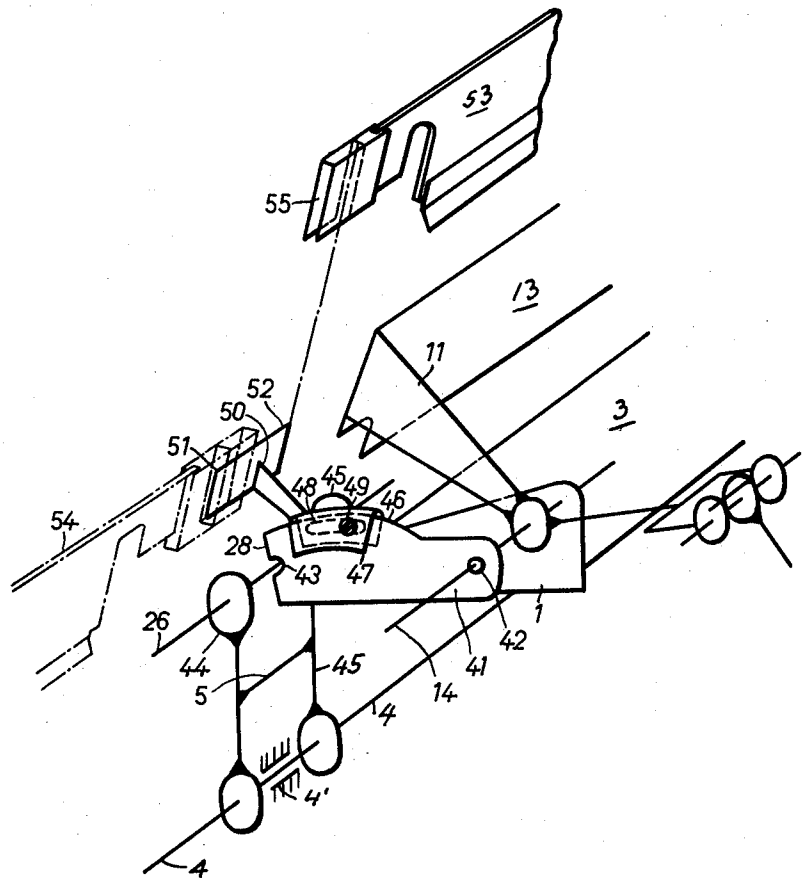
Dec. 15, 1959 W. NAEGELI 2,916,778

TOP COMB SUPPORT

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Fig. 1



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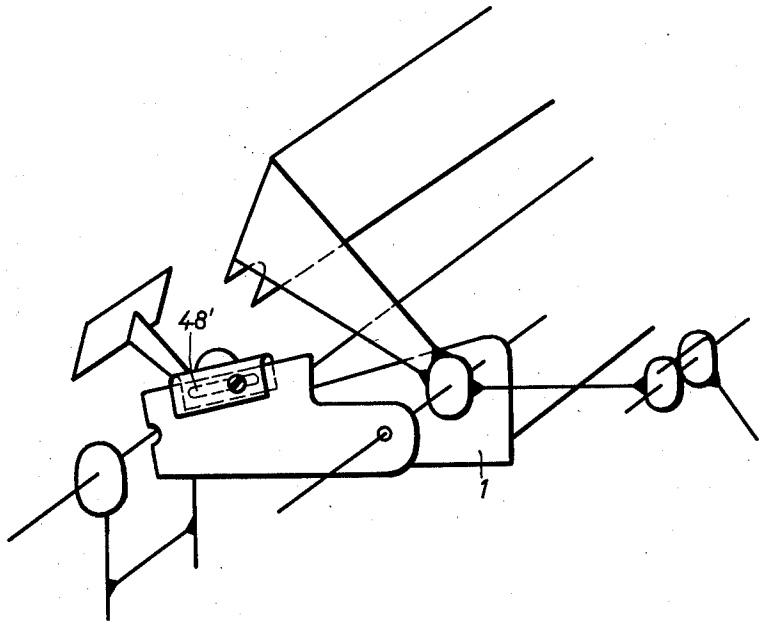


Fig. 2

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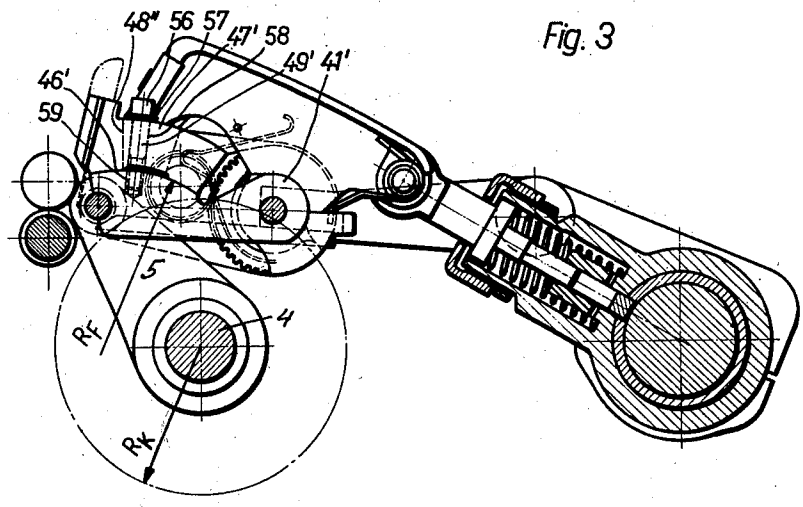


Fig. 3

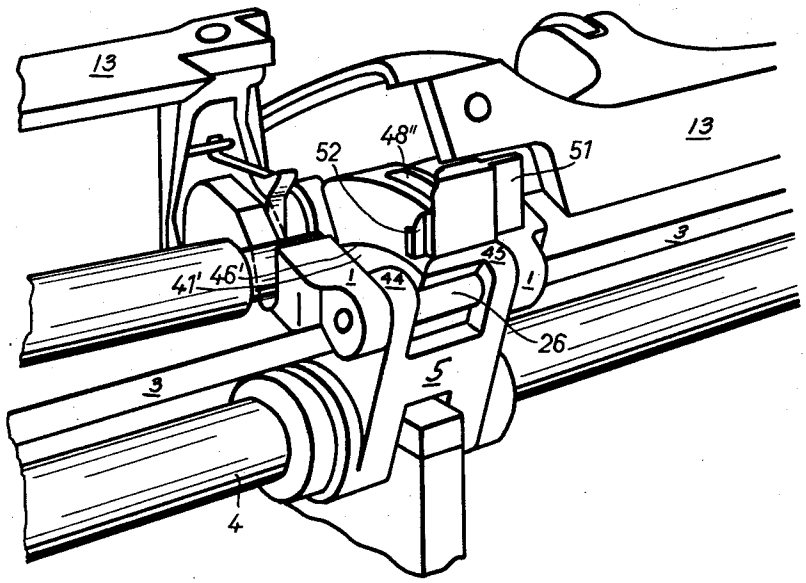
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Fig. 4



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TOP COMB SUPPORT

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Application May 28, 1958, Serial No. 738,542

Claims priority, application Switzerland June 1, 1957

10 Claims. (Cl. 19—116)

The present invention relates to a support of the top comb in a combing machine of the Nasmith type.

The adjustment of the top comb in conventional combing machines takes much time and is extremely difficult because each individual top comb must be adjusted at two ends by two adjusting devices.

In the support according to the invention a carrier is provided for the top comb which carrier can be displaced on and fixed to a guide which is unmovable relatively to the bottom nipper, the carrier having a support surface which is complementary to said guide.

Fixing of the top comb after it has been adjusted is effected by a single, disconnectable connection between the guide and the carrier. A carrier interposed between two top combs is adapted to receive both combs.

The top comb support according to the invention avoids the disadvantages of conventional arrangements in two ways. Firstly, the top comb can be adjusted and fixed at the desired spacing by a template or gauge defining the distance of the upper detaching roller from the top comb and secondly, the adjustment operation for n combing machine heads need be performed only $(n+1)$ times in contradistinction to conventional arrangements which require performance of the adjustment operation $2n$ times.

The novel features which are considered characteristic of the invention are set forth with particularity in the appended claims. The invention itself, however, and additional objects and advantages thereof will best be understood from the following description of embodiments thereof when read in connection with the accompanying drawing in which:

Fig. 1 is a diagrammatic perspective rear view of a support system for the top comb in a combing machine according to the invention.

Fig. 2 is a diagrammatic perspective view of a modified detail of the system shown in Fig. 1.

Fig. 3 is a cross section of a device of the type shown in Fig. 1.

Fig. 4 is a perspective front view of the device diagrammatically shown in Fig. 1.

Like parts are designated by like numerals in several figures of the drawing.

Numeral 1 designates a cheek mounted on the end of a bottom nipper 3. A pin 14 extending through the cheek pivotally supports a cheek 11 mounted at the end of a top nipper 13. The pin 14 also extends through a bore 42 in the rear portion of an element 41 which is placed between the cheek 1 and another cheek mounted at the end of another bottom nipper, not shown, which is in line with the nipper 3. A double arm 5 swingable on a shaft 4, which is supported by a stationary bearing 4' placed between the two arms of the double arm 5, supports a pin 26 extending through and supporting the forward portion of the cheek 1 and of the cheek, not shown, which is forward of the element 41 in Fig. 1. The front face 28 of the element 41 is provided with a recess 43 adapted to receive the pin 26 so that the

forward part of the element 41 rests on the pin 26. The element 41 cannot move laterally because its thickness corresponds to the clearance between the arms 44 and 45 of the double arm 5 as is shown in Fig. 4. In the diagrammatic illustration, Fig. 1, the distance between the arms 44 and 45 is exaggerated and the members 1, 11 and 41 are shown as plane forms without thickness.

The top of the element 41 is provided with a circular guide surface 46 which supports a correspondingly shaped carrier 47 whose position relatively to the element 41 can be fixed by tightening a screw 49 extending through a slot 48 in the carrier 47. The latter has a short extension 50 carrying two flanges 51 and 52 unto which the top combs 54 and 53 may be slid, the ends of the combs 53 and 54 being provided with fastening elements having slots 55 which are open at the bottom and which correspond to the flanges 52 and 51. Due to the small space between the connection of the top comb and the bottom nipper the top comb can be made short. This is important, if the combing machine operates at high speed because the precision of the work of the top comb is not impaired by bending of the comb which is usually the case in conventional arrangements. The top combs can be individually inserted and removed from above as is apparent from Fig. 1 in which the comb 53 is shown disconnected. The carrier for the top combs is preferably made of a suitable synthetic material whereby wearing out of the slots 55 due to corrosion is eliminated.

The diameter of the circular guide surface 46 may be made very great so that the guide surface may become straight. This is shown in Fig. 2. In this case the slide portion of the carrier for the top combs and the slot 48' provided in said slide portion are also straight.

In contradistinction to the embodiment of the invention diagrammatically shown in Fig. 1, the embodiment illustrated in Figs. 3 and 4 has an element 41' which is provided with a cylindrical guide surface 46' on which rests a comb carrier 47' whose thickness is substantially the same as the thickness of the element 41'. The carrier 47' is provided with a longitudinal slot 48'' through which a stud 49', which is not shown in Fig. 4, extends. The stud 49' is screwed into a threaded bore 59 in the element 41'. The head 56 of the stud presses through a U-shaped plate 57 against the carrier 47'.

The circular guide whose radius R_F may be as small as the radius R_K of the periphery of the circular comb forming part of the combing mechanism is of advantage with respect to the combing operation because, at any possible distance between the nipping point and the nip of the detaching cylinder, a deviation of the combing angle of the top comb from the optimum angle is avoided, which deviation had to be tolerated in conventional arrangements. The circular guide is also of advantage because the depth of insertion of the top comb is the same at any possible distance between the nipping point and the nip of the detachment cylinder. The radius of the circular guide as well as the location of the center thereof can easily be so determined that the depth of insertion of the top comb as well as the combing angle at the forward dead center position are maintained constant. Change of the percentage of noil by the choice of the distance between the nipping point and the nip of the detachment cylinders can be additionally effected by reducing the depth of insertion of the top comb at smaller distances relatively to the depth of insertion at greater distances. This can easily be accomplished by a suitable choice of the radius and the center of the circular guide. It is preferred to arrange the guide relatively to the nippers so that the top comb in foremost position penetrates deeply without offset into the space

which converges from the detaching cylinders towards the nipping point.

By providing a double lever or arm 5 instead of the individual conventional forward swing arms of the nippers and by providing a common pin extending through both arms of the double lever and by pivoting the top nipper on a pin 14 which extends through the neighboring cheeks of two juxta-positioned bottom nippers, the number of the top comb carriers is reduced from $2n$, as is conventional, to $n+1$ wherein n is the number of combing heads in the combing machine.

Adjustment of the top combs is effected in a most simple manner as follows:

After the distance between the nipping point and the detaching cylinder has been chosen, the top comb carrier with the top comb placed thereon is moved towards the upper detaching cylinder so far as is permitted by an inserted and properly chosen template. Thereupon the screw 49 in Fig. 1 or 49' in Fig. 3 is tightened.

I claim:

1. In a combing machine, guide means having a guide surface, a bottom nipper, common support means for said guide means and for said bottom nipper for rendering said guide means unmovable relatively to said bottom nipper, a carrier having a surface complementary to said guide surface and being supported by said guide means and movable on said guide surface, means operatively connected with said guide means and with said carrier for fixing the position of said carrier relatively to said guide means, and a top comb disconnectably connected with and supported by said carrier.

2. In a combing machine as defined in claim 1 and wherein said carrier is made of synthetic resin.

3. In a combing machine as defined in claim 1 and including a circular comb, said guide surface being circular and having a radius which is at least as great as the radius of the periphery of said circular comb.

4. In a combing machine according to claim 3 in which the radius of said guide surface is infinite and the guide surface is straght.

5. In a combing machine as defined in claim 1 and wherein said top comb and said carrier include complementary means adapted to be inserted one into the other for disconnectably connecting said top comb with said carrier.

6. In a combing machine according to claim 5 and wherein said complementary means are above and close to the line on which the points of the teeth of the top comb are located.

7. In a combing machine, guide means having a guide surface, a bottom nipper, common support means for said guide means and for said bottom nipper for rendering said guide means unmovable relatively to said

bottom nipper, a carrier having a surface complementary to said guide surface and being supported by said guide means and movable on said guide surface, means operatively connected with said guide means and with said carrier for fixing the position of said carrier relatively to said guide means, and two juxta-positioned top combs having end portions facing one another and being disconnectably connected with and supported by said carrier.

8. In a combing machine, juxta-positioned bottom nippers, juxta-positioned top nippers individually hinged to said bottom nippers, said bottom nippers having ends facing one another, common support means for the ends of said bottom nippers facing one another, guide means having a guide surface and being supported by said support means, a carrier having a surface complementary to said guide surface, and being supported by said guide means and movable on said guide surface, means operatively connected with said guide means and with said carrier for fixing the position of said carrier relatively to said guide means, and juxta-positioned top combs having end portions facing one another and being supported by said carrier.

9. In a combing machine, juxta-positioned bottom nippers having ends facing one another, connecting means interconnecting the ends of said bottom nippers which ends face one another, guide means having a guide surface and being supported by said connecting means, a carrier having a surface complementary to said guide surface and being supported by said guide means and movable on said guide surface, means operatively connected with said guide means and with said carrier for fixing the position of said carrier relatively to said guide means, and juxta-positioned top combs having end portions facing one another and being supported by said carrier.

10. In a combing machine, a bottom nipper, a top nipper, a pin pivotally connecting said bottom nipper and said top nipper, support means for said bottom nipper, guide means having a guide surface and being supported by said pin and by said support means, a carrier having a surface complementary to said guide surface and being supported by said guide means and movable on said guide surface, means operatively connected with said guide means and with said carrier for fixing the relative position of said carrier and of said guide means, and a top comb supported by said carrier.

References Cited in the file of this patent

UNITED STATES PATENTS

1,534,783	Horridge	Apr. 21, 1925
2,384,603	Crockett	Sept. 11, 1945