July 1, 1947. C. E. MAGNUS ET AL 2,423,245

METHOD OF AND DEVICE FOR EXTRACTING HAIRS BY USING ADHESIVE TAPE

Filed Nov. 9, 1946 2 Sheets-Sheet 1

Fig. 1

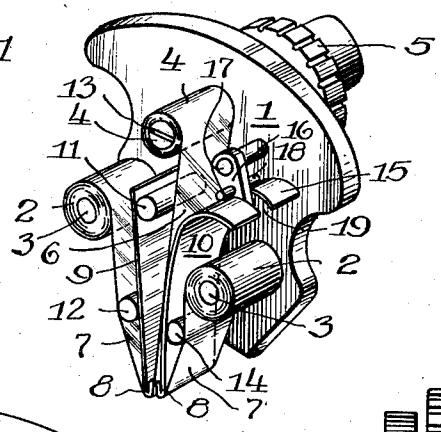
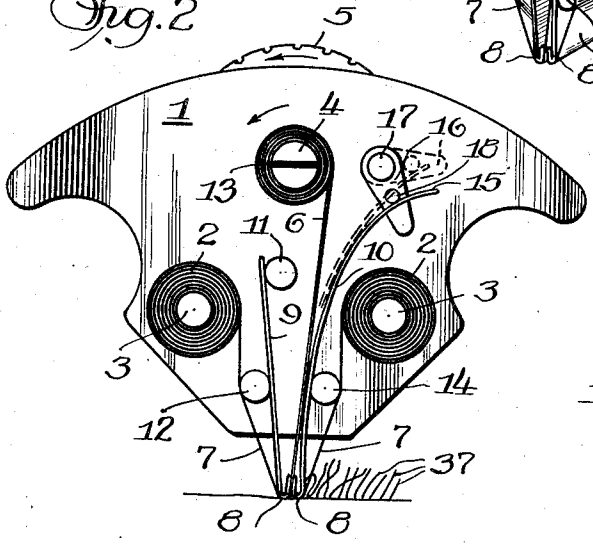


Fig. 2



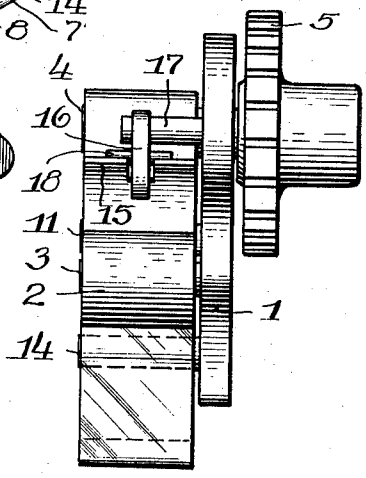


Fig. 3

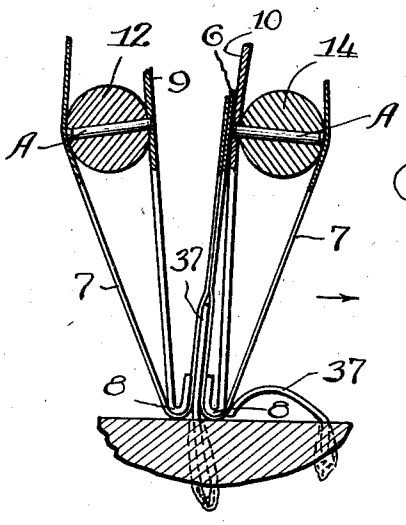


Fig. 4

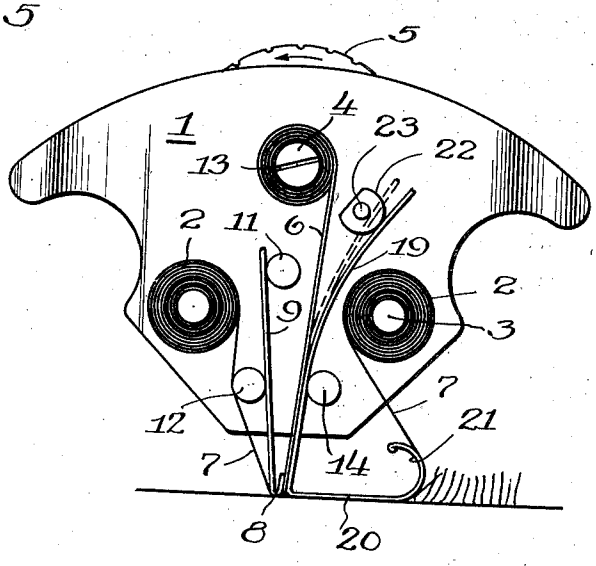
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Fig. 5



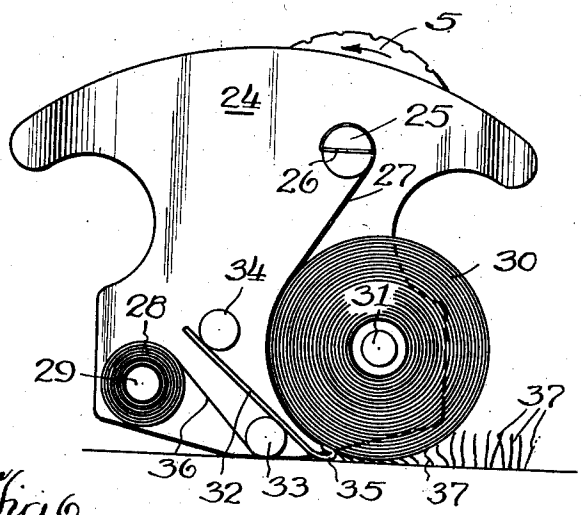


Fig. 6

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METHOD OF AND DEVICE FOR EXTRACTING HAIRS BY USING ADHESIVE TAPE

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Chicago, Ill.

Application November 9, 1946, Serial No. 708,874

12 Claims. (Cl. 128—355)

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The present invention relates to a method and means for extracting superfluous hairs from the face, arms or other portion of the body, and to a novel mechanically actuated device for accomplishing the desired results.

Among the objects of the present invention is to provide a novel method for quickly and effectively removing superfluous hairs, and which is simple in the manner of operation and highly effective in the results produced.

The present invention further comprehends a novel construction and arrangement in which any superfluous hairs are entrapped between two strips of adhesive tape on applying a requisite amount of gripping action and by a quick pull those hairs retained between the tapes are quickly and effectively removed.

A further object of the present invention is to provide a mechanism having a pair of rolls of adhesive or so-called Scotch tape containing an adhesive substance on one side thereof, means for rotating the rolls for withdrawing a desired length of the tape from each of the rolls, and tensioning means for applying a requisite amount of pressure or compression at the point where these tapes join to thereby grip the hairs to be extracted.

Further objects are to provide a construction of maximum simplicity, efficiency, economy and ease of assembly and operation, and such further objects, advantages and capabilities as will later more fully appear and are inherently possessed thereby.

The invention further resides in the construction, combination and arrangement of parts illustrated in the accompanying drawings, and while there is shown therein a preferred embodiment, it is to be understood that the same is susceptible of modification and change, and comprehends other details, arrangements of parts, features and constructions without departing from the spirit of the invention.

In the drawings—

Figure 1 is a view in perspective of one embodiment of the novel device.

Fig. 2 is a view in front elevation thereof and showing the device applied to the face or other part of the body for removing superfluous hair.

Fig. 3 is a view in end elevation of the device.

Fig. 4 is an enlarged fragmentary view of the lower end of the device and showing the manner in which the hair is drawn by means of the strips of adhesive tape between a pair of springs or blades.

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Fig. 5 is a view in front elevation of an alternate construction.

Fig. 6 is a similar view of another modification but requiring but one blade or leaf spring.

Referring more particularly to the embodiment selected to illustrate the invention in Figs. 1 to 4, inclusive, the device there shown comprises a body, plate or support 1 having supported thereon a pair of rolls 2 of Scotch tape or other adhesive material. Each roll is freely rotatable upon a projection or supporting pin 3, and mounted intermediate and above these rolls is a slotted pin 4 extending through and journalled in the support or plate 1 and adapted to be manually rotated by a knurled knob 5 disposed at the rear of the support. This rotatably slotted pin 4 is adapted to receive the end of the combined or composite tape 6 from the two rolls 2, and by such rotation and winding up of this combined tape tension is applied to the two strips of tape 7 as the latter are withdrawn from their respective rolls.

The tape from each of the rolls 2 is drawn over the lower end 8 of each of a pair of leaf springs or blades 9 and 10. These springs or blades are so constructed that the lower ends 8 are rounded, curved, bent or otherwise formed that when arranged in the manner shown these ends are held under compression. To accomplish this, the leaf spring 9 has its upper end disposed at one side of a pin or projection 11 and its intermediate portion being disposed against the other side of a pin 12 over which the smooth side of adhesive tape 7 from one of the rolls passes.

To facilitate threading of the combined strip 6 between the springs or blades 9 and 10 and upon the rotatable pin 4, the end of this pin is slotted at 13 and the spring 10 is made readily adjustable and preferably removable. As more clearly shown in Figs. 1, 2 and 3, the spring 10 is disposed adjacent its lower end over one side of a pin or other projection 14, and has its upper extended end 15 disposed in a manner to be engaged by a rotatable crank arm 16. This crank arm is mounted upon a rotatable pin or stub shaft 17 projecting through and to the rear of the body or support 1 to facilitate its manual operation, when required.

A pin 18 projects through and to the opposite sides of the crank arm intermediate its length, and the upper end of the leaf spring 10 is bifurcated or slotted at 19 to permit the free end of the crank arm to project therethrough. Thus as the stub shaft 17 is rotated in a clockwise di-

rection, the cross pins 18 bear against and depress the upper end of the spring or blade 10 and places it under tension, as shown in full lines in Fig. 2.

When the crank arm 16 is rotated in a counter-clockwise direction as shown in dotted lines in Fig. 2, the tension on the spring or blade 10 and its lower end 8 is relieved and it in turn relieves the tension on the tape 7 controlled by this blade or spring. Thus when the tension on this spring or blade is released, the spring may be removed or if maintained in position, the joined ends of the composite tapes 6 may be readily fed between the ends 8 of the springs or blades, and the extreme end or juncture quickly secured in the slot 13 whereby rotation of the knurled knob 5 in a counter-clockwise direction withdraws the tapes from the supply rolls 2.

In the operation of the device, two rolls of adhesive tape are placed on the pins 3 and the ends thereof are withdrawn outside the pins 12 and 14. These ends are then joined together and threaded or directed between the ends 8 of the springs or blades 9 and 10, then disposed about the slotted pin 4 and the extreme composite end thereof anchored within the slot 13. In this feeding operation, the spring or blade 10 may have the tension thereof relieved by rotation of the stub shaft 17 and crank arm 18 in a counter-clockwise direction, or it may be removed to further facilitate threading. After the end has been threaded into the slot 13 and the crank arm 16 moved to the full line position shown in Figs. 1 and 2, the ends 8 of the springs 9 and 10 apply the desired tension or pressure upon the composite tape where the separate tapes are joined and pass over and between the ends 8 upon rotation of the knurled knob 5.

When the assembled device is placed in contact with the face, arms or other part of the body from which unwanted or superfluous hairs are to be removed, the adhesive surface on the exposed face of the tapes engages and causes the hair or hairs adjacent thereto to adhere, and rotation of the knob 5 in a counter-clockwise direction withdraws the hairs with the tape into the space between the flat springs or blades 9 and 10 as shown in Fig. 4. In this position the hair or hairs are retained between the tapes and then as the operator pulls the device quickly in a manner similar to the operation of a pair of tweezers, those hairs are removed.

It is to be understood that the sticky or adhesive side of the tape 7 is on the outside until it passes over the rounded or curved ends 8, after which the adhesive sides of the strips of tape are sealed to each other. After the operation has been completed, rotation of the knurled knob in a counter-clockwise direction exposes a new section of tape for removing additional hairs, while that portion of the composite tape previously used is withdrawn to be rolled upon the pin 4. If desired, pins A may be employed for retaining the springs or blades in position.

In Fig. 5 is disclosed an alternate construction in which the spring or blade 19 is contoured at its lower end to provide an elongated surface 20 having its end rounded at 21. In this construction, the tape 7 from one of the rolls 2 passes over this rounded end 21, then over the elongated surface 20, and then bends inwardly to pass between the adjacent surfaces on the springs or blades 9 and 19. In this form of the invention, the elongated surface 20 is moved into contact with the portion of the body from which hairs are to be extracted, and causes the hairs to adhere to the tape over a relatively wide area.

Although we prefer to employ an adhesive tape such as Scotch tape, we have found that if such tape is not available, other tape, even one that may be devoid of adhesive, may be employed for the reason that the elongated surface 20 bends and directs the hairs toward the gripping edges formed where the adjacent surfaces on the springs or blades 9 and 19 are disposed and where the tapes bend inwardly to form a composite strip. It is at this point that the tapes are compressed and direct the hairs into the space therebetween when the knob 5 is rotated in a counter-clockwise direction and withdraws tape from the separate rolls. An adhesive tape is preferred for the reason that the sticky surface tends to facilitate directing the hairs to the pressure or compression point between the adjacent lower ends of the springs or blades.

In this alternate construction as in the device shown in Figs. 1 to 4, inclusive, a spring or blade 19 is placed under tension by means of a cam 22 mounted upon one end of a pin or rock shaft 23, with the other end of this pin or shaft preferably projecting beyond the cam so that it may be easily rotated to apply or relieve the tension on the spring or blade 19.

In Fig. 6 is disclosed a further alternate construction in which the support 24 has projecting therethrough a stub shaft 25 slotted at 26 for receiving the end of composite sheet 27 formed by joining the two strips of tape, one strip being supplied from the roll 28 mounted upon the pin 29 and the other strip by the roll 30 mounted upon the pin 31. This roll 30 is of much larger diameter than the roll 28 and so mounted as to expose a considerable surface of the adhesive side of the tape to the hairs to be removed. In this form of the invention, only one spring or blade 32 is required, the spring or blade being mounted between spaced pins 33 or 34 in such manner as to apply tension to the spring and cause the lower end 35 thereof to be at all times pressed and maintained against the outer surface of the roll 30. Although we prefer employing a roll 28, good results may be had employing only the large adhesive roll 30 and drawing this tape over the end of the spring or blade 32.

In this embodiment and construction, the tape 36 from the roll 28 passes over the lower surface of the pin or projection 33 and over the lower or rounded end 35 of the spring or blade 32. As it passes over this rounded end 35, the lower or adhesive side of this tape is exposed and engages and combines with the adhesive side of the tape supplied from the larger roll 30, and causes the superfluous hairs to pass between the adhesive surfaces at this point, which provides a line contact between the separate tapes and forms the combined sheet or strip 27. Thus when the knurled knob 5 is rotated in a counter-clockwise direction, the hairs 37 adhering to the tape on the roll 30 will be drawn between the two strips of adhesive, withdrawn from rolls 28 and 30 and held by the compression force applied at this point by the spring or blade 32, and when these hairs have been securely anchored in this manner, a quick pull on the device will extract these hairs most effectively.

Although we have shown several illustrative embodiments of the novel invention, we do not wish to be limited to the particular details, features and assembly. For example, we show the

ends of the blades or leaf springs bent or deformed to form the resilient surfaces for compressing or applying pressure to the tapes where they are joined. If desired, rollers or other compression means may be disposed at the ends of the springs so long as they give the desired gripping action.

From the above description and the disclosure in the drawings, it will be readily apparent that the invention comprehends a simple and highly effective means and method of extracting superfluous hair from the face, arms or other place on the body. When used on the face, no mirror is required for the reason that the hairs to be removed need not be accurately located as where a pair of tweezers is employed.

Having thus disclosed the invention, we claim:

1. A device for extracting superfluous hairs, comprising a support, a pair of rolls of adhesive tape mounted on the support, means for withdrawing the tape from the rolls, spring blades so disposed on the support as to provide a line contact at one end thereof, means directing the tape from the rolls over this end of the blades and with the adhesive surfaces on the tapes joined thereat to grip therebetween the hairs to be extracted.

2. A device for extracting superfluous hairs from the face, arms or other parts of the body, comprising a support, a pair of rolls of tape mounted in spaced relation on the support, means for combining the tape from the two rolls to form a composite sheet, and tension means for compressing the tapes where they join to tensionally grip therebetween the superfluous hairs to be removed, and permit their removal by a quick pull.

3. A device for the removal of unwanted or superfluous hairs, comprising a support, rolls of tape mounted at spaced points on the support, means for unwinding the tapes from said rolls, means for directing the tapes to combine them into a composite strip, and tension means disposed at the point where the tapes are combined to thereat receive and tensionally grip the hairs to be extracted.

4. A device for the removal of superfluous hair from the face, arms or other parts of the body, comprising a support, spaced rolls of tape rotatably mounted on the support, manually actuated means for receiving an end of each roll and when actuated simultaneously withdrawing tape from each roll, spring members over an end of which the tapes are passed as withdrawn from the rolls, and means for maintaining the ends of said members and the tapes passing thereover under compression whereby to grip therebetween any hairs to be extracted.

5. A device for the removal of superfluous hairs, comprising a plate, a pair of rolls for supplying adhesive tape, a take-up roll for receiving the ends of the tape, means for guiding the adhesive tape leaving each roll and directing these tapes toward the take-up roll, and tension means for uniting the separate tapes by applying pressure thereto and causing the adhesive surfaces to adhere and grip therebetween the hairs to be removed.

6. A device for the removal of superfluous hair,

comprising a supporting plate, a pair of blades of spring metal having their lower ends disposed in abutting relation and under compression, a pair of rolls of tape mounted on the support and adapted to supply a tape to each blade, means for withdrawing tape from each roll and directing these tapes over the lower ends of and between the blades, and means for maintaining the ends of the blades under tension whereby to compress the tapes as they pass thereover to thereat provide a gripping action for the removal of any hairs drawn into the space between the tapes.

7. A mechanism for the manual removal of superfluous hairs, comprising a member supporting rolls of adhesive tape, means for rotating the rolls for withdrawing a desired length of tape from each roll, means for directing these tapes into adjoining relation, and tensioning means for applying a requisite amount of pressure at the point where these tapes meet to thereby and thereat grip the hairs to be extracted.

8. A mechanism for the manual removal of superfluous hairs, comprising a supporting member, means mounted upon the supporting member for supplying tape to the mechanism, a take-up member having means for withdrawing desired lengths of tape from the supply means, means for directing these tapes into abutting relation, and tensioning means for applying a requisite amount of pressure at the point where these tapes meet to thereby grip therebetween the hairs to be extracted as they are drawn into the space between the abutting surfaces on the tapes.

9. A mechanism for the manual removal of superfluous hairs, comprising a supporting member, means mounted on said member for supplying strips of tape, means for withdrawing desired lengths of tape from the supply means, means for directing these tapes into abutting relation and means for applying pressure to the tapes where they abut and thereat gripping the hairs to be extracted.

10. Mechanism for the manual removal of superfluous hairs, comprising a supporting member, a supply of adhesive tape, a spring blade over which the tape is drawn, and means for moving the tape over the blade whereby the superfluous hairs are gripped between the tape and blade and removed by a quick pull.

11. A method of extracting unwanted hairs, comprising the steps of moving two strips of adhesive tape over the part of the body containing the hairs to be extracted and into abutting relation to form a composite strip with the adhesive sides in contact, gripping these hairs between the adhesive sides of the tapes where they abut and form the composite strip, and removing the hairs so gripped by a quick pull.

12. In the method of extracting unwanted or superfluous hairs from the arms, legs or other parts of the body, comprising the steps of drawing two strips of adhesive tape over the hairs to be extracted and into abutting relation, and causing these hairs to adhere to and be drawn between the strips where they abut and form a composite strip.

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