

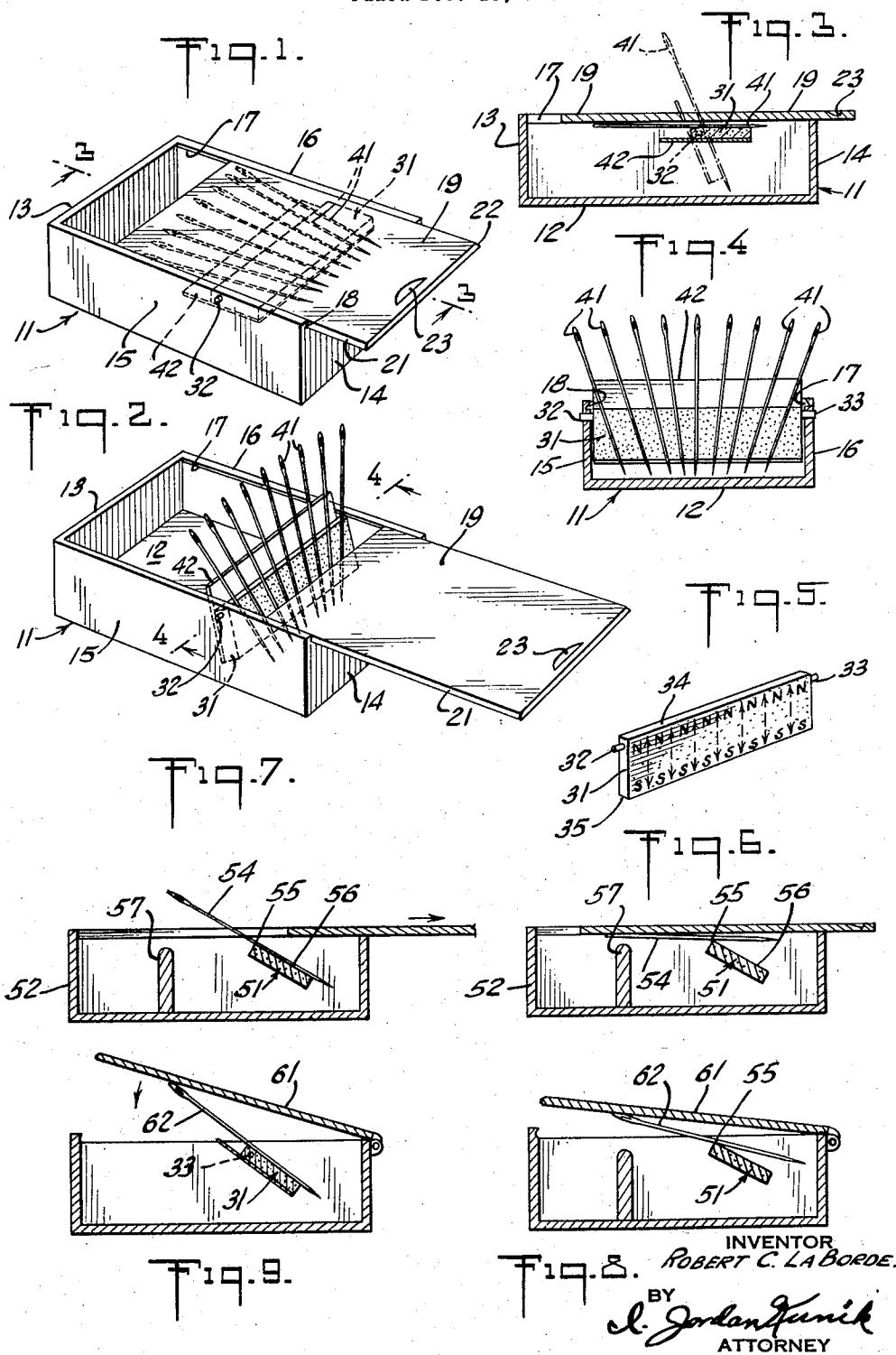
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R. C. LA BORDE

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DISPENSER-CONTAINER FOR ARTICLES OF MAGNETIC MATERIAL

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INVENTOR
 ROBERT C. LA BORDE.
 BY
L. Jordan Kunkin
 ATTORNEY

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DISPENSER-CONTAINER FOR ARTICLES OF MAGNETIC MATERIAL

Robert C. La Borde, Bronxville, N.Y., assignor of five percent to I. Jordan Kunik

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4 Claims. (Cl. 206—66)

This invention relates to a container and dispenser for magnetically permeable materials, and particularly for elongated materials such as needles, drill bits, implements, and the like.

The invention is particularly useful for the packaging of sewing needles, or the like, and for providing a convenient dispensing means for a plurality of needles whereby any one of them may be readily selected from the group.

The invention comprises generally a box-like container having a sliding or hinged closure and which contains a magnetic support upon which the needles are magnetically mounted. When the closure is opened or retracted from the container, the needles automatically emerge from the container and present themselves in a fanned out array for selection. The support bar, to which the magnetic needles adhere, is made of a substance in which the magnetic lines of force are generally lateral to the longitudinal dimension of the bar. Thus when they are applied in a group upon the support bar, the needles spread out and distribute themselves in a spaced apart manner so that individual ones may be easily selected.

In one embodiment, the magnetic support bar is suspended pivotally between the sides of the container whereby the rotation of said bar about its pivot axis causes the needles to emerge at least in part from the container when the cover is retracted or opened. In another embodiment, the magnetic bar is permanently fixed in position within the container in such a manner that at least a portion of the needles nevertheless emerge from the container when the cover is retracted or opened.

The features of novelty which I believe to be characteristic of my invention are set forth herein and will best be understood, both as to their fundamental principles and as to their particular embodiments, by reference to the specification and accompanying drawings, in which:

Figure 1 is a perspective view of the container-dispenser showing a sliding cover that is only slightly retracted, some parts and the needles contained therein, being shown in dotted outline;

Fig. 2 is similar to Fig. 1, showing the cover of the container further retracted so that portions of the needles on the pivoted support bar have partially emerged from the container;

Fig. 3 is a section view taken along line 3—3 of Fig. 1, the dotted outline portion showing the alternative position of the needles;

Fig. 4 is a view partly in section taken along line 4—4 of Fig. 2;

Fig. 5 is a perspective view of the magnetic support bar shown in Figs. 1 to 4;

Fig. 6 is a section view showing the embodiment of the invention wherein the support bar is fixed permanently in position and with the cover almost closed;

Fig. 7 is similar to Fig. 6, showing the cover retracted to permit portions of the needles to emerge;

Fig. 8 is similar to Fig. 6, showing a hinged cover for

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the container-dispenser wherein the magnetic support bar is in a fixed position; and

Fig. 9 shows a container-dispenser with a hinged lid and having a pivoted magnetic support bar.

Referring now to the drawings in detail, there is shown a container generally designated 11, of a substantially rectangular shape having a bottom 12, end walls 13 and 14, and side walls 15 and 16. The upper edges of side walls 15 and 16 have opposite internal bevel recesses 17 which are adapted slidably to receive a cover 19 whose lateral edges are bevelled at 21 and 22 to mate with said recesses. Cover 19 may be provided with a top recess 23 for facilitating the retraction thereof, in the direction of the arrow, Fig. 3.

Container 11, including cover 19, is preferably made of any suitable non-magnetic material such as wood, plastic, natural or synthetic rubber, or of various types of thermosetting resins. Some of these materials may be transparent or translucent as illustrated in the drawings, or they may otherwise be made of opaque materials as circumstances require.

A magnetic support bar 31 having a pair of opposite flat sides is rotatably suspended laterally between walls 15 and 16 by means of pivot pins 32 and 33 which engage suitable respective recesses in said walls. Pivot pins 32 and 33 are mounted on opposite ends of bar 31 but they are both positioned near one side thereof so that the weight of the bar causes it normally to assume a generally upwardly extending position at an angle from cover 19.

In other words, pivot pins 32 and 33 may be mounted in any position where the pivot axis between them is aligned in any suitable position other than through the center of gravity of support bar 31. Thus, bar 31 will normally tend to assume a downwardly extending position within container 11, as shown in Fig. 2. In some embodiments the pivot function may be produced by a single elongated pin cemented or otherwise attached to the upper edge of bar 31, the ends of said pin engaging the pivot recesses on the interior of walls 15 and 16. In other embodiments, the pivoting function may be produced by pins mounted on the interior of walls 15 and 16 and adapted to be accommodated by corresponding recesses in the ends of bar 31 by which the latter may be pivotally suspended in container 11.

Support bar 31 is composed of a magnetic material in which the lines of magnetic force are oriented laterally across the bar generally perpendicular to the longitudinal dimension thereof. As shown in Fig. 5, support bar 31 is made of a material in which the magnetic lines of force are distributed transversely substantially evenly along the longitudinal dimension of the bar. Hence, the support bar may be described as comprising a plurality of substantially evenly distributed north poles "N," extending completely across the upper edge 34 of the bar while a plurality of corresponding south poles "S" extend in a similar evenly distributed manner completely across the lower edge 35 of the bar.

Thus, when such implements as magnetically permeable needles 41, drill bits or the like, are applied upon one flat side of bar 31, they orient themselves generally in the direction of the lines of magnetic force which are indicated diagrammatically by the arrows in Fig. 5. Since adjacent areas of the respective needles have the same magnetic polarization, there is a tendency for the needles to distribute themselves laterally over the whole length of the bar so that they do not bunch together. This spreading of the needles as shown in Figs. 1, 2 and 4 facilitates the selection of a particular one from amongst the rest. It will be noted that needles 41 are magnetically positioned on that flat side of bar 31, which places those needles in a direct path within which cover 19

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moves back and forth when opening and closing the container.

When cover 19 is closed, as shown in Figs. 1 and 3, the lower side thereof bears directly and only against the upper portions of needles 41 and causes the latter and support bar 31, to which they adhere magnetically, to lie in a substantially horizontal position. In Figs. 1 and 3, the cover 19 is not completely closed in order more clearly to illustrate the retractability of the cover.

When cover 19 is retracted as shown in Fig. 2, the pressure of said cover bearing upon needles 14 is released, and support bar 31 has rotated on its pivot pins 32 and 33 by gravity and has assumed an upwardly extending position whereby needles 41 are also positioned in an upwardly extending position, emerging at least partially from container 11 in the manner shown in Figs. 2 and 4. The needles are more or less evenly distributed over support bar 31 and their upper ends may fan out as shown in Figs. 2 and 4 so that selection may be made of a needle having a particular size for the sewing work to be performed. After the selection has been made, cover 19 may be pushed back to the closed position, the rear edge of said cover bearing against needles 41 and causing them to rotate on the axis between pivot pins 32 and 33. Since the needles and support bar 31 are magnetically connected, support bar 31 also rotates on said pivots and they both assume their respective positions, as shown in Figs. 1 and 3, where they are enclosed in container 11.

In some embodiments, there may be optionally provided a back plate 42, cemented or otherwise mounted on the side of support bar 31 opposite that upon which the needles adhere. This back plate 42 serves to prevent needles 41 from rotating pivotally over the upper edge 34 of support bar 31, particularly when lid 19 may be accidentally closed with such force as to overcome the magnetic attraction between bar 31 and the lower ends of needles 41. It is contemplated that the pivoting action of bar 31 may be accomplished by having plate 42 pivotally suspended upon suitable pivot pins mounted on the interior surfaces of walls 15 and 16 of container 11, in which case bar 31 would be cemented or otherwise attached to plate 42. Variations in the pivot suspension of plate 42 may be made within the skill of the mechanic trained in the art. In other embodiments, when back plate 42 is dispensed with, needles 41 may be positioned on either or both sides of support bar 31.

In another form of the invention, as illustrated in Figs. 6 and 7, support bar 51, having magnetic properties similar to support bar 31 (Fig. 5), is mounted in a fixed angular position in container 52 whose general structure may be similar to that of container 11 shown in Figs. 1 and 2.

When lid 53 (similar to lid 19) is in a closed position as indicated in Fig. 6, needles 54 are arrayed in a generally horizontal position and adhere magnetically to the upper corner 55 of bar 51. When lid 53 is retracted as shown in Fig. 7, needles 54 assume a general upwardly extending position by virtue of the magnetic attraction of the lower ends of the needles to the lateral surface 56 of support bar 51. Support bar 51 may be mounted in container 52 at any suitable angle, determined empirically or otherwise, at which sufficient magnetic attraction is exerted on the lower ends of the needles in order to cause them pivotally to move from the enclosed position to the position extending at least in part externally from the container when the cover is opened or retracted.

Although the magnetic force of bar 51 may suffice to hold needles 54 in horizontal position as shown in Fig. 6, there is optionally provided a lateral stop bar 57 arrayed generally parallel to support bar 51. The upper end of stop bar 57 serves to prevent needles 54 from becoming disengaged from support bar 51 by bouncing or otherwise, should lid 53 be closed with too great force.

In further embodiments, sliding lids 19 (Fig. 1) and 53 (Fig. 6) may be replaced by a hinged lid 61 as shown

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in Figs. 8 and 9. Said hinged lids would function in a manner similar to that of lids 19 and 53 by bearing down upon the upper ends of needles 62 to cause them to assume a generally horizontal position. When lid 61 is lifted and releases pressure from the upper ends of needles 62, support bar 31 rotates, as in Figs. 1 through 4, to cause needles 62 to move into an upwardly extending position (Fig. 9), while the magnetic force of bar 51 (Fig. 8) causes needles 62 to rotate pivotally around the upper edge 55 of bar 51 to assume their upwardly extending position as shown in Fig. 7.

Although support bars 31 and 51 may have the magnetic characteristics described hereinabove for distributing the needles individually in a spaced apart array across said bars, it is also within the purview of the present invention to provide conventional magnetic bars in which the magnetic polarity is longitudinal rather than lateral to the longitudinal dimension of the bar. In the latter case, the same function of the container-dispenser will be manifest whereby the needles will pivotally rotate either upon the pivoting magnet bar, as shown in Figs. 1 and 2, or around the upper edge of a fixed magnet support bar, as in Figs. 6 and 7.

It is contemplated that the container-dispenser of the present invention comprises magnetic means within said container for moving the elongated magnetic articles from one position angularly to another position by the action of the cover means whereby in one position of the cover the articles are enclosed within the container and in another position they are extended outwardly from the container for selection.

In the specification, I have explained the principles of my invention, and the best mode in which I have contemplated applying those principles, so as to distinguish my invention from other inventions; and I have particularly pointed out and distinctly claimed the part, mode or combination which I claim as my invention or discovery.

While I have shown and described certain preferred embodiments of my invention, it will be understood that modifications and changes may be made without departing from the function and scope thereof, as will be clear to those skilled in the art.

I claim:

1. A package for elongated magnetically permeable articles comprising a container having a bottom wall, a pair of side walls and a pair of end walls, a cover for said container, said cover being movable back and forth in a single path between its open and closed positions relative to said container, a flat sided magnetic support bar, said bar being pivotally mounted between said side walls at a location intermediate said end walls, the pivot line of said mounting being positioned other than through the center of gravity of said support bar, a plurality of magnetically permeable elongated articles, a portion of each of said articles adhering magnetically to said bar on one flat side thereof, said bar acting only by the force of gravity and rotating on said pivot mounting into an upwardly extending position when said cover is retracted from said container to cause at least a portion of each of said adhering articles to extend upwardly and externally of said container, said articles being positioned on that side of said bar which faces said path of said cover, said cover when being closed upon said container bearing directly and only against upwardly extending portions of said articles to pivotally move said articles together with said bar adhering magnetically thereto into an enclosed position within said container.

2. A package according to claim 1, and further comprising a pivot mounting for said cover, said pivot mounting connecting one end of said cover to the upper edge of one of said end walls.

3. A closure according to claim 1, and further comprising a longitudinal groove in the upper portion of the interior surface of each of said side walls, side edges on

said cover slidably engaging respective grooves for enabling said cover to close upon said container and to retract therefrom.

4. A closure according to claim 3, and further comprising an end edge on said cover engaging and bearing upon the upwardly extending portions of said articles when said cover is being urged into a closing position on said container to cause said articles to be moved pivotally.

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