Dec. 30, 1958 J. H. BATTS 2,866,583

GARMENT HOLDER WITH HIGH FRICTION SURFACE

Filed June 17, 1957 2 Sheets-Sheet 1

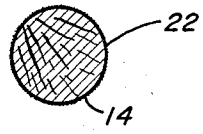


Fig. 2

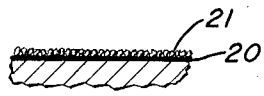


Fig. 11

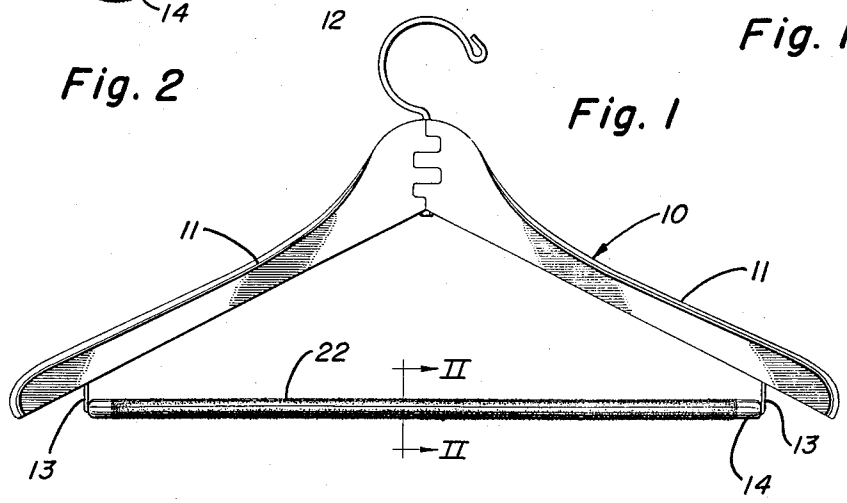


Fig. 1

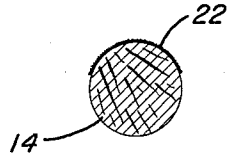


Fig. 3

Fig. 4

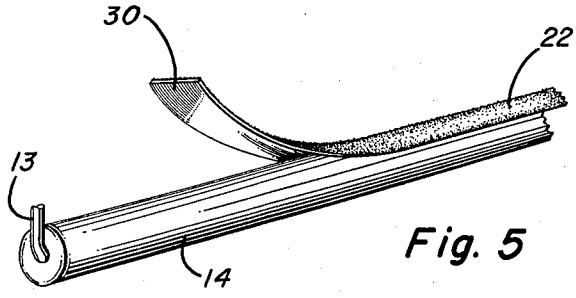


Fig. 5

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GARMENT HOLDER WITH HIGH FRICTION SURFACE

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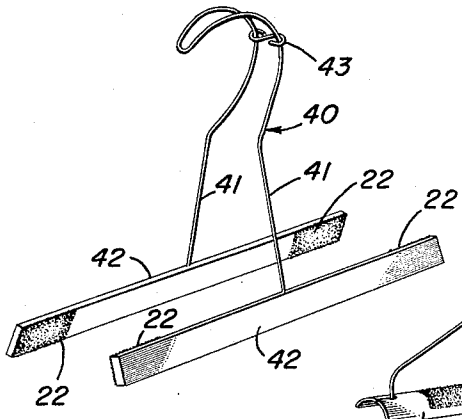


Fig. 9

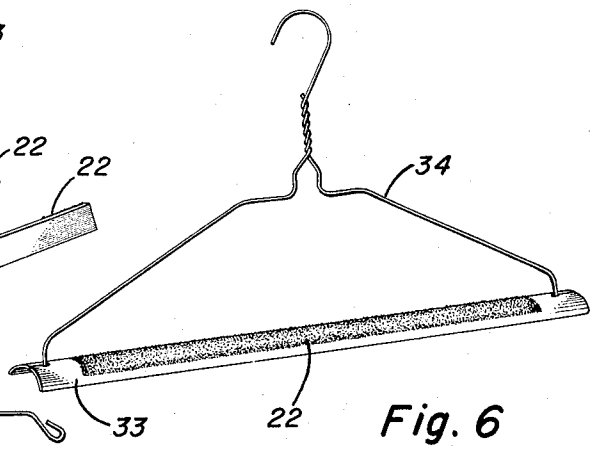


Fig. 6

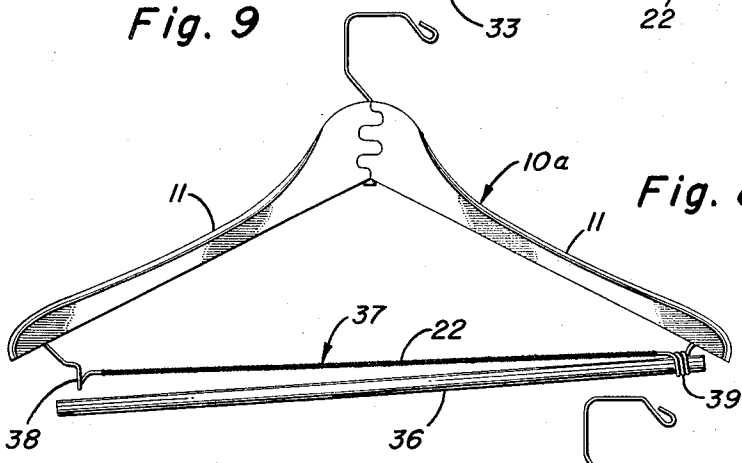


Fig. 8

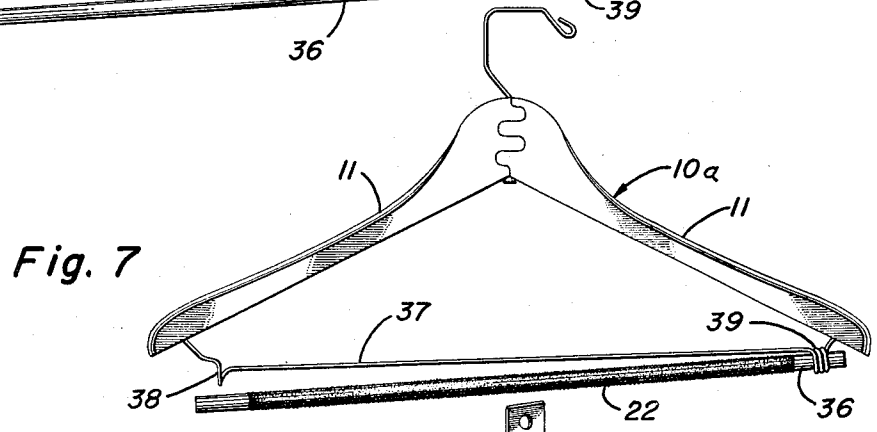


Fig. 7

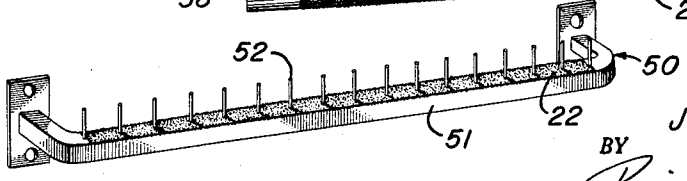


Fig. 10

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GARMENT HOLDER WITH HIGH FRICTION SURFACE

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Application June 17, 1957, Serial No. 666,104

5 Claims. (Cl. 223—88)

This invention relates to garment hangers and more particularly to an improvement therein providing them with a surface having a substantially higher coefficient of friction than has heretofore been possible.

Various types of garment hangers have been known for many years. Most of these hangers, whether of the type which fit into a garment such as that for a coat or of the type over which a garment is draped such as that used for pants, slacks, or ties or of the type which grips one end of the garment such as that commonly used for hanging skirts, pants or slacks depend solely upon friction between the garment and the surface of the hanger to secure the garment. This causes substantial difficulty. The materials commonly used for these hangers such as wood or metal would seriously damage the garments either by tearing or rapid wear if the surface were not smoothly finished. Smoothly finished surfaces have a low coefficient of friction and the garments have a tendency to slide off them.

In the conventional, low cost, wire coat hanger this has been to some extent overcome by placing a cardboard cover over the trouser rail to provide a broader surface and one having a higher coefficient of friction per unit area. However, even this type of expedient has not solved the problem because insufficient frictional grip is provided where the hanger is subject to vibration. Some hangers provide a member paralleling the trouser rail which cooperates with the rail by clamping the garments between the two. While this is relatively effective as a means of anchoring the garments, it is undesirable. It interferes with the proper placing of the garment on the rail and if made to clamp with sufficient force, it creases the garments.

This invention solves the problem and does so in a manner having a number of advantages not heretofore attainable from any known garment hanger construction. The invention provides a surface having such a high coefficient of friction that even under severe conditions of vibration such as is encountered when garments are in transport over long distances, there is no tendency for the garment to slip from the hanger. This is true even in the absence of a structure employing the clamping principle.

This invention accomplishes this desirable result while providing a surface which will neither wear, mark nor cause other physical injury to the surface of the garment. This is true even though the most delicate fabrics are draped over it. This invention provides a surface which will not mark the garment even though the garment is forcibly dragged across its surface.

While greatly improving the conventional garment hanger the invention is easy and inexpensive to apply. Thus, it is adapted to use even on those garment hangers sold for a single use such as the transportation of suits and dresses from the manufacturer to the retailer or supplied as the means of returning dry cleaned garments.

These and other objects and purposes of this invention will be immediately understood by those acquainted with the design and use of garment hangers, upon reading

the following specification and the accompanying drawings:

In the drawings:

Fig. 1 is a front elevation view of a conventional wooden hanger equipped with a trouser rod.

Fig. 2 is a central sectional elevation view taken along the plane II—II of Fig. 1.

Fig. 3 is a sectional elevation view taken along the same plane as Fig. 2 but showing a modified construction.

Fig. 4 is a front elevation view of the hanger equipped with this invention on the ends of the hanger's coat arms.

Fig. 5 is an enlarged fragmentary oblique view of a modified form of this invention shown as applied to the trouser rod.

Fig. 6 is an oblique view of the application of this invention to a wire coat hanger.

Fig. 7 is a front elevation view of this invention applied to the trouser rod of the conventional clamping type of coat hanger.

Fig. 8 illustrates the same coat hanger as illustrated in Fig. 7 with the invention applied to the clamping rod rather than to the trouser rod.

Fig. 9 is an oblique view of a clamping type hanger to which this invention has been applied.

Fig. 10 is an oblique view of a conventional tie rack to which this invention has been applied.

Fig. 11 is an enlarged fragmentary sectional view of the coating of this invention.

In executing the objects and purpose of this invention I have created a garment supporting and retaining surface coating for garment hangers characterized by a high coefficient of friction. This surface consists of bonding to the normal garment contact surfaces of the hanger a layer of granulates of a soft, resilient material such as rubber. The granules are bonded to the surface by a suitable adhesive such as a clear or relatively clear latex material.

Referring specifically to the drawings, the numeral **1** indicates a hanger of conventional design having a pair of coat arms **11** forming a shallow, inverted V. The arms **11** join at their upper ends to form a yoke. At the center of the yoke is an upwardly projecting hook **12** by which the hanger may be suspended. Projecting from beneath each of the arms, adjacent its end, is a wire prong **13**. The ends of the prongs **13** are turned toward each other and are embedded in the ends of the trouser rod **14**. Both the trouser rod **14** and the arms **11** are illustrated as fabricated of wood. However, in some hangers these are molded or formed from plastic or metal. For the purposes of illustrating this invention it is immaterial whether they are of wood, plastic, or metal.

The yoke formed by the arms **11**, in the type of hanger illustrated in Fig. 1, is used to support a coat by draping the coat over the arms with the upper end of the yoke and the hook **12** passing upwardly through the neck opening of the garment. The pants or trousers are draped over the rod **14**. In a hanger to which this invention has not been applied, the user must be careful to so drape the garment over the rod **14** that the portions of the garment suspended on each side of the rod are substantially equal in weight so the garment will have no tendency to slide off the rod.

In Fig. 1 the invention is shown applied to the rod **14**. To apply the invention the rod is coated with a film of suitable adhesive **20** (Fig. 11). While this adhesive is liquid or in the initial stages of becoming tacky, a coating of granules **21** of a flexible material are embedded in the adhesive. When the adhesive dries, these granules are firmly bonded to the surface of the rod. This forms the coating **22** surrounding the rod.

For the film of adhesive **20**, a material must be se-

lected which is capable of forming a high strength bond with both the hanger and the granules. Where the hangers are of wood, the number of adhesives is limited because of lack of proper adhesion to the wood by many of them. It is preferable to use a method of granule application which does not cause them to be coated. If the granules are coated or substantially coated, the adhesive used may remain flexible after setting. In practice, the latex based adhesives have been found particularly suitable such as those commonly known as the rubber type cements. These include both those made wholly or partially from natural latex or from artificial latex and include the butadiene base compounds and butadiene-styrene based materials. Certain of the more recently introduced urethane adhesives are suitable for this purpose. Under certain circumstances, the higher molecular weight, vinyl materials may be used as the bonding agent.

It is important that the bonding agent or adhesive **20** be one which, when it is dried or cured, will neither rub off on the fabric of the garment nor leave a mark on the garment either by reason of its inherent characteristics or by reason of any extenders, stabilizers or bulking agents incorporated into it for such purposes as controlling its viscosity.

It must maintain its adhesion to a high degree through a wide range of normal operating temperatures such as from −10 through about 150 degrees Fahrenheit. Within the upper portion of this temperature range it must have no tendency to soften or gell and thus become tacky and adhere to the garments. This is most important to avoid marking of the garments. It must also retain sufficient strength that the granules **21** remain firmly bonded at these higher temperatures even though they are subject to substantial pull by the garments. The adhesive must be one which bonds firmly both to the granules and to the particular base to which the adhesive is applied such as wood, plastic, metal or artificial materials having a cellulosic or ligneous base such as paper board.

The particles or granules **21** must be of a material characterized by resilience throughout the expected operating temperature range. They also must be soft or pliable. Preferably, the particles should be of a material which is either light colored or transparent whereby they will not impair the appearance of the hanger. They must be of a material which will not mark the fabric of the garments even though the garments are dragged over them and small portions of the granules become detached and adhere to the garments. Further, such portions of the granules as do adhere must adhere lightly so that a simple brushing removes them.

It has been found that light colored or clear, soft granules of rubber are particularly desirable for this purpose. The particles of rubber removed from certain types of rubber rolls in grinding them to size have been found to be a particularly suitable material. This material is a waste product and, therefore, substantially inexpensive. In selecting such material, care must be taken not to select one which contains any substantial proportion of carbon or other pigmentation.

In applying the coating **22**, a film of the adhesive **20** is first applied to the rod **14** by brushing, dipping, spraying or other suitable means. As illustrated in Fig. 1, the ends of the rod are not coated. This may be done either by selection of the area where brushing is employed or by protecting these areas when the film is applied by faster methods such as dipping or spraying. While the adhesive film is still tacky or liquid, the granules **22** are applied. This may be done by rolling or tumbling the rod in a supply of the granules or by sprinkling or spraying them over the surface. The adhesive qualities of the film **20** will cause sufficient quantities of the particles **21** to adhere to form an adequate coat for the purposes of this invention. The adhesive is then cured by means suitable for the particular type of adhesive employed and for the equipment available for this purpose. It may be done by simply allowing the adhesive to cure at room temperature or by the application of moderately elevated temperatures.

The coating **22** thus formed has an exceptionally high coefficient of friction, particularly in contact with fabrics of the type used in clothing. It is effective to grip and hold not only the coarser weaves of cloth having an inherently higher frictional surface such as woolen tweeds but also to hold such slippery material as tightly woven nylon, silk, or chiffon. The more recently introduced artificial fibers present the most difficult problems because they are slippery. This is particularly true of fabrics made wholly or largely of nylon, Dacron and Orlon.

Experiments have shown that a pair of pants or slacks having a tight weave forming a hard surface made from these materials will be retained by a hanger where the rod **14** has the coating **22** applied to the surface over which the garment is draped even though no more than one or two inches of the garment is laid on one side of the rod. Even the entire weight of the remainder of the garment will not pull the garment from the rod. Tests indicate that even under these circumstances, substantial force must be applied to the garment to cause it to slide on the surface. With fabrics having a slightly greater coefficient of friction, it has been found that the pull necessary to cause the garment to slide over the coating **22** exceeds the strength of the rod. Tests also indicate that the coating is completely effective in retaining the garments on the rod even under severe conditions of vibration such as are experienced when the garment is hung over the rod while in transit in trucks or freight cars. Yet the garments after long periods of contact require neither cleaning nor pressing since they are neither marked nor wrinkled in any way. This has never before been achieved by any garment hanger or any of the various friction increasing coatings which have been applied to them in the past.

Fig. 3 shows a slight modification wherein the coating **22*a*** is applied only to the upper portion of the rod, that is, the portion of the rod surface which actually contacts the garment when it is draped over it. This arrangement is desirable in saving material. This can be accomplished by limiting the area to which the adhesive is applied since the granules will adhere only in this area.

Fig. 4 shows a garment hanger identical to the one illustrated in Fig. 1 but with the coating **22** applied as a patch **24** to the upper surface of the ends of the arms **11**. In this position, the coating prevents the garments from sliding off the end of the hanger. It is particularly useful for hanging garments of thin or shear material or which are so cut that they have little body to prevent the sides of the garment separating at the neck or torso opening. It will be recognized that, if desired, the patch **24** may be extended to cover any amount of the upper surface of the arms **11** required to properly anchor the garments.

Fig. 5 illustrates a modification of this invention wherein the coating **22** is applied to a flexible base **30** such as a fabric, paper or plastic tape. The undersurface of the tape **30** has a coating of a suitable contact adhesive whereby the tape may be laid on the surface of the hanger such as the rod **14** and will automatically bond to it. In this case the tape is separately fabricated and applied to the garment hanger in whatever lengths are required.

Fig. 6 illustrates this invention applied to the conventional, low cost, wire hanger. In this case the coating **22** is applied to the upper surface of the paper board cover **33** which is seated on the rod of the wire hanger **34**. Assuming the cover **33** to be sufficiently anchored to the hanger **34**, the coating **22** will firmly anchor the garment against sudden or gradual displacement from the hanger.

Fig. 7 illustrates the invention applied to a garment hanger **10*a*** of the conventional yoke type having the arms

11 and a trouser rod 36. The rod 36 is very similar to the rod 14 except that instead of being fixedly secured to the yoke of the hanger, it is made movable so that one end may be opened. For this purpose a wire 37 is provided, the ends of which are firmly secured to the arms 11. Adjacent one end, the wire 37 has an open loop 38 forming a latch or keeper for the free end of the rod 36. Adjacent the other end, the wire 37 has a coil 39 wrapped about the captive end of the rod 36 and forming a hinge for the rod. The coating 22 is applied to the surface of the rod other than in the area of the loop 38 and the coil 39.

The garments are draped over the rod 36 and then the free end of the rod is seated in the loop 38. The advantage of using the coating 22 under these circumstances is that the coating will provide such a grip with the garment that the clamping action of the central portion of the wire 37 may be exceedingly light as opposed to the tight clamping which is now necessary. Thus, the tendency to form a crease in the garment is materially if not entirely eliminated.

The hanger 10*a* illustrated in Fig. 8 is identical to that illustrated in Fig. 7 except the coating 22 is applied to the surface of the central portion of the wire 37 rather than to the rod 36. It produces the same effect. It will be recognized that while the invention has been shown as applied in one instance to the rod alone, in another to the arms 11 alone and in Figs. 7 and 8 to the rod used in conjunction with a clamping wire, that the coating may be applied to all of these areas simultaneously. This is merely a multiplication of the forms of the invention already described and illustrated.

Fig. 9 illustrates the application of this invention to the clamp type of hanger. This hanger has a wire loop 40 forming a pair of legs 41. A clamping bar 42 is secured to the end of each of the legs 41. The resiliency of the wire hanger 40 normally keeps the bars 42 separated. The coating 22 is applied to short areas adjacent each end of both of the bars 42. It may be applied to the entire inner surfaces of the bars 42. When the locking loop 43 is moved downwardly to close the legs and clamp the bars 42 against the garment, the areas covered with the coating 22 provide a secure grip on the garment. This positively prevents it from slipping out of this type of hanger. This eliminates a frequently experienced deficiency in this type of hanger particularly where the garment is thin and the hanger is unable to exert substantial clamping pressure on it.

Fig. 10 illustrates other uses for this invention. In this case, the coating 22 is applied to the upper surface of a tie rack 50. The ties, when laid over the tie rack bar 51 between the pegs 52, lie on the surface of the coating 22. The coating stops them from sliding off the rack as commonly occurs in the absence of this invention. This invention is effective irrespective of whether the rack is designed with a round or a flat upper surface. This is intended to illustrate the wide application of this invention in the field of garment hangers and supports.

It will be recognized that this invention corrects one of the long recognized deficiences of garment hangers. The tendency of garments to slide from their hangers has always been a major source of irritation to the user. Despite the effective grip afforded by this invention, it cannot mark or otherwise damage the garments. It will not cause wear because it is inherently free of any abrasive qualities. It utilizes the principle of a high friction surface without necessitating the use of materials which are tacky or semi-adhesive. It eliminates the necessity for piercing or clamping the garments to assure their retention on hangers. Consequently, it has materially improved garment hangers and widened their utility.

While I have described my invention and various applications of it, it will be understood that modifications of this invention may be made. Such of these modifications as incorporate the principles of the invention are to be considered as included in the hereinafter appended claims unless these claims by their language expressly state otherwise.

I claim:

1. A garment hanger adapted to depend from a support element, said hanger having a horizontal support means, said support means having a fabric contacting area over which a garment is adapted to be draped; a layer of pliable, cured rubber-like granules adhered to said support means by an adhesive, said layer covering at least a substantial portion of the fabric contacting area; said granules projecting above the surface of the horizontal support means; said rubber-like granules when bonded by said adhesive to said support means providing a plurality of small resilient, flexible fingers projecting from said support means and firmly adhered thereto, said fingers having garment contacting surfaces characterized by high coefficient of friction.

2. A garment hanger adapted to depend from a support element, said hanger having a horizontal support means, said support means having a fabric contacting area over which a garment is adapted to be draped; a layer of pliable, cured rubber-like granules adhered to said support means by an adhesive characterized when cured by being pliable and having a high coefficient of friction, said layer covering at least a substantial portion of the fabric contacting area; said granules projecting above the surface of the horizontal support means; said rubber-like granules when bonded by said adhesive to said support means providing a plurality of small resilient, flexible fingers projecting from said support means and firmly adhered thereto, said fingers having garment contacting surfaces characterized by high coefficient of friction.

3. A garment hanger adapted to depend from a support element, said hanger having a horizontal support means, said support means having a fabric contacting area over which a garment is adapted to be draped; a layer of pliable, cured rubber-like granules adhered to said support means by a latex adhesive, said layer covering at least a substantial portion of the fabric contacting area; said granules projecting above the surface of the horizontal support means; said rubber-like granules when bonded by said adhesive to said support means providing a plurality of small resilient, flexible fingers projecting from said support means and firmly adhered thereto, said fingers having garment contacting surfaces characterized by high coefficient of friction.

4. The hanger of claim 1 in which the horizontal support means is a rod.

5. The hanger of claim 1 in which the horizontal support means is an elongated strip of material supported on a horizontal bar.

References Cited in the file of this patent

UNITED STATES PATENTS

2,419,435	Behr	Apr. 22, 1947
2,585,715	Youngblood	Feb. 12, 1952
2,590,738	Tufts	Mar. 25, 1952
2,590,811	Zimmerman et al.	Mar. 25, 1952
2,605,030	Fischer	July 29, 1952
2,655,296	Winzer	Oct. 13, 1953
2,737,323	Griffith	Mar. 6, 1956

FOREIGN PATENTS

1,019,312	France	Oct. 29, 1952