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(54) Automatic device for applying hairpins or curlers

(57) An automatic device for applying hairpins or curlers comprises an outer body (2), a magazine (3) which can be removed from the outer body (2), a reciprocating mechanism controlled by a trigger element (5), a releasing lever (9) pivoted inside the outer body (2), the hairpins or curlers (8) held in the magazine (3) being individually ejected by operating the trigger element (5) and releasing lever (9).

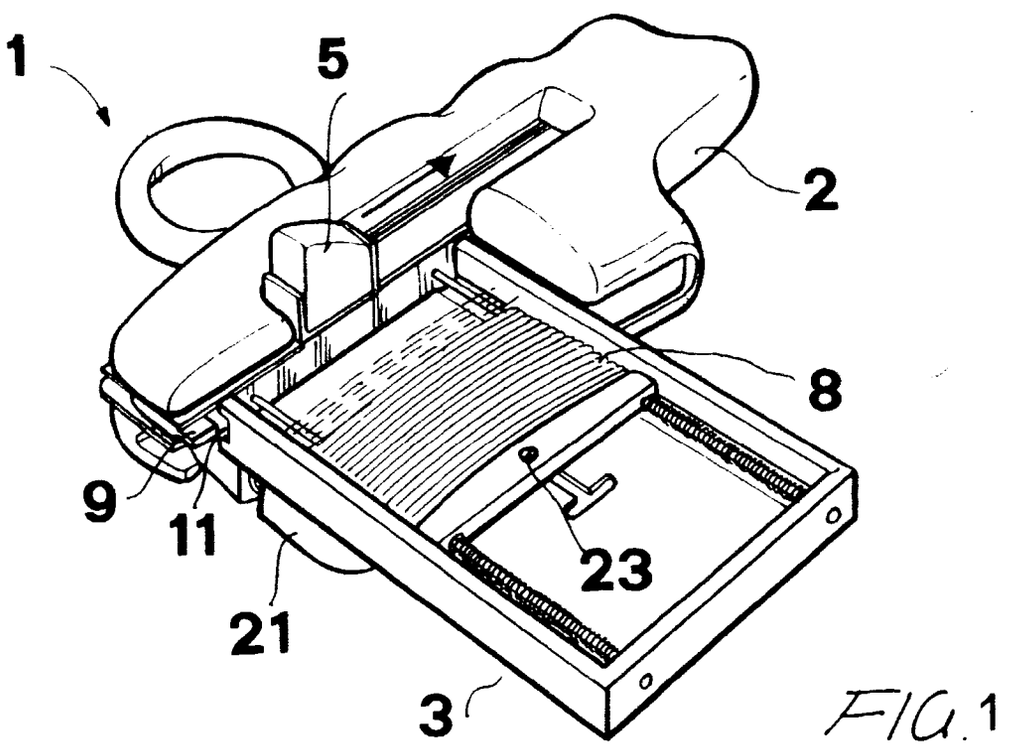

FIG.1

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Description

BACKGROUND OF THE INVENTION

The present invention relates to an automatic device for applying hairpins or curlers.

As is known, for making different hairstyle pattern, hairpins or curlers are frequently used, said hairpins or curlers being manually applied by an operator removing one by one the mentioned hairpins or curlers from commercially available holding devices or magazines therefor.

A curler, as this term is conventionally accepted, is constituted by a contoured wire portion so bent as to present two end legs which, in a rest condition, are urged to contact one another.

As the curlers are used, the two curler legs are partially spread apart in order to allow hair locks to be introduced therebetween, the hair locks being then held at a desired position by a clamping force provided by the mentioned legs as they are released.

The hairpins, on the other hand, are small coiffure tools comprising a narrow V-bent wire length and are conventionally used in applicationssimilar to those of the mentioned curlers, the hair locks being in particular wound about the two rectilinear legs of the hairpins.

A manual application of the above mentioned coiffure aids, while solving the above mentioned technical problem, i.e. to provide a proper hairstyling operation, is affected by the following disadvantages.

Because of the above mentioned manual operation for taking up and applying the mentioned implements, a lot of time is required by the operator due to the comparatively high number of individual hairpin or curler applications which are required for a single hairstyling work and, moreover, because of the comparatively small size of the mentioned implements, the operator will encounter serious difficulties in gripping and properly arranging by his/her fingers said hairstyling implements.

Such an increase of the hairstyling time will negatively affect the labour cost of any hairstyling operations.

Moreover, a further disadvantage is a direct and continuous handling of the hairpin and curlers immediately before the use thereof, which represents an unhygienic and unaesthetic operation negatively affecting the customers.

SUMMARY OF THE INVENTION

Accordingly, the aim of the present invention is to overcome the above mentioned prior art drawbacks.

Within the scope of the above mentioned aim, a main object of the present invention is to provide an automatic device for applying hairpins and curlers, which is of a hand-held type and may be simply and reliably used, so as to greatly reduce the operating time associated with a hairstyling operation, while greatly improving the sanitary conditions.

For achieving the above mentioned aim and objects, an automatic device has been provided, according to the present invention, for automatically applying hairpins and curlers, which device comprises an outer body, a hairpin or curler magazine which can be removed from said outer body, an operating reciprocating mechanism controlled by a trigger element, a releasing lever pivoted inside said outer body, the hairpins or curlers held in said magazine being ejected individually by operating said trigger element and releasing lever.

The automatic device for applying hairpins or curlers according to the present invention is characterized in that it has been provided with the characterizing features of claim 1.

The automatic device for automatically applying hairpins or curlers according to the present invention provides the following advantages.

The hairpins or curlers can be simply and quickly applied, thereby improving the application result and reducing the operating time.

This will positively affect the hairstyling cost owing to the great reduction of the operating time for performing the hairstyling operation.

A further advantage is constituted by the great improvement of the hygienic and aesthetic conditions, since the operator will not manually contact the hairpins or curlers.

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics, advantages and details of the automatic device for applying hairpins or curlers according to the present invention will become more apparent hereinafter from the following detailed disclosure, with reference to the accompanying drawings, in which is shown, by way of an indicative, but not limitative example, a preferred embodiment of the invention.

In the drawings:

Figure 1 is a perspective view of the automatic device for applying hairpins or curlers according to the present invention;

Figure 2 is a front view of the device shown in figure 1;

Figure 3 is a front view of the device according to the present invention, the hairpin or curler magazine being shown in an opened condition thereof;

Figure 4 is a further front view of the device according to the invention, during the operation thereof; and

Figure 5 is a cross-sectional view of the device according to the present invention, substantially taken as shown in figure 4.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to the number references of figures 1, 2, 3, 4, the automatic device for applying hairpins or

curlers according to the present invention comprises an outer body 2, made of a plastics material and having a specifically anatomically designed contour, as well as a hairpin or curler magazine 3 which can be detached from the outer body 2.

As shown, on the outer body 2 a rail 4 is provided, on which can freely slide a trigger element 5, which is held in the end of stroke or limit position thereof shown in the drawings by a spring element 6.

Said trigger element 5 is firmly coupled to a profiled element 7, which, by slidably reciprocating with the trigger element 5 on the rail 4, will engage the hairpins or curlers 8 supplied from the magazine 3.

On the top of said trigger element 4, a contoured releasing lever 9 is pivoted on a pivot pin 10 by known means such as a screw and nut, not specifically shown.

Said releasing lever 9 ends, outside of the outer body 2, with a ring element for allowing an operator to operate said lever, said lever being held by known resilient means (not specifically shown) in the indicated position, so as to partially cover a port 11 provided for ejecting therefrom the hairpins or curlers 8.

Advantageously, the releasing lever 9 can be directly coupled to said trigger element 5 and can be driven by the latter.

The port 11 is made by mutually coupling the outer body 2 and magazine 3, because of the specifically designed geometrical configuration of these elements.

In particular, the hairpin or curler magazine 3, which is made of a plastics material, comprises a rectangular body 12 provided with a lug 13 so designed as to engage with a small cylinder 14 arranged at the bottom between the two inner walls of the outer body 2 of the device 1.

The magazine 3 is provided, at the bottom thereof, with two holes 15 in which are threaded two metal rods 16, fixed in the holes 15 by a clamping elements, of any known types, such as nuts and the like.

Two springs 17 are threaded on said rods 16 in order to hold under tension a pressing supplying element 18, which can be displaced along the body 12 of the magazine 3, by sliding on the metal rods 16 and a vertical central slot 19, ending with a horizontal portion 20 provided for locking said pressing supply element 18 as the hairpins or curlers 8 are loaded.

Said pressing supplying element 18, in particular, can be locked since it is traversed, at the central portion thereof, by a pin 23 which is held at its set position by known and not shown clamping means. Said pin 23 slides in said vertical slot 19, thereby entraining said pressing supplying element 18.

As the pin 23 contacts the horizontal slot 20, a small horizontal driving movement, which will be possible due to the clearance existing between the several components of the magazine 3, will be sufficient to held said pin in its set position, thereby simultaneously locking the pressing supplying element 18.

On the top, and on the opposite side of the lug 13, a housing 21 is provided for housing a pin 22 provided on the outer body 2 of the device 1, in order to allow said body 2 and magazine 3 to be firmly coupled.

In this connection, it should be apparent that the specific size and shapes of the several elements constituting the automatic device according to the present invention can be varied depending on the contingent requirements, without departing from the scope of the invention.

With reference to the number references of figures 3, 4, 5, the operation of the device 1 according to the present invention is comparatively simple and will comprise the following operating steps.

After having removed the magazine 3 from the outer body 2 of the device 1, the pressing supplying element 18 will be brought in contact with the horizontal portion 20 of the slot 19, and it will be locked in this position by a small horizontal displacement movement.

Then, the hairpins or curlers 8 will be loaded, by engaging them with said metal rods 16, and then the magazine 3 will be re-located on the body 2 of the device 1, by causing the lug 13 to engage the small cylinder 14, and then by clamping under pressure the pin 22 in the housing 21.

As the pressing supplying element 18 is disengaged, the resilient urging by the springs 17 will cause the top hairpin or curler 8 to contact the profiled or contoured element 7.

Then, the operator will grip the device 1 by his/her right hand, by engaging with the forefinger the ring or loop element formed by the lever 9, while engaging by the thumb the trigger element 5 and by the little finger the rear portion of the outer body 2.

Then, the trigger element 5 will be displaced to the limit position thereof, as shown by the arrows in figure 5: accordingly, the top hairpin or curler 8, arranged on the top of the magazine 3, will be urged by the pressing supplying element 18 to a position aligned with the ejecting port 11 and the displacement path of the contoured element 7.

As the trigger element 5 is released, the spring 6 will tend to recover it to its starting position, thereby it will entrain therewith the contoured element 7 which, in turn, will cause the hairpin or curler 8 upwardly displaced by the pressing supplying device 18 to be frontward urged.

This pushing force will cause said hairpin or curler 8 to be ejected from the ejecting port 11 so as to engage, because of its geometrical configuration, the bottom end portion of the lever 9.

As shown by the arrows of figure 4, as the operator displaces the forefinger downward of the device 1, then, the outer ring of the lever 9 will be displaced downwardly, whereas the bottom end portion thereof will be displaced upwardly, so as to disengage from the hairpin or curler 8, to allow the latter to be fully ejected.

By releasing the ring of the lever 9, said lever, under the urging of its resilient means, will be returned to its starting position, and the bottom end portion thereof will

cover again the ejecting port 11.

The operating cycle can be then started again by displacing in the direction shown by the arrow of figure 5 the trigger element 5.

Upon exhausting of the hairpins or curlers, the magazine 3 will be again removed from the outer body 2 of the device 1 for performing a new reloading operation.

Claims

1. An automatic device for applying hairpins or curlers, characterized in that said device comprises an outer body (2), a magazine (3) which can be removed from said outer body (2), a reciprocating driving device controlled by a trigger element (5), a releasing lever (9) pivoted inside said outer body (2), said magazine (3) holding therein a plurality of said hairpins or curlers (8) which can be individually ejected from said magazine (3) by operating said trigger element (5) and releasing lever (9).

2. An automatic device for applying hairpins or curlers according to Claim 1, characterized in that said magazine (3), made of a plastics material, comprises a lug (13) and a housing (21) for coupling with said outer body (2) through a small cylinder (14) and a pin (22) provided on said outer body (2).

3. An automatic device for applying hairpins or curlers according to Claim 1, characterized in that said magazine (3) comprises a vertical slot (19), ending with a horizontal portion (20), two metal rods (16) rigid with said magazine (3), on each of said metal rods a spring (17) being threaded, and a pressing supplying element (18) which, by a pin (23) passing through a central portion thereof, is slidably coupled to slide along said vertical slot (19) as vertically urged by said springs (17).

4. An automatic device for applying hairpins or curlers according to Claim 1, characterized in that said reciprocating driving mechanism comprises a spring (6) coupled to said trigger element (5), which is tightly connected to a contoured element (7) engaging said hairpins or curlers (8) coming from said magazine (3).

5. An automatic device for applying hairpins or curlers according to Claim 1, characterized in that said releasing lever (9) is driven by said reciprocating mechanism through said trigger element (5) in order to allow said hairpins or curlers (8) to be released.

6. An automatic device for applying hairpins or curlers according to Claim 1, characterized in that said releasing lever (9) is provided, outside of said outer body (2), with a ring element which can be driven by an operator for allowing said hairpins or curlers (8) to be released.

7. An automatic device for applying hairpins or curlers according to Claims 1 and 3, characterized in that said hairpins or curlers (8) are loaded into said magazine (3) by engaging with said metal rods (16).

8. An automatic device for applying hairpins or curlers according to Claims 1 and 4, characterized in that said releasing lever (9) is provided with a bottom end portion engaging with said hairpins or curlers (8) as said hairpins or curlers (8) are ejected by said contoured element (7), and resilient means allowing said releasing lever to be held engaged with said hairpins or curlers (8) as said releasing lever is in a not actuated condition thereof.

9. An automatic device for applying hairpins or curlers according to Claims 1 and 4, characterized in that said outer body (2) and magazine (3) have such a geometric configuration that, as said outer body (2) and magazine (3) are coupled to one another, said outer body (2) and magazine (3) define an ejecting port (11) aligned with a horizontal displacement path of said contoured element (7) in order to allow said hairpins or curlers (8) to be ejected.

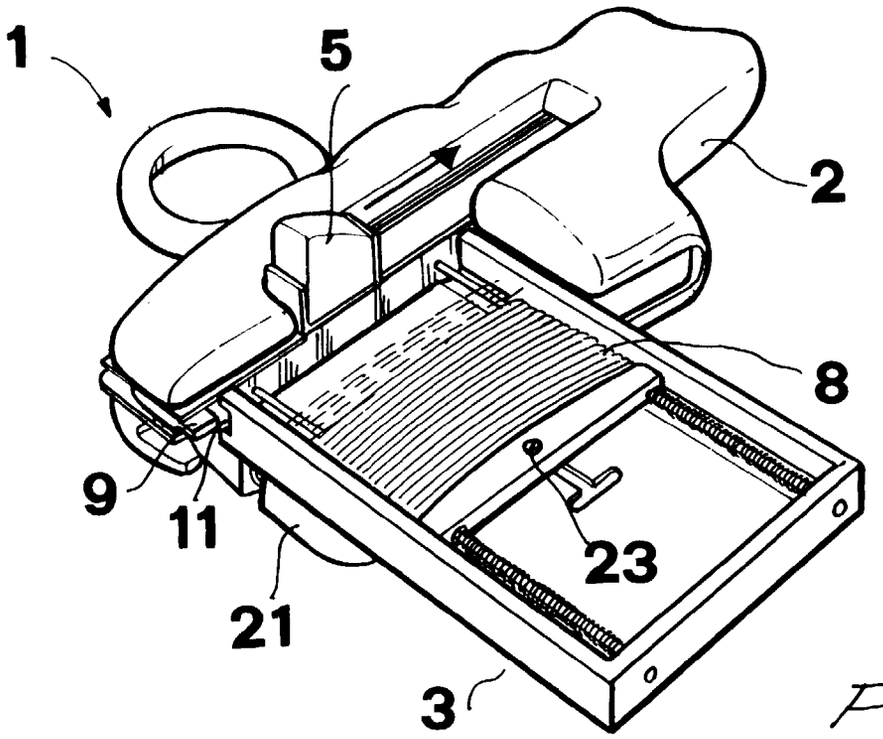


FIG.1

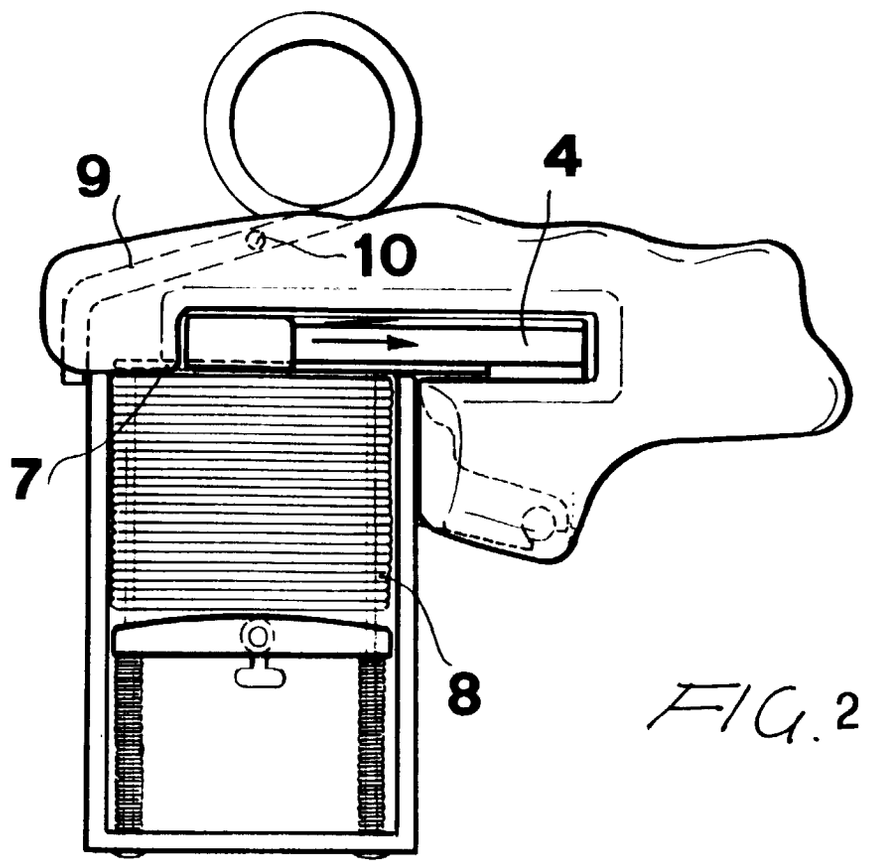


FIG.2

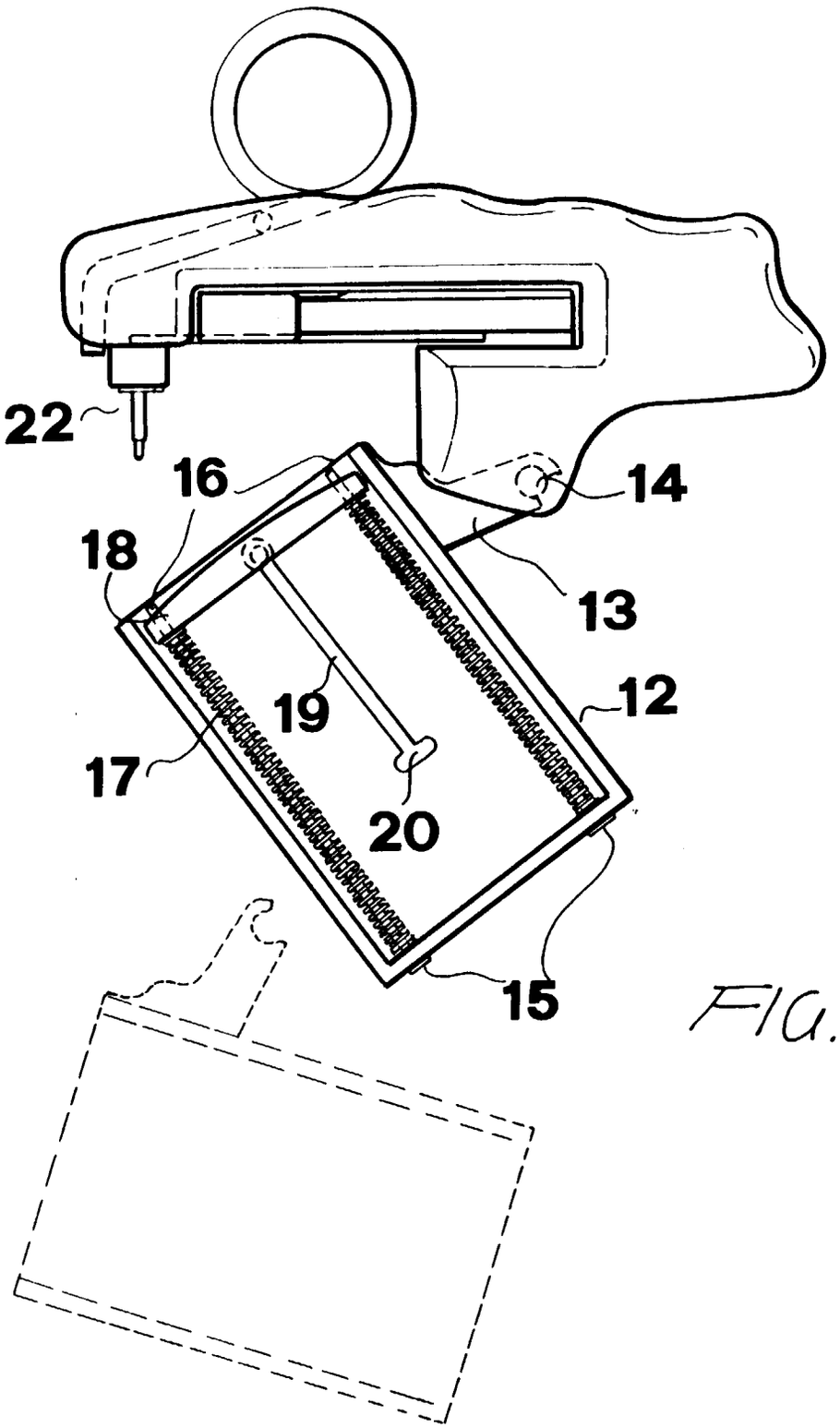


FIG. 3

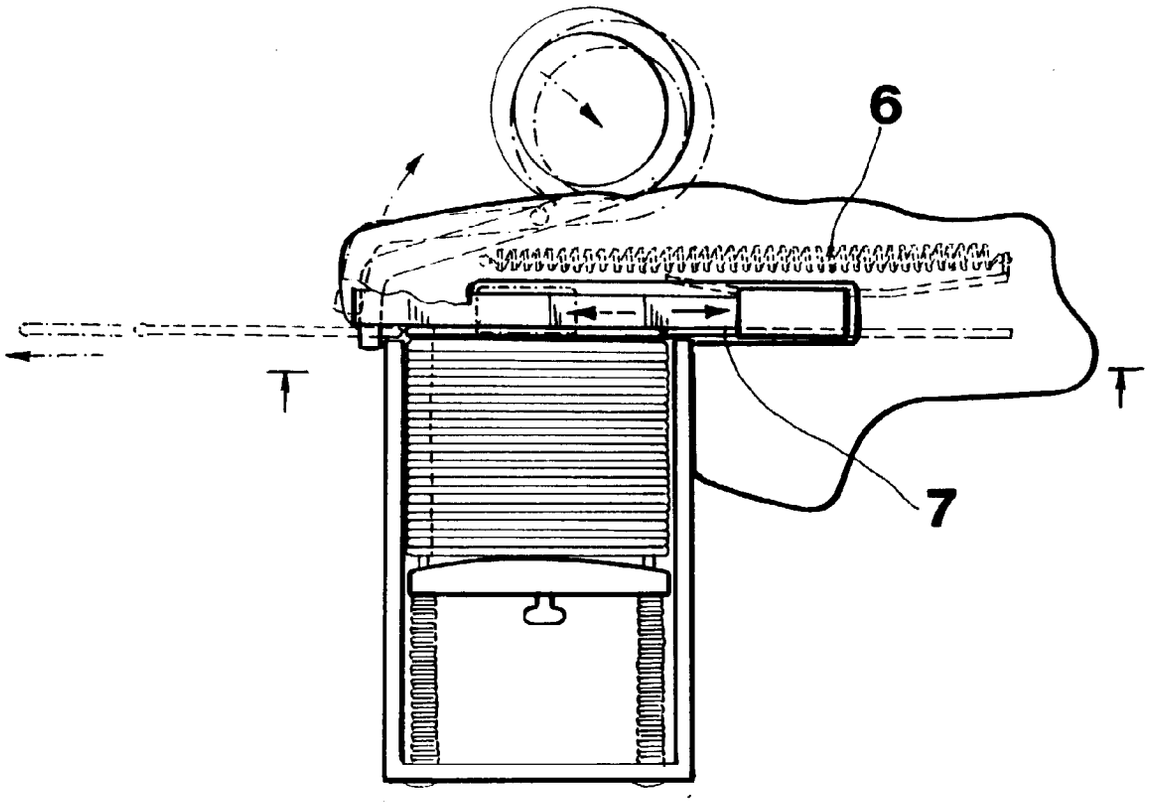
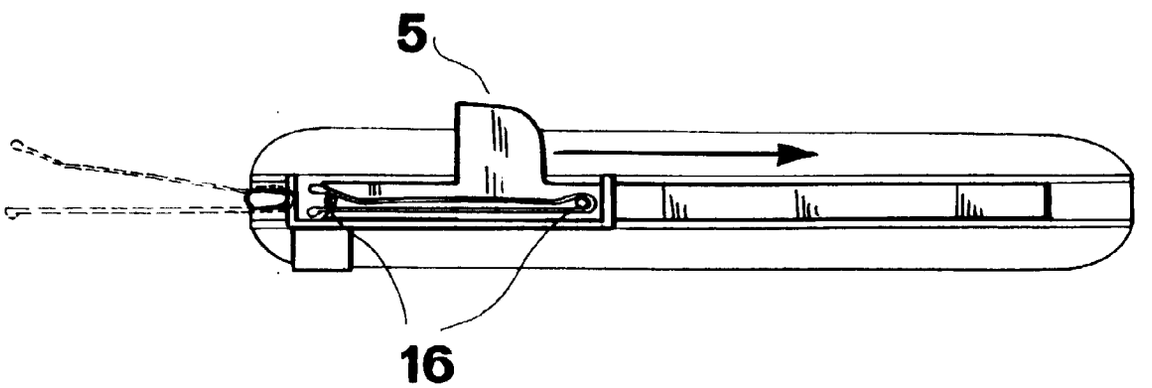


FIG. 4



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EUROPEAN SEARCH REPORT

Application Number
EP 97 83 0305

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	US 2 932 302 A (THEODORE R. PORTER) 12 April 1960 * column 1, line 15 - column 1, line 18 * * column 2, line 17 - column 2, line 36 * * column 3, line 7 - column 3, line 29; figures 1-8 *	1-9	A45D8/18
A	US 2 769 448 A (RAYMOND A. UHLENDORF, PACKANACK LAKE, N.J.) 6 November 1956 * column 1, line 15 - column 1, line 17 * * column 1, line 72 - column 1, line 73 * * column 2, line 9 - column 2, line 64; figures 1,5-9 *	1-9	
A	US 2 930 383 A (DAVE J. JONES AND DOLLY D. JONES, PROSSER, WASH) 29 March 1960 * figures 1-4 *	1-9	
A	US 2 723 670 A (PHILIP A. AVELLI, OZONE PARK, N.Y.) 15 November 1955 * figures 1,3 *	1-9	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6) A45D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	24 September 1997	Lang, D

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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