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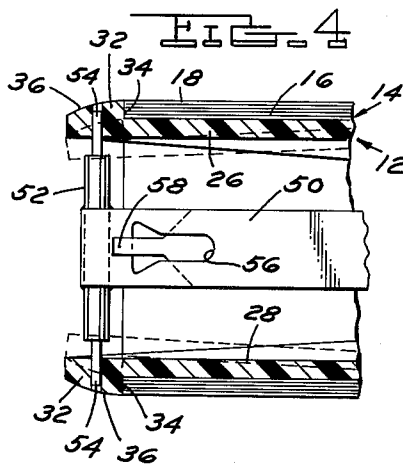
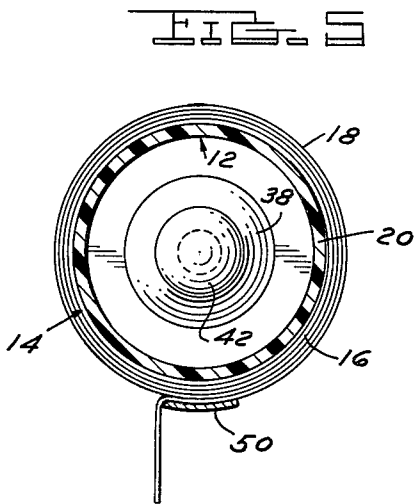
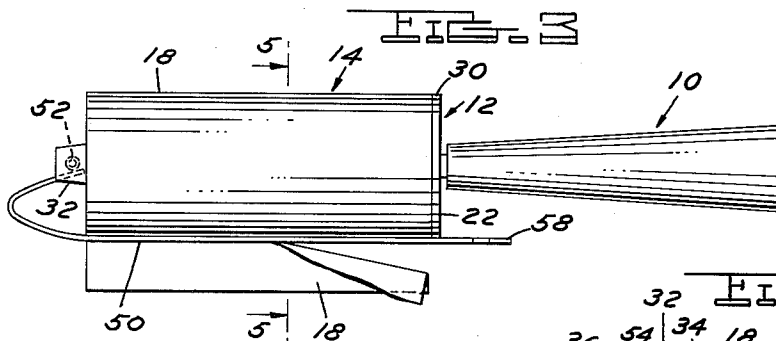
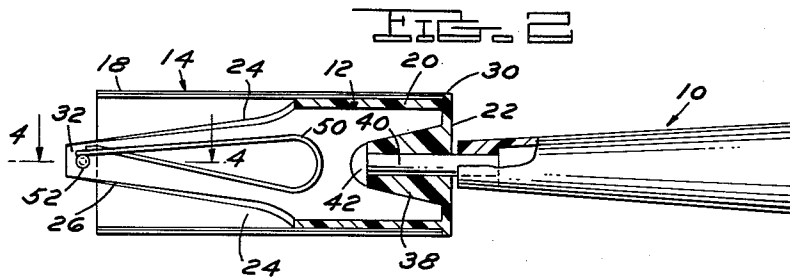
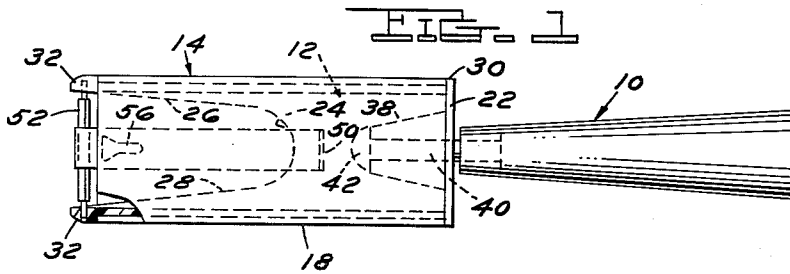
F. N. KISBANY

3,225,373

LINT REMOVER

Filed Nov. 12, 1963

2 Sheets-Sheet 1



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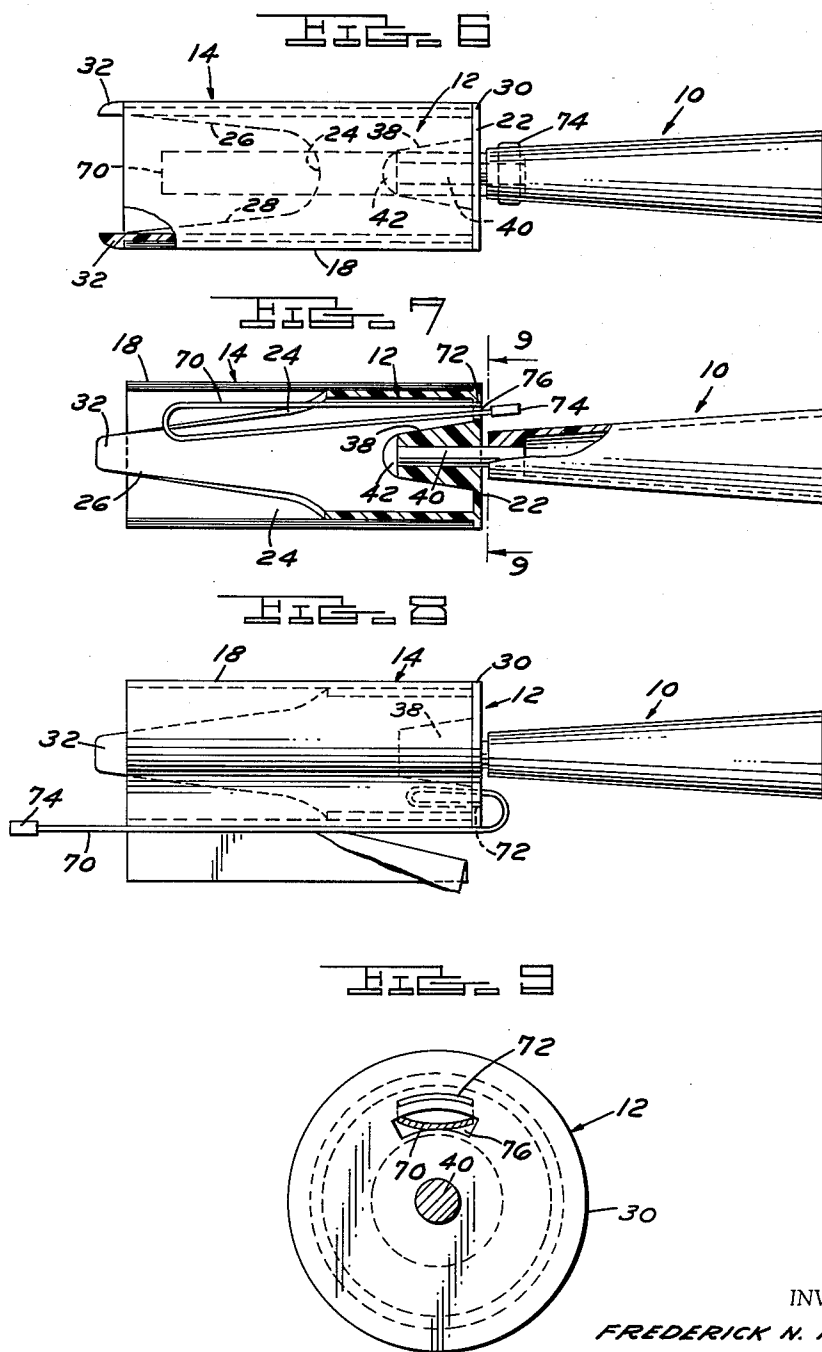
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LINT REMOVER

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9 Claims. (Cl. 15-104)

This invention relates generally to lint removing devices, and refers more particularly to a roller type device for removing lint from clothing and similar fabrics.

One of the essential objects of this invention is to provide a roller type lint removing device in which a sleeve bearing a tacky material can be removed and replaced readily and without requiring disassembly of the device.

Another object is to provide a lint removing device having a rotatable cylindrical core which is compressible at one end to enable the sleeve bearing the tacky material to be readily slipped on and off the core by an endwise movement.

Another object is to provide a lint removing device having a tubular cylindrical core of flexible material which is open at one end and has one or more slots extending longitudinally from the open end, to enable the core to be radially reduced at the open end and the sleeve to be slipped on and off the core by an endwise movement.

Another object is to provide a lint removing device wherein the core has a radially outwardly extending flange at the open end normally blocking endwise removal of the sleeve, the core being sufficiently compressible to enable the sleeve to clear the flange when the sleeve is slipped on and off.

Another object is to provide an elongated core having a pair of diametrically opposed members extending parallel to the axis of rotation of the core in supporting relation to the sleeve, the members being sufficiently flexible to permit the sleeve to be slipped on and off by an endwise movement.

Another object is to provide a lint removing device having means for severing lengths of tacky material wound convolutely upon the sleeve.

Other objects and features of the invention will become apparent as the description proceeds, especially when taken in conjunction with the accompanying drawing, wherein:

FIGURE 1 is a side elevational view of a lint removing device embodying my invention.

FIGURE 2 is a view of the device showing the roller rotated 90° from the position in FIGURE 1, with parts in elevation and parts in section.

FIGURE 3 is an elevational view showing the device in the position of FIGURE 2, and illustrating the manner in which a length of the tacky material may be severed from the sleeve.

FIGURE 4 is an enlarged, fragmentary, sectional view taken along the line 4-4 of FIGURE 2.

FIGURE 5 is an enlarged sectional view taken on the line 5-5 of FIGURE 3.

FIGURE 6 is a view similar to FIGURE 1, showing a modification of the invention.

FIGURE 7 is a view of the device of FIGURE 6 showing the roller rotated 90°, with parts in elevation, and parts in section.

FIGURE 8 is an elevational view of the same device, with the roller turned 180° from the FIGURE 7 position, and illustrating the manner in which a length of the tacky material may be severed from the sleeve.

FIGURE 9 is an enlarged view taken on the line 9-9 of FIGURE 7.

Referring now more particularly to the drawing, and especially to FIGURES 1-5, the lint removing device

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there illustrated comprises a handle 10, a core 12 rotatably mounted on the handle, and a sleeve 14 fitted on the core. The sleeve 14 may include a tube 16 of cardboard or like material having a long strip 18 of adhesive convolutely wound thereon. The strip or tape 18 will be tacky on its radially outer surface to pick up lint on clothing or similar fabrics, and the tackiness will serve to stick the overlying turns of the spiral tape to one another.

The core is essentially an elongated hollow tube or cylinder having a cylindrical wall 20 and being closed at the inner end by a transverse end wall 22. The outer end of the cylinder is open. The cylindrical wall 20 of the core is slotted at diametrically opposite sides. The slots are designated 24 and extend lengthwise of the cylinder from the open outer end slightly more than halfway toward the closed end thereof. The remaining elongated portions of the cylindrical wall 20 between the slots 24 are diametrically opposed to one another. These portions or members are designated 26 and 28.

The core 12 is made of a flexible resilient material, and in the present instance is made from a suitable plastic having these characteristics. Hence the elongated members 26 and 28 can be flexed toward and away from each other. Normally, that is in their free state, these members 26 and 28 will extend in a lengthwise direction parallel to the center line of the cylinder. Their outer surfaces will be of the same cylindrical shape as the unslotted portion of the wall 20. However, these members are not attached at their free or outer ends so that they may be flexed radially inward with only a slight application of pressure.

The inner end of the core 12 has a continuous radially outwardly extending annular flange 30 which is in effect an extension of the end wall 22. This flange extends beyond the outer cylindrical surface of the wall 20 to provide an end abutment for the sleeve 14. Each of the flexible members 26 and 28 has at its free end an enlarged nose portion 32 defining a shoulder 34 which projects radially outward to provide an end abutment for the opposite end of the sleeve on the core. This enlarged nose portion 32 will be seen to have a tapered outer surface 36 to enable the sleeve to be easily slipped on the core, as will appear more fully in the description that follows.

The handle 10 is an elongated hollow member which can be conveniently gripped in the hand. The core 12 is mounted on the handle so that it can rotate about its own axis and also about the longitudinal center line of the handle.

As shown in FIGURE 2, the core 12 has an integral boss 38 in the interior thereof which extends from the end wall 22. A headed fastener 40 extends through the boss, through a hole in the end wall 22 and through a hole in the end of the handle. The fastener has its integral head 42 abutting the inner end of the boss 38, and its opposite end is press-fitted into the hole at the end of the handle. Sufficient clearance between the core and the handle permits free rotation of the core about the fastener.

The sleeve 14 is slipped on and off the core over the outer end thereof by an endwise movement. Specifically, the elongated members 26 and 28 are flexed radially inward, or towards one another, to enable the end of the sleeve to be started over the tapered nose portions 32 defined at the free ends of the members. The tapering surfaces 36 enable the sleeve to be slipped over the nose portions by a small amount of endwise pressure, and these tapering surfaces will provide a camming action to flex the members 26, 28 inward a little more if necessary to clear the sleeve. When the sleeve is positioned on the cylindrical wall 20 of the core in the position shown in FIGURES 1, 2 and 4, the flexible members 26,

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28 snap radially outward so that the shoulders 34 provide an abutment for the outer end of the sleeve. The sleeve fits snugly on the cylindrical surface of the core in coaxial relation therewith, between the flange 30 and shoulders 34. The sleeve is removed by an endwise movement in the opposite direction, after having flexed the free ends of the members 26, 28 radially inward to the dotted line position of FIGURE 4.

Obviously the tacky surface of the outer convolution of the tape 18 will lose its effectiveness in time. In order to present a new, fresh surface, the outer convolution of the tape must be torn off. For this purpose there is provided an elongated, thin, flexible, resilient strip 50 which may be of metal or plastic, for example, and might be of a gauge similar to that employed in ordinary steel measuring tapes. The strip has the arched or concavo-convex cross-section, shown in FIGURE 5, throughout its length. One end of the strip 50 is permanently secured to a spindle 52 which extends across the free ends of the members 26 and 28 of the core. The opposite ends of the spindle are reduced to provide journal portions 54 which are axially slidable and rotatable in transverse openings in the enlarged nose portions 32 of the flexible members 26 and 28. Hence these journal portions do not interfere with the flexing of the members 26 and 28 between the solid and dotted line positions of FIGURE 4. The strip has an opening or hole 56 near the spindle, shaped as indicated in FIGURE 4, and the opposite or free end of the strip has a narrow tab 58.

When not in use, the strip 50 is folded in a loop within the core, as illustrated in FIGURE 2, and the tab 58 is inserted through the hole 56 to releasably latch or hold the strip in this position. When it is desired to sever a length of the tape 18 from the sleeve 14, it is only necessary to manually remove the tab 58 from the hole, and withdraw the strip 50 from its position within the core by pulling straight out on the free or tab end of the strip. The strip is then laid across the end and along the length of the cylindrical surface of the core and sleeve, as shown in FIGURE 3, and with one longitudinal edge of the strip placed against the tape as a cutting edge, the tape may be torn off at any length desired. The tacky surface of the tape serves to hold the tearing strip in place when being used. Also, the underlying layers of tape hold the outermost layer and tearing strip rigidly in place, because of the characteristic tack, thereby permitting the use of a less rigid tearing strip than would ordinarily be required.

Referring to FIGURES 6-9, the device there illustrated is substantially the same as the device in FIGURES 1-5, except for the means which facilitate the tearing off of a length of the tacky material, which is different in this embodiment. Accordingly, corresponding parts of the device are designated by the same reference characters.

In this embodiment, the elongated, thin, flexible, resilient strip 70 is like strip 50 previously described. In other words, it may be of metal or plastic for example, and might be of a gauge similar to that employed in ordinary steel measuring tapes. The strip 70 likewise has an arched or concavo-convex cross-section, shown in FIGURE 9, throughout its length.

The strip 70 has one end 72 permanently secured to the end wall 22 of the roller. As shown in FIGURES 7 and 9, the end wall 22 has a slot in which the end 72 of the strip 70 is disposed and secured by any suitable means. The strip 70 extends inside the roller to form its anchored end 72 within the hollow interior of the roller, and when not in use substantially the entire strip is disposed in a loop within the roller. In this inoperative or stored position illustrated in FIGURE 7, the free end 74 of the strip projects through slot 76 in the end wall 22 to the outside of the roller. The free end 74 of the strip 70 is enlarged, and preferably of a shape or size such that it will not pass through the slot 76.

In order to use the tear strip 70, the free end 74 is

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grasped to extend the strip from the inside of the roller, and the strip is then laid along the length of the core and sleeve, as shown in FIGURE 8. The strip 70 will have its concave side against the tape, in the same manner as the tape 50 shown in FIGURE 5, and one longitudinal edge of the strip will serve as a cutting edge. The tape 18 may, accordingly, be torn off easily and at any desired length.

What I claim as my invention is:

1. A lint removing device comprising a support and roller assembly, said roller being elongated and mounted on said support for axial rotation, said roller having a length of tacky material wound thereon, and means for severing portions of said length of tacky material comprising an elongated flexible strip having a longitudinal severing edge, one end of said strip being connected to said roller, said roller being hollow to accommodate said strip when not in use, said strip being adapted to be withdrawn from said roller and to be laid along the exterior of said roller to facilitate severing a portion of said length of tacky material.

2. A lint removing device comprising a support, an elongated hollow roller mounted on said support for axial rotation, said roller having a length of tacky material wound thereon, and means for severing portions of said length of tacky material comprising an elongated flexible strip having a longitudinal severing edge, one end of said strip being connected to said roller, said roller having a slot in one end thereof, said strip when not in use being disposed within said roller with its opposite end projecting from said slot so that said strip can be withdrawn from said slot by a pull on said opposite end, and laid along the exterior of said roller to facilitate the severing of a portion of said length of tacky material.

3. The device defined in claim 2, wherein said roller has a transverse wall at the said one end thereof, said slot is formed in said transverse wall, and the said one end of said strip is secured to said transverse wall.

4. A lint removing device comprising a support, an elongated core rotatably mounted on said support, a sleeve fitted on said core in coaxial relation therewith, said sleeve having a length of tacky material wound thereon, said core having a pair of diametrically opposed members extending parallel to the axis of rotation of said core in supporting relation to said sleeve, said members terminating at one end of said core in free ends and being flexible to enable the same to be flexed radially inwardly and said sleeve to be readily slipped on and off said core by an endwise movement, said core having a transverse wall closing its opposite end, said members having radially outwardly extending flanges at the free ends thereof normally blocking endwise removal of said sleeve, said members being sufficiently flexible radially inwardly to enable said sleeve to clear said flanges when said sleeve is slipped on and off said core as aforesaid, and means for severing portions of said length of tacky material comprising an elongated flexible strip having a longitudinal severing edge, one end of said strip being connected to said transverse wall, said transverse wall having a slot therein, said strip when not in use being disposed within said core between said opposed members thereof with its opposite end projecting from said slot so that said strip can be withdrawn from said slot, by a pull on said opposite end, and laid along the exterior of said sleeve to facilitate the severing of a portion of said length of tacky material.

5. The lint removing device defined in claim 1, wherein a rotatable spindle extends across and is carried by said roller at one end of said roller, one end of said strip being attached to said spindle.

6. The lint removing device defined in claim 5, wherein said strip has a hole near said spindle, and the opposite end of said strip has a tab adapted to fit in said hole and retain said strip in an inoperative position folded in a loop within said hollow roller.

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7. A lint removing device comprising an elongated handle, a tubular cylindrical core of flexible, resilient material, the inner end portion of said core being rotatably connected to one end of said handle so that said core and handle are disposed in end-to-end coaxial relation and said core is free to rotate relative to said handle, and a sleeve having a tacky outer surface removably frictionally fitted on said core in coaxial relation therewith, said core having a radially outwardly extending portion at its inner end to prevent inward movement of said sleeve beyond the inner end of said core, said core being open at its outer end and having a pair of diametrically opposite, elongated slots extending longitudinally of said core from the open end thereof, said slots each terminating short of the inner end of said core, said slots defining therebetween a pair of diametrically opposite elongated flexing fingers extending longitudinally of said core, said fingers having radially outwardly extending abutments adjacent their free outer ends, said abutments having shoulders extending radially outwardly from said fingers to normally block endwise removal of said sleeve, said fingers being sufficiently flexible radially inwardly to enable said sleeve to clear said abutments when said sleeve is slipped on and off said core over the outer end thereof by endwise movement, the radially outer surfaces of said fingers conforming to the cylindrical contour of the remaining radially outer surfaces of said core.

8. A lint removing device comprising an elongated handle, a tubular cylindrical core of flexible, resilient material, the inner end portion of said core being rotatably connected to one end of said handle so that said core and handle are disposed in end-to-end coaxial relation and said core is free to rotate relative to said handle, and a sleeve having a tacky outer surface removably frictionally fitted on said core in coaxial relation therewith, said core having a radially outwardly extending rim at its inner end to prevent inward movement of said sleeve beyond the inner end of said core, said core being open at its outer end and having a pair of diametrically opposite, elongated slots extending longitudinally of said core from the open end thereof, said slots each terminating short of the inner end of said core in an arc of relatively large radius which is concave toward said open outer end of said core, the side edges of each slot extending from the ends of said arc to said open outer end

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of said core in diverging relation, said slots defining therebetween a pair of diametrically opposite, elongated, flexing fingers extending longitudinally of said core, each flexing finger at its inner end having a circumferential extent of 180° measured from the midpoint of one arc to the midpoint of the other arc and at its free outer end being substantially less in circumferential extent than the outer ends of said slots, said fingers having radially outwardly extending abutments adjacent their free outer ends, said abutments having shoulders spaced from said free outer ends and extending radially outwardly from said fingers to normally block endwise removal of said sleeve, said fingers being sufficiently flexible radially inwardly to enable said sleeve to clear said abutments when said sleeve is slipped on and off said core over the outer end thereof by an endwise movement, said abutments tapering radially inwardly from said shoulders in a direction toward said free outer ends of said fingers to facilitate slipping said sleeve on said core as aforesaid, the radially outer surfaces of said fingers conforming to the cylindrical contour of the remaining radially outer surfaces of said core.

9. The lint removing device defined in claim 8, wherein said core has a transverse wall at its inner end to close the latter, a central boss on said transverse wall within said core, and a reduced extension on said one end of said handle providing a spindle extending through said transverse wall and boss to provide the aforesaid rotatable connection between said handle and core.

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