July 23, 1946. J. S. SMITH 2,404,755

TEXTILE COMB-NEEDLE ASSEMBLY

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FIG. 1.

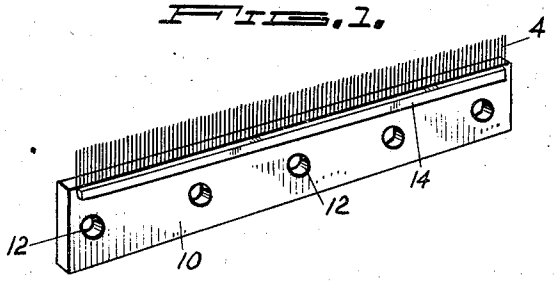


FIG. 2. FIG. 3. FIG. 4. FIG. 5.

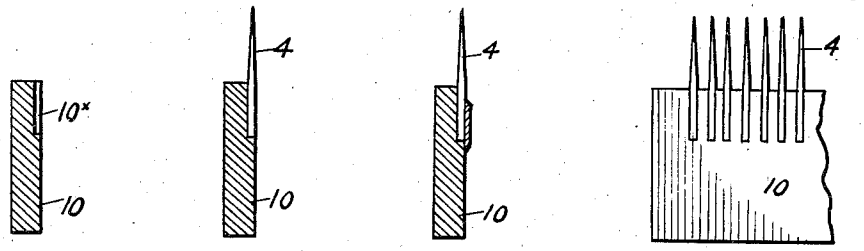


FIG. 6.

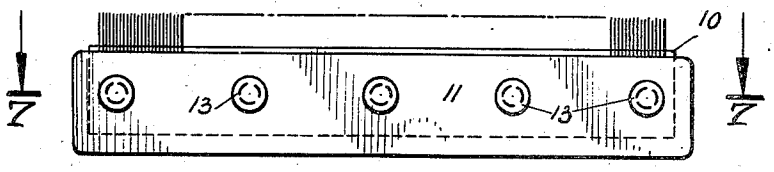


FIG. 7.

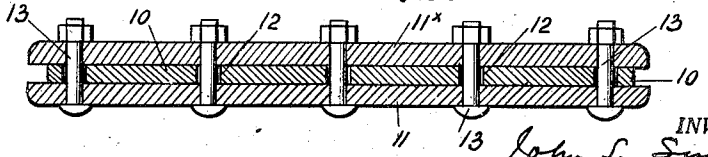
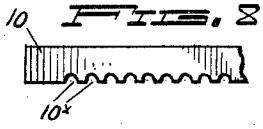


FIG. 8.



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FIG. 9.

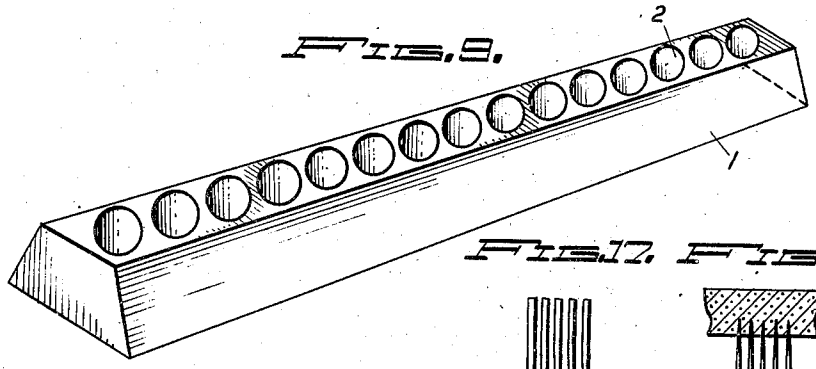


FIG. 17.

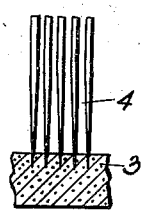


FIG. 18.

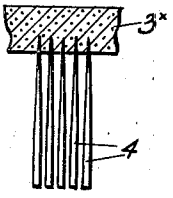


FIG. 10.

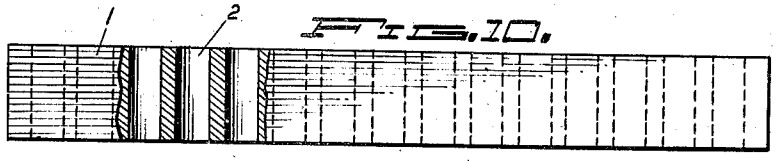


FIG. 11.



FIG. 12.

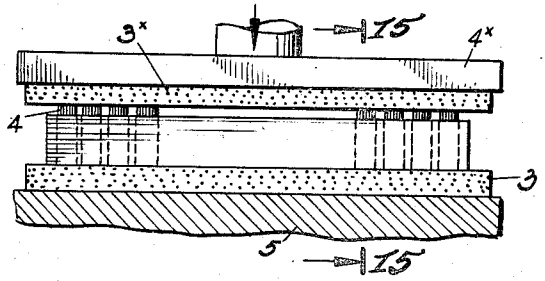


FIG. 13.

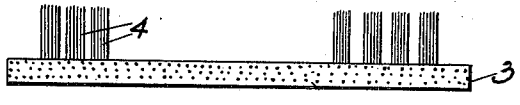


FIG. 14.

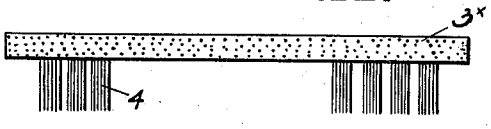


FIG. 15.

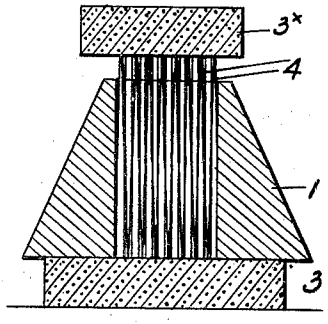
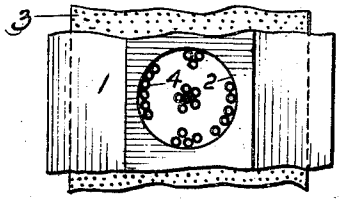


FIG. 16.



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UNITED STATES PATENT OFFICE

2,404,755

TEXTILE COMB-NEEDLE ASSEMBLY

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Application January 5, 1945, Serial No. 571,474

1 Claim. (Cl. 163—8)

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In textile mills employing carding machinery, as in the carding of wool, it is necessary to periodically change the needles of carding combs for replacement of broken, bent or worn needles. Generally, such wearing, bending and breaking of needles occurs only after many hours of use of a carding comb and it has been found desirable in such case to completely remove the line of old needles from a comb and replace them with a fresh line of needles. From the needles removed, those capable of being straightened or otherwise restored to good operative form are processed accordingly.

The needles are customarily applied to the comb bar by hand insertion in a row of closely spaced side channels formed in the bar. During this process the comb bar is held in a clamp which temporarily closes the lower portion of the open side of the channels. The needles are finally secured in their position by applying a line of solder to the bar. The bar is then removed from the clamp.

The operator may receive the needles with the points extending in various directions, and for efficient "threading" of the comb with the needles it is necessary that they be arranged with the points extending in the same direction.

The specific object of the invention, is to provide a method and means by which an operator may quickly arrange, and hold for assembly, a large number of textile comb needles with their points extending in the same direction ready for group insertion into the channels of the combs.

The invention will now be described with reference to the accompanying drawings, in which

Fig. 1 is an isometric view of a textile comb.

Fig. 2 is a vertical section through the comb bar; and

Fig. 3 is a similar view showing a needle filled in a channel of the bar.

Fig. 4 is a view similar to Fig. 3, showing needle held by solder.

Fig. 5 is a fragmentary view in front elevation showing a comb bar portion with needles in its channels.

Fig. 6 is a view in elevation showing the comb bar held in the assembly clamp.

Fig. 7 is a horizontal transverse section of Fig. 6 through lines 7—7.

Fig. 8 is a fragmentary plan view of the comb.

Fig. 9 is an isometric view of the needle assembly cavity block.

Fig. 10 is a side elevation partly in section showing the needle assembly cavity block with its cavities or wells open at each end; and

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Fig. 11 is an end view of the same.

Fig. 12 is an elevation partly in section, showing the needle assembly block holding needles, and mounted between two slabs of cork or similar material, placed between the jaws of a press.

Fig. 13 shows view in elevation of one of the two cork slabs after removal from press and holding needles with points piercing the slab.

Fig. 14 shows elevation view of the second cork slab after removal from the press and holding needles with the points piercing the slab.

Fig. 15 is a view in sectional elevation on the line 15—15 of Figure 12.

Fig. 16 is an enlarged fragmentary plan view showing the top of the needle assembly block with needles therein with their blunt ends upwardly extending (after removal of the top cork slab with the remaining needles therein) the lower cork slab being in position.

Figs. 17 and 18 show a partial section of the respective lower and upper cork slabs with oppositely facing needle points embedded therein.

Referring to the drawings I have shown the needle cavity block 1 in Fig. 9. The cavities 2, therein are open at each end, and their length is less than the length of the needles.

The first action of the operator is to place the needle cavity block 1 upon the slab of cork 3, or similar material. Each cavity of the block 1 is then filled with new or processed needles 4. A second slab of cork 3*x*, or similar material is placed over the needle cavity block and upon the upwardly projected needles.

This whole assembly is placed between the jaws 4*x*, 5 of a press as shown in Fig. 12. The press then is lightly closed, pressing the points of the needles in the two slabs of cork or similar material.

The press is then opened and the assembly withdrawn. By removing the top and bottom slabs of cork or similar material from the needle block, the needles are withdrawn from the block.

By pressing the needles between the cork slabs the point of each needle is caused to pierce into one of the slabs and to be held in this position. Hence, some of the needles are held by their points in one slab, and the remainder of needles are held by their points in the second cork slab. In this manner, all the needles in each slab have points extending in the same direction as shown in Figs. 13 and 14.

The operator may then readily thread the comb bar 10. This bar is formed at one face with a row of closely related grooves (shown at 10*x* Fig. 2) for receiving the blunt lower end area of

the needles. Preliminary to the threading action the bar 10 is placed between the clamp numbers 11, 11x so that bolt holes 12 in the bar will be brought into alinement with corresponding bolt holes in the clamp numbers. Bolts 13 will then be applied to hold the assembly.

The clamp bar 11 will close the lower areas of the grooves 10x of the comb bar, but may expose the upper area of each groove as indicated in Fig. 6.

When the operator has "threaded" the comb bar with the needles a line of solder 14 may be applied to securely hold the needles in position, as shown in Figure 1, after which the thus completed comb may be released from the clamps for use.

Having described my invention, what I claim

and desire to secure by Letter Patent is as follows:

A method for quickly preparing needles for insertion into carding combs, used in textile mills which consists in the step of placing the needles in cavities of a needle assembly block, the cavities being closed at their base by a needle penetrable member, the step of placing over the projecting needles in this block a second needle penetrable member and the step of applying pressure upon needle members sufficient to cause the needle points to penetrate same penetrable members a distance sufficient to support the needles by the latter, and enable free movement of said members with the needles carried thereby.

JOHN S. SMITH.