March 24, 1959 W. F. MAVES 2,879,122

BOBBIN DISPENSER

Filed Aug. 29, 1955

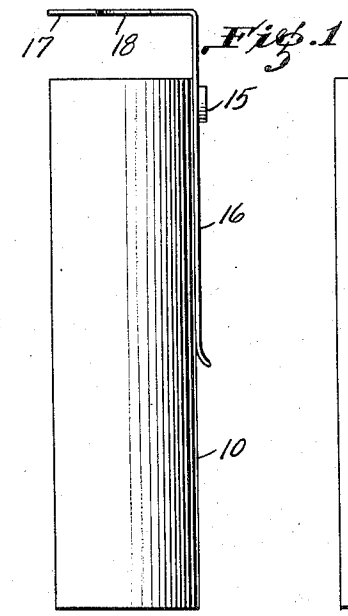

Fig. 1

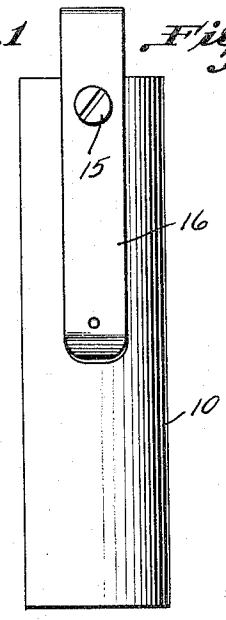

Fig. 2

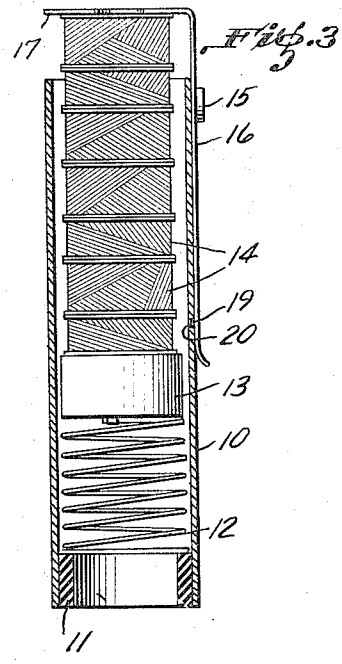

Fig. 3

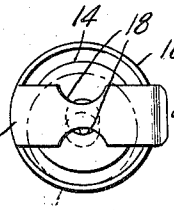

Fig. 4

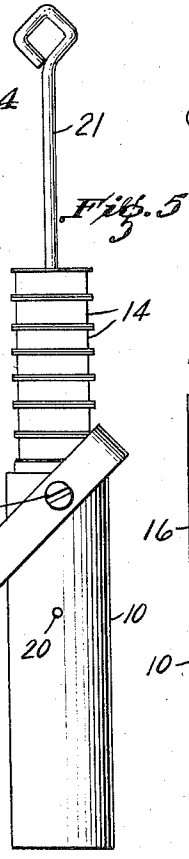

Fig. 5

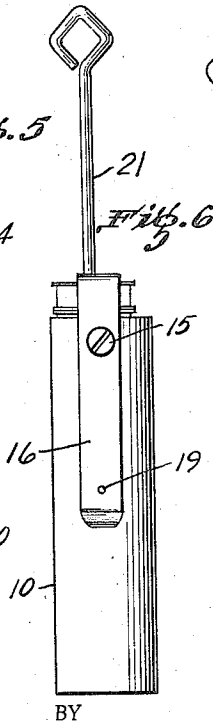

Fig. 6

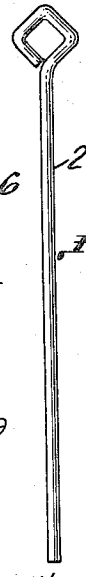

Fig. 7

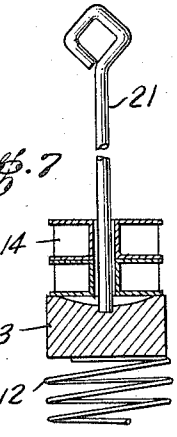

Fig. 8

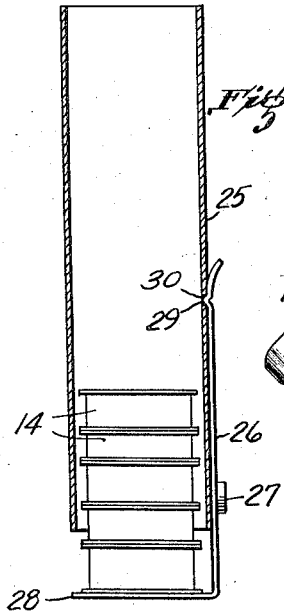

Fig. 9

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BOBBIN DISPENSER

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2 Claims. (Cl. 312—71)

This invention is a bobbin holder attachment particularly for use in connection with lock stitch sewing machines.

In sewing machine operation, it is necessary to use a bobbin to contain the under or bottom thread, which thread is wound on small paper cones at thread mills and used in practically all factories where sewing machines are used; being called "ready wounds." These "ready wounds" come in boxes from the thread mills and when used in factories are quite often mixed together, frequently resulting in the operator obtaining the wrong thread size which is often a cause of breaks in the stitch. The bobbin dispenser of the present invention greatly relieves if not entirely eliminates this chance of error by having all one size thread bobbins in one tube and other sizes in other tubes.

The dispenser of the present invention resides in a tube of a length to contain a desired number of bobbins flatwise, to be dispensed or withdrawn one at a time from the tube, the latter being equipped with means to prevent the discharge of more than one bobbin at a time.

The invention further comprises means for feeding the bobbins to the discharge end of the tube or cylinder where they may be selectively withdrawn one at a time.

The invention further comprehends means of improved nature to enable the tubes or cylinders to be easily and quickly refilled with a new supply of bobbins when the original supply becomes exhausted.

With the foregoing objects in view, together with others which will appear as the description proceeds, the invention resides in the novel construction, arrangement, and combination of parts, all as will be described more fully hereinafter, illustrated in the drawings, and particularly set forth in the claims.

In the drawings:

Fig. 1 is a side elevation of a bobbin holder and dispenser constructed in accordance with the invention,

Fig. 2 is a rear elevation of the tube as shown in Fig. 1,

Fig. 3 is a sectional view taken longitudinally through the bobbin dispenser and illustrating the means by which the bobbins are retained therein,

Fig. 4 is a top view of the device as shown in Fig. 3,

Fig. 5 is a rear elevation of the dispenser tube and illustrating the parts in the position they will assume during the filling operation,

Fig. 6 is a view similar to Fig. 5 and showing the parts in the position they will assume when the filling operation is completed and the filler rod is ready for withdrawing,

Fig. 7 is a side elevation of the improved filling rod,

Fig. 8 is a cross sectional view through the follower and bobbin and illustrating the practical use of the filler rod,

Fig. 9 is a vertical sectional view taken through a dispenser tube or cylinder involving a slight modification of the invention.

The bobbin holder and dispenser of my invention includes a straight tube or cylinder **10**, being somewhat

larger in diameter than the bobbins it is to contain and being of a length to accommodate a desired number of bobbins. This cylinder or tube may be made of metal or, if desired, of glass or other transparent material to enable the contents of the tube to be viewed from the exterior thereof.

In the bottom of the tube, there is secured a ring or annulus **11** which constitutes a base to be engaged by and to support the lower end of an expansion coil spring **12**, the spring being secured to the bottom surface of a circular follower **13**. This follower supports a column of bobbins **14** disposed in stacked relationship in the tube. It will be observed, particularly with reference to Fig. 3 of the drawings, that the exterior diameter of the bobbins is substantially less than the inner diameter of the cylinder **10**, whereby appreciable lateral movement of the bobbin column within the cylinder is permitted.

Pivoted inwardly from its ends as at **15** to the exterior of the cylinder **10** near the open end thereof is a dispenser arm **16**, which may be formed of relatively thin, flat metal or synthetic material. The outer end of this arm is provided with a laterally extended finger **17** overlying the open end of the cylinder and normally spaced from the feed opening a distance slightly greater than the thickness of a bobbin. The lateral edges of the finger **17** are recessed as at **18** for a purpose later to be described. The opposite end of the arm **16**, is provided with a prong **19** to engage within an opening or recess **20** in the outer surface of the cylinder **10**. This prong affords an effective means for maintaining the arm **16** in parallelism normally with the tube wall **10**. When the cylinder is filled with a column of bobbins stacked flatwise, as shown in Fig. 3, the spring **12** urges the follower **13** and the column of bobbins supported thereby in an outward direction, the outermost bobbin being engaged with the inwardly directed finger **17** of the arm. Inasmuch as the distance between the finger and the open end of the cylinder is greater than the thickness of a bobbin, it is apparent that the topmost of these bobbins may be readily withdrawn laterally of the cylinder by the fingers, and upon its removal from the stack or column the next underlying bobbin will be forced outward by the spring **12** until it contacts the finger **17**. The bobbins may be readily withdrawn, one at a time, until the column has been exhausted.

When it is desired to refill the cylinder, the filler rod **21** is passed through the alined openings of the stack of bobbins, whereupon the arm **16** is swung laterally upon its pivot **15**, withdrawing the finger **17** from the end of the cylinder, as shown in Fig. 5. The rod with the bobbins **14** thereon is then inserted in the cylinder with the lower end of the rod **21** engaging the follower and tensioning the spring **12** until the entire column of bobbins is in the tube and the top bobbin assumes the position shown in Fig. 6 of the drawings. The arm **16** is then swung backwardly until the finger **17** passes over the upper end of the column of bobbins with the recess **18** in the finger receiving the side of the rod **21**. It is preferred that the difference in the external diameter of the bobbins and internal diameter of the cylinder be such as to permit lateral movement of the column of stacked bobbins within the cylinder so that the prong **19** may snap into opening **20** in the side wall of the cylinder; the recess **18** in the side edge of the finger **17** engaging the side edge of the follower rod **21**. The filling rod may then be withdrawn and the dispenser is ready for use.

Fig. 9 of the drawing discloses a modification of the invention wherein the cylinder or tube **25** is inverted, and the spring and follower dispensed with. In this form of the invention the arm **26** is pivoted near the lower end of the tube and is provided with a laterally

disposed finger **28** spaced normally beyond the lower end of the cylinder a distance slightly greater than the thickness of the individual bobbin. In this instance, as in the other embodiment of the invention, the arm **26** is in parallelism with the tube or cylinder and is so held by the prong **29** engaging in an opening or depression **30** in the side wall of the cylinder. In this modification, the filling operation is carried out through the upper open end of the cylinder and the column of bobbins is supported by the finger **28** at the lower end of the cylinder.

From the foregoing it is apparent that I have provided a bobbin dispenser of extremely simple construction, which is composed of but few simple and relatively assembled parts, which parts are of such construction and arrangement to minimize the opportunity for wear, derangement or breakage and which proves highly efficient in operation. By construction the laterally swinging arm **16** in the manner here described with the recess or depression **18** in the side edge of the finger **17**, the holder may be easily and quickly refilled by simple operation, with little if any likelihood of dropping or losing the bobbins, and when properly filled the filling rod may be easily withdrawn without disturbing the column of bobbins.

I claim:

1. In a bobbin holder and dispenser, a cylindrical tube open at one end adapted to receive apertured bobbins of less diameter than said tube, a base at the opposite end of said tube, a follower in said tube to support said bobbins, a spring resting at one end on said base and engaged at its opposite end with said follower tending to force the latter and said bobbins toward said open tube end, an arm pivoted inwardly of its ends to the exterior of said tube, a finger projecting laterally from one end of said arm and overlying said tube when in parallelism with said tube a distance greater than the thickness of a bobbin, the side edges of said finger having recesses therein overlying the apertures in said bobbins, and means at the opposite end of said arm to lock the latter in parallelism with said tube.

2. A bobbin holder comprising a tube open at one end to receive centrally apertured bobbins in stacked relationship and of a diameter less than the internal diameter of said tube, an arm pivoted inwardly of its ends to the exterior of said tube near said open end, a finger projecting laterally from one end of said arm to normally overlie the open end of said tube a distance greater than the thickness of a bobbin, the lateral edges of said finger having recesses therein extending adjacent to said bobbin apertures, a rod extending through the bobbin apertures, to feed the latter to the interior of said tube, the degree of lateral movement of the stack of bobbins within said tube due to the difference of the tube and bobbin diameters plus the depth of the recesses in the sides of the said finger permitting the rod to remain projected from the tube when the arm is in parallelism with said tube, and means for locking said arm to said tube in parallel relationship thereto.

References Cited in the file of this patent

UNITED STATES PATENTS

381,266	Miller	Apr. 17, 1888
766,094	Anderson	July 26, 1904
1,671,285	Hanna	May 29, 1928
1,727,247	Mueller	Sept. 3, 1929
1,844,285	Johnson	Feb. 9, 1932