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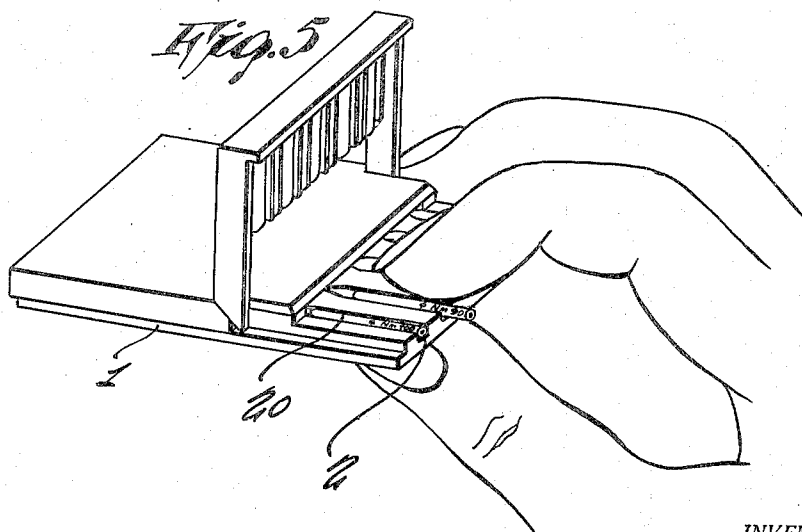
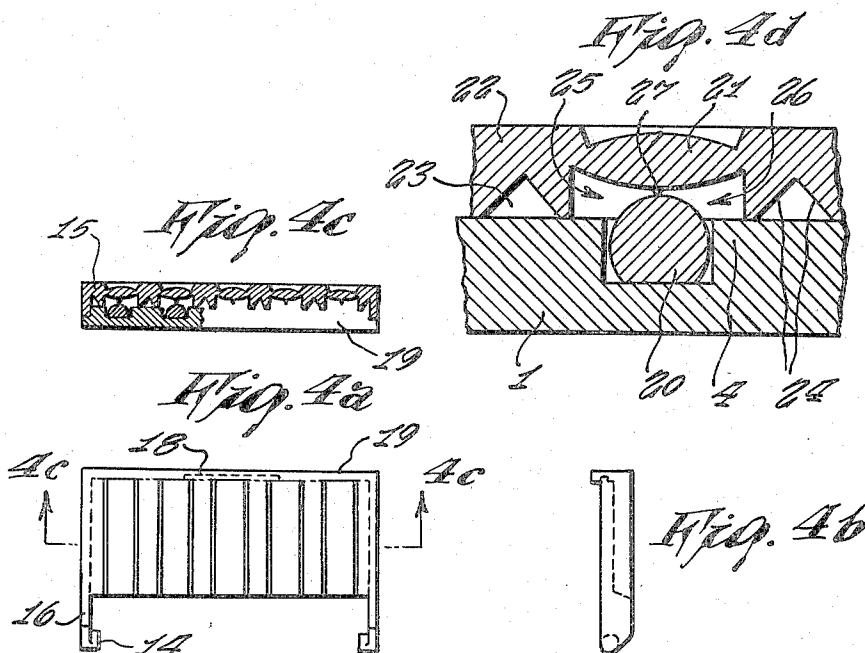
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RECEPTACLE FOR SEWING MACHINE NEEDLES

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RECEPTACLE FOR SEWING MACHINE NEEDLES

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1 Claim. (Cl. 206—16)

The invention relates to a sewing-machine-needle packing container of rigid material having at least one magazine cavity in which the needles are accommodated adjacently parallel to each other with or without intervening space, wherein the needles are introduced and withdrawn axially.

Removal of needles from known receptacles of this kind can be accomplished only by overturning, with the result that several and usually all of the needles in the receptacle must slip out of the latter to a greater or less extent before one of them can be selected and the needle selected can be grasped.

The receptacle constituting the subject matter of the invention, on the other hand, permits selection and withdrawal of a needle of given weight from a row of needles including several kinds without having to move or even touch the other needles. According to the invention, this is accomplished by means of a form of receptacle in which, when opened, parts of the needles, preferably their butts, are laterally and frontally exposed, while the remaining portions of the needles continue to be enclosed in the magazine receptacle. Thus the inscribed butts are exposed to view for selection of the desired needle, and to remove a needle its free end need merely be depressed against the backing with one finger and thrust out of the receptacle along the backing until it can be grasped with more than one finger.

For this purpose, the receptacle constituting the subject matter of the invention comprises a tabular backing one surface of which is provided with grooves corresponding in number to the number of needles to be packed, such grooves conforming in at least one longitudinal section to the shape of the needle, and their enlarged portions each receiving the butt of a needle being open at one end of the backing. A portion of these grooves, namely the portion accommodating the shanks of the needles, is covered with a panel fixedly attached to the backing and adjoined by a hinged cover enclosing the remaining portion of the backing accommodating the butts of the needles, and the frontal end interrupted by the grooves.

In order that the butts, generally bearing inscriptions, of the needles contained in the receptacle, may be exposed to view when the cover is opened, the steps between the enlarged portions of the grooves, each accommodating a butt, and the narrower portions of the said grooves, each accommodating a shank, are so arranged in the backing that longitudinal shifting of the butt between the open end of the groove enclosed by the cover and the transitional step is to a large extent avoided. In order to facilitate removal of only one needle at a time from its unilaterally open groove, the depth of the said grooves is made such that the butts will project somewhat from the surface of the backing.

The parts of the receptacle, namely the backing, panel and cover, are preferably fabricated separately and then combined. For this purpose, the parts to be joined fixedly, namely the backing and the panel, are joined by swallowtail matching provided at the sides of the

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backing and on beveled margins of the panel, so as to engage when the backing and panel are made to slide into each other. To make the connection permanent, cleats are provided between the slides, so as to snap together with slight elastic deformation of the panel and/or its marginal strips.

For attachment of the hinged cover, the backing or the panel or both are provided with lateral holes in which the cover can be hooked by means of inward-directed pins before assembly of the other two parts. When the backing and panel are thrust together, the pins are locked in their bearings, so that the cover is permanently joined to the other parts.

For closer inspection of parts of the needles, for example to facilitate reading of markings on the butts, the cover, according to the invention, consisting in that case of transparent material, may be curved at the parts situated over each needle, so as to act as an optical lens, preferably cylindrical.

To protect this lens against scratching, its outer surfaces, according to the invention, are recessed from the exterior of the cover. On the inside of the cover, it is advantageous to provide projections alongside or upon the lens to hold down the needle and prevent contact between it and the inside surface of the lens.

In order further to improve the legibility of markings on the butts of the needles, additional light is directed thereupon, according to the invention, by providing V-grooves in the cover between the lenses and parallel to them, the boundary surfaces of which grooves will totally reflect light perpendicularly incident on the surface of the cover and cast it in a glancing beam on the butts of the needles. The impression on the butt will thereby be rendered especially clear.

The device according to the invention will now be more fully described with reference to the accompanying drawings, but it should be understood that these are given by way of illustration and not of limitation and that many changes in the details may be made without departing from the spirit of the invention.

In the drawings:

Figs. 1a, 1b and 1c respectively show the backing plate in top view, in end view from the open end, and in side view;

Figs. 2a, 2b and 2c show the front panel, likewise respectively in top view, in end view from the open end, and in side view;

Fig. 3 shows the packing receptacle comprising the backing plate and front panel assembled and locked together by means of catches;

Figs. 4a and 4b respectively show the cover in top view and in side view;

Fig. 4c shows a receptacle with cover, filled with needles, in section along line 4c—4c in Fig. 4a;

Fig. 4d shows a portion of Fig. 4c to an enlarged scale;

Fig. 5 shows the procedure of withdrawing a needle from a complete receptacle filled with sewing machine needles.

As shown in Figs. 1a, 1b and 1c, the backing plate 1 consists of a flat plate or object one surface of which is provided with grooves 2 to accommodate needles 3, which grooves are opened at one end of plate 1. The grooves 2 are adapted to the shape of the needles, and so fashioned that the transition from the narrower to the wider portion will support the conical shoulder between the shaft and the butt of the needle, so that the point of the needle will not reach the closed end of the groove 2. The ribs 4 left between the grooves 2 keep the needles separate, for example in order of thickness. Their smooth upper surfaces provide space for any desired inscription, for example identifying the contents of the receptacle.

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Two lateral keys 5, undercut on the outside, serve for attachment of the front panel 9. The keys 5, say of swallowtail cross section, extend no farther over the length of the plate than necessary to accommodate the shorter panel 9. Recesses 7 in each lateral surface of the backing plate receive pivots 14 of the cover (Figs. 4a, 4b). Two projections 8 at the end of plate 1 secure the cover 15, which has a recess 18 for the purpose, in closed position.

The front panel 9 represented in Fig. 2 likewise essentially comprises a flat plate whose two side pieces 10 match the keys 5 on backing plate 1. The end piece 11 serves to finish off the closed end of backing plate 1. Projections 13, when the two plates are thrust together, snap into depressions 6 in the keys 5 of backing plate 1, locking the two parts firmly together.

Fig. 3 shows the two plates 1 and 9 in assembled condition, as seen from one side. Cover 19 has been omitted in this figure.

Fig. 4 shows the cover, essentially comprising cover plate 15, side pieces 16 with pivots 14, and end piece 19 provided with a recess 18. When assembling the packing receptacle, pivots 14 of cover 15 are first inserted in recesses 7 of backing plate 1, whereupon the front panel 9 is thrust over the backing plate 1. Its anterior portion 17 (Fig. 2c) then covers the grooves 6 in the backing plate, thereby securing the pivots 14 of cover 15 in their bearings. The recess 18 in end piece 19 of the cover, in closed condition, receives the projections 8 on backing plate 1, which hold the cover closed.

Fig. 4c shows a cross section of the cover, and Fig. 4d an enlarged portion of Fig. 4c to illustrate the conformation of the cover to provide magnifying lenses and reflector surfaces. On backing plate 1, between ribs 4, two needle butts 20 are visible in cross section. The superposed cover contains cylindrical lenses 21, and between every two of these a ledge 22 the under side of which is provided with an approximately right-angled V-groove 23; the surfaces of these grooves are inclined at about 45° to the plane of the cover, and run parallel to the axes of the cylindrical lenses. Rays of light incident in the direction of arrows 25, 26 are totally reflected from these surfaces 24, and additionally illuminate the needle butt 20 by glancing incidence as indicated by the arrows. The angle between surfaces 24 should preferably be adapted to the index of refraction of the material of the cover. The small protuberances 27, here shown as sharp points, on the inner side of lenses 21, prevent contact between the surfaces of lenses 21 and needle butts 20.

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Fig. 5 shows how the needle shanks and points, even with cover open, are totally enclosed by the packing receptacle, while the needle butts 20 are exposed endwise and on top.

Fig. 5 likewise illustrates the procedure for removing a needle, the index finger being placed on the butt and the thumb under the backing plate 1. After the needle has been withdrawn only a short distance, both fingers can grasp the butt firmly and remove the needle from the receptacle completely.

A particularly effective form of the needle receptacle here described is obtained if the backing plate 1 is of opaque material, while the cover 15 and optionally also the front panel 9 are of transparent material.

What we claim is:

A receptacle for sewing machine needles, in which the needles are placed adjacent to each other in a layer and from which the needles are inserted and withdrawn endwise, said receptacle being of square shape and comprising a tabular backing plate having a plurality of parallel groove-like recesses fashioned in one of its surfaces, adapted to the shape of the needles in axial direction, and open at an end widened to accommodate the needle butts; further comprising a front panel fixedly attached to the said backing plate and covering the portion of the said recesses accommodating the shanks of the needles, and comprising a cover pivoted to said backing plate and supplementing the front panel to cover the remaining portion of the backing plate including the end interrupted by the open recesses, a step being provided between the widened end accommodating the butt of a needle and the portion accommodating the shank of the needle in the groove-like recesses in the backing plate in order to impede lengthwise displacement of the butt between the open end of the recess obstructed by the cover and the said step, and a plurality of magnifying lenses in said cover, corresponding in number with said parallel groove-like recesses in said backing plate, each of said lenses being arranged above each said recess, whereby when said cover is in closed position, the needle butts are magnified.

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