Nov. 14, 1967 J. D. KELLER 3,352,010

NAIL CLIPPER HAVING RESTRAINING MEANS FOR PREVENTING FLIGHT OF FINGERNAILS

Filed Aug. 19, 1965 2 Sheets-Sheet 1

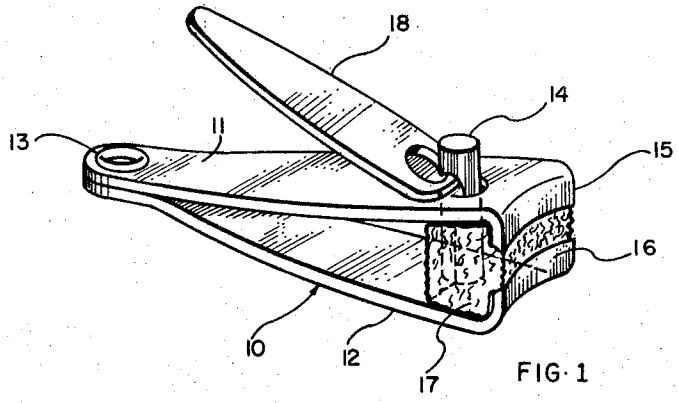


FIG. 1

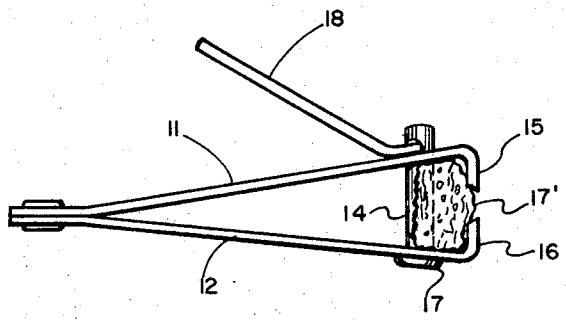


FIG. 2

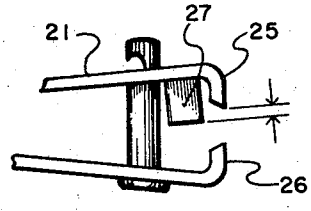


FIG. 3

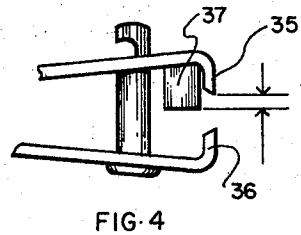


FIG. 4

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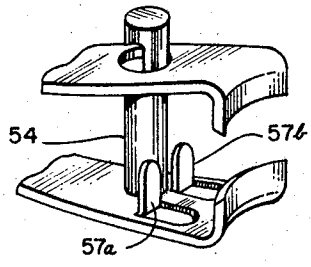


FIG. 5

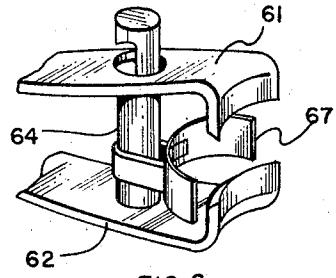


FIG. 6

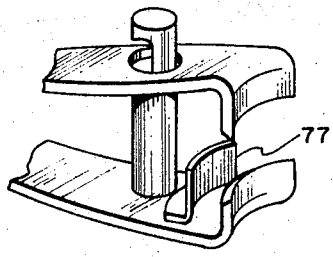


FIG. 7

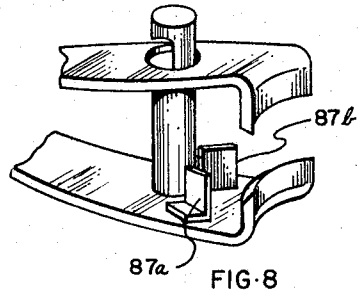


FIG. 8

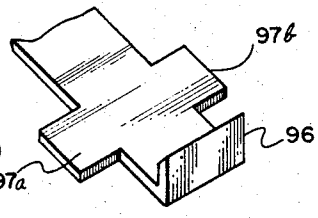


FIG. 9

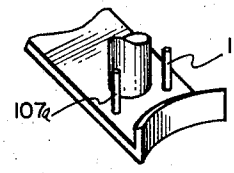


FIG. 11

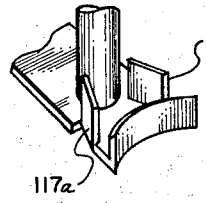


FIG. 12

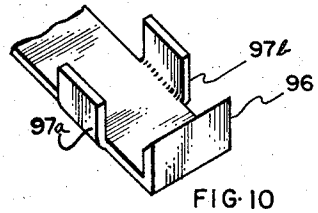


FIG. 10

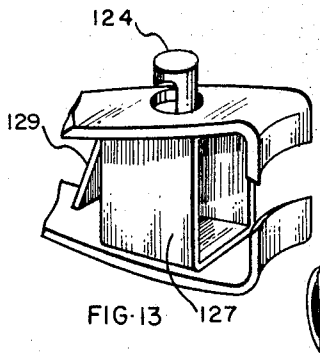


FIG. 13

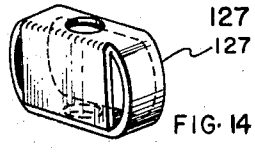


FIG. 14

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NAIL CLIPPER HAVING RESTRAINING MEANS FOR PREVENTING FLIGHT OF FINGERNAILS

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2 Claims. (Cl. 30—135)

This invention relates to an improved nail clipper, and more particularly to a nail clipper of inexpensive construction that advantageously is so configured as to prevent the flight of fingernails during a nail trimming operation.

In the past, a number of concepts have been patented relating to various means for catching fingernails as they are trimmed, as well as for merely preventing fingernails from undesirably flying through the air as they are cut. However, in each known instance these devices have been of elaborate construction and unwieldy, but perhaps most significantly such prior art clippers have necessarily been of expensive construction. Despite the many types of nail clippers on the market, and considering also the past efforts spent to catch or stop cut nails, seldom has a clipper been made available for purchase at low to moderate price which incorporates desirable cut nail control.

In accordance with the present invention, I have provided a simple, novel, yet highly effective design for preventing the flight of cut fingernails, which design quite significantly adheres to the principle that the cost of the advantageous new nail clipper must represent only a slight increase if any at all over the devices now on the market, thereby enabling my clipper to be vended in the same manner and for the same price as ordinary prior art devices.

My novel design is predicated upon the fact that the flight of fingernails can be effectively prevented by the use of a restraining means or obstruction that is operatively disposed between the relatively movable structural members of the clipper adjacent the blades or jaws of the clipper. Such restraining means can take many forms and for example may be a block of ordinary resilient material such as plastic or sponge rubber, or even may be formed by upsetting a portion of the metal structural members of the clipper at a location adjacent to the cutting jaws. As will be apparent to those skilled in the art, this restraining means may be formed out of or secured to either the upper structural member or the lower structural member of the clipper. Although the restraining means may even be disposed upon the pin going through the relatively movable main upper and lower members, in a deliberate effort to avoid increasing the cost of my improved clipper, I do not require this latter construction.

In an embodiment involving of the use of resilient material such as sponge rubber, I advantageously provide automatic protection for the cutting jaws or blades of the clippers by packing the sponge rubber rather closely between the upper and lower structural members adjacent the jaws so that it tends to bulge out somewhat between the jaws. This quite effectively prevents coins or other items carried in the pockets from undesirably becoming lodged between the cutting jaws when the clippers are being carried in the user's pocket, yet the sponge rubber can remain in place during nail clipping inasmuch as such material does not inhibit the effective trimming of the nails. This is because it is but a simple matter to insert or imbed the nail between the jaws in the proper position to be trimmed. Then, when the nail is clipped, the sponge rubber effectively prevents undesired flight thereof.

It should be noted that any trimming of the sponge rubber that is necessary in this embodiment will be accomplished during the initial factory trial cutting action, with subsequent use of the clipper typically not removing any more sponge rubber. However, I have found that despite the possible removal of some sponge rubber during this initial cut, the remaining block of sponge rubber still tends to extend somewhat outwardly between the cutting jaws when the jaws are not being manipulated, thus to achieve the desired protection of the jaws from harm by objects with which they may come into contact. Upon depressing or closing the jaws, this slightly extended portion of the rubber block is automatically removed from between the jaw cutting edges by the closing action of the jaws, without involving a cutting of the rubber. As previously indicated, it is only necessary to press the fingernail to be cut into contact with the sponge rubber in order to dispose the nail in the desired position between the jaws or blades for the cutting operation.

In most instances I find it convenient to use sponge rubber having an adhesive backing so that the block of sponge rubber located between the jaws will tend not to become dislodged while the clipper is being carried in the pocket. However, this is not a firm requirement, for by the proper sizing of the block of sponge rubber, typically involving the use of a comparative oversize piece of the material, the block of sponge rubber will naturally expand against the inside of the clipper in such a manner as to prevent dislodgment.

Some embodiments of my invention involve configurations that physically and purposely interfere with the undesired flight of the nail, whereas other embodiments utilize the principle of mechanically dampening the nail during the trimming operation, this latter taking place to such an extent that when the nail is subsequently severed, it does not tend to move away from the blades at the high velocity that it otherwise would. In each instance, it should be noted that my means for achieving cut nail control does not prevent the sides of the jaws of the clipper being effectively used, as was often prevented by prior art designs employing mechanical side members, which also obscured the nail positioning with respect to the cutting edges.

Quite significantly, all embodiments of my invention involve low cost means for preventing the undesired flight of fingernails, which means are nevertheless quite effective. Further examples include the use of metallic obstructions formed directly from the metal of the clipper, or else secured such as by welding to the inside portions of the structural members of the clipper in order to achieve cut nail control.

These and other objects, features, and advantages will be apparent to those skilled in the art from a study of the appended drawings in which:

FIGURE 1 is a perspective view of my improved nail clipper in which in accordance with a preferred embodiment, restraining means in the form of sponge rubber is disposed between the relatively movable structural members adjacent the jaws so as to extend for a desired distance outwardly between the jaws;

FIGURE 2 is a side elevational view related to the showing of FIGURE 1 in which the bulging of the sponge rubber between the jaws or blades is perhaps more apparent;

FIGURE 3 is a fragmentary side elevational view of the active portion of a clipper, revealing an embodiment in which a block of rubber serving as the restraining means is affixed inside the upper structural member at a location spaced from the upper blade or jaw;

FIGURE 4 is a view similar to FIGURE 3 but showing a restraining means in the form of a block of rubber immediately adjacent the upper cutting jaw to achieve a desired dampening action;

FIGURE 5 is a fragmentary view revealing the use of bent up tabs which, in conjunction with the center pin of the clipper, provide effective restraining means;

FIGURE 6 is a fragmentary view of an embodiment in which an obstruction or restraining means in the form of a shield disposed upon the center pin is employed;

FIGURE 7 is a view similar to FIGURE 6 but revealing the use of a shield as by spot welding to the lower structural member of the clipper;

FIGURE 8 is a view generally similar to FIGURE 7 in which a plurality of smaller tabs or shields are spot welded to the lower main member to form with the center pin a desired restraining means;

FIGURES 9 and 10 reveal an embodiment in which side tabs are utilized as restraining means, formed from the material of the main lower member of the clipper;

FIGURE 11 is an embodiment using a plurality of upstanding pins forming restraining means;

FIGURE 12 is similar to FIGURES 8 and 10, involving tabs bent at an angle;

FIGURE 13 is an embodiment of my clipper in which the restraining means takes the form of a five sided, box-like structure of a deformable material; and

FIGURE 14 is a view showing the deformable restraining means of FIGURE 13 in greater detail.

Referring to FIGURE 1 it will be noted that the clipper **10** is provided with relatively movable upper and lower members **11** and **12** secured together at their aft ends by means of a rivet **13** or the like. The structural members **11** and **12** possess springiness, and by means of lever **18** that is mounted upon center pin **14**, the cutting jaw portions **15** and **16** of the main upper and lower members may be brought together with sufficient force to achieve a cutting action. Clippers of this general type are well known in the art, and as revealed in the David Patent No. 2,837,821, it is also known that such clippers may be provided with means for catching cut fingernail portions. The scarcity of latter type devices on the market, however, is a natural consequence fact that the provision of nail catching means has in the past necessarily increased the cost of clippers to a very significant extent.

In accordance with a preferred embodiment of my invention, a piece of sponge rubber **17** is provided between the relatively movable main upper and lower members **11** and **12** at a location immediately adjacent the jaw or blade portions **15** and **16**. As revealed in FIGURE 2, the sponge rubber is comparatively tightly disposed between the upper and lower members so that it tends to bulge outwardly somewhat between the cutting jaws **15** and **16**. It should be noted however, that as the lever **18** is fulcrumed about pin **14** and its rear portion moved toward the member **11** so that the cutting action will be brought about, the bulging portion 17^1 is passed over by the jaw members at all times subsequent to an initial cut by the clippers, thus enabling the sponge rubber to remain effective to prevent injury to the cutting edge of the jaw members as well as preventing the tendency of coins, keys, or the like carried in the pockets from becoming lodged between the jaws.

By appropriately sizing the sponge rubber to the clipper, typically involving compressing the rubber, there is little tendency for it to become dislodged. However, if desired, sponge rubber provided with an adhesive backing may be employed so as to positively prevent it from undesired movement away from the position shown in FIGURE 2.

As will be apparent to those skilled in this art, other embodiments of my basic invention other than that shown in FIGURES 1 and 2 may be employed if desired. For example, as shown in FIGURE 3, a piece of sponge rubber **27** or the like may be secured to upper structural member **21** at a location slightly spaced from upper jaw member **25** to serve as the restraining means. As will be noted, the lower portion of the rubber member **27** is of a dimension greater than that of the jaw **25**, causing it to extend somewhat below the lower terminus of the jaw. In this manner, when the blade edges **25** and **26** have been brought into severing contact with a fingernail inserted therebetween, the rubber member **27** serves to provide a physical barrier preventing rearward travel of the cut fingernail portion. By providing a piece of rubber of sufficient dimension, including a width corresponding with the width of the jaw **25**, it can be assured that cut fingernails will not except in extraordinary cases fly past the rubber member.

Referring to FIGURE 4, another embodiment of my invention is depicted wherein restraining means **37**, such as of rubber, is disposed directly against the inner portion of the upper jaw **35**, in this instance providing a direct, effective barrier against undesired movement of the cut fingernail portion. However, the modus operandi is somewhat different in this instance in that the rubber member **37** is dimensioned to come into contact with the fingernail placed upon the lower jaw **36** an instant before the upper jaw **35** commences cutting of the fingernail. In this manner, the outer portion of the fingernail is physically restrained against flight by a form of damping operation from a time just before the fingernail severing is to be brought about. As a result, any movement of the cut fingernail portion away from the clipper is only slight, with any tendency of the cut portion to achieve substantial velocity being small.

As will be obvious, it is not required that it be the upper member **21** to which the rubber member **27** or **37** be secured, for quite obviously in each instance the restraining means could be secured as well as to the lower main member. In latter instance, when the restraining member is comparatively soft, such as of sponge rubber, the user's fingernail can be pushed directly into the rubber. However, if the restraining member is a more dense or hard piece of material, it may be desirable to turn the clipper over in order to be able to place the fingernail against the jaw of the clippers upon which no restraining member is directly employed.

Referring to FIGURE 5, it will be noted that the restaining means in this instance take the form of two or so bent up tabs **57***a* and **57***b* created out of the metal of the lower structural member. Ideally, these tabs are on either side of the center pin **54** and with the pin form an effective barricade for virtually the entire width or extent of the jaws.

Turning to FIGURE 6, it will be noted that the restaining member **67** has taken a different form, and is secured to and supported in position by the pin **64** extending between the relatively movable upper and lower members **61** and **62** of the clipper. This restraining member may be shaped much like a shield, and for example may have a rear center portion equipped with appropriate slits therein, forming a member that can be inserted over the pin **64** during assembly of the clipper. In this manner, the restraining member **67** will be maintained in a desired location adjacent to the jaws of the clipper so as to deliberately interfere with the flight of fingernails. As will be desired, the height of the restaining member is sufficient to extend most of the distance between the upper and lower members when the jaws have been brought together in the nail cutting position, but desirably it is not of a height to interfere with the proper closure of the jaws.

Referring now to FIGURE 7, it will be noted that the restraining means takes the form of a spot welded shield **77** that is secured to the lower structural member between the lower jaw and the pin, and, being of a similar dimension to that of the lower jaw, prevents as in the other embodiments, the undesired travel of cut fingernail portions.

FIGURE 8 is a view much like that of FIGURE 7 but differs in that the restraining means takes the form of a pair of spot welded shields **87***a* and **87***b* disposed on either side of the center pin.

Referring to FIGURE 9 it will be noted that the lower member of the clippers is provided with additional material in the form of tabs **97***a* and **97***b* adjacent jaw **96**, which material may be bent approximately 90 degrees into

the positions shown in FIGURE 10. It should be noted in this instance that the tabs form a different type of restraining means, although it should be noted that such tabs quite effectively prevent the severed fingernails from traveling beyond the confines of the clipper. This is because nails cannot fly rearwardly from the jaws without contacting the secured-together rear portions of the main structural members of the clipper, and obviously cannot travel sideways because of the presence of the tabs.

Referring to FIGURE 11, an embodiment is shown wherein two or more small pins **107***a* and **107***b* are inserted into say the lower main member of the clipper so as to form with the main pin, effective fingernail flight preventing means. As in the other instances, the height of the pins constituting the restraining means obviously is such that they do not prevent effective closure of the jaw members.

FIGURE 12 is an embodiment much on the order of that of FIGURE 10, but involving tab members **117***a* and **117***b* that are not disposed at 90 degrees to the side edges of the lower member of the clippers. In other words, the bent up tabs angle toward the pin and together therewith form a barricade of desirable configuration.

In FIGURE 13 a final embodiment is presented, which is in keeping with the use of a structure functioning as a restraining means operatively disposed between the main structural members of the clipper. In this embodiment, and as better seen in FIGURE 14, an enclosed, five-sided configuration **127** made of plastic or molded rubber is mounted about the center pin **124** or otherwise disposed adjacent the jaws so as to render a deformable structure with sides and back portion for cut nail obstruction. As will be noted from FIGURE 13, the rear portion **129** is shorter than the overall height of the configuration **127**, thus allowing an opening for unloading cut nail pieces when the jaws are not compressed. Upon closing the jaws, as when clipping nails, this back portion **129** is lowered so as to form a back shield that serves as an effective restraining means.

As will be apparent to those skilled in the art, I have provided a number of embodiments of an invention designed to prevent the undesirable flight of severed fingernails, in each instance involving the concept of interfering with high speed motion of the cut fingernail away from the jaws. It is most significant to note that the utilization of my concept does not materially increase the cost of manufacture of the clipper, thus allowing it to be sold for approximately the same price as clippers that do not have any novel, flight-preventing characteristics. This concept is of course to be contrasted with that of prior art clipper configurations that achieved such a goal only by the utilization of much more expensive means.

I claim:

1. In a nail clipper, a pair of jaws having cutting edges disposed in a substantially aligned arrangement and normally biased away from a cutting relationship, means for forcing said jaws together so as to cause said cutting edges to cut a nail placed therebetween from one side of said edges, restraining means formed of a resilient, easily deformable material, means supporting said resilient, easily deformable material on the other side of said edges, adjacent at least one of said cutting edges, so that said material will contact a nail placed between said cutting edges from said one side, said resilient material normally contacting said other side of both of said cutting edges in the normally biased away cutting relationship, thus spanning the space between said cutting edges, said resilient material also functioning to dampen and attenuate a nail cut by said cutting edges, thus to prevent the undesirable flight of the cut nail.

2. An improved nail clipper for preventing the undesired flight of fingernails said clipper comprising upper and lower members secured together at one of their ends and the other ends resiliently held apart, said other ends having a pair of transversely extending nipper jaw portions that are directed toward each other, a lever spaced inwardly from said jaw portions, a pin extending between said other ends and accommodating said lever for moving said jaw portions toward each other, the improvement comprising restraining means formed of a resilient material disposed between said upper and lower members at a location adjacent said jaw portions so as normally to contact a portion of a fingernail at the time the fingernail is placed between said jaws portions, thereby attenuating and dampening the lateral force applied to the fingernail during the severing of a portion of same, and said resilient material filling the space between said other ends of said members and bulging outwardly between said jaw portions to some extent to prevent foreign items from becoming lodged between said jaw portions and thus preventing the premature dulling thereof.

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