Aug. 28, 1956 L. S. ROGGENBURGER 2,760,464

RIBBON RE-INKER

Filed Aug. 3, 1955

Fig. 1

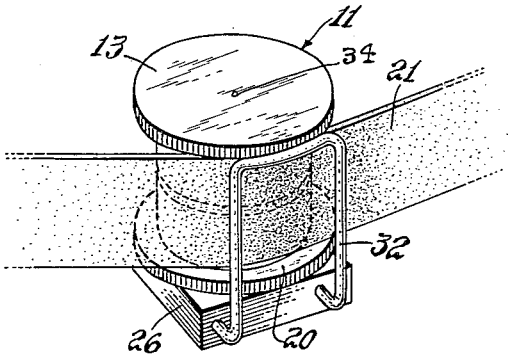


Fig. 2

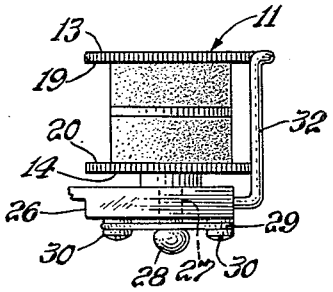


Fig. 4

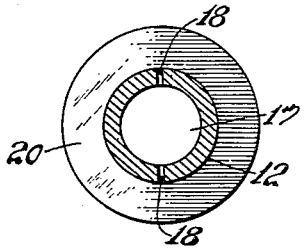


Fig. 3a

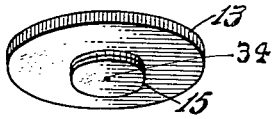


Fig. 3b

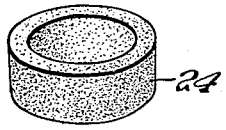


Fig. 3c

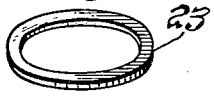


Fig. 3d

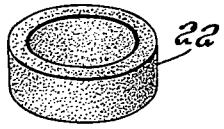
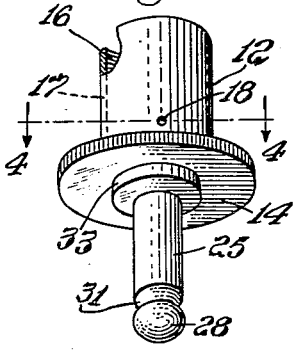


Fig. 3e



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RIBBON RE-INKER

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12 Claims. (Cl. 118—259)

My invention relates generally to ribbon re-inkers and specifically ribbon re-inkers intended to equally distribute ink over the entire surface of a ribbon without tending to deform the ribbon.

It is among the objects of my invention to provide a ribbon re-inker which will distribute ink to a ribbon without making the ribbon too wet or without permitting the ribbon to become too dry.

It is a further object of my invention to provide a ribbon re-inker which will not tend to deform the ribbon or cause it to assume a cupped or unnatural shape.

It is yet a further object of my invention to provide a ribbon re-inker which will increase the normal life of a ribbon.

It is yet a further object of my invention to provide a ribbon re-inker which may be attached as an accessory to a typewriter, a teletypewriter, or similar instrument using an inked ribbon.

It is yet a further object of my invention to provide a ribbon re-inking device which will not feed ink to a saturated ribbon when the ribbon is not being moved.

It is yet a further object of my invention to provide a ribbon re-inking device which will supply a continuous amount of ink to a ribbon.

Yet another object of my invention is to provide a ribbon re-inking device which may be easily filled with ink.

These objects and advantages, as well as other objects and advantages, may be achieved by the device illustrated in the drawings in which Figure 1 is a view in perspective of a ribbon re-inker made in accordance with my invention; Figure 2 is a side elevational view; Figures 3*a* to 3*e* is a view of the component parts separated from each other and in which Figure 3*e* is partly broken away to show the internal threading of the casing; Figure 4 is a cross-sectional view taken on the line 4—4 in Figure 3*e* looking in the direction of the arrows.

Referring now to the drawings in detail, my ribbon re-inking device is comprised of a spool-shaped casing 11 having an annular side wall 12 and a flat top 13 and a bottom 14. The top 13 extends beyond the side wall 12. The top 13 is not formed integral with the side wall 12 but is separable therefrom. It has a small air-relief passage 34 in the center to relieve differentials between internal and external air pressure. There is an annular, threaded, central, raised portion 15 on the bottom of the top 13. The inside of the side wall 12 has an internal thread 16 so that the top 13 may be brought into threaded engagement with the threads 16 on the inside of the side wall 12, thereby providing a closure. There is a circular ink cavity 17 in the casing 11. A pair of capillary holes 18 extend through the side wall 12 and communicate with the cavity 17, thereby allowing ink in the cavity to flow out. The bottom 14 extends beyond the side wall 12 and is formed integral therewith. The flange 19 on the top 13 and the flange 20 on the bottom 14 serve as guides for a ribbon 21. A bottom felt ring 22, of slightly less than

one-half the height of the side 12, is carried by the casing 11. A metal dividing ring 23 is also carried by the casing 11 and lies over the felt ring 22. This ring is preferably of metal, since it must be incompressible and should be the same diameter as the rings 22, 24. A top felt ring 24 is also carried by the casing 11 above the metal dividing ring 23.

The casing is provided with an integral spindle 25 or shaft which extends from the bottom 14 and serves to mount rotatably the ribbon re-inking device adjacent to the ribbon 21 to be re-inked. A bracket 26 receives the spindle 25. The shaft 25 passes through a hole 27. An annular boss 33 is formed on the bottom 14 surrounding the shaft 25 and serves to space it above the bracket 26. A ball 28 is provided on the end of the shaft 25. A spring 29 is attached to the bottom of the bracket 26 by a pair of screws 30 and engages the constriction 31 above the ball 28 so that the casing 11 is retained on the bracket 26. A guard 32 is attached to the bracket and serves to keep the ribbon 21 from falling out from between the flanges 19, 20.

Although the ribbon may be frequently under tension, by reason of the ring 23, it cannot unduly compress the felts 24 and 22, thereby assuming cupped shape. The ring 23 will serve to keep the ribbon relatively flat inasmuch as it is metal and not compressible. Without the ring, the felts would be compressed at the center and the ribbon would assume a dished or cupped shape cross-section. It is to be noted that the position of the holes 18, 18 is only such as to be in contact or communicate with the felt 22. Thus, only the felt 22 is directly inked from the ink inside of the casing 11. But this does not mean that the upper felt ring 24 remains uninked, for it tends to continuously receive and absorb ink from the ribbon. Thus, the ribbon acts as a transfer agent in supplying ink from the lower felt 22 to the upper felt 24. Receiving ink from the ribbon, the upper felt 24 becomes thoroughly inked, maintaining an equal distribution of ink over the upper portion of the ribbon. Thus, by the ribbon serving as a transfer agent, transferring ink from the lower felt to the upper felt, a more even distribution of ink is achieved and the lower portion of the ribbon never becomes excessively inked as is frequently the case where ink is applied equally to all portions of the ribbon at the same time. It is believed that the absorbent qualities of the ribbon cause a constant migration of ink from the lower felt to the lower portion of the ribbon, and then to the upper portion of the ribbon from which it is in part transferred to the upper felt 24. Capillarity of the ribbon thereby appears to be utilized to keep a uniform distribution of ink over the entire surface of the ribbon rather than a concentration of excessive amounts gravitationally attracted to the bottom of the ribbon.

In use, the cap 13 is removed by unscrewing it and the cavity 17 filled with ribbon ink. This comes out the passages 18 and inks the lower felt 22. The upper felt 24 is separated from the lower felt by the ring 23 so that there is no transfer of ink from the lower felt 22 directly to the upper felt 24.

The foregoing device is intended merely to be an illustration of one embodiment of my invention, for many changes may be made in the construction, selection, and arrangement of the parts, all within the scope of the appended claims without departing from the spirit of the invention.

I claim:

1. A ribbon re-inker comprising an annular casing having a central ink receiving cavity open at the top, a floor at the bottom of the cavity, a bottom radial, external flange on the casing, a top having a passage therethrough engageable with the top of the casing and defining: a closure for the cavity, and a top radial, external

flange corresponding to the bottom flange; an ink passage through the casing, upper and lower absorbent rings carried by the casing between the flanges, an annular member positioned between the rings, and a means attached to the bottom of the casing for rotatably mounting it for engagement with a ribbon.

2. A ribbon-reinker comprising an annular casing having a central ink receiving cavity open at the top, a floor at the bottom of the cavity, a bottom radial, external flange on the casing, a top having a passage therethrough threadably engageable with the top of the casing and defining: a closure for the cavity, and a top radial, external flange corresponding to the bottom flange; an ink passage through the casing, upper and lower absorbent rings carried by the casing between the flanges, an annular member positioned between the rings, and a means attached to the bottom of the casing for rotatably mounting it for engagement with a ribbon.

3. A ribbon re-inker comprising an annular casing having a central ink receiving cavity open at the top, a floor at the bottom of the cavity, a bottom radial, external flange on the casing, a top having a passage therethrough threadably engageable with the top of the casing and defining: a closure for the cavity, and a top radial, external flange corresponding to the bottom flange, a threaded boss on the bottom of said top, an internal thread in the casing engageable with the threaded boss; an ink passage through the casing, upper and lower absorbent rings carried by the casing between the flanges, an annular member positioned between the rings, and a means attached to the bottom of the casing for rotatably mounting it for engagement with a ribbon.

4. A ribbon re-inker comprising an annular casing having a central ink receiving cavity open at the top, a floor at the bottom of the cavity, a bottom radial, external flange on the casing, a top having a passage therethrough engageable with the top of the casing and defining: a closure for the cavity, and a top radial, external flange corresponding to the bottom flange; a capillary ink passage extending from the outside of the casing to the cavity, upper and lower absorbent rings carried by the casing between the flanges, an annular member positioned between the rings, and a means attached to the bottom of the casing for rotatably mounting it for engagement with a ribbon.

5. A ribbon re-inker comprising an annular casing having a central ink receiving cavity open at the top, a floor at the bottom of the cavity, a bottom radial, external flange on the casing, a top having a passage therethrough engageable with the top of the casing and defining: a closure for the cavity, and a top radial, external flange corresponding to the bottom flange; a capillary ink passage extending from the outside of the casing to the cavity, said capillary passage communicating with a lower ring, upper and lower absorbent rings carried by the casing between the flanges, an annular member positioned between the rings, and a means attached to the bottom of the casing for rotatably mounting it for engagement with a ribbon.

6. A ribbon re-inker comprising an annular casing having a central ink receiving cavity open at the top, a floor at the bottom of the cavity, a bottom radial, external flange on the casing, a top having a passage therethrough engageable with the top of the casing and defining: a closure for the cavity, and a top radial, external flange corresponding to the bottom flange; an ink passage through the casing, upper and lower absorbent rings carried by the casing between the flanges, an annular member positioned between the rings, said member being of an incompressible material and having its diameter the same as the diameter of the absorbent rings, whereby to afford central support for a ribbon under tension positioned between the flanges in contact with the absorbent rings, and a means attached to the bottom of the casing for rotatably mounting it for engagement with a ribbon.

7. A ribbon re-inker comprising an annular casing having a central ink receiving cavity open at the top, a floor at the bottom of the cavity, a bottom, radial, external flange on the casing, a top having a passage therethrough threadably engageable with the top of the casing and defining: a closure for the cavity, and a top radial, external flange corresponding to the bottom flange; a threaded boss on the bottom of said top, an internal thread in the casing engageable with the threaded boss, a capillary ink passage extending from outside of the casing to the cavity, upper and lower absorbent rings carried by the casing between the flanges, an annular member positioned between the rings, and a means attached to the bottom of the casing for rotatably mounting it for engagement with a ribbon.

8. A ribbon re-inker comprising an annular casing having a central ink receiving cavity open at the top, a floor at the bottom of the cavity, a bottom, radial, external flange on the casing, a top having a passage therethrough threadably engageable with the top of the casing and defining: a closure for the cavity, and a top radial, external flange corresponding to the bottom flange; a threaded boss on the bottom of said top, an internal thread in the casing engageable with the threaded boss, a capillary ink passage extending from outside of the casing to the cavity, said capillary passage communicating with a lower absorbent ring, upper and lower absorbent rings carried by the casing between the flanges, an annular member positioned between the rings, and a means attached to the bottom of the casing for rotatably mounting it for engagement with a ribbon.

9. A ribbon re-inker comprising an annular casing having a central ink receiving cavity open at the top, a floor at the bottom of the cavity, a bottom radial, external flange on the casing, a top having a passage therethrough threadably engageable with the top of the casing and defining: a closure for the cavity, and a top radial, external flange corresponding to the bottom flange; a threaded boss on the bottom of said top, an internal thread in the casing engageable with the threaded boss; an ink passage through the casing, upper and lower absorbent rings carried by the casing between the flanges, a dividing ring positioned between the absorbent rings, said dividing ring being of an incompressible material and having its diameter the same as the diameter of the absorbent rings, whereby to provide central support for a ribbon under tension positioned between the flanges in contact with the absorbent rings, and a means attached to the bottom of the casing for rotatably mounting it for engagement with the ribbon.

10. A ribbon re-inker comprising an annular casing having a central ink receiving cavity open at the top, a floor at the bottom of the cavity, a bottom radial, external flange on the casing, a top having a passage therethrough engageable with the top of the casing and defining: a closure for the cavity, and a top radial, external flange corresponding to the bottom flange; an ink passage through the casing, upper and lower absorbent rings carried by the casing between the flanges, an annular member positioned between the rings, and a shaft attached to the bottom of the casing for rotatably mounting it for engagement with a ribbon.

11. A ribbon re-inker comprising an annular casing having a central ink receiving cavity open at the top, a floor at the bottom of the cavity, a bottom radial, external flange on the casing, a top having a passage therethrough engageable with the top of the casing and defining: a closure for the cavity, and a top, radial, external flange corresponding to the bottom flange; a threaded boss on the bottom of said top, an internal thread in the casing engageable with the threaded boss; a capillary ink passage extending from the outside of the casing to the cavity, upper and lower absorbent rings carried by the casing between the flanges, a dividing ring positioned between the absorbent rings, said dividing ring being of an incompressible material and having its diameter the same

as the diameter of the absorbent rings whereby to provide central support for a ribbon under tension positioned between the flanges in contact with the absorbent rings, and a means attached to the bottom of the casing for rotatably mounting it for engagement with the ribbon.

12. A ribbon re-inker comprising an annular casing having a central ink receiving cavity open at the top, a floor at the bottom of the cavity, a bottom radial, external flange on the casing, a top having a passage therethrough engageable with the top of the casing and defining: a closure for the cavity, and a top, radial, external flange corresponding to the bottom flange; a threaded boss on the bottom of said top, an internal thread in the casing engageable with the threaded boss; a capillary ink passage extending from the outside of the casing to the cavity, upper and lower absorbent rings carried by

the casing between the flanges, a dividing ring positioned between the absorbent rings, said dividing ring being of an incompressible material and having its diameter the same as the diameter of the absorbent rings whereby to provide central support for a ribbon under tension positioned between the flanges in contact with the absorbent rings, and a shaft attached to the bottom of the casing for rotatably mounting it for engagement with a ribbon.

References Cited in the file of this patent

UNITED STATES PATENTS

341,630	Bailey	May 11, 1886
1,846,498	Stephenson	Feb. 23, 1932
2,098,171	Van De Voorde	Nov. 2, 1937