46** connected across one end by a cross-plate **48**. A shaft **50** is secured to the side members **44** and **46** of the printing unit and a plurality of spools are supported thereon, on each of which is a continuous type band B. Each of the spools has a disc D with a serrated surface for rotating the spool and the corresponding type band, well known in the art. The type bands rotate over the cross-plate **48** which is the printing end of the printing unit.

The printing unit **42** is supported on the sides of the depressible sub-frame **12** so as to be rotated from its up position to its down or printing position through an arc of approximately 190°. The side member **46** of the frame of the printing unit **42** has a laterally extending pin **52** which is received within an opening in the side **32** of the depressible sub-frame **12**.

Extending from the opposite side **44** of the printing frame and rigidly secured thereto is a pin **54** which ex-

tends through an opening in side member 30 of the depressible sub-frame 12, and rigidly secured on said pin exteriorly of said side member 30 is a small gear 56 which when rotated operates to rotate the printing unit 42. Rotatably mounted on the side member 30 as at 58, in vertical alignment with small gear 56, is a larger gear 60 in mesh with small gear 56. The larger gear 60 is best shown in FIGURE 8 and said gear has a pair of pins 62 and 63 fixed thereon.

The widened side portion 14' of side member 14 of the main base frame 10 has a pair of spaced cam slots 64 and 66, best seen in FIGURES 2 and 10, in which the pins 62 and 63, respectively, ride when the sub-frame 12 is depressed to rotate the large gear 60 which rotates the small gear 56 and thereby rotates the printing unit 42 from its up position, shown in FIGURE 1, to its down or printing position, shown in FIGURE 9, and then back up to its up position each time the handle is depressed and released. The lower end of cam slot 64 continues as a vertical slot 64'. While cam slot 64 and pin 63 serve to rotate the printing unit 42, as described, the pin 62 in engagement with the vertical slot 64' will stabilize the printing unit in its down or printing position shown in FIGURE 9.

It will be seen that the side member 46 of the frame of the printing unit 42 is channel shaped, as best seen in FIGURE 6, and said side member supports a bar 68 which is fixedly secured to the side member as at 70. Said bar has an inclined upper edge 72 which extends above the plane of the top cross-plate 48 of the printing unit. Said inclined upper edge 72 acts as a tripping member to engage the ratchet on the inking roller to rotate the roller, as will be described.

The inking mechanism includes an ink container generally indicated at 76 and a roller generally indicated at 78 which receives the ink from the container and transfers it to the type band B on the printing unit 42. The ink container comprises a rectangular shaped housing of a length to be fixed and pivotally secured between the sides 30 and 32 of the depressible sub-frame 12 by pins 80 secured to the sides 30 and 32 and engaging the ink container.

The ink container housing 76 has a threaded opening 77 at the front thereof for filling the ink container, which is closed by a threaded plug 79. The bottom of the ink container 76, best shown in FIGURE 11, has a concavely shaped bottom wall 81 which is provided with a central longitudinal slot 82. The roller 78 is supported to be in engagement with the concave bottom wall 81 and to close the longitudinal slot 82. The roller 78 is formed preferably of steel and is supported on a shaft 84 which has its opposite ends engaging the opposite end walls of the ink container 76. A ratchet 86 is fixed to the shaft 84 adjacent one end to be engaged by the tripping member 72 as the depressible sub-frame 12 is depressed, thus rotating the inking roller 78 a distance of one tooth each time the printing unit 42 is moving from its non-printing to printing position, to continuously present a new inking surface.

The ink I in the ink container 76 is a printer's ink or is similar to the ink used in ball point pens and flows by gravity on to the inking roller 78. The inking roller is rotated with each actuation of the handle 38 so that a new inking surface is constantly being presented to the printing unit.

The side member 32 of the depressible sub-frame 12 has an inwardly extending stop lug 88 (FIGURE 1) to limit the pivotal movement of the ink container 72 in one direction, that is, it will limit the pivotal movement of the ink container 72 to the left, as viewed in FIGURE 6, and thus maintain the ink container in center position, as shown in said figure, as the printing unit 42 moves from its off-center or initial starting position, as shown substantially in FIGURE 7, through center, as in FIGURE 6, and past center on its downstroke, as indicated by arrow A in FIGURE 6. In its fully up position the printing unit 42 is positioned approximately 10° off center or slightly more to the right than that shown in FIGURE 7 and moves through an arc of approximately 180° from said position to its printing position, as in FIGURE 9.

On the return or upstroke of the sub-frame 12, the printing unit 42 will rotate in the direction reverse to arrow A and will engage the roller 78 of the ink container 76 as the printing unit reaches center, and as the printing unit 42 passes center and moves to its resting off-center position, shown in FIGURE 7, it will pivot the ink container 76 to the right, as shown in FIGURE 7, to permit the printing unit to pass under the inking roller 78.

After the printing unit has passed the ink container a flat spring 90 (FIGURE 3) on the side member 30 of the depressible sub-frame in engagement with the ink container will move the ink container back to center position, as in FIGURE 6. The flat spring 90 is opposite to the stop member 88. When the ink container 76 is moved to its off-center position, as in FIGURE 7, it is against the bias of spring 90, thus insuring the return of the ink container 76 to its center position, as in FIGURE 6.

In normal undepressed or up position, as shown in FIGURES 1 and 2, the printing unit 42 is approximately 10° off-center or slightly more to the right than shown in FIGURE 7 and is not in engagement with the inking roller 78. However, when the handle 38 is engaged and manually depressed, the printing unit 42 will be caused to rotate or move to center to engage the inking roller 78 to ink the type on the printing unit; simultaneously the tripping member 72 will engage the ratchet 86 to rotate same one tooth in the direction of arrow C (FIGURE 6), thereby rotating the inking roller 78 the space of one tooth to expose a new ink surface.

As the handle 38 is being depressed the printing unit 42 will rotate, as indicated by arrow A in FIGURE 6, to move to its down or printing position, as shown in FIGURE 9. Upon release of the handle and as the depressible sub-frame 12 moves upwardly due to the spring 40, the printing unit 42 will rotate in the reverse direction to that indicated by arrow A in FIGURE 6 and assume the position shown in FIGURE 7. The spring 90 will return the ink container to its center position as shown in FIGURE 6. On the return or upstroke of the printing unit no rotation is imparted to the ratchet 86, thus, only on the downstroke of each actuation is the inking roller rotated. The ink container may be readily refilled through the opening 77 by removal of the plug 79. Also, if desired, the ink container may be replaced with a new ink container by making the pins 80 retractable to accommodate replaceable ink containers.

It will be understood that various changes and modifications may be made from the foregoing without departing from the spirit and scope of the appended claims.

What is claimed is:

1. A self-inking hand stamp comprising a base frame, a depressible sub-frame supported by said base frame, a printing unit rotatably supported at the lower end of said sub-frame to rotate upon the depression of said depressible sub-frame, an ink container secured to said sub-frame above said printing unit, an opening at the lower end of said ink container, a roller rotatably supported at the lower end of said ink container and blocking said opening but adapted to receive the ink from said ink container by gravity flow, means on said printing unit and on said roller cooperating to rotate said roller with each downward actuation of said depressible sub-frame to expose a new inking surface on said roller to said printing unit before said printing unit engages said inking roller, said means permitting said printing unit to return on the upstroke without rotating said roller.

2. A self-inking hand stamp comprising a base frame, a depressible frame member supported in said base

frame, a printing unit having a frame member supported by said depressible frame member, means for rotating said printing unit upon each depression of said depressible sub-frame, an ink container supported by said depressible frame above said printing unit, said ink container having an inking roller at the lower end thereof adapted to receive the flow of ink from said container by a gravity flow, a gear cooperating with said roller, a tripping member on said printing unit adapted to engage said gear upon downward actuation of said depressible sub-frame member to rotate said roller to present a new inking surface for said printing unit before said printing unit engages said inking roller, said gear and tripping member permitting said printing unit to return on the upstroke without rotating said roller.

3. A self-inking hand stamp comprising a base frame, a depressible sub-frame supported on said base frame, a printing unit supported on the lower end of said sub-frame, an ink container secured to the depressible sub-frame above said printing unit and movable relative thereto, an inking roller rotatably secured at the lower end of said ink container, means for normally positioning said printing unit in off center relation with respect to said roller, means for moving said printing unit from said off center position to engagement with said inking roller and downwardly to printing position upon depression of said depressible sub-frame, means carried by said printing unit and said roller engaging each other to rotate said roller upon the depression of said depressible sub-frame to expose a new inking surface, said printing unit upon the return stroke of said sub-frame adapted to move said ink container to permit said printing unit to pass the center and return to off center position.

4. In a structure defined in claim 3 in which the ink container is pivotally movable relative to the sub-frame.

5. A self-inking hand stamp comprising a base frame, a depressible sub-frame supported on said base frame, a printing unit supported on the lower end of said sub-frame, an ink container pivotally secured to the depressible sub-frame above said printing unit to permit pivoting of the ink container on the upstroke of the sub-frame in the direction of the return movement of said printing unit, an inking roller rotatably secured at the lower end of said ink container, means for normally positioning said printing unit in off center relation with respect to said roller, means for moving said printing unit from said off center position to engagement with said inking roller and downwardly to printing position upon depression of said depressible sub-frame, means carried by said printing unit and said roller engaging each other to rotate said roller upon the depression of said depressible sub-frame to expose a new inking surface, said printing unit upon return upstroke of said sub-frame adapted to pivot said ink container in the direction of the return movement of said printing unit to permit the printing unit to pass the center and return to off center position.

6. A structure defined in claim 5 having means for returning the ink container to center after the printing unit has returned to its off center position.

References Cited in the file of this patent

UNITED STATES PATENTS

770,956	Bradley	Sept. 27, 1904
856,799	O'Conner et al.	June 11, 1907
1,718,686	Du Belle	June 25, 1929
2,939,390	Clausing	June 7, 1960
2,950,676	Weissman et al.	Aug. 30, 1960