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(71) Applicant : **I. APPEL CORPORATION**
136 Madison Avenue
New York, New York 10016 (US)

(72) Inventor : **Bro, Denise**
426 West 23rd Street
New York, New York 10011 (US)
Inventor : **Katz, Norman**
9 Timberlake Estates, 1104 North Parkway
Jackson, IN 38305 (US)
Inventor : **Feinberg, Herbert**
211 E 70th Street
New York, New York 10021 (US)

(74) Representative : **Paget, Hugh Charles Edward et al**
MEWBURN ELLIS 2 Cursitor Street
London EC4A 1BQ (GB)

(54) Garment hanger.

(57) A garment hanger (10) is provided which has upwardly divergent arms (18,20) that are moved towards axial alignment with each other upon stretching a garment (32) around the hanger, thus providing for movement of downwardly extending fingers (28) of the hanger (10) into parallelism with each other to firmly entrap a waistband (34) of a garment (32), the resilience of the arms (18,20) acting to maintain the waistband (34) under tension.

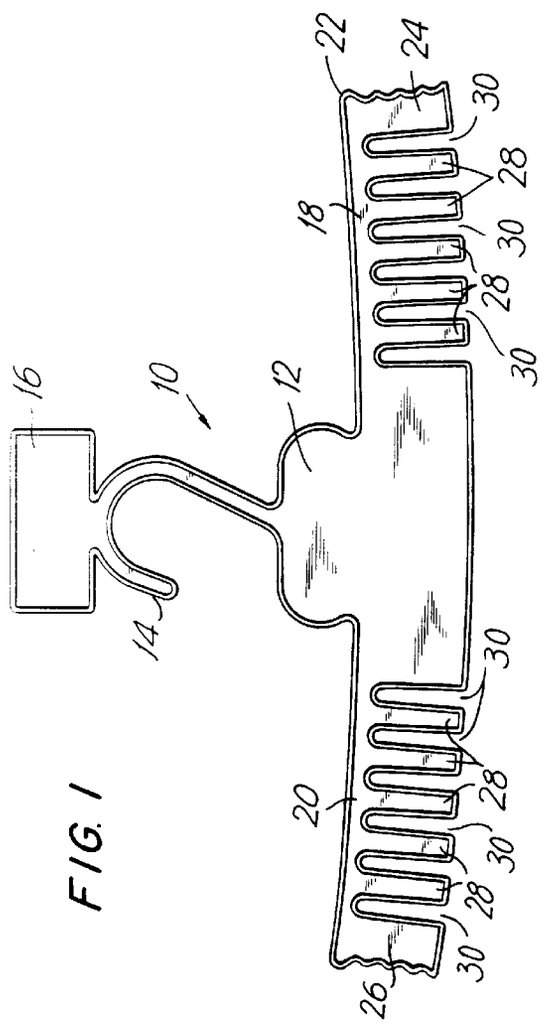

FIG. 1

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Field of the Invention

This invention relates to a hanger for articles of apparel, and in particular to a hanger for displaying articles of clothing, such as underwear, swimsuits, panties and the like having a stretchable waistband.

Background of the Invention

A requirement in the merchandising industry is for a hanger that will permit the direct display of articles of clothing for visual and tactile inspection by a prospective customer, and which can be hung on an appropriate rack or stand, thus permitting a collection of such articles to be displayed in a single location.

When dealing with articles having a stretchable waistband, and articles having a relatively large waistband size, this poses particular problems in that the hanger must be of greater width than that of the partially stretched waistband for the garment to be attached to the hanger, and supported thereon solely by the elastic tension produced in the waistband. If the waistband is of a large size, then, the hanger must be made correspondingly wide, this in turn presenting a cosmetically unacceptable appearance in that the waistband must be stretched from its contracted condition in order for the article to support itself on the hanger. Also, due to the stretched condition of the waistband, this presents a cosmetically unacceptable distortion of the article of clothing which, at that time, is stretched at the waistband, while the depending portion of that article is in a flaccid and unsupported condition.

This problem is addressed in U.S. Patent No. 4,703,878 issued November 3rd, 1987 in the name of Louw, which teaches a garment hanger in which a stretchable waistband of a garment of any waistband size can be stretched across a front face of the hanger, then be folded around the ends of the hanger, and then be stretched along the back face of the hanger, thus presenting a partially folded condition of the article of apparel.

The waistband, which is then in the stretched condition, is then hooked over downwardly extending fingers formed integrally with the hanger, the fingers each extending at an angle of inclination towards the center line of the hanger.

While hangers of this type are eminently suited for the hanging of articles of apparel for display purposes, they are encumbered with the disadvantage that fabric immediately beneath the waistband at the point of engagement with the fingers tends to become stretched, thus presenting an unsightly appearance to the prospective purchaser when the article of apparel is removed from the hanger. This is particularly so in the case of fabrics that take a "set" when subjected to localized pressure.

A development of the concept of the above patents is to be found in U.S. 4,744,496 issued May 17th, 1988 in the names of Blanchard, et al. That patent, to some extent, alleviates the problem of local stretching and "setting" of the fabric of the garment, and also provides for a bottom rail, which will further stabilize the garment when it is hung on the hanger. The teachings of this patent, however, are also encumbered with the problem of localized stretching and "setting" of the fabric of the garment at the turned back ends of the waistband, this patent also employing downwardly extending fingers formed integrally with the hanger, and, which extend at an angle towards the center line of the hanger.

Those fingers, as in the earlier patent, also cause localized stretching and "setting" of the fabric at the point it passes around the fingers, this being further aggravated by the teachings in both of the patents of providing enlargements on the lower ends of the fingers, the enlargements also extending towards the center line of the hanger, and, which further increase the localized pressure on the fabric of the garment at that point, and which further exaggerates the "set" in the fabric.

Summary of the Invention

It is an object of this invention to provide a hanger for an article of clothing, which, as is known in the art, will accommodate any articles of clothing within a determined range of waistband sizes, and which will display the article of clothing in an extended substantially planar condition having an outline simulating that of the human form, while at the same time avoiding the disadvantages of fingers that extend inwardly towards the center line of the hanger, and, fingers that must be provided with enlargements at their lower ends.

A garment hanger is provided which has upwardly divergent arms that are moved towards axial alignment with each other upon stretching a garment around the hanger, thus providing for movement of downwardly extending fingers of the hanger into parallelism with each other to firmly entrap a waistband of a garment, the resilience of the arms acting to maintain the waistband under tension.

According to the present invention, the hanger for articles of apparel has downwardly extending fingers that extend substantially parallel to each other, and also parallel to the center line of the hanger. An upper portion of the hanger providing a bridge between the respective fingers is formed for it to be dominantly rigid, and secondarily flexible in a plane that includes the center line of the hanger. In an unstressed condition of the hanger, the fingers converge at a small angle of inclination upwardly towards the upper portion of the hanger.

At their outer ends, the respective arms of the hanger are extend downwardly in outwardly curved

portions, the distance between the outer edges of the downwardly extending portions being greater than that of the distance between the outer ends of the bridging portion.

By constructing the hanger in this manner, the following beneficial effects occur during assembly of the article of clothing onto the hanger, which is done firstly by looping one side portion of the waistband around an appropriate one of the downwardly extending fingers, and by then passing it over the end of the hanger and stretching it towards the opposite end of the hanger.

This stretching motion produces the beneficial result of moving the downward extension of the hanger at one end thereof towards the center line of the hanger, which in turn, results in stressing of that portion of the hanger supporting the downward extension, and, flexure of that arm of the hanger in a direction to cause the respective fingers to move towards each other, for them to securely entrap that portion of the waistband that is looped around one of those fingers.

The garment is then stretched over the opposite end of the hanger, and, the downwardly extending portion is pulled outwardly to a small extent, thus opening the gaps between the respective fingers of the other arm of the hanger, and, permitting the easy looping of the waistband over a selected one of the fingers of that arm.

The downward extension is then released, allowing that downward extension to move towards the opposite downward extension, this in turn causing the fingers adjacent that downward extension also to move towards each other, and, to securely entrap the waistband on the selected finger.

The garment can then be smoothed on the hanger, at which point it has become subtended between the downwardly extending portions in a tensioned condition, thus presenting a flattering appearance to the prospective purchaser of what the garment would appear like on the purchaser's torso.

This spring-like action of the hanger acts to firmly attach the garment to the hanger in the substantial absence of localized stretching of the fabric of the garment. The fingers themselves preferably are of greater length than the width of a waistband elastic of the garment to be supported.

DESCRIPTION OF THE DRAWINGS

Preferred embodiments of the present invention will now be described with reference to the accompanying drawings, in which:

Fig. 1 is a front elevation of one form of the hanger of the invention;

Fig. 2 is a rear elevation of the hanger of Fig. 1 showing a garment attached to that hanger;

Fig. 3 is a section taken on the line 33 of Fig. 2; and

Fig. 4 is a front elevation of another preferred embodiment of the hanger of the present invention;

DETAILED DESCRIPTION OF THE DRAWINGS

Referring now to Figs. 1, 2 and 3, the hanger of the invention is indicated generally at 10, the hanger having a central body portion 12 which is utilized to indicate the size of the garment that is surmounted by a hook 14 by means of which the hanger can be hung from a display rack. Conveniently, a display panel 16 is formed integrally with the hook 14, thus providing for the convenient display of the manufacturer's logo.

Extending on opposite sides of the central body 12, and in co-planar relationship with the central body 12, are arms 18 and 20 which are specifically formed for them to be of controlled flexibility in the said medial plane.

Preferably, the entire hanger structure is reinforced against displacement out of the medial plane by a continuous beating 22 that extends throughout the entire periphery of the hanger, the central body 12 and the arms 18 and 20 then being formed of relatively thin cross-section, in order to effect weight and cost economies in the manufacture of the hanger. This is illustrated in Fig. 3 of the drawings, which shows a cross-section through the hanger.

The arms 18 and 20 terminate at their outer ends in relatively inflexible downwardly extending portions 24 and 26, the arms 18 and 20 each including downwardly extending fingers 28 that are spaced inwardly equidistantly along the length of the respective arms, and, which define slots that terminate in close proximity to the upper edges of the arms 18 and 20, thus to provide weakened sections of the respective arms that permit controlled flexure of the respective arms in the medial plane of the hanger.

As will be observed in Fig. 1, in an unstressed condition of the arms 18 and 20, the respective arms diverge upwardly from the central body portion 12, the respective fingers extending substantially perpendicular to the respective arms 18 and 20, thus to provide slots between the respective arms that converge slightly in an upward direction.

As will be appreciated, flexure of the respective arms 18 and 20 in a downwards direction, will in turn cause the fingers 28 to move towards parallelism with each other, in which condition the respective slots 30 extend parallel to one another, the upwards convergence of those slots having been eliminated by flexure of the respective arms.

The slots 30 preferably are of a width that will permit multiple layers of cloth, such as exist in a waistband of a garment, to be pushed upwardly into one of the slots, the waistband during that movement being compressively held as it moves upwards in the slot,

this resulting in a greater pinching effect by the associated pair of fingers 28 at the upper end of the slot than exists at the lower end of the slot.

However, if the respective arms are then flexed downwardly, the fingers 28 move into parallelism with each other, this in turn decreasing the angle of upwards convergence of the slots, and in turn acting to distribute the pinching effect of the fingers throughout the entire length of the fingers. In this manner, the waistband is gently but firmly held, and this in the total absence of any hooks, projections or other enlargements formed on the edges of the fingers that extend in the said medial plane of the hanger.

The manner in which the arms 18 and 20 are flexed downwardly will now be described with reference to Figs. 2 and 3 of the drawings, Fig. 2 illustrating the hanger when properly "tensioned", the arms 18 and 20 having moved into axial alignment with each other, and, the fingers 28 having moved into substantial parallelism with each other. In Fig. 2, a garment is indicated generally at 32, the garment having a waistband 34, that, with the garment with flattened condition has been threaded over one of the fingers 28 of each of the arms 18 and 20, in the manner now described with reference to Fig. 3.

Firstly, with the garment in a neatly flattened condition, the waistband 34a at one edge of the flattened garment, is passed over one of the fingers of the arm 18, so that the finger becomes positioned within the waistband. The waistband is then stretched laterally around the end member 24, and, the waistband is then stretched across the front of the hanger and is then passed around the end member 26 of the arm 20. The waistband is then passed upwardly over one of the fingers 28 associated with the arm 20, as is indicated at 34b, and, the garment is then smoothed by hand ready for hanging in a display rack.

The stretching of the waistband across the end members 24 and 26 produces a force that moves those end members towards each other for their outer edges to move into parallelism, and, in so doing, causes downwards flexure of the associated arm, that movement in turn resulting in movement of the fingers 28 into parallelism with each other, and, gripping of the waistband throughout its entire width in such a manner as to securely hold the bight of the waistband firmly secured around the selected finger 28.

Thus, even relatively rough handling of the hanger with a garment supported thereon does not result in dislodgement of the garment from the hanger the garment being held by the hanger in a secure manner that readily permits its display on a display rack, and, as will occur, handling of the garment by a prospective customer when the garment is so displayed.

This securement of the garment to the hanger, unlike prior proposals, does not require knobs or hooks or other enlargements to be provided on the ends of the fingers 28. Thus, setting of the fabric of the garment while it is on the hanger, and, an unsightly appearance of that garment when it is removed from the hanger is virtually eliminated. The hanger illustrated in Figs. 1, 2 and 3, while being of utility in hanging any form of garment having a stretchable waistband, does not provide support for the folded lateral edges of the garment. Such support can readily be provided, as illustrated in Fig. 4, by providing downward extensions of the end members 24 and 26, as illustrated at 36 and 38 in Fig. 4. Such downward extensions have the beneficial effects of amplifying the forces exerted on the arms 18 and 20 that act to bend those arms downwardly into axial alignment with each other, and, additionally, can provide a pleasing contour to the hung garment simulating that of the human form. Further, the downward extensions 36 and 38 act to tension the front panel of the garment for it to provide a flat and cosmetically acceptable appearance.

The hanger of the invention can be manufactured from any stiff but not brittle plastics material, and, conveniently can be manufactured by an injection molding process, such as is well known in the art. Thus, to provide a versatile and inexpensive hanger. If desired, the hanger of the invention equally well could be manufactured from metal by a stamping process, in which event the peripherally extending ribs 22 could be replaced by appropriate channeling of the metal, relatively soft metals such as brass or aluminum being contemplated for such use.

Claims

1. In a garment hanger of the type having a central body having oppositely extending arms and means for suspending said body from a support member, at least said central body and said arms being arranged in a medial plane and in substantially coplanar relationship;

the improvement comprising:

said central body being relatively rigid and inflexible, at least in said medial plane;

said arms each being of controlled flexibility in said medial plane, and each extending from said body in upwardly divergent relationship relative to a vertical center line passing through said central body;

said arms each comprising a continuous beam portion terminating in a downwardly extending end portion, and plural spaced fingers each extending downwardly from said beam portions at positions intermediate said central body portion and said downwardly extending end portion, said respective fingers defining upwardly convergent slots when said hanger is an unstressed condition;

whereby, by placing a loop of a waistband of a garment having a stretchable waistband upwardly around one of said fingers of one of said arms, then stretching said waistband around said respective end portions of said respective arms and across a frontal face of said hanger, and by then placing a loop of said waistband upwardly around one of said fingers of the other of said arms, said end portions are placed under compressive forces acting inwardly of said respective arms and towards said center line, said compressive forces in turn acting to flex said respective arms downwardly towards axial alignment of said arms, thus moving the free ends of said respective fingers towards the next adjacent finger and decreasing the angle of convergence of said slots, thus to trap said waistband in the associated said slots, the force stored in said arms acting to maintain said waist band under tension.

2. The hanger of claim 1, in which at least said arms, said end portions, and said fingers each terminate at their respective edges in edge reinforcements extending transverse to said medial plane, said edge reinforcements being formed integrally with the associated said arm, said end portion, and said fingers, and reinforcing those members against displacement out of said medial plane.

3. The hanger of claim 2, in which said respective end portions are comprised of downwardly extending fingers having a length considerably in excess of that of said first.-mentioned fingers.

4. The hanger of claim 3, in which said end portions extend in outwardly divergent relation relative to said center line.

5. The hanger of claim 4, in which said fingers comprising said end portions are curved outwardly relative to said center line.

6. The hanger of claim 1, in which said upwardly convergent slots are configured to exert a compressive force on the free edge of a said waistband during insertion of said waistband into said slots, and then to exert a compressive force throughout the entire width of said waistband upon downwards flexure of said arms under the influence of the compressive forces applied to said end portions.

7. The hanger of claim 6, in which said side edges of said respective fingers each are axially straight, whereby, in the stressed condition of said hanger, to exert a substantially even gripping pressure on said waistband throughout the entire transverse width of said waistband.

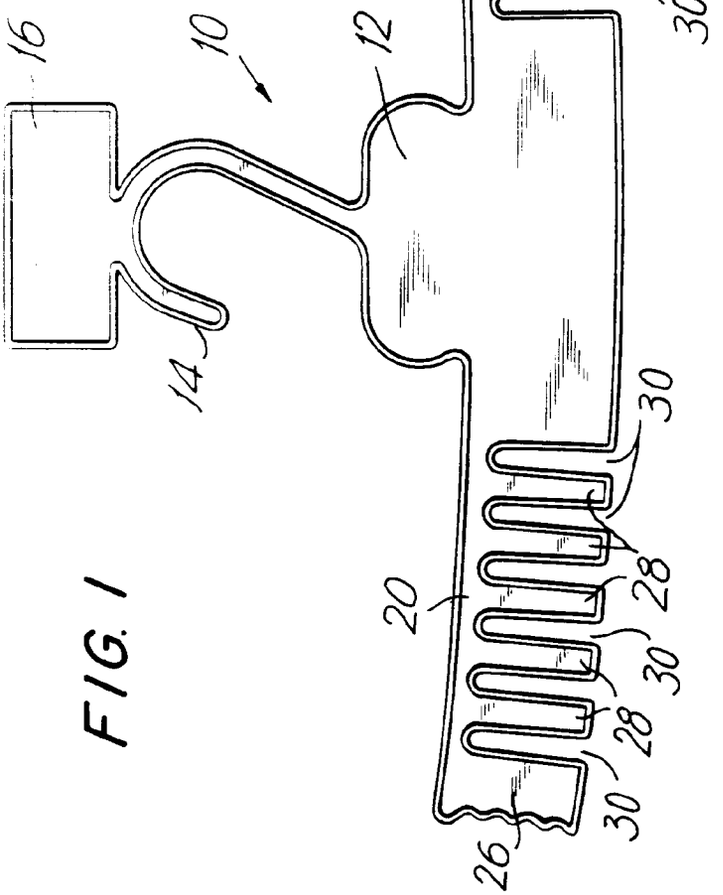

FIG. 1

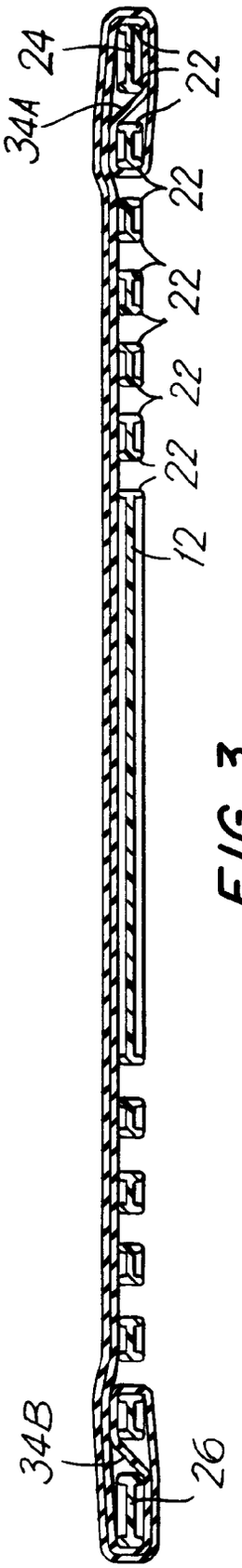

FIG. 3

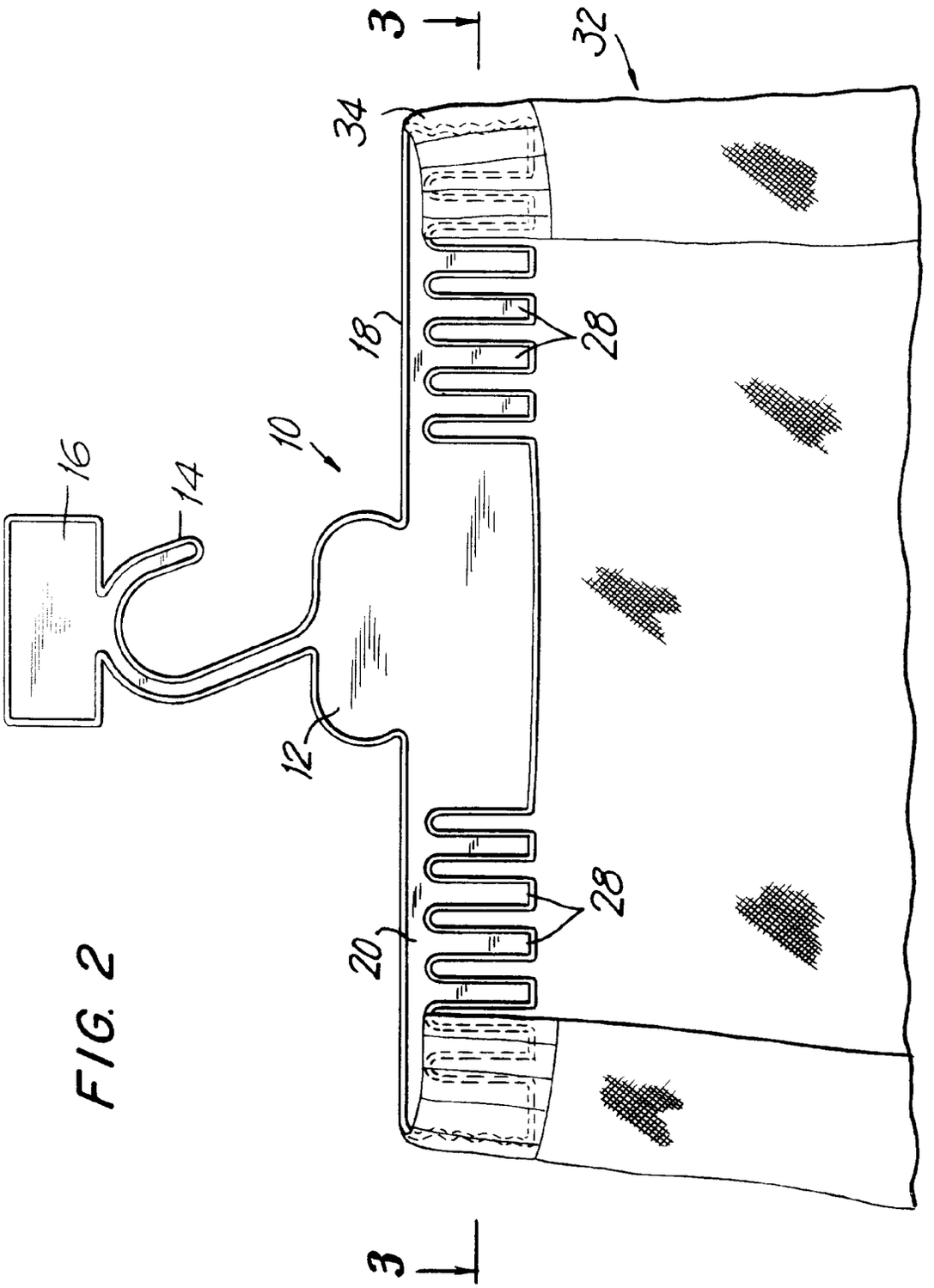

FIG. 2

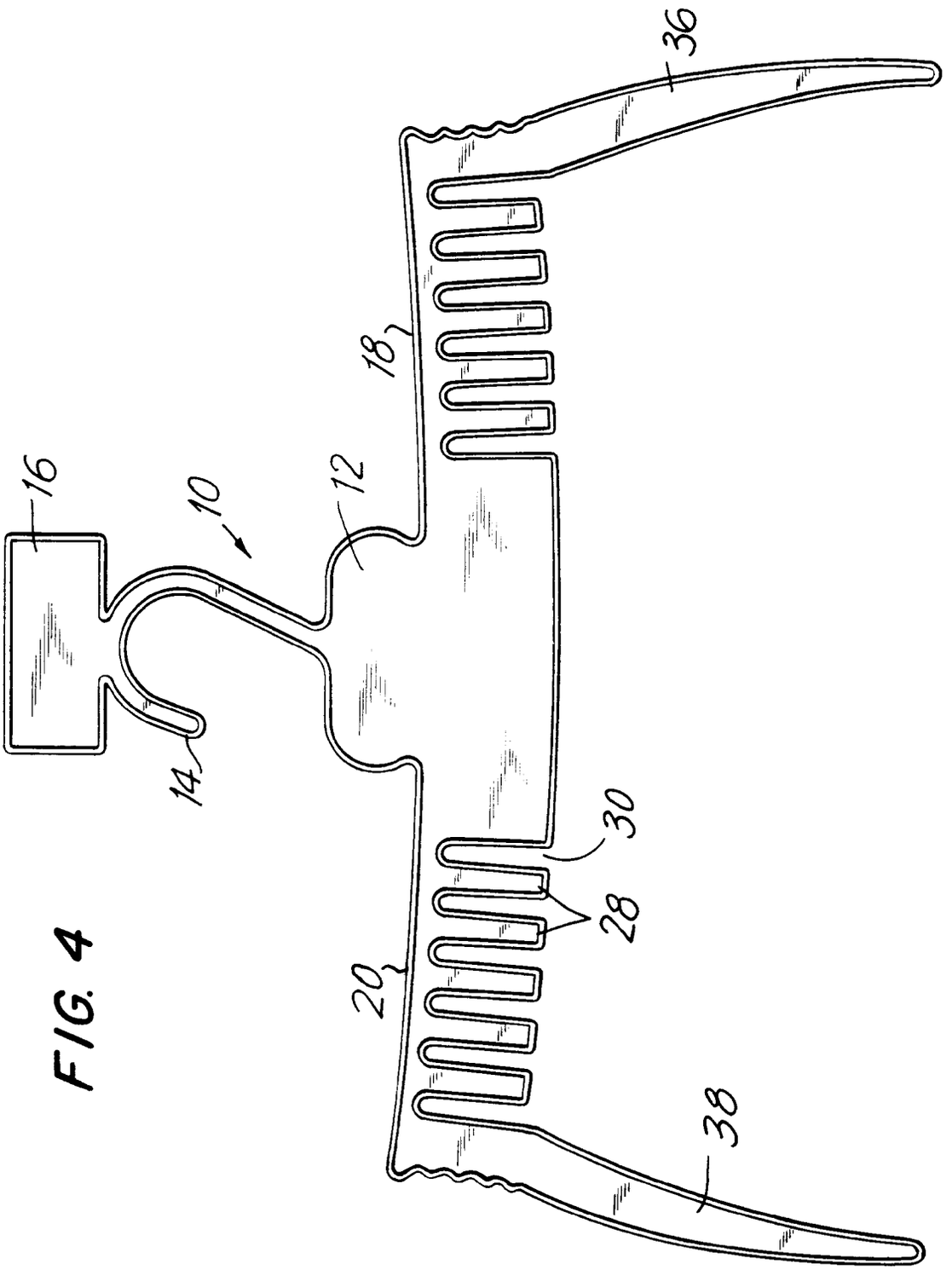

FIG. 4

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 93 30 0580

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
D,X	US-A-4 703 878 (LOUW) * column 3, line 1 - column 4, line 1; figures *	1,6,7	A47G25/50
D,A		3-5	
D,X	US-A-4 744 496 (BLANCHARD ET AL) * column 2, line 21 - column 4, line 19; figures *	1,3,4	
A	EP-A-0 427 552 (KARNER & COMPANY AKTIEBOLAG) * column 4, line 51 - column 5, line 3; figures 1,4 *	2	
A	FR-A-2 066 138 (CENNI) * page 1, line 23 - page 1, line 26; figures *	5	
A	DE-A-1 753 125 (HUBBERT ET AL)		TECHNICAL FIELDS SEARCHED (Int. Cl.5)
A	US-A-4 793 531 (BLANCHARD ET AL)		A47G A47J
A	US-A-2 164 525 (KEYS)		

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	11 MAY 1993	VISTISEN L.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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