

Sept. 15, 1964

W. F. TUFTS
GARMENT HANGER

3,148,809

Original Filed Dec. 20, 1956

2 Sheets-Sheet 1

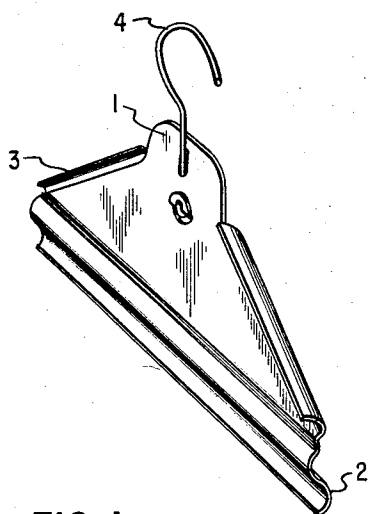


FIG. 1

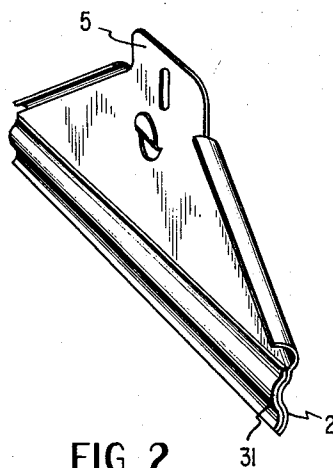


FIG. 2

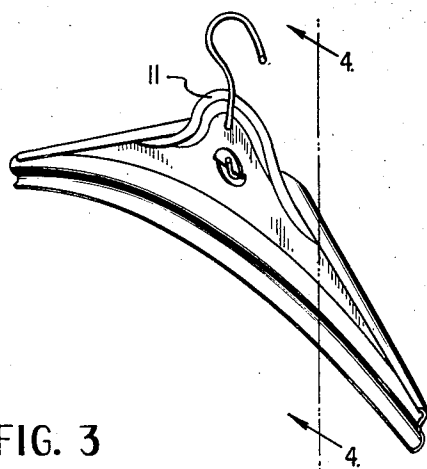


FIG. 3

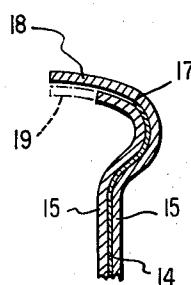


FIG. 5

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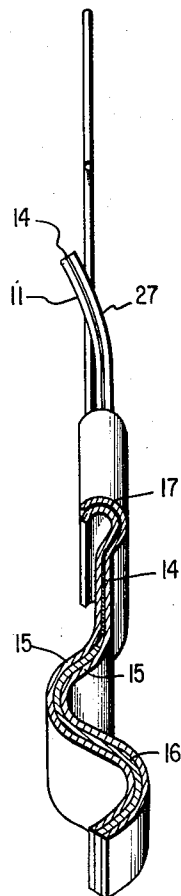


FIG. 4

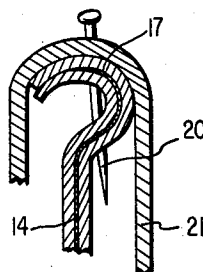


FIG. 6



FIG. 7



FIG. 8

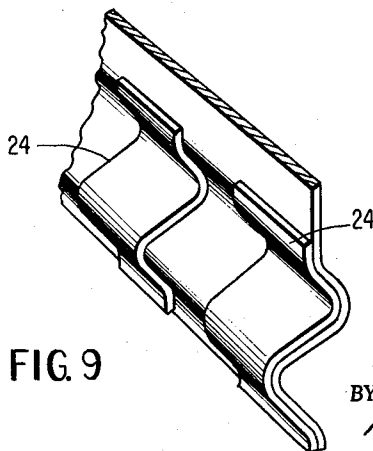


FIG. 9

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GARMENT HANGER

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Original application Dec. 20, 1956, Ser. No. 629,591, now Patent No. 3,049,272, dated Aug. 14, 1962. Divided and this application June 30, 1961, Ser. No. 125,024 2 Claims. (Cl. 223-87)

This application is a continuation-in-part of my co-pending application, Serial Number 367,425, filed July 13, 1953, now abandoned, and is a divisional application of my application 629,591 December 20, 1956, now Patent No. 3,049,272 granted August 14, 1962.

This invention pertains to garment hangers and has as its object to provide certain hanger and hanger design details especially adaptable to the manufacture of a garment hanger substantially from paper or other sheet materials in order to afford the garment cleaning industry a more economical and yet a suitably functionable garment hanger.

Practically the only type of hanger employed in the dry cleaning industry today is made of wire. However, due to limitations of such hangers, two accessories, the dress shield and the trouser guard, are required to provide adequate protection to the garment. The guard is employed to protect the trousers from creasing and the dress shield is commonly used to protect a dress from rust stains as well as to provide the cleaner's finished product with a more acceptable appearance.

Many attempts have been made to supplant the common wire hanger with hangers constructed of paper in particular. However, due to various reasons none of such efforts have been successful.

A careful study of the subject reveals that what is required in an acceptable substitute for wire hangers is a balanced combination of the following features: (a) Economy, (b) Strength, (c) Moisture resistance, (d) Elimination or minimization of assembly labor required by the cleaner, (e) Adaptability to the application of ladies skirts by the employment of common straight pins as fasteners, (f) The ability of the hangers to nest and thereby to require a minimum space for shipping and storage, (g) Features incorporated in the design of the shoulders to protect ladies light weight garments from unsightly creases after long periods of hanging, (h) Lightness of weight.

Those skilled in the art have provided many hanger designs for paper or sheet construction, but which designs are deficient in one or more, and in most cases several, of the above set forth requirement features.

The aim of this invention, therefore, is to provide a garment hanger design which can be manufactured to possess all of the above established requirements.

On the basis of careful tests it is believed that this aim has been achieved in the improvements of this invention which improvements were not obvious to those skilled in the art.

Referring to the figures in general:

FIGURE 1 shows the general concept of the invention as pertains to the dress hanger.

FIGURE 2 is a slight variation of the design of FIGURE 1.

FIGURE 3 in another variation of the design of FIGURE 1.

FIGURE 4 shows a sectional view taken along the lines 4-4 of FIGURE 3.

FIGURE 5 shows the design of the shoulder portion of FIGURE 4.

FIGURE 6 shows in part the functioning of the shoulder roll of FIGURE 5.

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FIGURES 7 and 8 show by comparison two basic types of rib designs.

FIGURE 9 shows the basic purpose of laminating the rib section.

In order to describe the various details to this invention, separate reference will now be made to the figures.

The hanger 1, of FIGURE 1, consists of a generally triangular shaped sheet of material formed with the transverse rib structure 2, and the shoulder rolls 3. The hook 4, though made of wire, may be made of plastic and attached to the body in a suitable fashion.

It has been found that if such a hanger as that of FIGURE 1 is constructed of kraft paper board similar to that used as liner board in corrugated boxes and of a weight referred to in the industry as 90-pound board, adequate strength can be had provided the rib structure shown is large enough and provided such rib structure is maintained in its shape. If made of paper, the maintenance of such shape under high humidity conditions has been found to present a real problem.

However, a hanger constructed of the weight of board mentioned has been found to be impractical because of the fact that common straight pins cannot be conveniently pushed through the shoulder rolls for the purpose of securing such garments as low-necked dresses and skirts.

To overcome these two basic and important faults, the hanger body 5 of FIGURE 2, is constructed of lighter board of the order of 69-pound liner board and is laminated at the rib section 2 with an additional layer or rib 31 and a permanently setting laminating material.

It has been found that by use of a water-proof resin as the laminating agent, such sandwiched structure as the rib section of FIGURE 2 is permanent in nature regardless of high humidity conditions. It has also been demonstrated that the shoulder portions of such a hanger are practical from the standpoint of an operator pushing pins in them periodically all day long as normally is required without rendering the fingers sore.

The hanger body 11 of FIGURE 3 is designed with the rib section in a generally arcuate shape. This is so that when the hanger is under loaded conditions from an extra-heavy garment the horizontal force components result in a series of vertical force components which act to maintain the shape of the rib section.

The hanger 11, of FIGURE 3 also employs the resin laminate of the hanger of FIGURE 2.

However, it is seen from the cross-sectional view, FIGURE 4, that the body 11, of FIGURE 3, employs the resin laminate substantially throughout in order to primarily provide the added feature of maintaining the shoulder roll in its shape under high humidity conditions. In this design two sheets of approximately 33-pound board 15 are sandwiched with the permanently setting resin layer 14 and include the rib laminate 16. It is also noted that the resin laminate 14 terminates at 17, and does not continue to the free edge of the shoulder roll.

The latter detail is further illustrated by the shoulder roll sectional view of FIGURE 5. Here it is seen that the resin laminate 14 extends to embrace the entire curve portion of the shoulder roll section. The lips or free edges 18 and 19 remain unbounded and therefore are free to flex independently under the weight of a garment, thus providing a shoulder design which lends itself to nesting for stacking purposes, as do the rib designs, and at the same time one which will readily flex to a supporting radius under the weight of even a light weight garment, as further illustrated by FIGURE 6. It is also further seen that one of the lips of FIGURE 5 may be shortened as at 19 in order to facilitate completing of the roll radius under the weight of very light weight gar-

ments and thus prevent the forming of permanent hanger marks on such garments after long periods of hanging.

It is also thus seen that the hanger design of FIGURES 3 and 4 combines economy and structural strength by employing a minimum amount of base sheet material in combination with a permanently setting laminating agent and an extra laminate at the area of greatest stress together with an adequate structural rib shape.

FIGURE 6 further illustrates the reverse direction shoulder roll of this invention as adapted to the employment of straight pins as skirt fasteners. It is seen that the point of the pin 20 is protected from causing damage by being protected by the hanging garment 21. Though a small detail this has been found to be an important hazard-preventing and labor-saving feature from the standpoint of dry cleaning operators.

Reference will now be made to FIGURES 7, 8 and 9 for further discussion of the rib 22 structure of this invention. FIGURE 7 shows the double or multiple rib extending from the same side of the base sheet. When in combination with the laminate structures of FIGURES 2 and 4 such double rib would be adequate if relatively large enough in dimensions. However, the reversed substantially adjacent rib design 23 of FIGURE 8 is mathematically superior to that of FIGURE 7 considering that both are formed from the same amount of linear material.

Further reference to the rib structure is made in FIGURE 9. Here it is demonstrated that the primary purpose of the laminate structure is to maintain the shape of the rib. As stated already, the major problem has been found to be comprised of maintaining the cross-sectional shape of the rib structure and particularly under humid conditions if the body is of moisture-sensitive paper board material. Here in FIGURE 9 the laminate material 24 is shown in short and spaced length in order to demonstrate that the laminate is not for added strength as derived from material mass but is added to insure permanence of the rib section shape in high humid conditions even in the absence of load on the hanger.

The above description is not intended to include all and

every possible detail and variation of this invention but rather is meant to be exemplary of the spirit thereof.

What I claim is:

1. A garment hanger comprising a substantially triangular body of lightweight paper board; a sinusoidal section formed in said body adjacent the lower edge thereof and extending substantially the entire length of said lower edge, said section having a layer of reinforcing material laminated thereto with a laminating agent to maintain the shape of said section; a pair of ribs formed in said body adjacent to and extending along the sloping edges of said triangular body to form curved shoulder rolls having sloping free edges, each of said ribs having a layer of reinforcing material and a laminating agent laminated thereto, said laminating agent and said reinforcing material extending substantially coextensive with the sectional configuration of said ribs, said laminating agent forming and maintaining the shape of said ribs and terminating a distance from said sloping free edges of said shoulder rolls and from the free edges of said reinforcing material to permit said free edges of said body and of said reinforcing material to flex under the weight of a light weight garment to further curve said shoulder rolls, said free edges otherwise remaining uncurved to facilitate nesting of said hanger.

2. A garment hanger as set forth in claim 1 wherein each said rib, having a free edge of said reinforcing material and a sloping free edge of said shoulder roll, has one of said free edges overlying and extending beyond the other of said free edges.

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