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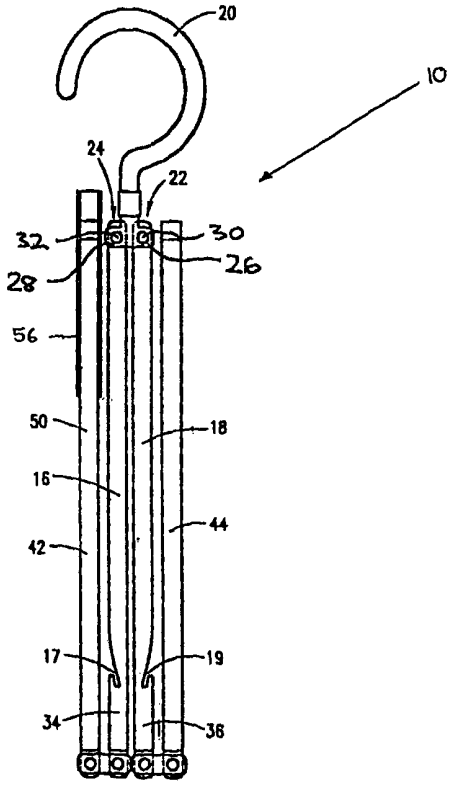
(54) Title: COLLAPSIBLE CLOTHES HANGER

(57) Abstract

A collapsible hanger (10) including a hub, a hook (20) coupled to the hub, a pair of upper branches (16, 18) which are pivotally connected to the hub portion and which are adapted in use to extend in substantially opposite directions from the hub, a pair of lower branches (42, 44) which are pivotally connected to distal ends of the upper branches (16, 18), free ends of the lower branches (42, 44) being configured to permit inter–connection between the free ends of the lower branches (42, 44) in an operative condition and a retaining member (56) provided on one of the lower branches (42, 44) to retain the lower branches (42, 44) in the inter–connected operative condition, the arrangement of the hub and upper (16, 18) and lower branches (42, 44) being configured to permit the upper (16, 18) and lower branches (42, 44) to be arranged in a side by side relationship relative to each other in an inoperative collapsed condition wherein the width of the branches (16, 18, 42, 44) in the collapsed condition conforms substantially to the width of the hook (20).



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Collapsible Clothes Hanger

This invention relates to a clothes hanger. In particular the invention relates to a collapsible or foldable clothes hanger.

The inventor is aware that often when travelling it is desirable to hang up ones clothes when the destination is reached, however often no hangers are available and conventional hangers are unsuitable to be taken with due to their space requirements.

According to an aspect of the invention there is provided a collapsible hanger including:-

a hub;

a hook coupled to the hub;

a pair of upper branches which are pivotally connected to the hub portion and which are adapted in use to extend in substantially opposite directions from the hub;

a pair of lower branches which are pivotally connected to distal ends of the upper branches, free ends of the lower branches being configured to permit inter-connection between the free ends of the lower branches in an operative condition; and

a retaining member provided on one of the lower branches to retain the lower branches in the inter-connected operative condition, the arrangement of the hub and upper and lower branches being configured to permit the upper and lower branches to be arranged in a side by side

relationship relative to each other in an inoperative collapsed condition wherein the width of the branches in the collapsed condition conforms substantially to the width of the hook.

A connector means may be provided to maintain pivotal inter-connection between the distal ends of the lower branches in the operative and inoperative conditions.

The upper and lower branches may be configured to lie in substantially the same plane in collapsed condition.

Alternatively, the upper branches may be configured to lie between the lower branches in the inoperative collapsed condition. The lower branches may be configured to lie between the upper branches in the collapsed condition.

The hook may be rotatably or pivotally coupled to the hub.

The retaining member may include a sleeve which is slideably mounted on one of the lower branches for strengthening a strut formed by the lower branches in the operative condition, the sleeve preferably being slideable between an inoperative position on the said one lower member and a retaining position wherein the sleeve spans the distal ends of both lower branches.

A stopper formation may be provided on the other lower branch to enable the retaining member to be arranged substantially centrally the length of

the lower branches in the operative retaining position.

Slots may be provided in the upper branches to improve the strength and/or rigidity of the branches by increasing the second moment of inertia in the manner of an I-beam. The slots may further improve the moulding characteristics of the branches.

Further hanging formations may also be provided on the branches. The hanging formations are defined by recesses in the upper branches towards their said distal ends.

The hanger and components thereof may be formed from any suitable plastics material.

The pivotal inter-connection between the branches and hub may be provided by means of rivets or pin formations which typically are configured to be flush with the sides of the branches and hub. The rivets or pins may be formed from any suitable synthetic, plastics or metallic material.

The lower branches may be elongate members which are configured to form a strut between the upper branches or clothes supporting shoulders when the clothes hanger is in an unfolded or operative condition.

The said connecting means may include a pair of cooperating formations provided on the lower branches for cooperating to secure said lower branches together to form the strut.

The clothes supporting shoulders may be pivotally connected to each other either directly or via a link member. The pivotal connection may be by means of a pin and socket arrangement, however, any other arrangement, such as a crimped portion on the elongate members, a hinge arrangement, or the like.

The hook or eye may form part of one or more of the elongate members, however, the hook or eye may be in the form of a further member connected or connectable to the clothes supporting shoulders.

Typically the foldable or collapsible clothes hanger is made from a substantially rigid material, such as a polymer or a metal, however any suitable material capable of supporting the weight of the clothes to be hung thereon can be used.

An elongate pouch may be provided for storing a plurality of hangers when in a disassembled, folded or collapsed condition, with the branches in side by side configuration.

The invention will now be described, by way of non-limiting examples, with reference to the following diagrammatic drawings.

In the drawings:-

Figure 1 shows, a side view of a first embodiment of a collapsible hanger in a folded or collapsed condition, broadly in accordance with the invention;

Figure 2 shows, a side view of the hanger of Figure 1 in an operative assembled condition;

Figure 3 shows, in detail revealing section, the connection portion of the hanger of Figures 1 and 2;

Figure 4 shows, a side view of a second embodiment of a collapsible hanger in accordance with the invention;

Figure 5 shows, a side view of the hanger of Figure 4 in a partially operative assembled condition;

Figure 6 shows, a side view of the hanger of Figure 4 in a fully operative assembled condition;

Figures 7 and 8 show, enlarged plan and end views of a pin of the hanger shown in Figure 4;

Figures 9 and 10 show, enlarged side and plan views of a hook portion of the hanger of Figure 4;

Figures 11 and 12 show, enlarged side and plan views of an upper branch of the hanger of Figure 4;

Figures 13 and 14 show, enlarged side and plan views of a lower branch of the hanger of Figure 4; and

Figures 15 and 16 show, enlarged side and plan views of a connector of the hanger of Figure 4.

Referring to Figures 1 to 3, reference numeral 10 generally indicates a

foldable or collapsible hanger, broadly in accordance with the invention.

The foldable or collapsible hanger 10 includes two elongate upper branches 12, 14 having substantially rigid portions 16, 18 for forming clothes supporting shoulders of the clothes hanger 10. The shoulders 16, 18 have moulded hook portions 17, 19 for hanging ladies clothes and the like, therefrom.

The hanger 10 further has attachment means, in the form of a hook 20, for attaching the clothes hanger 10 to a formation (not shown) on which the clothes hanger is to be hung. The branches 12, 14 and the hook 20 are provided with means, in the form of rivets 30, 32 passing through sockets 22, 24 provided in each of the members 12, 14 and in corresponding positions 26, 28 on the hook, for permitting the clothes supporting shoulders to be folded so that they are in substantially side by side arrangement over a major portion of their lengths (Figure 1). The hook 20 and the members 12, 14 are recessed to about half of their thickness at the socket 22, 24, 26, 28 portions such that, when the members 12, 14 are riveted to the hook 20, the thickness of the hanger 10 is substantially that of the elongate members 12,14.

At free ends 34, 36 of the members 12, 14 are provided link members 38, 40 for connecting each of the upper branches 12, 14 to lower branches 42, 44, by means of socket and rivet arrangements 46, 48, similar to that connecting the hook 20 to the members 12, 14 at the other end.

The lower branches 42, 44 are configured to form a strut 50 between the

upper branches or supporting shoulders 16, 18 when the clothes hanger 10 is in an unfolded or operative assembled or erected condition (Figure 2). The lower branches 42, 44 are recessed at their free ends 43, 45 to form connecting formations 52, 54 for connecting to each other to form the strut 50. The connecting formations are in the form of a press stud type arrangement having a socket 58 provided on one of the members and the stud 60 on the other of the two members. A retaining means in the form of a sleeve 56, approximately a third of the length of the strut 50, is slideable over the connecting formations 52, 54 for strengthening the strut 50.

Referring now to the second embodiment as shown in Figures 4 to 16, reference numeral 100 generally designates a collapsible hanger in accordance with the invention. Like reference numerals used in the embodiments shall refer to like parts unless the contrary appears from the context.

The hanger 100 includes a hub 102 and a hook 20 coupled thereto via complementary male and female socket portions 104, 106 respectively. A pair of upper branches 108 connected pivotally to the hub 102 via rivets 110 in complementary apertures 112. A pair of lower branches 114 are pivotally connected to distal ends of the upper branches 108, the proximal ends of the lower branches 114 being in turn pivotally interconnected via a connector 116 and which is configured to permit the lower branches to lie in a side-by-side relationship between the upper branches 108 in the collapsed condition as shown in Figure 4.

A retaining means in the form of a sleeve 56 is slideably mounted on lower branch 114B and which an operative erect or assembled condition as shown in Figure 6 is slideable between a first position as sown in Figure 5 and a second position as shown in Figure 6 wherein the sleeve spans the distal ends of the lower branches 114 thereby to retain the branches 114 in their locked operative condition. A stopper formation 118 is provided on the lower branch 114A to enable the sleeve 56 to be laid substantially centrally the length of the lower branches in operative retaining condition.

Stepped shoulder portions 120, 122 and 124, 126 are provided on the upper and lower branches 108 and 114 respectively to permit the branches 108 and 114 to be arranged in substantially the same plane in their collapsed condition. In particular, the shoulder formations 124 and 122 are configured to be interconnected. Furthermore, shoulder formations 128 are provided on the hub 112 to receive and permit interconnection of the shoulder portions 120 of the upper branches 108. The shoulder portions 126 are configured to be interconnected via rivets 110 to the connector 116.

Slots 130 are provided in the upper branches 108 to facilitate moulding and increase the strength and reduce the weight of the hanger.

The collapsible hangers 10 and 100 are made from a substantially rigid material, in this example, a polymeric material viz. Polypropylene. However, it will be clear to those in the art, that any suitable material capable of supporting the weight of the clothes to be hung thereon can be used, for example, metal

and/or wood.

In one example, as shown in Figures 1 and 2, the members 12, 14 are substantially oval in cross-section being approximately 10 mm by 15 mm. The members 42, 44 have a cross-section of approximately 10 mm by 10 mm but could equally be round having a diameter of 10 mm. The inventor believes however, that in other embodiments made of other materials, the dimensions may differ.

The inventor believes, that it is an advantage of the invention, as illustrated, that a clothes hanger is provided which folds away to form an elongate, slim, item which may be carried around in a pocket or briefcase while utilising storage space optimally. The inventor further believes, that a further advantage of the invention lies in the simple and cost-effective construction of the hanger.

CLAIMS

1. Collapsible hanger including:-

a hub;

a hook coupled to the hub;

a pair of upper branches which are pivotally connected to the hub portion and which are adapted in use to extend in substantially opposite directions from the hub;

a pair of lower branches which are pivotally connected to distal ends of the upper branches, free ends of the lower branches being configured to permit inter-connection between the free ends of the lower branches in an operative condition; and

a retaining member provided on one of the lower branches to retain the lower branches in the inter-connected operative condition, the arrangement of the hub and upper and lower branches being configured to permit the upper and lower branches to be arranged in a side by side relationship relative to each other in an inoperative collapsed condition wherein the width of the branches in the collapsed condition conforms substantially to the width of the hook.

2. A collapsible hanger as claimed in claim 1 the lower branches are configured to lie between the upper branches in the collapsed condition.

3. A collapsible hanger as claimed in any one of the preceding claims wherein a connector means is provided to maintain pivotal inter-connection between the distal ends of the lower branches in the operative and inoperative conditions.

4. A collapsible hanger as claimed in any one of the preceding claims wherein the upper and lower branches are configured to lie in substantially the same plane in collapsed condition.

5. A collapsible hanger as claimed in claim 1 wherein the upper branches are configured to lie between the lower branches in the inoperative collapsed condition.

6. A collapsible hanger as claimed in any one of the preceding claims wherein the hook is rotatably or pivotally coupled to the hub.

7. A collapsible hanger as claimed in any one of the preceding claims wherein the retaining member includes a sleeve which is slideably mounted on one of the lower branches, the sleeve being slideable between an inoperative position on the said one lower member and a retaining position wherein the sleeve spans the distal ends of both lower branches.

8. A collapsible hanger as claimed in any one of the preceding claims wherein a stopper formation is provided on the other lower branch to enable the retaining member to be arranged substantially centrally the length of the lower branches in the operative retaining position.

9. A collapsible hanger as claimed in any one of the preceding claims wherein slots may be provided in the upper branches.

10. A collapsible hanger as claimed in the preceding claims wherein further hanging formations are provided on the branches.

11. A collapsible hanger as claimed in claim 10 wherein the hanging formations are defined by recesses in the upper branches towards their said distal ends.

12. A collapsible hanger as claimed in any one of the preceding claims wherein the components thereof are formed from any suitable plastics material.

13. A collapsible hanger as claimed in any one of the preceding claims wherein the pivotal inter-connection between the branches and hub are provided by means of rivets or pin formations which typically are configured to be flush with the sides of the branches and hub.

14. A collapsible hanger according to the invention, as hereinbefore generally described.

15. A collapsible hanger as specifically described with reference to or as illustrated in the accompanying drawings.

16. A collapsible hanger including any new and inventive integer or combination of integers, substantially as herein described.

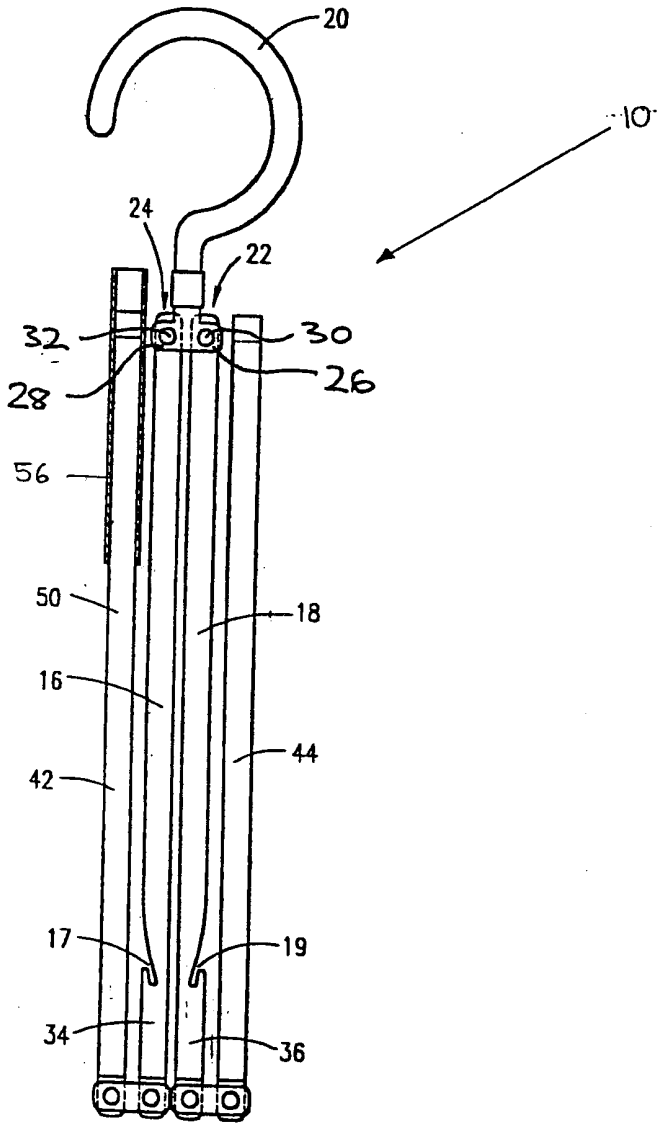

Fig. 1

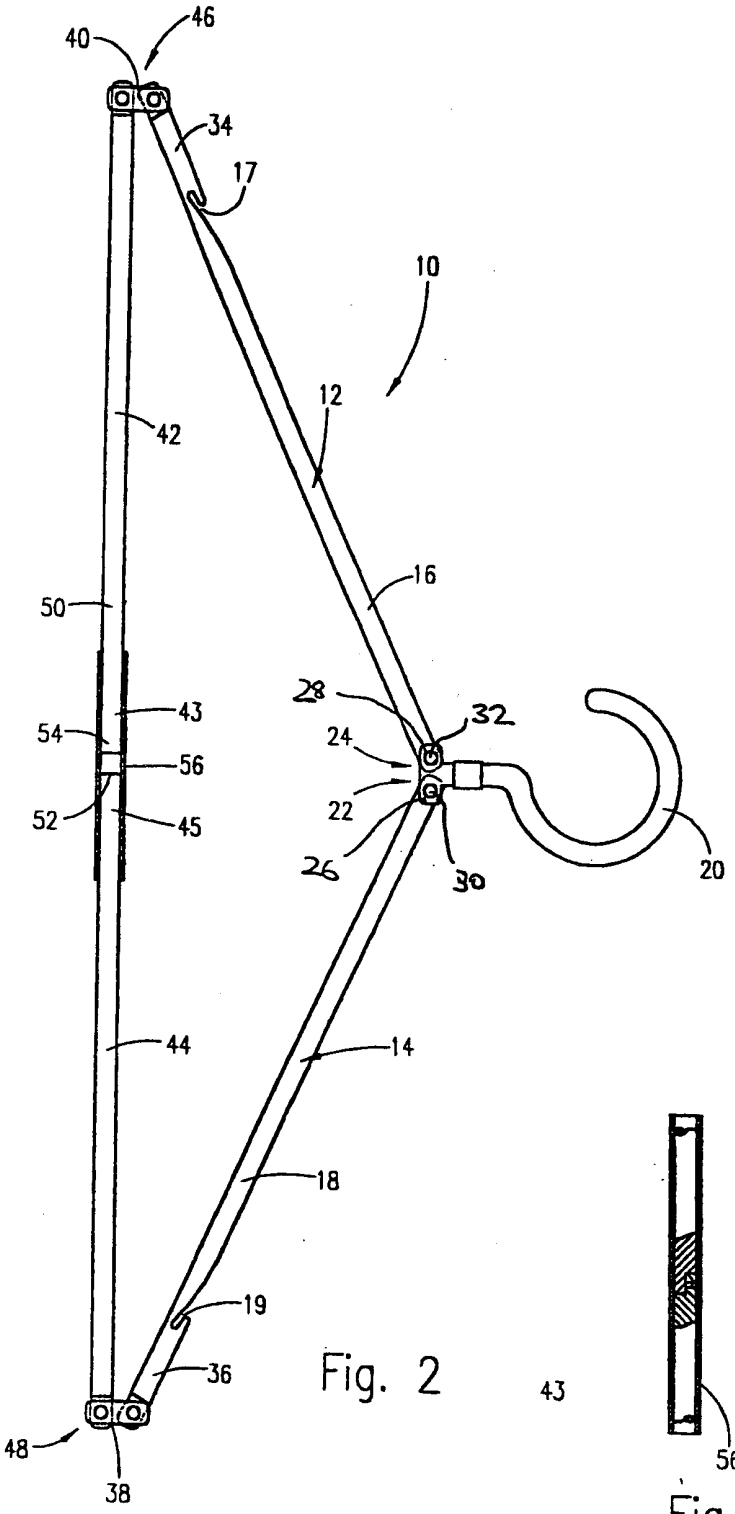
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Fig. 2

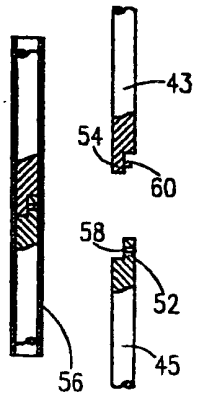
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Fig. 3

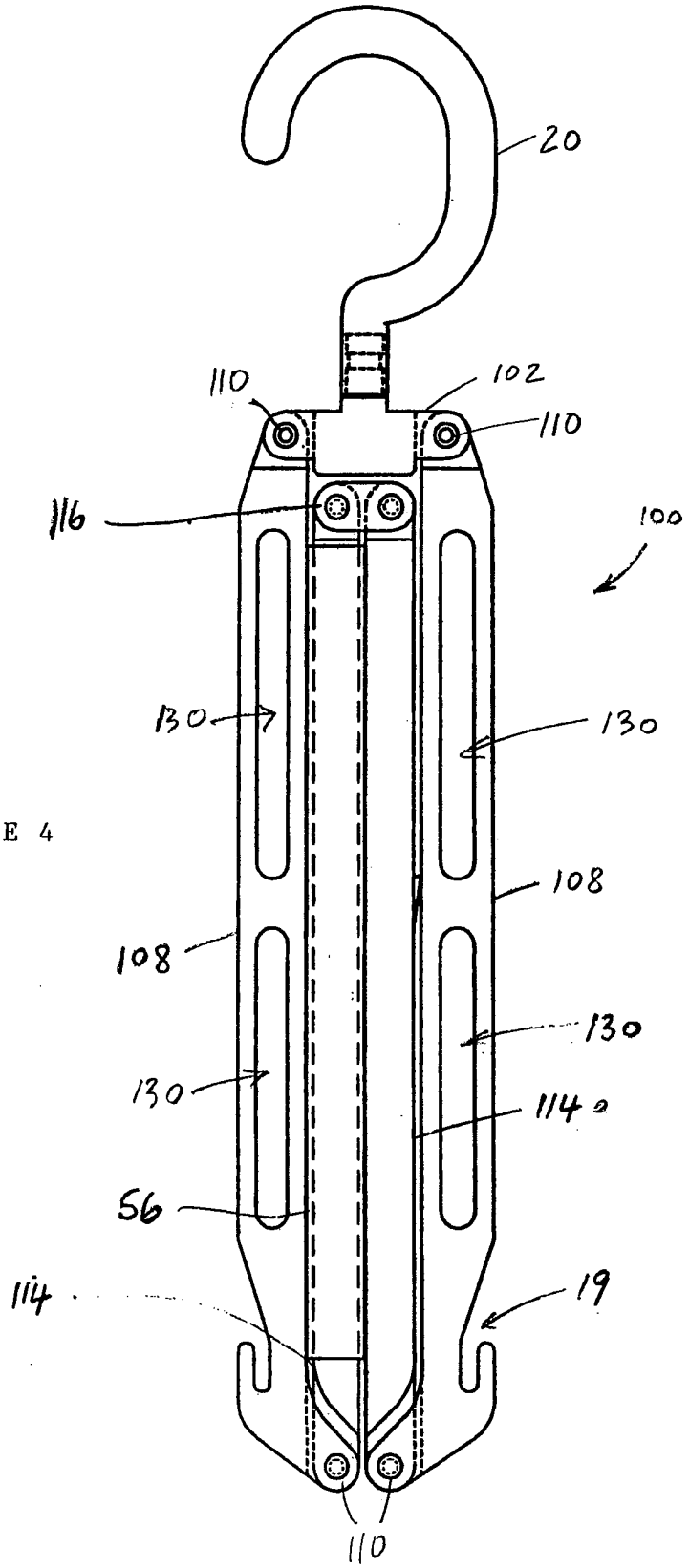

FIGURE 4

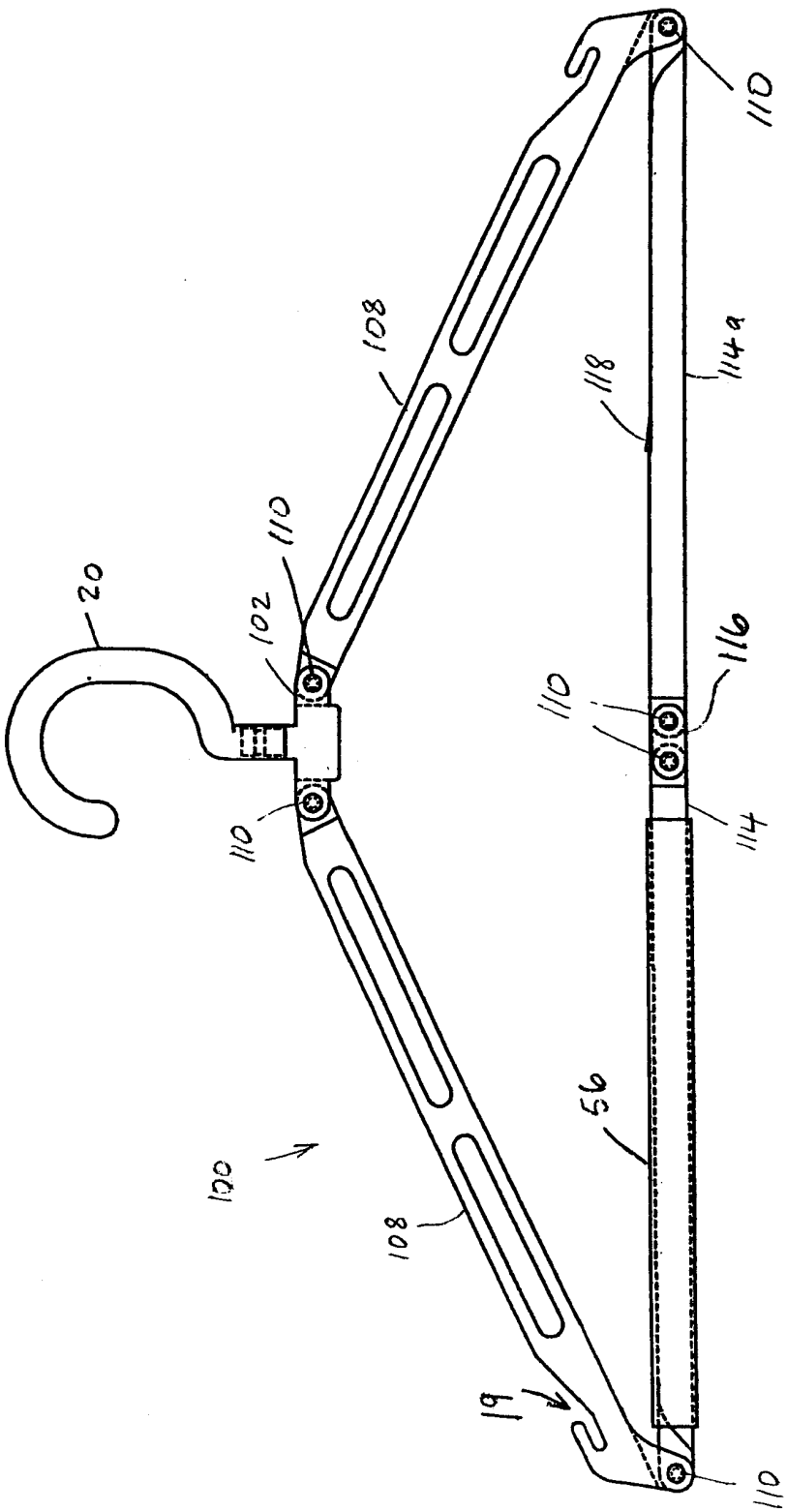

FIGURE 5

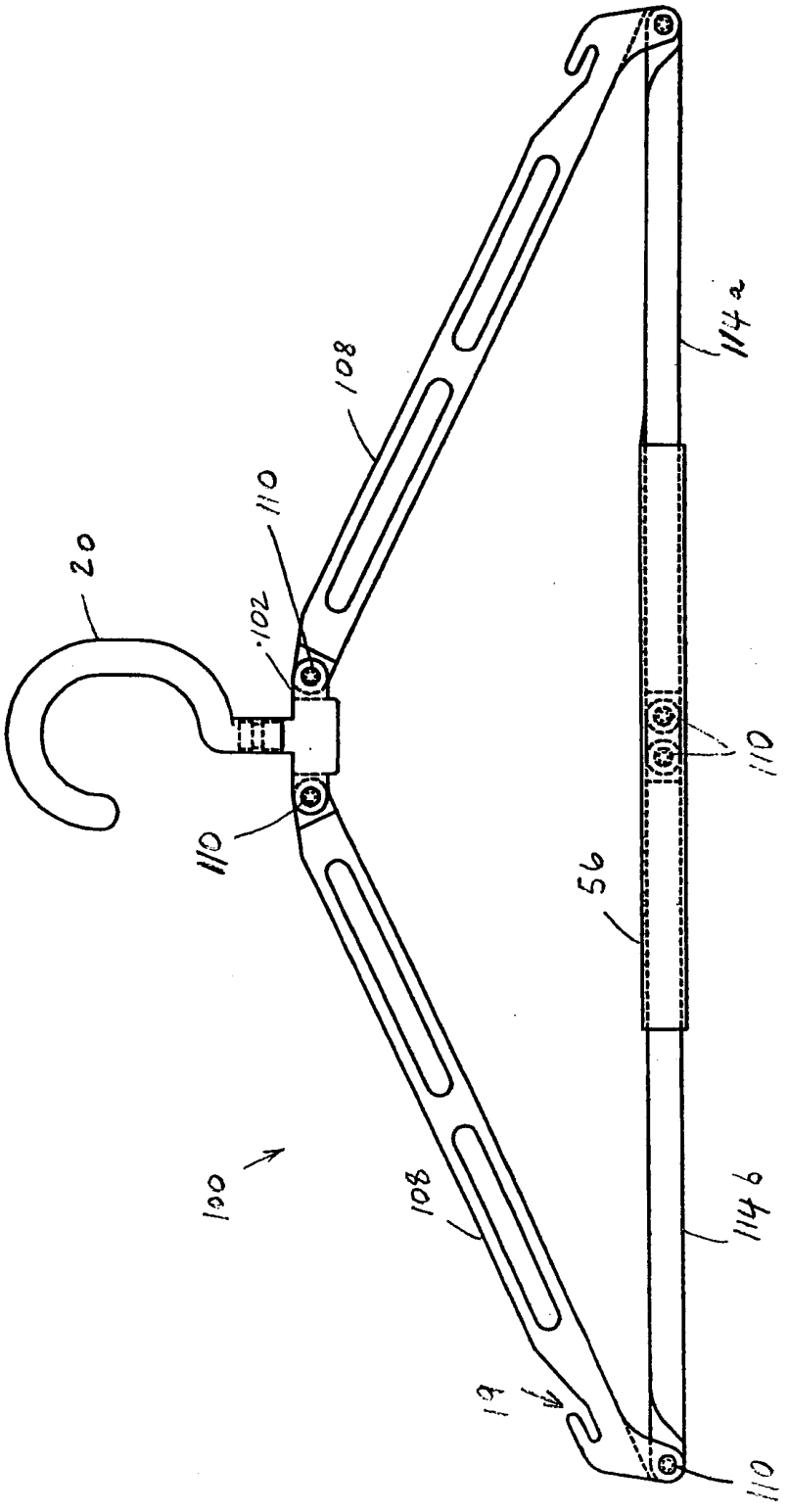

FIGURE 6

FIGURE 7

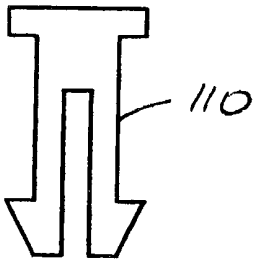

FIGURE 8

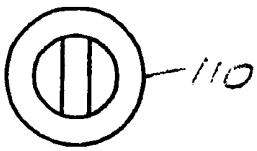

FIGURE 9

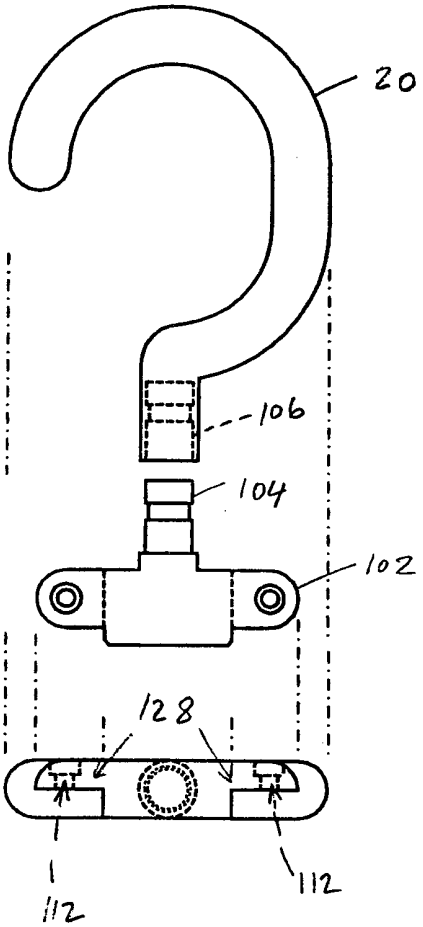

FIGURE 10

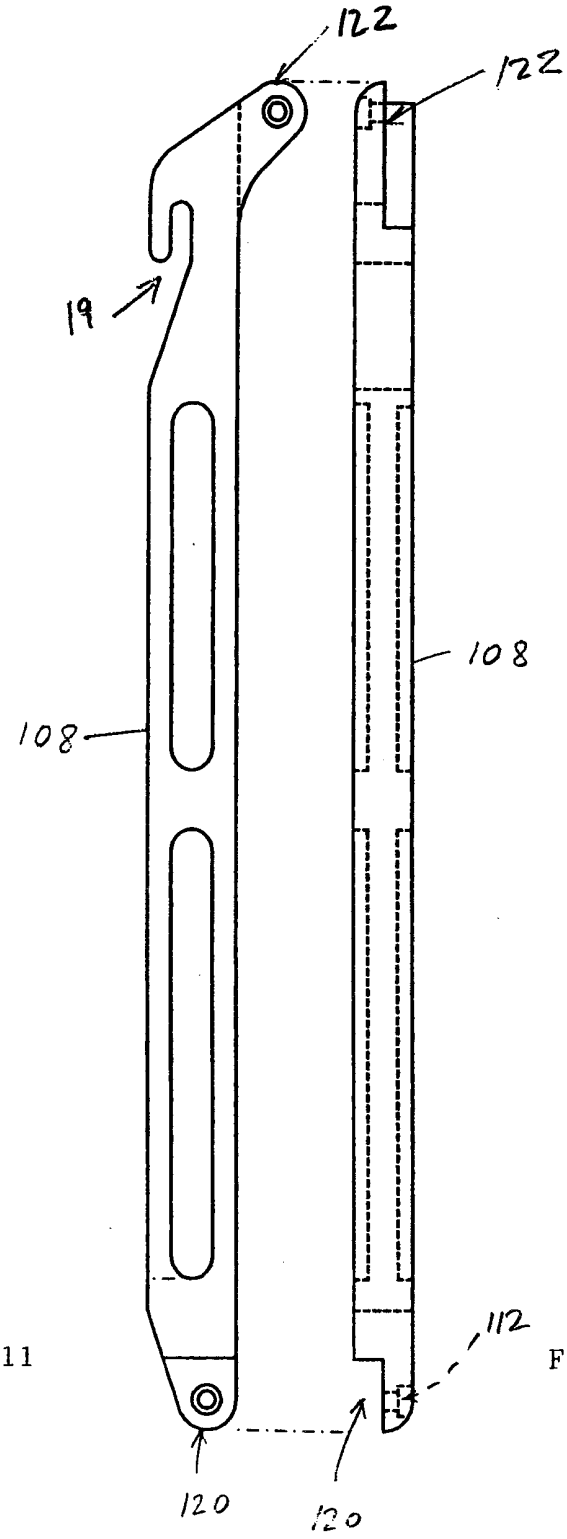

FIGURE 11

FIGURE 12

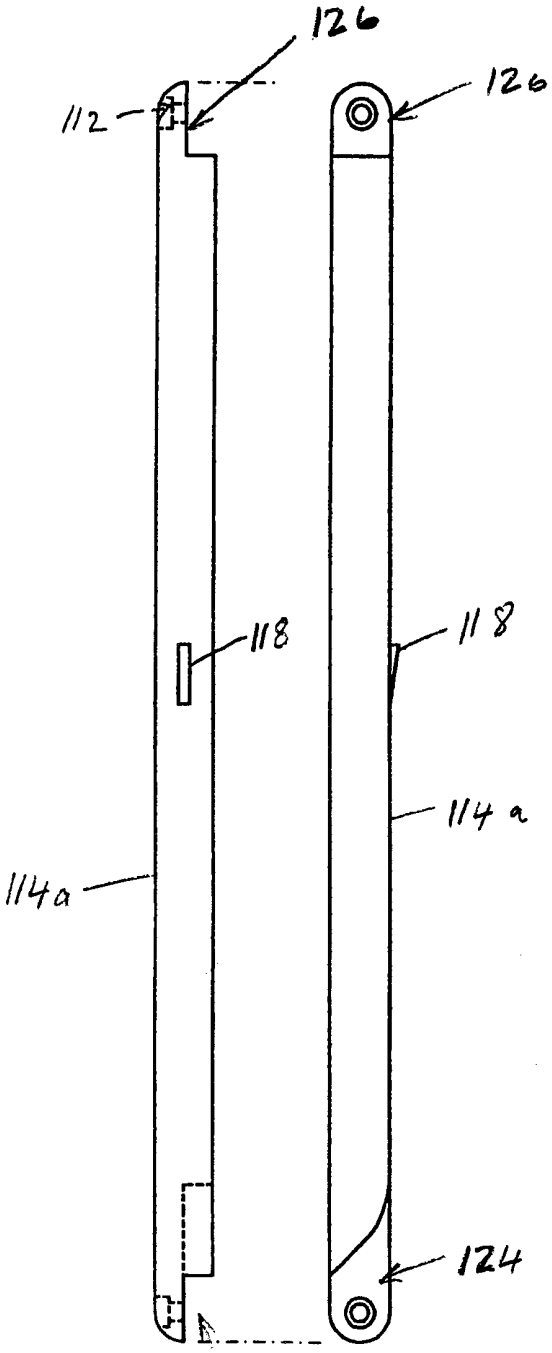

FIGURE 13

FIGURE 14

FIGURE 15

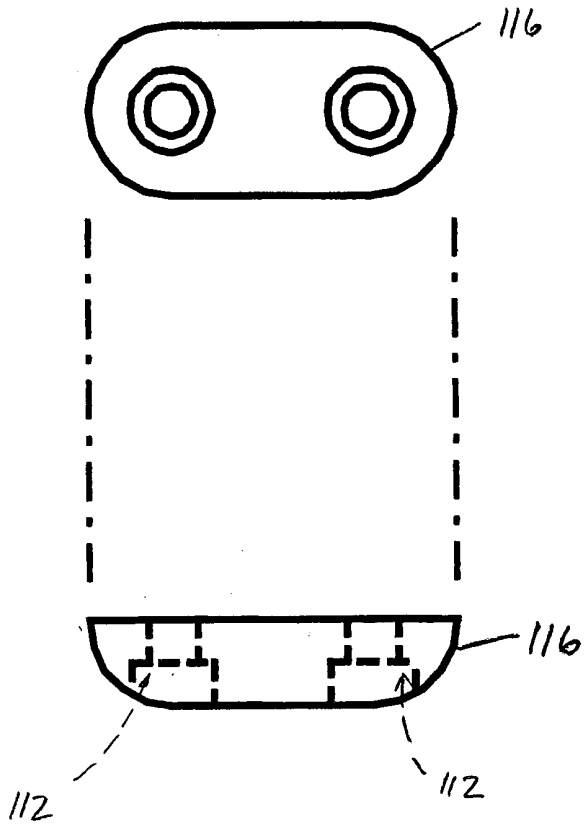

FIGURE 16

INTERNATIONAL SEARCH REPORT

Int. ional Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A47G25/40

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A47G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 611 469 A (POUBEAU) 29 September 1926 (1926-09-29) page 2, line 5 - line 10; figures ---	1-4,6,7, 12-16
X	US 5 044 534 A (HWANG) 3 September 1991 (1991-09-03) figures 4,5 ---	1,4-6, 12,14-16
X	US 2 232 249 A (LOSIN) 18 February 1941 (1941-02-18) page 1, right-hand column, line 37; figures 1,2 ---	1,2,4,7, 8,13-16
X	GB 583 354 A (ELSTON) 9 January 1947 (1947-01-09) figures --- -/--	1-4,6, 9-11, 13-16

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA	Authorized officer
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
X	FR 1 002 069 A (THUILLIER) 3 March 1952 (1952-03-03) figure 2	1,4,5, 14-16
A	US 3 531 028 A (VAZQUEZ) 29 September 1970 (1970-09-29) figure 4	9-12

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INTERNATIONAL SEARCH REPORT

information on patent family members

Inte onal Application No
PCT/ZA 99/00086

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 611469	A	29-09-1926	NONE	
US 5044534	A	03-09-1991	NONE	
US 2232249	A	18-02-1941	NONE	
GB 583354	A		NONE	
FR 1002069	A	04-03-1952	NONE	
US 3531028	A	29-09-1970	NONE	