

July 27, 1948.

J. P. CURRY

2,446,079

MEANS FOR MANUFACTURING COMBS FOR COMBER MACHINES

Filed May 23, 1945

3 Sheets-Sheet 1

Fig. 1.

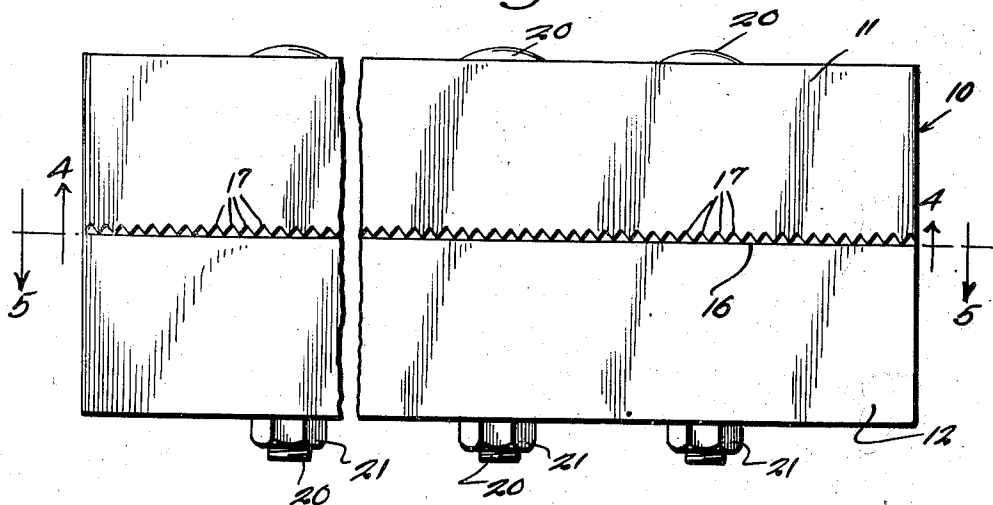


Fig. 2.

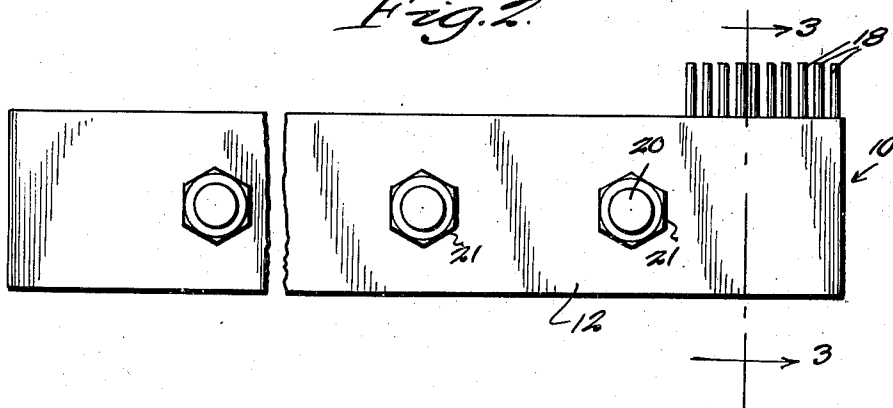
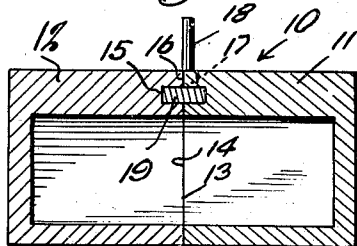


Fig. 3.



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Fig. 4.

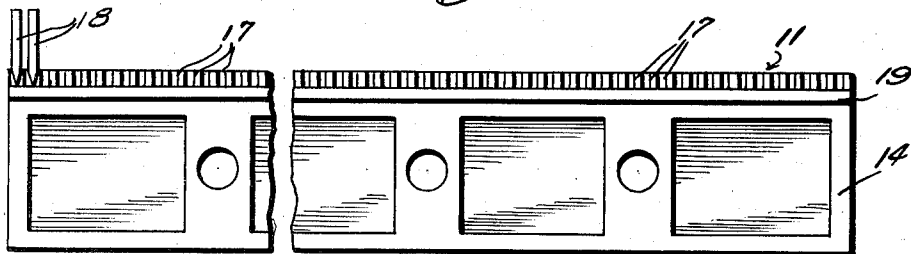


Fig. 5.

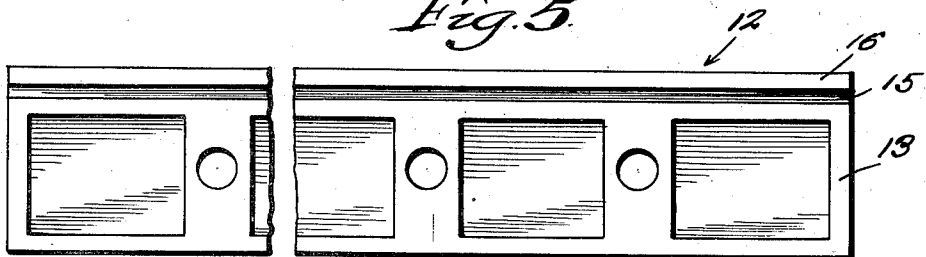
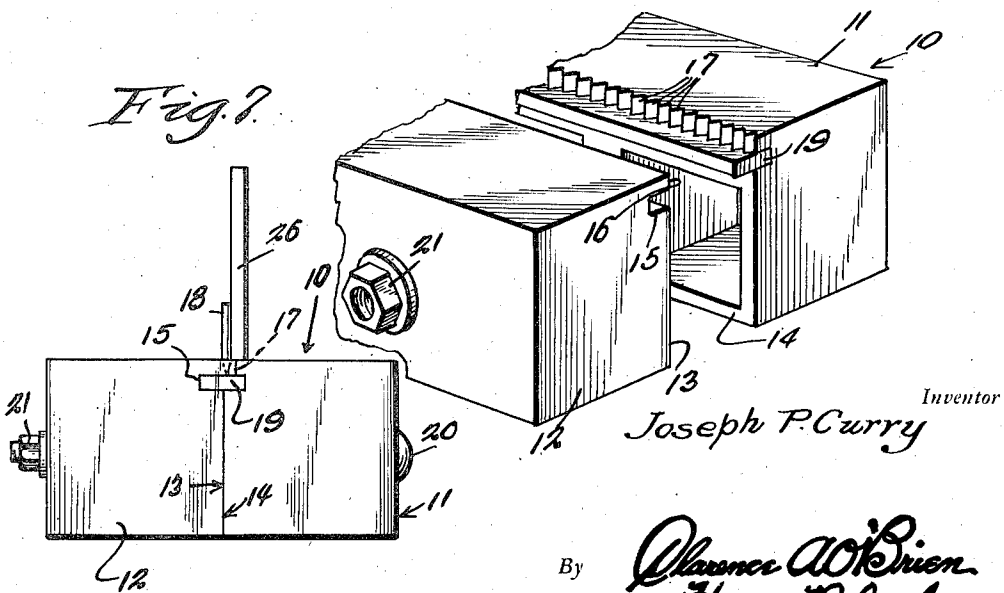


Fig. 6.

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Fig. 8.

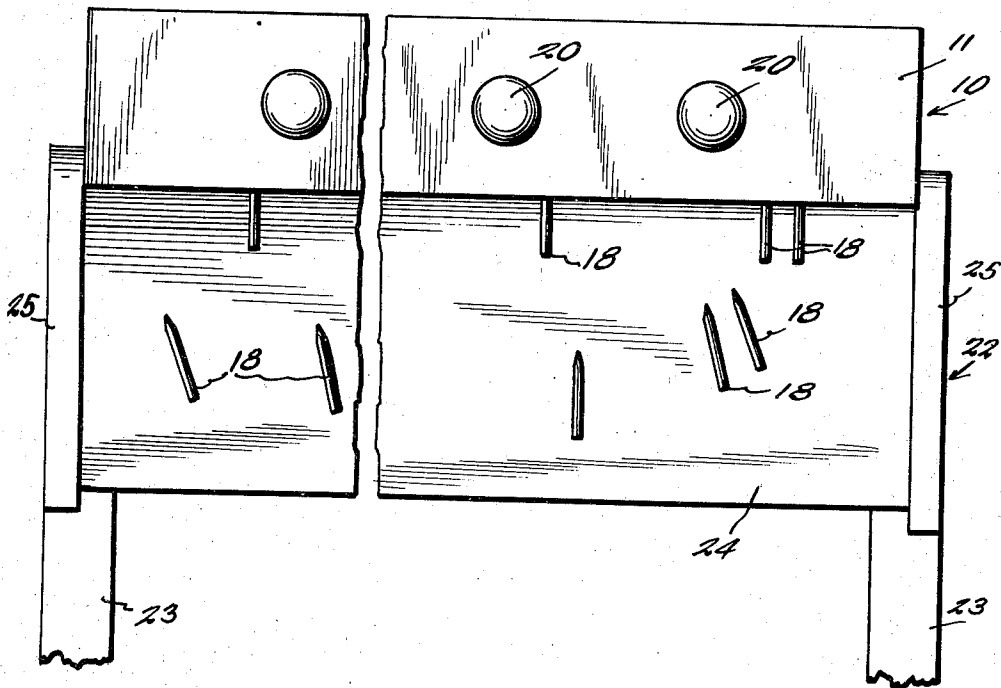
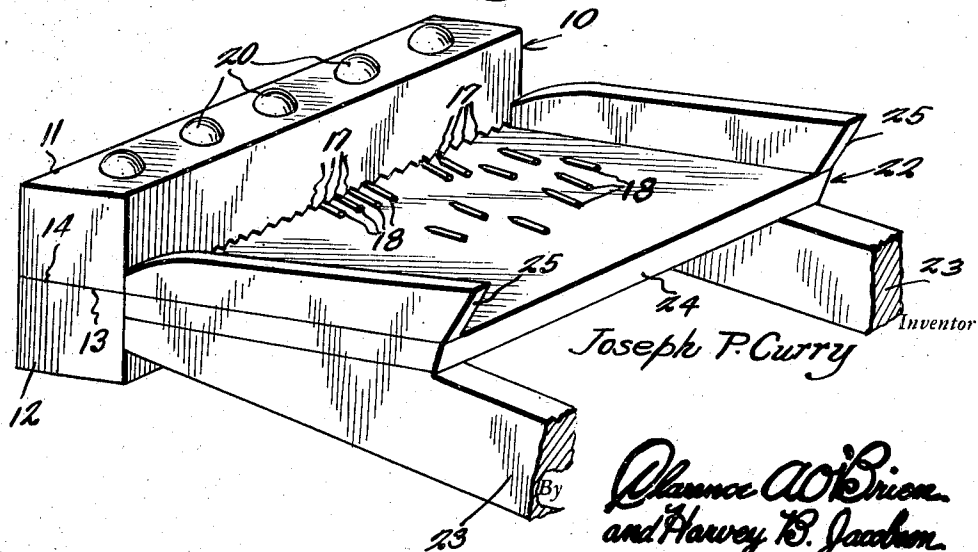


Fig. 9.



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UNITED STATES PATENT OFFICE

2,446,079

MEANS FOR MANUFACTURING COMBS FOR
COMBER MACHINES

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Application May 23, 1945, Serial No. 595,405

2 Claims. (Cl. 140—100)

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The present invention relates to a novel and improved means for expeditiously and economically manufacturing so-called "half-laps" or special metal combs for complementary use in parallelism in comber machines such as are employed in the textile industry to comb and straighten various kinds of fibers.

Secondly, the invention has to do with a special steel needle assembling, aligning, spacing and clamping vise, whereby to permit said needles to be adequately and satisfactorily soldered to the back or body of said comb in a manner to function as teeth.

In carrying out the principles of the invention, I utilize a reciprocatory shaking table, this having an inclined needle assembling and drifting trough at the needle discharge end, the needles being delivered by forces of gravity and agitation into pockets provided therefor in a special twin-block vise, the blocks being so constructed so as to expeditiously locate, uniformly space, and orderly clamp and position the needles so that protruding shank portions thereof may be secured to the back of the comb and the comb quickly made up and finished for use.

Other features and advantages will become more readily apparent from the following description and the accompanying illustrative drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the same:

Figure 1 is a face elevational view of the aforementioned twin-block needle assembling and retaining vise constructed in accordance with the adopted principles of the present invention.

Figure 2 is a side elevational view of the same, that is, a view observing either one side or one face, this view showing a plurality of the needles clamped in position for subsequent attachment to the comb body.

Figure 3 is a transverse or cross-sectional view, this taken on the plane of the line 3—3 of Figure 2, looking in the direction of the arrows.

Figure 4 is an inside face and elevational view of one of the blocks or sections of the vise, this view being taken approximately on the plane of the longitudinal line 4—4 of Figure 1, looking in the direction of the arrows.

Figure 5 is a similar view of the companion block or section, this taken on the plane of the line 5—5 of Figure 1, also looking in the direction of the arrows.

Figure 6 is a fragmentary perspective view

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with the blocks separated to show the construction of the meeting surfaces or faces thereof.

Figure 7 is an end elevation of Figures 1 and 2, observing same in a direction from right to left and showing the steps whereby the shank portions of the needles are soldered to the body so as to complete the comb, said needles serving as teeth.

Figure 8 is a top plan view of a fragmentary type showing the reciprocatory shaking table, the trough and the associated needle assembling and retaining vise.

Figure 9 is a perspective view of the same.

Referring now to Figures 1 to 7 of the drawings by distinguishing reference numerals, it will be observed that the special needle grouping, assembling, spacing and clamping vise is denoted, as a unitary structure, by the numeral 10. It comprises a pair of complementary or companion blocks or sections 11 and 12. These are of general rectangular form and of approximately equal dimensions and shapes exteriorly visualized. Also, the blocks are preferably hollow to cut down weight. The internal partitions make said blocks of cellular form, this being the preferred mode of construction. The inner surfaces 13 and 14 are flat and are adapted to be brought into firm mating relationship (see Figs. 3 and 7). The surface 13 in the block 12 (Figs. 5 and 6) is provided with a longitudinal groove 15 forming a keyway, and this opens through opposite transverse ends of said block. The narrow longitudinal area or region 16 is perfectly flat and plain and constitutes a "straight edge." The surface of the face 14 opposed to the straight edge 16, that is, in the block 11, is provided with a multiplicity of uniform and properly spaced V-shaped notches 17 which constitute the assembling, spacing and subsequent clamping pockets for the shank ends of the needles 18. In addition, a horizontal or longitudinal strip is inserted into a groove formed in the block 11, said strip being denoted at 19 and constituting a seating base and line-up ledge for the pointed ends of said needles. One-half portion of this ledge-strip projects into the groove or keyway 15 when the two blocks 11 and 12 are brought together and maintained in clamping relationship by bolts 20, latter clamped in place by coacting retaining nuts 21.

I next call attention to the aforementioned agitating and shaking table, (see Figs. 8 and 9), this denoted generally by the numeral 22. The table includes reciprocatory, spaced parallel side rails 23 mounted on an operating machine (not

shown), these having their free ends beveled to accommodate an inclined trough 24 having confining flanges 25 and functioning as a needle feeding hopper and chute.

In practice, the V-shaped needle receiving pockets, formed by the notches 17, are lined up with the discharge edge of the trough, that is, the inclined chute 24. Hence, when the trough is put into motion, that is, subjected to quick, intermittent movements, this by the back-and-forth shift or reciprocation of the rails 23, the needles 18 on the surface 24 all have a tendency to straighten out with their points directed toward the V-shaped pockets 17. In fact, and eventually, the pointed ends enter these pockets, points first. After all of the pockets have been thus orderly and expeditiously charged, the moving table is brought to a stop, and the vise is detached, this being held in place by suitable means, not shown, and then the step shown in Figure 7 is pursued. That is to say, the back or body of the comb 26 is put in position and the shank ends of the needles are soldered, welded or otherwise connected to said part 26 and the comb is finished.

The finished comb, an all-metal unit, is often referred to in the cotton textile trade as a "half-lap," and is used in a machine called a comber, which combs and straightens textile fibers. The expression "half-lap" is also used to designate a series of combs, parallel to one another, fixed to a curved surface forming a part of the comber machine.

There are three highly important features in connection with the vise and vise block which appear to be original and which have resulted in an appreciable saving of time, labor and materials. These features are as follows:

No. 1.—The permanent or built-in strip 19 in the block 11 with a longitudinal edge portion projecting and serving as a leveling-up, straight-across ledge is distinctive and highly important. On other blocks or clamps used in the trade, the "straight-edge" is subject to employment in conjunction therewith of numerous "gadgets" for setting and adjusting purposes. This painstaking and time-consuming method is modified and improved through the use of my procedure and the ledge-equipped block in the vise is highly important, obviously. There is no loss of time in adjusting or setting. When the needles drop into the pockets, the pointed ends rest on the flat surface of the ledge and are thus placed nicely in position for clamping and subsequent attachment purposes. The V-shaped notches acting in conjunction with the strip serve and provide for this receiving and assembling step and are also worthy of consideration.

No. 2.—The opposed relation of the V-shaped pockets 17 on block 11 to the "straight-edge" 16 on the block 12 is of equal importance. In other devices, known to me and used in the trade, a long, narrow, rectangular strip of wood is often used instead of the permanent metal "straight-edge" 16. These strips of wood are used in large numbers over the course of a year or so, and a great deal of patience and time is required to set them in the clamps for use. All this is eliminated in the invention and method herein covered.

No. 3.—Although it is of incidental consideration and importance, it is felt that the idea of employing the hollow blocks constructed along the lines shown and bolting these together is of outstanding importance. That is, considering

the possibility of quickly separating and then firmly abutting the blocks by simple bolts and nuts is a contributing factor to getting all of the needles quickly assembled and lined up right for subsequent attachment, anchorage and comb making purposes.

A careful consideration of the foregoing description in conjunction with the invention as illustrated in the drawings will enable the reader to obtain a clear understanding and impression of the alleged features of merit and novelty sufficient to clarify the construction of the invention as hereinafter claimed.

Minor changes in shape, size, materials and rearrangement of parts may be resorted to in actual practice so long as no departure is made from the invention as claimed.

I claim:

1. A sectional needle receiving, alining, spacing and holding vise of the class described comprising a pair of complementary substantially rectangular blocks, clamping bolts for assembling said blocks and disposing predetermined surfaces thereof in tight mating contact with each other, one of said surfaces being serrated and thus provided with a plurality of V-shaped notches defining needle receiving and spacing pockets, said surface being provided with a longitudinally extending metal gauge bar, said gauge bar having an edge portion thereof projecting beyond the notches and constituting a line-up and leveling ledge for pointed ends of the needles, the remaining block having a straight edge opposed to said notches and a longitudinally extending groove receiving the coating half-portion of said bar when the blocks are clamped together.

2. A sectional needle assembling, racking, spacing and holding vise comprising a substantially rectangular clamping block having one edge surface notched and thus defining a plurality of shallow needle-end receiving pockets, said block being provided inwardly of said notches with a longitudinally extending groove, and a metal bar inserted and fitting in said groove, approximately one-half portion of said bar projecting beyond the adjacent notched surface of the block and beyond said pockets to function as a needle depth gauge and ledge and to facilitate in assembling and retaining the needles properly in said receiving pockets, a second rectangular clamping block, said latter block having a predetermined face thereof formed with a carefully machined flat surface running from end to end and constituting a precision finished straight edge, and being formed inwardly of said straight edge with a groove, said groove running from end to end and extending through opposite transverse ends of the block, said groove being opposed to and lined up with said first groove and the projecting edge portion of said bar fitting into said second groove.

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