Nov. 2, 1965 A. EMSELLEM ETAL 3,215,148

ELECTRICALLY HEATED HAIR CURLER WITH SELECTIVE HAIR ROLLERS

Filed Feb. 12, 1963 2 Sheets-Sheet 1

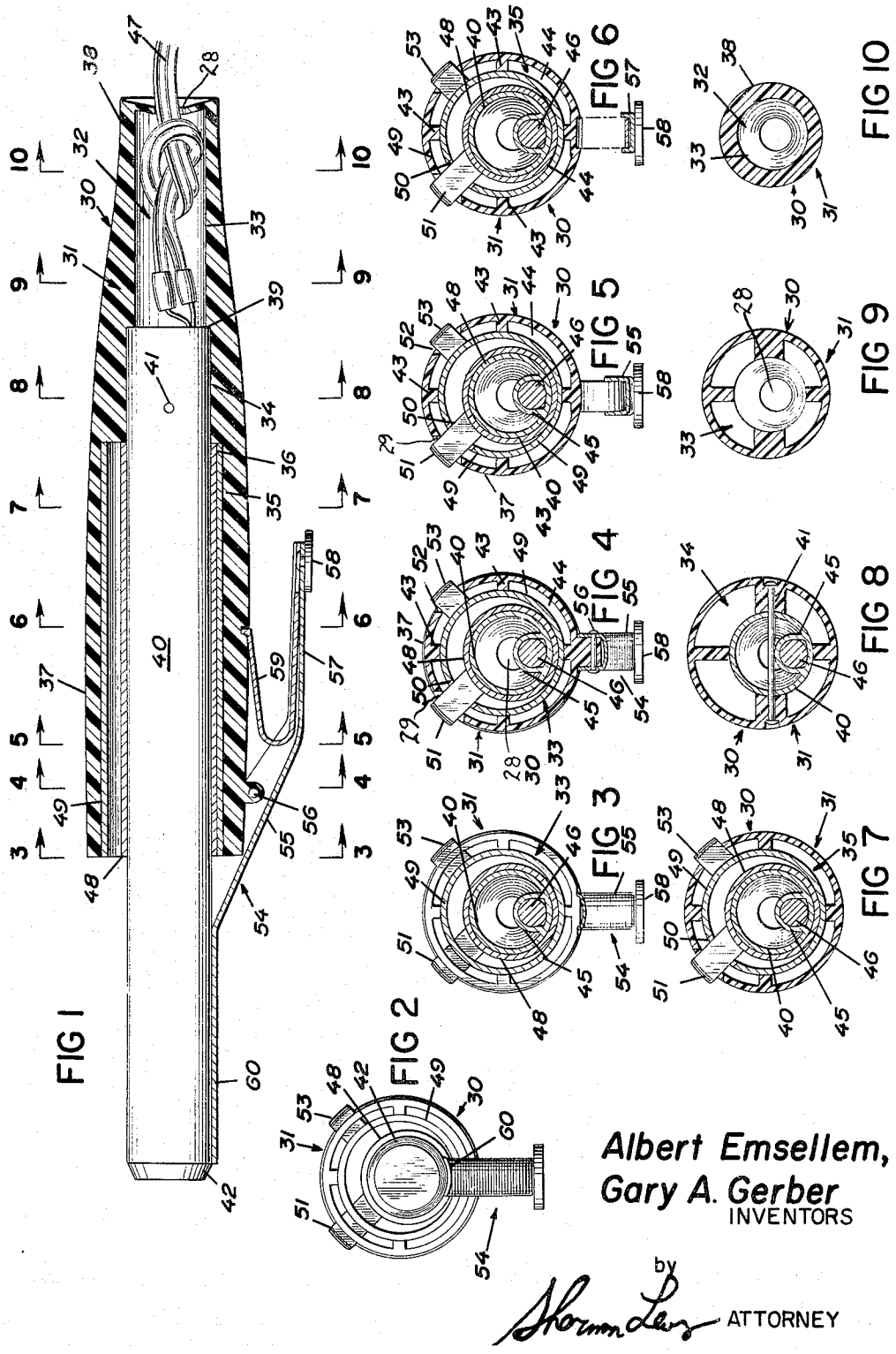


FIG 1

FIG 2

FIG 3

FIG 4

FIG 5

FIG 6

FIG 7

FIG 8

FIG 9

FIG 10

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ELECTRICALLY HEATED HAIR CURLER WITH SELECTIVE HAIR ROLLERS

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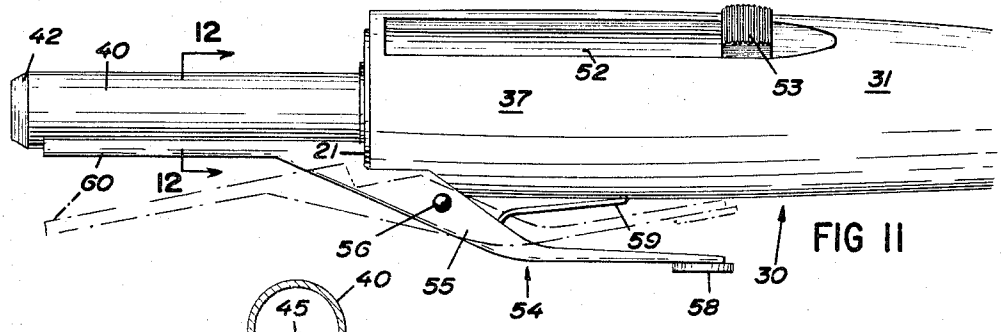


FIG 11

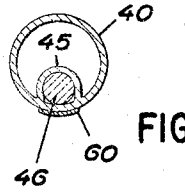


FIG 12

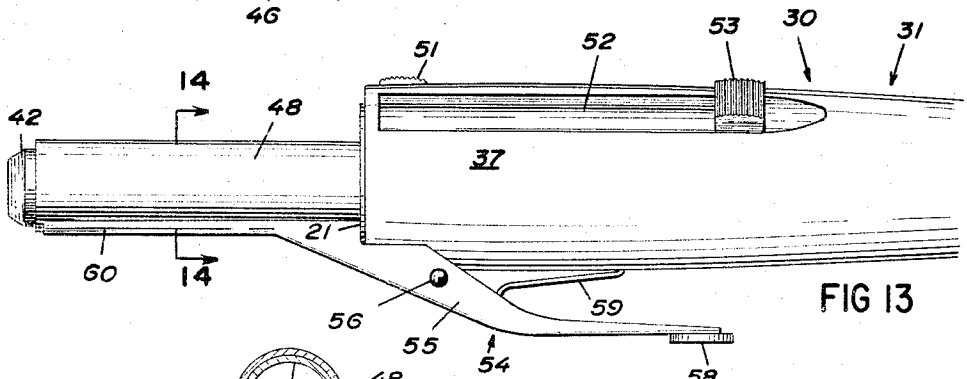


FIG 13

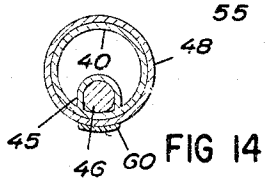


FIG 14

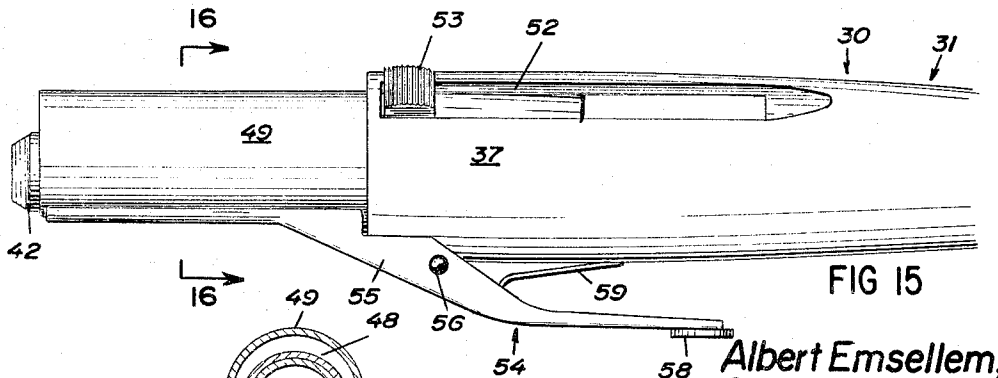


FIG 15

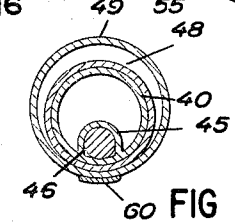


FIG 16

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ELECTRICALLY HEATED HAIR CURLER WITH SELECTIVE HAIR ROLLERS

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3 Claims. (Cl. 132—37)

This invention relates to a hair curler, and more particularly to an electrically operated hair curler.

An object of the present invention is to provide an improved hair curler which includes a plurality of rollers of different diameters that are maintained heated to the proper temperature so that a person using the hair curler need only slide the rollers in and out so that the proper heated roller or curler can be selected instantaneously, and wherein with the present invention the disadvantage or necessity of removing a hot roller from the curler and replacing it with a cold roller as is necessary with existing hair curlers, is eliminated.

A further object is to provide a hair curler which is constructed so that it will minimize the amount of work involved in curling a lady's hair and will also permit the hair to be curled more quickly and efficiently.

Still another object is to provide a hair curler of the type stated which is constructed so that it is only necessary to plug the hair curler into an electrical outlet and as soon as the curler reaches the proper operating temperature, the device is ready for use so that the lady only has to simply select the roller size she desires and place a section of hair on the roller and wherein the hair is conveniently and properly held in place by a hair gripper so that the hair can be rolled over the roller until the scalp is reached, and then after the rolled hair is held in place for a proper time interval, the hair curler can be slid or disengaged from the lady's hair so as to provide a firm curl set in the hair.

Another object is to provide a device of the character described that may be utilized speedily and with precision by even inexperienced persons, and further objects and advantages are to provide improved elements and arrangements thereof in a device of the character described that is economical to produce, durable in form, and conducive to the most economical use of materials and uniformity of members formed therefrom.

Still further objects and advantages will become apparent in the subsequent description in the specification.

In the drawings:

FIG. 1 is a longitudinal sectional view taken through the hair curler of the present invention, but showing the small roller in full.

FIG. 2 is an end elevational view thereof.

FIGS. 3 through 10 are sectional views taken on corresponding lines 3 through 10 of FIG. 1.

FIG. 11 is a fragmentary elevational view showing or illustrating the use of the smaller roller.

FIG. 12 is a sectional view taken on the line 12—12 of FIG. 11.

FIG. 13 is a view similar to FIG. 11 showing the medium or intermediate roller in extended operative position.

FIG. 14 is a sectional view taken on the line 14—14 of FIG. 13.

FIG. 15 is a view generally similar to FIGS. 11 and 13 but showing the large roller in extended operative position.

FIG. 16 is a sectional view taken on the line 16—16 of FIG. 15.

Referring in detail to the drawings, the numeral 30 indicates the hair curler of the present invention which is shown to comprise a body 31 that is adapted to be made of a suitable material such as a suitable plastic material, and the body 31 has a hollow interior as at 32 and the hollow interior embodies or includes a first portion 33 of reduced diameter, a second portion 34 of greater diameter than the portion 33, and there is also provided a third portion 35 which is of greater diameter than the second portion 34, FIG. 1. The numeral 39 indicates a shoulder that is defined between and at the junction of the first and second portions 33 and 34. Similarly a shoulder 36 is defined at between the junction of the portions 34 and 35.

As shown in the drawings the body 31 has its outer contour or configuration of generally enlarged rounded formation as indicated by the numeral 37, and the outer contour of the body 31 also includes a portion 38 which is of a somewhat tapered reduced diameter as compared to the portion 37.

The numeral 40 indicates a small hollow roller which is fixedly secured within the body 31 as, for example, by means of a pin 41, and the roller 40 has an end thereof projecting beyond the end of the body 31 for a purpose to be later described.

A cap 42 is mounted on the outer end of the roller 40. As shown in FIG. 5 for example there is provided on the interior of the body 31 a plurality of spaced apart inwardly directed ribs 43 which define therebetween air spaces 44. As shown in FIG. 7 for example a channel member 45 is formed integral with or secured to the inner portion of the small roller 40, and the numeral 46 indicates a conventional electric heater element which is arranged in the channel member 45, and the heater element 46 is adapted to be connected to a suitable source of electrical energy as, for example, by means of a cord 47. As shown in FIG. 1 a portion of the cord 47 is adapted to extend through the portion 33 and the recess 32.

As shown in FIG. 5 for example, a medium diameter hollow roller 48 is slidably mounted on the small roller 40, and the roller 48 is mounted for movement into and out of the third portion 35 of the recess 32. The numeral 49 indicates a large diameter roller which is slidably mounted on the medium roller 48, and the large roller 49 is also mounted for movement into and out of a recessed portion 35, and the large roller 49 is arranged in tangential contact with an outer peripheral portion of the medium roller 48.

The large roller 49 is provided with an elongated slot 50 therein, and a manually operable slide button is mounted for travel through the slot 50 and the button 51 is suitably affixed to the medium roller 48. The body 31 has a slot 29 therein for the projection therethrough of the button 51. The numeral 28 indicates an opening in the end of the body 31.

The body 31 has an elongated slot 52 therein, and the numeral 53 indicates a manually operable slide button which is affixed to the larger diameter roller 49, and the button 53 is mounted for travel through the slot 52 in the body 31.

The hair curler of the present invention further includes a hair griper which is indicated generally by the numeral 54, and the hair gripper 54 includes an intermediate section 55 which is pivotally connected to the body 31 as, for example, by means of a pivot pin 56, and the hair griper 54 further includes an end section 57 which has a manually engageable button 58 suitably affixed thereto. The numeral 59 indicates a spring member which is interposed between the end section 57 and the body 31 for normally biasing or urging the hair gripper 54 in the proper direction. The hair gripper 54 further includes a section 60 which is of slightly arcuate formation as, for example, as shown in FIG. 16 and the section 60 defines or provides a jaw for selectively engaging one of the rollers 40, 48 or 49 so that hair can be gripped be-

tween the jaw and the proper roller in order to heat and curl the hair in the proper and desired manner.

From the foregoing, it will be seen that there has been provided a hair curler of the electrically operated type which is an improvement over prior electric hair curlers. When using the hair curler of the present invention the lady will plug the cord **47** into a suitable electrical outlet and after allowing sufficient time for the heater element **46** to reach the proper operating temperature, the hair curler **30** of the present invention is ready for use. To use the hair curler the lady simply selects the roller size she desires and moves the rollers as, for example, by means of the buttons **51** or **53**. Then, the lady places a section of hair on the roller and the hair is held in place by the hair gripper **54** and the hair is adapted to be rolled over the roller until the scalp is reached. A comb may be placed at the scalp to prevent the heat of the roller from burning. The lady will hold the rolled hair in place by the handle portion **38** of the body **31** for a predetermined period of time and then the lady need only slide the hair curler out of her hair so as to leave or provide a firm curl set.

The hair curler of the present invention will permit a lady's hair to be styled with increased efficiency and the hair curler of the present invention will produce a more efficient hair curler as, for example, as compared to the prior hair curlers which have been marketed or used. The present invention can be made and sold at a relatively low price and some of the advantages of the hair curler of the present invention over existing hair curlers are that all of the various size rollers are maintained heated at all times. Thus, by simply sliding the rollers in and out by means of the buttons **51** or **53**, the lady can select the proper heated curler instantly. With the presently marketed or used hair curlers, the lady must remove a hot roller from the curler and replace it with a cold (room temperature) roller and wait two to five minutes for such roller to become hot enough to perform its job. Thus it will be seen that the present invention not only reduces the amount of work required but also permits the lady to set her curls more quickly.

The parts can be made of any suitable material and in different shapes or sizes as desired or required. For example the small roller **40** may have a diameter of three-quarter inch, the medium roller **48** may have a diameter of seven-eighth inch, and the large roller **49** may have a diameter of one and one-eighth inches. The body **31** may be molded from a suitable plastic, and similarly the slide buttons **51** and **53** may be made of plastic. The small roller **40** has the end cap **42** mounted thereon. The spring **59** serves to insure that the jaw **60** will maintain the proper pressure on the hair on the rollers, and by manually pressing on the button **58**, the tension of the spring **59** can be overcome to open or move the jaw **60** away from the rollers as, for example, when the hair is being arranged in engagement with the rollers. The device is adapted to be attractively and esthetically made so that it will have increased eye appeal, and suitable colors of an attractive or contrasting nature can be used for making the various parts where desired in order to further enhance or increase the attractiveness thereof, and the device is adapted to be conveniently gripped in the hand of the lady or other person to permit proper and convenient use thereof.

The manually operable slide buttons are adapted to be knurled or roughened on their outer surface so as to facilitate manual engagement therewith, and these buttons as well as the cap **42** may be made of a suitable material such as Lucite. The small roller **40** is adapted to be made from a suitable material such as aluminum extrusion, and similarly the medium and large rollers are also adapted to be made of a suitable heat conductive material such as aluminum. The end of the body **31** may have an aperture or opening therein for the insertion therethrough of the cord **47**. As shown in FIGS. 8 and 9 for example, the body **31** has inwardly disposed spaced apart ribs which define or provide air spaces therebetween. The small roller **40** may have a wall thickness of .035 inch, and the roller **40** may have an outside diameter of .750 inch, but these dimensions are merely illustrative and can be varied as necessary. Instead of using the cord **47** for attachment to an outside source of electrical energy, the hair curler of the present invention may be provided with energy cells to supply electrical energy for the heater **46**, or the device can be made so that at the option of the user, energy cells of the rechargeable type, or the electric cord can be selectively used.

It is to be noted that only the large and medium rollers are movable, and the small roller is fixed to the body, and the large and medium rollers are in sliding contact with the small roller so that after the unit is connected to a suitable source of electrical energy, the heater **46** will transfer the heat to the small roller **40** which will conduct the heat to the two remaining rollers **48** and **49**. The button **53** is affixed to the large roller **49** so that by manually moving the button **53**, the large roller **49** can be moved to extended or retracted position. Similarly by manually moving the button **51**, the medium roller **48** can be moved to extended or retracted position. FIG. 11 illustrates the hair curler with the small roller **40** being the only roller exposed, while FIG. 13 illustrates the medium roller **48** exposed, and FIG. 15 illustrates the large roller **49** exposed.

As shown in the drawings the large roller is in sliding contact with the middle roller so that there is no play or wobble in the large roller. As shown in the lower portions of FIGS. 3 through 7, the rollers **49**, **48** and **40** are in tangential contact at all times so that the heat transfer can take place. It is essential that the rollers be in sliding contact with one another for the conduction of heat through all the rollers.

With the present invention the lady does not have to wait for the individual rollers to become heated to the proper temperature as in the prior devices, and also in the prior hair curlers it is necessary to manually handle the hot rollers as, for example, when the rollers are being removed from the hair curler and since these rollers are hot, this is a disadvantage which is overcome by the present invention wherein it is not necessary to manually touch the rollers since the slide buttons **51** and **53** can be moved to position the rollers where desired or required. Also with the present invention the different sizes of rollers are simultaneously heated so that it is not necessary wait as, for example, when different rollers are being used whereas with the prior art devices since the rollers are actually completely separated or removed from the hair curler, it is necessary to wait several minutes for the rollers to become heated to the proper temperature before the device can be used. When moving out or extending the large roller **49** by means of the button **53**, the medium roller **48** is likewise moved out to extend the position so as to insure that there will be proper contact and heat transfer between all of the rollers. The air spaces such as the spaces **44** between the ribs within the body provide insulation so that the device will not get too hot when being used. Also, due to the provision of the ribs **43**, it will be seen that the only points of contact between the heated roller **49** and the body will be through the ribs or at the ribs **43** and this will also help minimize or prevent the body from becoming overheated.

With the present invention the art of hair styling can be improved and simplified and a wide variety of coiffures can be efficiently effected or accomplished.

The number of rollers can be varied as desired, and the plastic body **31** is adapted to hold the different diameter rollers. The smaller roller contains the heater element, and the smaller roller is permanently affixed in the plastic body while the other rollers are slidable relative to the stationary roller **40**. In order to conduct the heat from the heater **46** inside the small diameter long roller

40 to the other two rollers, all of the rollers are in contact at one point as shown in the lower portion of FIGS. 3 through 7 so that in effect the rollers are arranged as eccentric circles tangent at one point, and the point of tangency is sufficient contact to conduct heat through the length of all the rollers. Thus, when the two larger rollers slide over one another and the small diameter roller, heat is conducted therethrough regardless of the position of the larger rollers on the small diameter roller.

Although the invention has been herein shown and described in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of the invention, which is not to be limited to the details disclosed herein but is to be accorded the full scope of the claims so as to embrace any and all equivalent devices and apparatus.

Having described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In a hair curler, a hollow body that is adapted to be gripped manually, and a plurality of rollers of different diameters telescopically mounted within said body, said rollers remaining in contact with each other regardless of the position thereof, the smaller roller being permanently affixed to the body, and the larger rollers being slidably adjustable relative to the smaller roller to a position exteriorly of the body, and a heater in the smaller roller adapted to be connected to a source of supply of electrical energy, manually operable means for selectively moving certain of said rollers exteriorly of the body, a manually operable hair gripper pivotally connected to said body and said hair gripper including a jaw for engaging said rollers, and resilient means engaging said hair gripper.

2. In a hair curler, a hollow body that is adapted to be gripped manually, and a plurality of rollers of different diameters telescopically mounted within said body, said rollers remaining in contact with each other regardless of the position thereof, the smaller roller being permanently affixed to the body, and the larger rollers being slidably adjustable relative to the smaller roller to a position exteriorly of the body, and a heater in the smaller roller adapted to be connected to a source of supply of electrical energy, manually operable button means for selectively moving certain of said rollers exteriorly of the body, a manually operable hair gripper pivotally connected to said body and said hair gripper including a jaw for engaging said rollers, a spring member engaging said hair gripper, and inwardly directed ribs on the interior of said body engaging the larger roller and defining air spaces therebetween.

3. A hair curler comprising a body having a hollow interior which includes an inner recess that embodies a first portion of reduced diameter, a second portion of greater diameter than said first portion, and a third portion of greater diameter than said second portion, there being a shoulder defined between and at the junction of the first and second portions, and a shoulder defined at and between the junction of the second and third portions, a small hollow roller fixedly secured to said body and said small roller having an end thereof projecting beyond the end of the body, a cap on the outer end of said small roller, a plurailty of inwardly directed ribs on the inner portion of said body defining air spaces therebetween, a channel member positioned within said roller and affixed thereto, an electric heater element arranged in said channel member and said heater element adapted to be connected to a source of electrical energy, a medium diameter hollow roller slidably mounted on and in tangential contact with said smaller roller and said medium diameter roller being mounted for movement into and out of the third portion of said recess, a large diameter roller of the same length as said medium diameter roller arranged for movement into and out of the third portion of said recess, and said large roller being arranged in tangential contact with the medium roller, said large roller having an elongated slot therein, a manually operable slide button mounted for travel through said slot and affixed to said medium roller, there being an elongated slot in said body, and a manually operable slide button affixed to said large roller and mounted for travel through said last named slot, a hair gripper including an intermediate section pivotally connected to said body, and said hair gripper including an end section having a manually operable button affixed thereto, a spring member interposed between said end section and said body, and said gripper having an arcuate jaw thereon for selectively engaging said rollers.

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