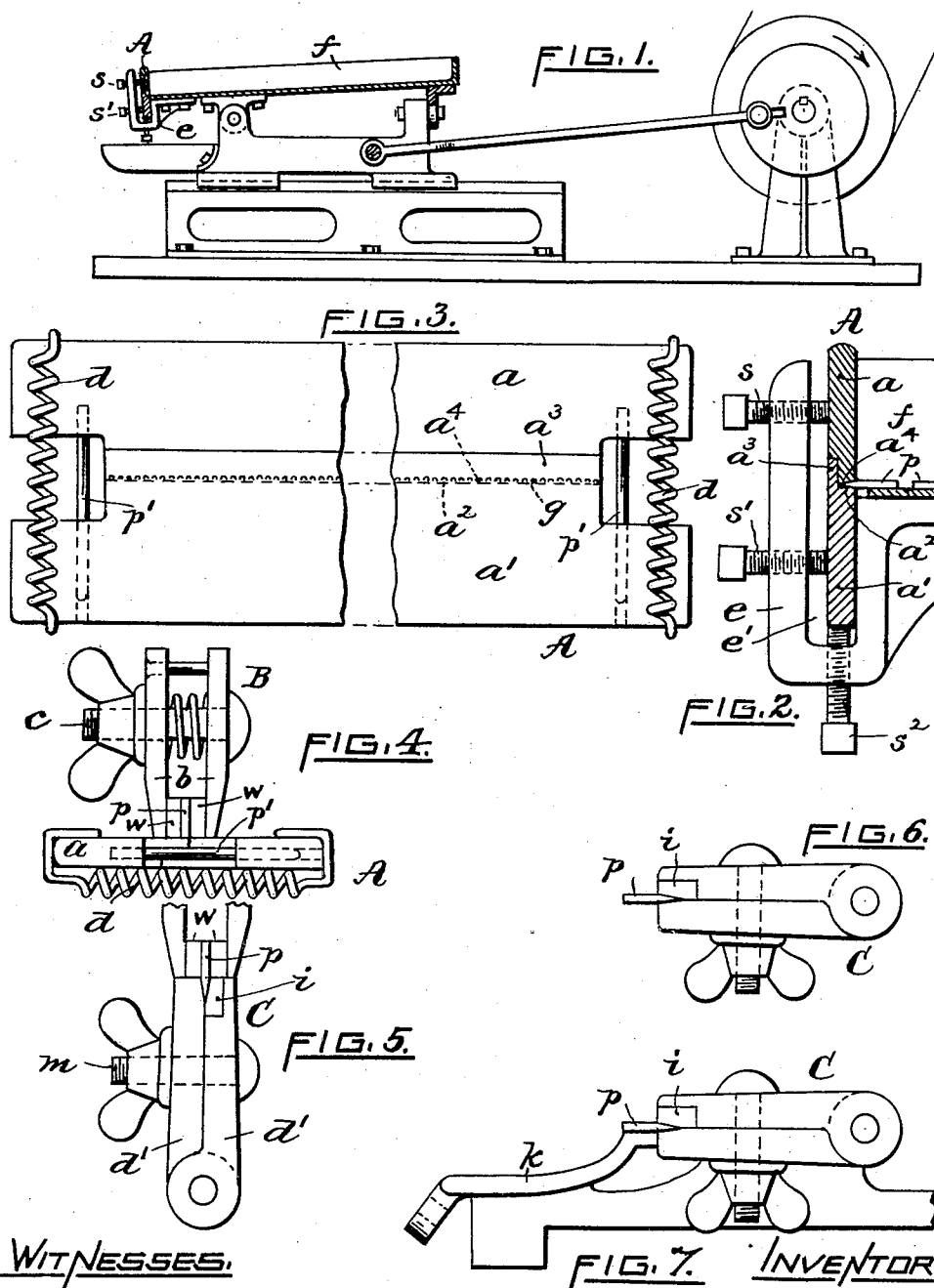


T. TOWNSEND.
 DEVICE FOR POSITIONING PINS FOR THE COMBS OF COMBING MACHINES.
 APPLICATION FILED MAR. 26, 1908.

910,744.

Patented Jan. 26, 1909.



WITNESSES:

C. J. Hannigan.
Calvin H. Brown

FIG. 7. INVENTOR.

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UNITED STATES PATENT OFFICE.

THOMAS TOWNSEND, OF PROVIDENCE, RHODE ISLAND.

DEVICE FOR POSITIONING PINS FOR THE COMBS OF COMBING-MACHINES.

No. 910,744.

Specification of Letters Patent.

Patented Jan. 26, 1909.

Application filed March 26, 1908. Serial No. 422,388.

To all whom it may concern:

Be it known that I, THOMAS TOWNSEND, a citizen of the United States of America, and a resident of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Devices for Positioning Pins or Teeth for the Combs of Combing-Machines, of which the following is a specification.

My present invention relates to means for producing metal combs, such for example, as are adapted to be used in combing machines. Machines of this class are usually employed for laying the fibers or staple of the material acted upon substantially parallel with one another preparatory to converting them into a continuous sliver.

I am aware that various methods and constructions have been devised for positioning the pins or needles (which latter constitute the comb teeth) in suitably mounted initial holders or tools, from which latter the pins are transferred and soldered to the comb-back or bars, thus completing the comb.

The object I have in view is to provide simple, inexpensive and efficient means for mechanically positioning the pins, and other means or tools for accurately and quickly transferring the thus positioned and evenly spaced pins bodily to a strip of metal, constituting the back of the comb itself, to which latter the pins are subsequently soldered in any well-known or suitable manner.

To this end my invention consists essentially of an initial slightly resilient separable pin-bar adapted to be removably secured to and properly registering with an intermittently movable pan or reservoir for holding the pins in a loose state; a transfer clamp adapted to receive the pins from said bar, and a separable book or holder into which the pins are transferred from said clamp and held in position therein while they are being soldered to the comb's back, all as more fully hereinafter set forth and claimed.

In the accompanying sheet of drawings, Figure 1 is a side elevation, in partial section, showing in reduced scale a reciprocatory or shaking pin-carrying pan or reservoir having my improved separable pin-bar mounted thereon, as in use. Fig. 2 is a cross-sectional view of the bar and the adjacent end of the pan, in enlarged scale. Fig. 3 is a corresponding side elevation of the bar itself. Fig. 4 represents an end elevation of the pin-carrying or filled bar lying flatwise, having

the transfer-clamp tool positioned thereon to receive the row of pins. Fig. 5 represents an end view of the book, so-called, for receiving the pins from the clamp. Fig. 6 is an end elevation showing the pin-carrying book lying horizontally, and Fig. 7 is a similar view of the book showing a comb-back positioned under the pins preliminary to the act of soldering the pins and comb-back together.

I would state in advance that U. S. Patent No. 841,358, granted to me January 15, 1907, illustrates a machine for temporarily inserting comb-pins or needles in a book of the character above referred to. Certain parts of said machine are well adapted to be employed in my present invention and I have therefore represented in Fig. 1 a pin-carrying reservoir arranged to be reciprocated back and forth to agitate the pins substantially the same manner as in said patented mechanism.

In the drawings herewith the pan or reservoir *f* has a pair of U-shaped brackets *e* secured thereto, each having upper and lower front screws *s s'*, a bottom screw *s''* and a narrow vertically extending opening or deep recess *e'* disposed parallel with the front end of the pan; said opening being arranged to receive and hold therein the separable initial pin-bar *A*, about to be described. This bar, *A*, consisting of the upper and lower main members, *a* and *a'* respectively, may be made of suitable metal, as brass. I prefer to extend the front edge portion of the lower member, *a'*, a short distance above the flat horizontal seat or plain face *a''* thereof so as to produce a narrow rib or flange *a'''*, and having the lower edge portion of the upper fellow member *a* fitted to and forming the counterpart of the face *a''* and flange *a'''*, except that the face *a'* of element *a* is provided throughout its length with a series of evenly spaced transversely arranged grooves *g*, the size of the latter preferably being made so that only the pointed end portion of the pins *p* may enter therein; it being understood that when in use the top surface of the pan's bottom and the said face *a''* are in alinement or disposed in a common plane. It may be stated that the width or depth of the face part *a''* also practically constitutes a gage so that the pins may be inserted therein a uniform distance, the rib *a'''* forming a stop, thus insuring a more perfect alinement, as clearly represented in Fig. 2. The ends of the bar *A* are adapted to ex-

tend beyond the corresponding ends or sides of the pan and are provided with dowel or guide-pins p^1 for obvious purposes. In order to prevent the two main members, a and a^1 , of the bar from accidental separation I employ at each end an attachable spring d formed so as to hook over the respective edges of the bar and extending transversely across its front side, as indicated in Figs. 3 and 4. The springs also impart a small degree of resiliency to the bar, in fact it is adapted to yield slightly in a lateral direction while receiving the pins from the pan and also for holding them in a non-rigid manner therein after the bar has been removed from the machine.

The transfer-clamp B comprises two parallel laterally separable jaw members having a plurality of suitably spaced quick-acting screws as c , or other suitable means, passing transversely therethrough and provided with handle-nuts, as clearly shown in Fig. 4. The length of the clamp is substantially the same as the bar A.

The book member C has a pair of flat parallel sides or cheeks, d^1 , adapted to be clamped together by screws m . The length of the book is substantially equal to that of the transfer-clamp B. The outer or free edge portion of said sides constitute jaws, one of which is adapted to receive a thin strip i of wood, rubber or other suitable non-metallic material.

The manner of operation may be described as follows: It is first assumed that the separable pin-bar A is provided with properly spaced grooves g , having a size corresponding with that of the pins to be soldered to the comb's back. The bar is next placed edge-wise in the brackets e and vertically positioned therein by means of the screws s^2 until the base of the pin-receiving grooves and face a^2 coincide and thus register or aline with the upper surface of the pan's bottom, followed by clamping the bar in position by means of the screws s^1 ; the rear face of the bar then being contiguous to the edge of the pan. Pins p of the proper size are placed in the pan f and the machine set in motion, the resulting action being to agitate or shake the pins about until the grooves or holes in the bar are properly filled by them, only the plain or shank portion of the thus mounted pins then being exposed. The pin-filled bar is next removed from the machine and laid flatwise, face down, followed by pressing downwardly upon the upper ends of the pins in any suitable manner so as to insure that all the points bear against the bottom or rear edge of the face a^2 . Oppositely disposed strips w of suitable material, as wood, are next placed upon the back or upper surface of the bar along each side of the row of pins. The jaws of the clamp B are now opened to freely

receive the strips w between them, the jaws at the same time resting upon the bar A, followed by clamping the jaws against the strips to firmly secure the pins therebetween. See Fig. 4. The two members of the bar A are then sprung apart a short distance in a lateral direction thus freeing the pins therefrom, the latter then being firmly retained in the clamp itself. The pins are next transferred to the book C, the sides of the latter being first opened for the purpose. The said pin-carrying clamp B is now placed in the position represented in Fig. 5, the edges of the jaws then bearing evenly upon those of the book, thereby correspondingly gaging the length of the points or working portions of the pins. The two side members of the book are now snugly drawn together by the bolts m or until the strip i , located in the edge of one side member, impinges the adjacent side of the portion of the row of pins extending from the clamp B, the opposite edge of the book at the same time impinging that portion of the pins adjacent to it. The clamp is next released from the pins and the pin-carrying book laid flatwise upon one side. (See Fig. 6). One edge portion of the comb-back or plate k is then suitably positioned below and in contact with the exposed shank part of the pins, said edge portion at the same time abutting the adjacent edge of the book, as clearly shown in Fig. 7. After securing the pins to the plate k , which operation may be effected in any well-known manner, as for example by placing a narrow strip of easily fusible metal upon the top of the horizontally lying row of pins and fusing it by directing a burning gas jet upon it or by a heated soldering-iron, the book-jaws are next opened and the now completed comb released therefrom.

I claim as my invention and desire to secure by United States Letters Patent:—

1. As an improved article of manufacture the separable pin-bar or tool herein described, the same consisting of a pair of comparatively thin members normally arranged and superposed one above the other edge-wise in a common plane having the meeting faces along the line of separation constructed to receive and hold a row of suitably spaced pins, means integral with the members for limiting the depth to which the pins may be inserted therein to insure a proper alinement of the pins, and means for detachably connecting said members together whereby the filled bar may be carried about without disarranging the pins and adapted to readily release them when desired.

2. The laterally separable flat pin-bar or tool substantially as described, the same comprising the two members a and a^1 , having the adjacent longitudinal edges thereof arranged to receive and support a row of segregated pins therein, said edges being also adapted

to form a gage or stop for limiting the depth to which the pins may be inserted, and resilient means for keeping said edges in normal contact with each other.

5 3. The combination with a suitably mounted reservoir for containing comb-pins in a loose state, and means operatively connected therewith for moving it in a reciprocatory or shaking manner so as to agitate the pins, of
10 a comparatively thin separable pin-bar having its adjacent longitudinal edges or joint along the plane of separation grooved transversely or arranged to receive and hold pins at a predetermined depth therein, means for
15 maintaining said edges in normal contact with each other, and means movable with the reservoir for positioning and maintaining the bar in alinement with the reservoir so that when in use the pins will move endwise
20 into and fill the said grooved portion of the bar.

4. The mechanism or means herein described for positioning a row of alining pins and securing them to a comb-plate, the same
25 consisting in the combination of a movable

horizontally disposed pin-carrying reservoir, a normally closed separable pin-bar placed edgewise, removably secured to and extending longitudinally of the reservoir having a row of spaced grooves formed along the line
30 of separation arranged to receive pins endwise therein direct from the reservoir, a book member having movable sides or jaws provided with clamping means, means for transferring the positioned pins bodily from said
35 pin-bar and securing them between the jaws of said book so as to leave the pins' shanks exposed while at the same time retaining the original spacing distance between the pins, a
40 comb-plate positioned with relation to the pins, and means substantially as described for securing the pins to the comb-plate while the pins are being held by the book.

Signed at Providence, R. I., this 25th day of March, 1908.

THOMAS TOWNSEND.

Witnesses:

GEO. H. REMINGTON,
CHARLES C. REMINGTON.