VENTILATED AND SWING AWAY FINGER COT FOR HANDLING PAPER DOCUMENTS

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ABSTRACT

A rubber finger cot for handling paper sheets. The cot has an elastic hinge means for swinging the working tip away from the finger tip to a parked position on the top of the finger. Thereby, permitting the finger to be used for tasks requiring tactile feel or the natural shape of the finger tip such as typing and keyboarding while the cot remains installed on the finger.

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CROSS REFERENCES TO RELATED APPLICATIONS

[0001] None.

U.S. GOVERNMENT INTEREST IN THE INVENTION

[0002] None

BACKGROUND OF THE INVENTION

[0003] 1. Field of Invention

[0004] This invention relates to finger cots to provide a friction surface to a human finger. In particular, for manipulating sheet paper stock.

[0005] 2. Description of Prior Art

[0006] The arts utilizing finger cots to modify or protect the surfaces of the fingers from damage, hold tools, or enhance the natural properties of the fingers have been practiced for many years. Indeed, examples of finger protectors and/or tools are to be found in the US Patent collection as far back as 1865. U.S. Pat. No. 48,354 and in particular U.S. Pat. No. 87,856 are representative of finger mounted protection and tool devices. Finger cots in contrast to gloves are applied to individual fingers instead of multiple fingers and/or the whole hand.

[0007] The present invention is specifically related to the use of finger tip friction enhancing cots. The nearest prior art is depicted by FIG. 1, herein. A Cot of this type is available at office supply stores under the brand name “Swingline” as “Rubber Finger Tips”, stock number 54053.

[0008] The nearest prior art found in the US Patent collection are U.S. Pat. No. 5,186,189 “Fingermall Protector” by Pauline Harris and U.S. Pat. No. 4,102,480 “Thimbles” by Bown O’Beirne. Neither has all the elements of the present invention, may not be combined, and work differently from the present invention in way and function. Neither invention as disclosed is suitable for use as a friction enhancing device.

[0009] Miss Harris’ invention specifically covers the nail, without touching the nail, and not the underside of the distal phalange. In addition, the Harris invention is made of metal or stiff plastic, not an elastic material. There is no teaching of flexing bands, indeed, the bands cannot flex in the manner of the present invention. If the Harris invention is turned over to shield the underside of the finger tip, then opened, unlike the present invention it would interfere with usual functions of a bare finger.

[0010] Mr. O’Beirne’s thimble is not flexible and only partially covers the bottom of the distal phalange, the side of the phalange having the primary protection.

[0011] Some modern office procedures require an office worker to quickly move between several tasks, some of which benefit from having a rubber finger tip installed, and others where such rubber tip interferes with finger function. Removing and re-installing the tip(s) is time consuming. To address this shortcoming, the present invention is designed to swing away from the distal end of the finger while leaving the cot installed on the finger.

[0012] Another shortcoming of the cited prior art is that it can become uncomfortable and unsanitary as it is hot and holds perspiration. This also can contribute to adverse allergic reactions to the latex material usually used in their construction. The present invention has significant ventilating properties and may be made of other than latex materials.

OBJECTS OF THE INVENTION

[0013] Therefore, to overcome the limitations of the prior art, a new finger cot having at least the following objectives has been invented and is described herein.

[0014] It is an object of the invention to provide means for removing just the tip of a finger cot while retaining it in position to be returned to the fingertip.

[0015] It is another object of the invention where the means for removing the tip while retaining the cot as installed comprises a swing-away, hinges-like structure.

[0016] It is another object of the invention to provide effective, functional ventilation for the finger.

[0017] It is another object of the invention to reduce the potential for allergic reaction to the material commonly used in “rubber” finger cots.

[0018] It is another object of the invention to permit wearing of the inventive embodiment of the cot for extended periods of time.

[0019] It is another object of the invention to provide a penetration resistant thimble function with swing away removableness.

[0020] It is another object of the invention to not subject the fingernail and/or decorative finishes thereon to potential hazards of trapped heat, perspiration, or fumes leaching from the cot material itself.

SUMMARY OF THE INVENTION

[0021] A tubular truncated cone comprised of elastic material is adapted to cover the distal phalange from a position just below the nail to approximately the last joint of the finger. The tubular cone is cut away on the top and underside in the region of the last finger joint thereby forming an elastic retaining band to encircle the middle phalange. A third cut-away is made in the region of the fingernail which leaves a covering for the underside of the distal phalange. This underside covering has an outer surface with a coefficient of friction significantly larger than the coefficient of friction of a bare fingertip. The coefficient of friction of the covering may be enhanced by the addition of a friction layer or by the addition of mechanical means such as bumps or roughening the contact surface.

[0022] The first two openings leave a pair of elastic bands on either side of the finger connecting the tip portion of the assembly to the retaining ring. The third cut-away opening over the fingernail and the upper opening leave an over the finger band for holding the fingertip covering portion in place under the finger.
BRIEF DESCRIPTION OF THE DRAWINGS

[0023] FIG. 1 is an isometric view of the prior art
[0024] FIG. 2 is an isometric view of the invention
[0025] FIG. 3 is an isometric view of the invention moved to the swing-away “parked” position
[0026] FIG. 4 is an orthographic plan view of the invention
[0027] FIG. 5 is an orthographic side view of the invention
[0028] FIG. 6 is an orthographic view of the tip of the invention
[0029] FIG. 7 is an alternate embodiment with an over-the-nail clamp
[0030] FIG. 8 is an alternate embodiment with a suction cup on the finger tip for picking up small items

INDEX OF IDENTIFIED DETAILS

[0031] 1. Prior art latex finger cot adapted to handle sheet of paper
[0032] 2. Barrel of the finger cot
[0033] 3. Shield portion of the cot, i.e., the working surface with friction increasing surface treatment shown
[0034] 4. The present invention finger cot
[0035] 5. Retaining band
[0036] 6. Lateral connecting band (a pair)
[0037] 7. Upper rear opening
[0038] 8. Lower opening
[0040] 10. Distal retaining band
[0041] 11. Reinforcing ribs
[0042] 12. Finger
[0043] 13. Tactile finger tip
[0044] 14. Retention means at finger tip
[0045] 15. Suction cup

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT(s)

[0046] The prior art shown in FIG. 1 is a “rubber finger cot” available in the art comprising of two primary features.

[0047] A. A tubular section 2 adapted to fit generally snugly over a finger

[0048] B. A tip section usually further comprising a surface treatment 3 to enhance the normal friction properties of the material from which the cot is fabricated. Shown is a plurality of small approximately hemispherical or conical bumps surrounding the tip region. Other patterns such as siping, bumps, crosshatch ribbing, roughening, etc. will perform equally as well.

[0049] It is to be noted that the prior art as shown in FIG. 1 is a simple device, and can be applied to the finger in any axial rotated position. Thus, the friction enhancement must surround the tip. Also, the closed tubular nature of the prior art collects perspiration and is somewhat difficult to install and remove. Users of the prior art find that the use of talc, cornstarch, or similar is useful for aiding in installing and removing the cot. Talc, in particular, aids in keeping the finger dry. The present invention does not need talc or such.

[0050] FIGS. 2, 3, 4, 5, and 6 illustrate the present invention. FIG. 3 illustrates the cot in use but retracted to the “parked” position.

[0051] The cot 4 shown in detail FIGS. 2, 4, 5, and 6 is adapted to cover the underside of a human finger from approximately the nail to near the distal joint. The covering 3 may have additional friction enhancing treatment. The cot 4 further comprises a circular band 5 and a pair of longitudinal bands which are bounded by openings 7 and 8. A third opening 9 is placed to expose the a major portion of the fingernail. Opening 8 also defines the proximal terminus of the shield portion of the cot. Openings 7 and 9 define the edges of an over-the-finger ½ circle band 10 that extends from one side of the shield portion over the finger and attaches to the other side of the shield portion. Band 10 secures the shield to the finger tip 13. The invention may be practiced without band 10, but its use is recommended. Openings 7, 8, and 9 are formed during the manufacturing process, usually casting with latex or some other elastomer.

[0052] Opening 9 is optional, but its presence is preferred. Opening 9 is part of the ventilation and comfort system portion of the preferred embodiment.

[0053] Bands 6, one on each side of the finger, operably attach the shield 3 to the retaining band 5. A hinging function required to permit parking of the working tip is provided by the flexibility of the bands 6.

[0054] Ribs 11 are reinforcing ribs to prevent tearing of the longitudinal bands 6 and other edges.

[0055] Referring to FIG. 3, bands 6 are elastic and stretch enough to permit the shield portion 3 to be passed over the end of the finger to the “parked” position on the top of the finger where it is out of the way while the finger is used to operate a computer or some other activity requiring, or better done with a bare finger tip.

Other Embodiments and Variations

[0056] The opening 9 may be omitted with the attendant reduction in overall comfort in use. The working surface at the underside of the tip may include a firm portion to prevent penetration by a needle or similar, permitting the inventive cot to be used during sewing activities and similar.

[0057] FIG. 7 is an alternate embodiment, still retaining opening 9 for ventilation, but reducing the need for band 10 to hold the working shield in place. Shield portion 3 is extended as a band 14 over the nail sufficiently far to provide retention of the shield portion onto the end of the finger. Band or cover 14 traverses over the distal phalange in the same manner as band 10, and serves the same purpose. Cover 14 may be just across the tip of the nail, or cover any amount of the nail and distal phalange, including as far as opening 7, thus incorporating band 10. Cover 14 serves not only as a retention means, but also as a protector for a broken fingernail or cut fingertip until adequate repairs can be made.
0.058. The retaining band 5 as shown is one piece of elastic, but a buckling means could be utilized as an option. Hook and loop fastener technology (Velcro, etc) could be used to provide a buckling means.

0.059. The surface treatment described in the preferred embodiment is to further increase the friction properties of the tip material. Other tool-like functional treatment is anticipated. FIG. 8 illustrates a suction cup for grasping lifting smooth surfaced items such as compact disks or small parts. Other anticipated, tools such as a wrench head to hold a nut while a bolt is being installed, hose attachments for air or vacuum, cutting blades, scissors, pliers, or clamps, thimbles, etc. A vacuum tip is ideal for lifting small parts. An air jet could be used for cleaning or cooling work pieces and work surfaces.

0.060. Thimble-like protection from cuts, abrasion, and puncture may be included in the working tip's structure with or without other tool functions.

How to Use the Invention

0.061. The new version finger cot is pulled onto a finger with the tip snugly nestled into the cup shaped working tip. The finger's capability is then enhanced by the characteristic properties of the material, shape, or tool comprising the working tip. In the preferred embodiment and two of the alternative embodiments described, the characteristics are enhanced friction, a thimble-like shield, and a suction cup for lifting small items.

0.062. The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to falling within the scope of the invention as defined by the claims which follow.

0.063. The embodiments of the invention in which an exclusive property right or privilege is claimed are defined as follows:

1 claim:

1. A finger cot for enhancing the manipulation of material by the action of human finger tips comprising:
   a. a finger encircling piece;
   b. first and second elongated pieces having elastic properties in the directions of their respective elongated axis, one end of each said elongated piece attached to said encircling piece at approximately diametrically opposed points;
   c. a shield piece adapted to cover the tactile tip of a human finger is attached to the opposite end of said elongated pieces;
   d. said shield piece further comprising at least one portion encircling the distal phalange for holding said shield piece firmly on the tip of the finger.

2. The finger cot of claim 1 further comprising:
   said shield piece having an inner and outer surface, with at least part of the outer surface having a coefficient of friction greater than the normal coefficient of friction of the tip of a dry human finger tip.

3. The finger cot of claim 1 further comprising:
   said shield piece having an inner and outer surface, and at least one suction cup means for lifting objects, where said suction cup is operably attached to the outer surface of the shield piece.

4. A finger cot for enhancing the manipulation of material by the action of human finger tips comprising:
   a. a finger encircling piece;
   b. a first and second elongated piece having elastic properties in the direction of its elongated axis, one end of each said elongated piece attached to said encircling piece at approximately diametrically opposed points;
   c. a shield piece adapted to cover the tactile tip of a human finger is attached to the opposite end of said elongated pieces;
   d. said shield piece further comprising at least one portion encircling part of the finger for holding said shield piece firmly on the tip of the finger.
   e. said shield piece having an inner and outer surface, with at least part of the outer surface having a coefficient of friction greater than the usual coefficient of friction of the tip of a dry human finger tip.

5. A finger cot for enhancing the manipulation of material by the action of human finger tips comprising:
   a. a finger encircling piece;
   b. a first and second elongated piece having elastic properties in the direction of its elongated axis, one end of each said elongated piece attached to said encircling piece at approximately diametrically opposed points;
   c. a shield piece adapted to cover the tactile tip of a human finger is attached to the opposite end of said elongated pieces;
   d. said shield piece further comprising at least one portion encircling part of the finger for holding said shield piece firmly on the tip of the finger.
   e. said shield piece having an inner and outer surface, with at least part of the outer surface further comprising a tool for enhancing the function of a finger, wherein said tool is selected from the group consisting of a friction pad, or at least one suction cup, or thimble shield, or a sticky surface, or the open end of a hose through which air flows, or a cutting blade, or a scissors tool, or a pliers tool, or a wrench, or a clamp for grasping objects.

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