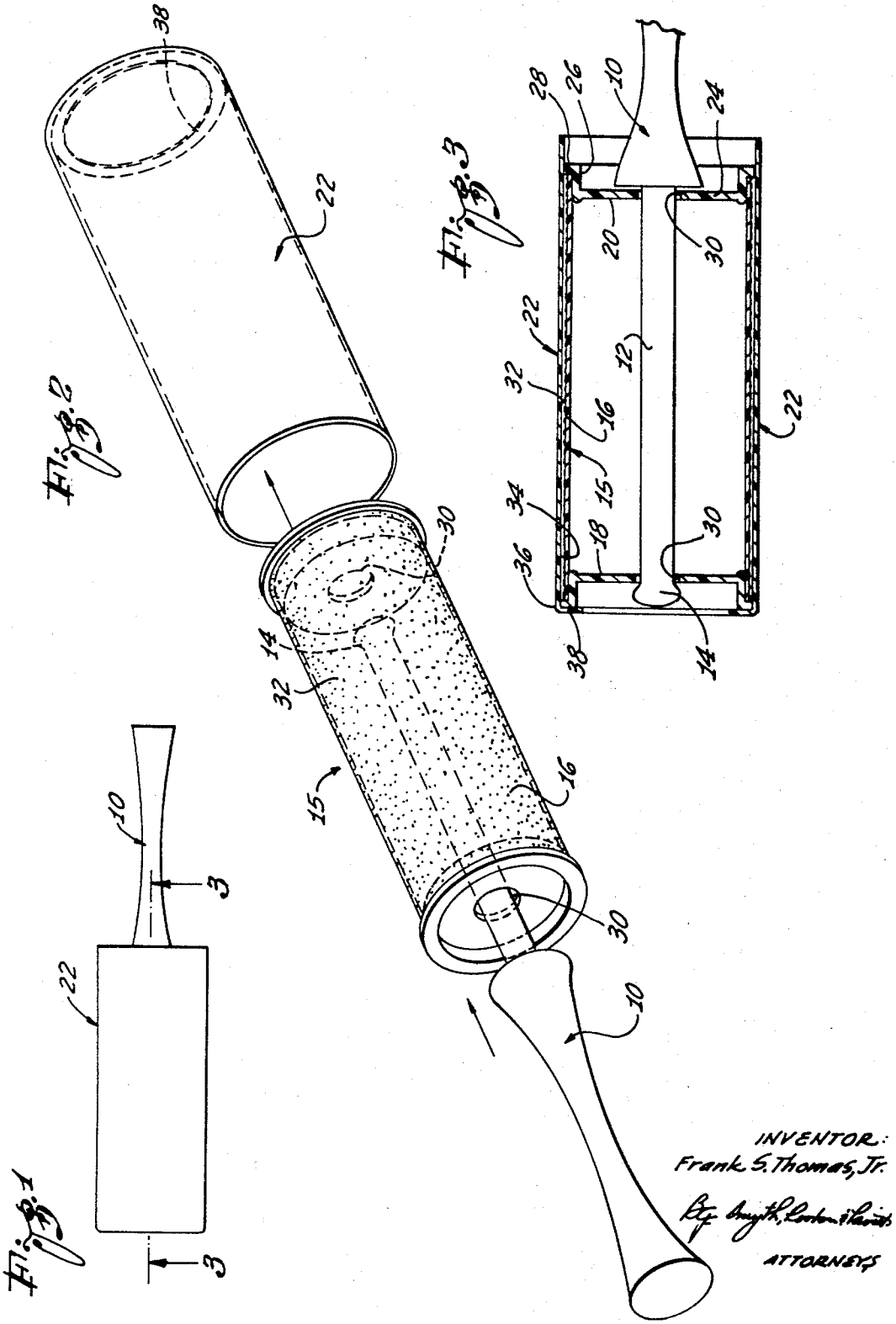
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JACKETED ROLLER-TYPE LINT REMOVER

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# JACKETED ROLLER-TYPE LINT REMOVER

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## ABSTRACT OF THE DISCLOSURE

A jacketed roller-type lint remover comprised of a tacky coated cylinder supported at both ends by flanged discs journalled upon a shaft extending from a handle. The outside diameters of the rims of the disc flanges exceed the outside diameter of the tacky cylinder and the latter is effectively covered during non-use by a cylindrical sleeve-like jacket which is axially slipped over the flanged discs and is supported by their rims. The inside of the jacket is preferably coated with silicone.

*Related application*

My co-pending Patent No. 3,363,276, granted Jan. 16, 1968, discloses certain subject matter bearing some relation to the present lint remover application.

*Background of the invention*

This invention relates to tacky surface lint removers in general and is particularly directed to providing a tacky roller for lint removal which may be effectively covered during non-use and hence protected from inadvertent contact with its tacky surface, but the covering means of which may be readily removed therefrom.

In recent years there have been developed a number of different types of devices which present tacky surfaces for the removal from fabrics of lint, hairs and other detachable foreign matter. One such device is illustrated and described in United States Patent No. Re. 25,435, issued to Francis P. Norman. The Norman device, however, is pretty much a "one-shot" lint remover. After the tacky surface has been applied a few times to fabrics, it tends to lose its tackiness and must be discarded.

In an effort to provide a more re-useable type of tacky lint remover, a number of designs have been contrived to employ a roll of tape having an outwardly tacky coating. One form of roller type lint remover employing such a tacky tape is illustrated and described in my aforementioned copending application, Ser. No. 496,787, now Patent No. 3,363,276. The roll of tape is journalled on some type of shaft or spindle and the tape cylinder with its tacky surface is rolled over fabric areas which it is desired to have cleaned of lint, hairs and detachable foreign matter on the fabric. However, after a certain amount of such rolling, the exposed tape surface loses its tackiness and one circumference of the tape must be peeled from the roll and cut off before re-use.

More recently there have appeared on the market a number of roller type lint removers which do not utilize any tacky tape rolls, but instead, employ cylinders which are coated with a tacky substance. These tacky coated cylinders are employed in the same manner as the tape type rollers described above, but when the tacky coating adsorbs a certain quantity of lint, hairs and foreign matter, the cylinder must be scrubbed with soap and water to remove the thus-picked up lint, hairs, etc. When the water is shaken off, the cylinder will again be found to be tacky and capable of re-use as a lint remover.

Both of these two types of roller lint removers, however, have required provision for some type of removable yet re-useable covering for the exposed tacky surface of



the cylinder (whether in the form of a tape roll, or washable substance). What has generally been employed is either a metallic surfaced flexible sheet with minimum adherence to the tacky surface of the cylinder, or some other type of flexible sheeting which can be wrapped around the cylinder and peeled off when a person desires to re-use the lint remover. These sheet-type coverings have generally been unsatisfactory since the sheet may become torn or lost. Manufacturers of tape-type roller lint removers generally solve this problem by supplying a new covering sheet wtih each replacement roll of tape, hoping that the sheet will not become lost or torn before the tape roll is completely used up. Such a solution is not available to those manufacturers of the permanently tacky cylinder types of lint removers. One manufacturer of the latter type of lint removers, therefore, has attempted to provide the necessary covering for his tacky cylinders by an elaborate closeable housing for the cylinder which housing, when opened up, serves as a handle as well as a mounting for journalling the tacky cylinder and exposing the latter for use. Such a housing is not only complicated and subject to being broken, but must be expensive to manufacture since the price of this lint remover is several times that of the tape-type roller lint removers.

*Summary of invention*

The present invention provides a roller type lint remover construction which is adapted to employ either the tape roll or the permanently tacky cylinder as the lint pick-up device and includes a cylindrical sleeve-like plastic jacket which serves to cover the exposed tacky surface of the tacky cylinder during non-use, thus obviating the necessity of applying a metallic or other flexible sheet to the tacky surface at the conclusion of useage to prevent such surface from coming into unwanted contact with some other object. To dispose the sleeve-like jacket in such a manner that the inside wall of the jacket is maintained out of contact with the tacky surface of the roll or other tacky coating on the cylinder, the tacky roll or other cylindrical element is supported at its ends by a pair of flanged discs having rims with outside diameters at least slightly greater than the outside diameter of the roll or other cylindrical element. These discs are centrally orificed and serve to journal the assembly on a shaft or spindle which, in turn, is supported by a handle. The inner wall of the sleeve-like jacket is coated wtih a silicone to inhibit any adherence of that wall to the tacky coating on the cylinder which the former protects from unwanted contact.

It may thus be seen that the construction of the present invention is readily adaptable for use with either the tape lint remover or the permanently tacky cylinder lint remover. Among its further advantages are its economy in manufacture, the relative indestructibility of the covering for the tacky surface, the facility with which the sleeve-like jacket may be removed and replaced, and its aesthetic appearance.

*Description of the drawing*

In the accompanying drawing:

FIG. 1 is an elevational view of the complete assembly of the preferred embodiment of the invention.

FIG. 2 is an exploded view in perspective of the assembly of FIG. 1.

FIG. 3 is a section on the lines 3—3 of FIG. 1.

*Description of the preferred embodiment*

Referring to the drawings for an illustration of the preferred embodiment of the present invention, a handle **10** is integrally molded of plastic, such as medium impact polystyrene, with a shaft or spindle **12** which is thereby

firmly supported by the handle. The outermost extremity of the shaft is provided with an enlargement **14**, the function of which will be explained at a later point in this specification.

There is then rotatably mounted on the shaft or spindle **12** an assembly **15** which comprises a tacky cylindrical element **16**, a pair of supporting flanged discs **18**, **20** and a sleeve-like cylindrical jacket **22**, the detailed construction, functions and interrelationship of all of which are as follows: In this illustrated embodiment, I have shown as the tacky lint pick-up cylindrical element the one which is provided with the permanently and washable tacky surface of the type more recently marketed by several manufacturers and which per se does not comprise any part of the present invention. It should be understood, however, that there could be substituted for such permanent and washable tacky surface type cylindrical element, one of the tacky tape type rolls which have been on the market for several years and is shown and described in my aforementioned prior co-pending application Ser. No. 496,787.

The element **16** is rotatably supported on the shaft or spindle **12** by a pair of polystyrene discs **18**, **20**, each of which includes a flat centrally disposed radiating portion **24**, an axially extending portion **26** and a radiating flange portion **28**. The portion **24** is centrally orificed at **30** to enable the shaft or spindle **12**, including its enlargement **14**, to be passed therethrough and to serve to journal the assembly **15** on the shaft or spindle **12**. The polystyrene or other plastic material selected for molding the discs **18**, **20** should be sufficiently flexible after molding to permit enough distention of the discs under modest hand pressure to permit the enlargement **14** of the shaft to be passed through the orifices **30** in the discs. However, after the enlargement **14** has passed through both discs as shown in FIG. 3, the enlargement serves to prevent retraction of the shaft **12** through disc **18**, until modest withdrawal pressure is applied for that purpose.

The axial portion **26** of the discs **18**, **20** has an outside diameter approximately equal to the inside diameter of the cylindrical element **16**, thereby to enable each of said discs to be force-fitted within the hollow area of the element **16** to the point where the end of the latter abuts the radiating flange portion **28** of the disc. This radiating flange portion **28** not only serves as a limit for the insertion of the disc into the hollow area of the cylindrical element **16**, but by its radial dimension further serves to support the sleeve-like jacket **22** a sufficient distance from the outer tacky surface **32** of the element **16** to permit the jacket **22** to be axially moved back and forth across the surface **32** without adherence thereto. The jacket **22** may be molded of a flexible polystyrene or polyethylene and, if coated with a thin layer **24** of silicone, will not adhere to the tacky surface **32** even though separated therefrom by only .025". The latter dimension may therefore be selected as the excess of the radius of the radiating flange portion **28** over the radius of the element **16** (including its outermost tacky coating **32**). The advantage of employing such a very small radial differential is that the flexible sleeve-like jacket **22** may be molded of a relatively thin wall and still receive some support from the tacky coated cylindrical element **16**. With the silicone coating **34**, it will be found that even when the sleeve is squeezed radially inwardly to the point of contacting the tacky coating **32** on the element **16**, when released, the memory of the plastic will draw the sleeve wall radially outwardly and off of the tacky coating **32**.

When thus maintained in a disposition not in actual contact with the tacky surface **32**, the plastic sleeve **22**, the inside diameter of which is slightly in excess of the outside diameter of the rim of the flange portions **28** of the discs **18**, **20**, may be moved axially with respect to these rims and the tacky coated surface **32** of the element **16**. To prevent the sleeve from being pushed over the element **16** beyond the disc **18** and thereby exposing a portion of the tacky coated surface **32**, the trailing end **36** of the sleeve-like jacket **22** is molded with an inwardly extending terminal portion **38**, the inside diameter of which is less than the outside diameter of the rim of the flanged portion **28**.



In use, a roller type lint remover constructed in accordance with the present invention may be readily assembled by simply snapping the roller assembly onto the shaft or spindle **12** and then sliding off of the cylindrical element **16** the jacket **22**. With this construction either a tape type tacky roll, or the newer washable tacky cylinder may be employed as the cylindrical element **16**. The tacky surface is at all times protectable by simply sliding over it axially the flexible sleeve-like plastic jacket **22**, and the latter not only is relatively durable, but is easy to remove and replace, has a neat appearance, is inexpensive to manufacture, and does not adhere to the tacky surface of the actual lint removing roll.

There will undoubtedly occur to persons skilled in this are many variations in materials, dimensions and constructional details for embodiments of the present invention but I intend to comprehend all such variations within the scope of the following claims to this invention.

I claim:

**1.** A roller device for the removal of lint, hairs and other foreign matter adhering to the surface of a fabric, said device comprising:

(A) a hollow cylindrical element, said element
  (i) being of a predetermined outside diameter and of a lesser predetermined inside diameter, and
  (ii) being coated on its outer surface with a tacky material adapted to cause lint, hairs and other foreign material detachably disposed on a fabric to adhere thereto;

(B) a pair of discs, each of said discs
  (i) having a first portion extending axially with an outside diameter approximating the said lesser predetermined inside diameter of said element, thereby to enable said first portion to be force fitted axially into one end of said element;
  (ii) having a second and flanged portion integrally formed with, and extending radially outwardly from, one end of said first portion to a diameter at least slightly greater than the said predetermined outside diameter of said element and its tacky material;
  (iii) being centrally orificed, and
  (iv) being forceably inserted into one end of said element;

(C) a shaft, said shaft
  (i) including a handle portion for gripping by the user of the device, and
  (ii) a spindle portion extending from the handle portion for a distance exceeding the distance between discs when so inserted into the ends of said element, said spindle portion being inserted through the central orifices in said discs whereby said discs become journalled for rotation on said spindle portion, and one end of said spindle portion being provided with means to inhibit the axial displacement of the most proximate of said discs over said end of said spindle portion; and

(D) a jacket, said jacket
  (i) being in the form of a hollow cylindrical sleeve with an inside diameter approximately equalling the outside diameter of said second and flanged portion of each of said pair of discs so as to be axially slidable over the rims of said discs;
  (ii) being of a length at least as great as the distance between the outer faces of the discs;
  (iii) being disposed removably by axial move-

ment, coaxially with and over said element and the rims of said discs; and

(iv) being of a thin, flexible plastic material, having a memory whereby it may be supported by proximity to the tacky coating of the cylindrical element when pressed radially inwardly but retracts itself radially outwardly upon release of such pressure so that the jacket may be readily removable axially from said element.

2. The device as described in claim 1 wherein said discs are molded of a medium impact polystyrene and the means on the one end of said spindle portion to inhibit the axial displacement of one of said discs over the said end of the spindle portion comprises a graduated enlargement in the diameter of said spindle portion, said enlargement being of such diameter as to enable it to be forced through the central orifices of the discs.

3. The device as described in claim 2 wherein the jacket is molded of a flexible plastic, such as polystyrene, or polyethylene.

4. The device as described in claim 2 wherein the jacket is molded of a flexible plastic and one end of the jacket is formed to a lesser inside diameter so as to be incapable of being passed axially over the rim of either disc.

5. The device as described in claim 1 wherein the tacky coating on said element is of a permanent type which is washable to remove therefrom accumulation of lint, hair and foreign material adsorbed thereto.



6. The device as described in claim 2, wherein a coating of silicone is applied to the inside wall of the sleeve-like jacket, thereby to inhibit adherence of said inside wall to the tacky coating on the cylindrical element.

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