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(54) **Pivot assemblies for umbrella ribs.**

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Description

This invention relates to pivot assemblies for umbrella ribs or struts, such as at a notch or runner.

It is known for a notch or a runner member for an umbrella to be provided with pairs of lugs forming radial slots between which flattened ends of ribs or struts locate, the flattened ends and the lugs being provided with holes through which a wire is threaded to form pivot portions for the ribs or struts, and the ends of the wire being twisted together to secure it in place.

US 904349 (Moulton) discloses a two-part pivot assembly for a notch, where the two parts are held together by a separate spring arrangement in the shaft.

The object of the invention is to simplify the construction and fitting of the pivot assemblies for either notches or runners.

According to the present invention, a pivot assembly for umbrella ribs or struts of the kind having a knob end adjacent a flattened portion comprises a notch or runner in two parts capable of being held together by a locking means and affording in the locked state radial slits, each of which leads to a cavity, so that, in use, the ribs or struts can pivot while the respective knob end is held captive in the cavity, wherein one of the parts is an inner part having a tubular body portion with a bore for fitting closely on an umbrella shaft and an outward annular flange portion adjacent one end of the tubular body portion, the other end of which is divided to form at least two tongues, and the other part is an outer part having a sleeve portion fitting closely on the body portion of the inner part and having an outward annular flange portion engaging the flange portion of the inner part so as to form the cavity for each slit, the slits being provided in one of the flange portions, there being an abutment on the tongues of the inner part for engagement with the sleeve portion of the outer part to prevent them being separated after fitting on an umbrella shaft.

The knob ends of the ribs or struts held captive between the flange portions act as pivots for the ribs or struts, which are guided for swinging by the sliding fit of their flattened portions within the radial slits, from positions alongside the shaft to radial positions. Thus no separate pivot or pivots need to be formed and fitted.

Preferred embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is an axial section through a notch for an umbrella and in accordance with the invention, the section being taken from the line I-I of Figure 2;

Figure 2 is a plan view of the outer part of the notch shown in axial section in Figure 1;

Figure 3 is an axial section through a runner for an umbrella and in accordance with the invention, the section being taken from the line III-III of

Figure 4;

Figure 4 is an underneath plan view of the inner part of the runner shown in the axial section in Figure 3; and

Figure 5 is a cap or « ornament » for the top of the umbrella shaft and the notch.

In Figures 1 and 3 a pivot assembly 1 for umbrella ribs or struts 2 comprises a notch (Figure 1) or runner (Figure 3) formed by inner and outer parts 3, 4, the inner part 3 having a bore 5 for fitting closely on an umbrella shaft 6 (indicated in broken lines) and an outward annular flange portion 7 adjacent one end of a tubular body portion 8 the other end of which is divided to form two tongues 9, though more could be used, and the outer part (4) having a sleeve portion 10 fitting closely on the body portion 8 of the inner part 3 and having an outward annular flange portion 11 engaging the flange portion 7 of the inner part, one of the flange portions being provided with radial slits 12 each of which leads to a cavity 13 formed between the flange portions.

The ribs or struts 2 each have a knob end 14 adjacent a flattened portion 15 for sliding in one of the radial slits 12 with the knob end held captive in the cavity 13 (see also Figures 2 and 4 in which only one rib or strut 2 is shown for simplicity), there being an engagement between the tongues 9 of the inner part and the sleeve portion 10 of the outer part to prevent them being separated after fitting on to the umbrella shaft 6.

The knob ends 14 of the ribs or struts 2 held captive between the flange portions 7, 11 act as pivots for the ribs or struts, which are guided for swinging by their flattened portions 15 within the radial slits 12, from positions alongside the shaft 6 (as shown at the right of Figures 1 and 3) to radial positions (as shown at the left in those Figures).

In the notch (Figure 1) the radial slits 12 are formed in the flange portion 11 of the outer part 4 and individual cavities 13 for the knob ends 14 are formed by radiating pairs of webs 16 (see Figure 2) across an annular recess 17 in that flange portion. The flange portion 7 of the inner part 3 has a generally U-shaped radial cross-section (minimising material whilst maximising strength) with the base 18 of the U effectively closing the cavities 13 in the flange portion of the outer part, and the outer limb 19 of the U is turned back outwards to form a rebate for location of a rim 20 of the flange portion 11 of the outer part 4.

In the runner (Figure 3) the radial slits 12 are formed in the flange portion 7 of the inner part 3, and individual cavities 13 for the knob ends 14 are formed by radiating pairs of webs 21 (see Figure 4) across an annular recess 22 in that flange portion, the sleeve portion 10 of the outer part 4 has an extension 23 incorporating the usual catch (not shown) in a housing 24 at one side of the extension, and the flange portion 11 of the outer part has a generally U-shaped radial cross section

(again minimising material whilst maximising strength) with radial webs 25 providing abutment for the knob ends 14. A narrower U 26 formed round the outside of the flange portion 11 of the outer part 4 forms a rebate for location of rim 27 of the flange portion 7 of the inner part 3.

The engagement between the tongues 9 of the inner part 3 and the sleeve portion 10 of the outer part 4 has a snap action, which is shown provided by outward ribs or « barbs » 28 on the tongues being pushed past a portion 29 of reduced diameter inside the sleeve portion, to prevent the two parts 3, 4 being separated after assembly with the ribs or struts 2 and before fitting on the umbrella shaft. Thus the two parts 3, 4 of both notch and runner can be formed conveniently of thermoplastics, and a separate cap or « ornament » 30 (see Figure 5) be provided for the top of the umbrella shaft 6 and the notch after the latter has been secured to the shaft by a pin 31.

The knob end 14 on each rib or strut 2 is conveniently formed by cropping the rod material (from which the ribs and struts are formed) a short distance beyond the end of its flattened portion 15.

Claims

1. A pivot assembly (1) for umbrella ribs or struts (2) of the kind having a knob end adjacent a flattened portion, the assembly comprising a notch or runner in two parts (3, 4) capable of being held together by a locking means and affording in the locked state radial slits (12), each of which leads to a cavity (13), so that, in use, the ribs or struts can pivot while the respective knob end is held captive in the cavity (13), characterised in that one of the parts is an inner part (3) having a tubular body portion (8) with a bore (5) for fitting closely on an umbrella shaft (6) and an outward annular flange portion (7) adjacent one end of the tubular body portion (8), the other end of which is divided to form at least two tongues (9), and the other part is an outer part (4) having a sleeve portion (10) fitting closely on the body portion (8) of the inner part (3) and having an outward annular flange portion (11) engaging the flange portion (7) of the inner part (3) so as to form the cavity (13) for each slit, the slits being provided in one of the flange portions, there being an abutment on the tongues (9) of the inner part (3) for engagement with the sleeve portion (10) of the outer part (4) to prevent them being separated after fitting on an umbrella shaft (6).

2. A pivot assembly according to claim 1 and comprising a notch, characterised in that the radial slits (12) are formed in the flange portion (11) of the outer part (4) and individual cavities (13) for the knob ends (14) are formed by radial pairs of webs (16) across an annular recess (17) in that flange portion.

3. A pivot assembly according to claim 2, characterised in that the flange portion (7) of the inner part (3) has a generally U-shaped radial

crossection with the base (18) of the U effectively closing the cavities (13) in the flange portion (11) of the outer part (4), and the outer limb (19) of the U is turned back outwards to form a rebate for location of a rim (20) of the flange portion (11) of the outer part (4).

4. A pivot assembly according to claim 1 comprising a runner, characterised in that the radial slits (12) are formed in the flange portion (7) of the inner part (3), and individual cavities (13) for the knob ends (14) are formed by radial pairs of webs (21) across an annular recess (22) in that flange portion, the sleeve portion (10) of the outer part (4) has an extension (23) incorporating the usual catch in a housing (24) at one side of the extension, and the flange portion (11) of the outer part (4) has a generally U-shaped radial cross section with radial webs (25) providing abutment for the knob ends (14).

5. A pivot assembly according to claim 4, characterised in that a narrower U-section (26) formed round the outside of the flange portion (11) of the outer part (4) forms a rebate for location of a rim (27) of the flange portion (7) of the inner part (3).

6. A pivot assembly according to any preceding claim, characterised in that the engagement between the tongues (9) of the inner part (3) and the sleeve portion (10) of the outer part (4) has a snap action.

7. A pivot assembly according to claim 6, characterised in that the snap action is provided by outward ribs or « barbs » (28) on the tongues (9) being pushed past a portion (29) of reduced diameter inside the sleeve portion (10), to prevent the two parts (3, 4) being separated after assembly with the ribs or struts (2) and before fitting on the umbrella shaft (6).

8. A pivot assembly according to any preceding claim, characterised in that the two parts (3, 4) of the notch or runner are formed of thermoplastics.

9. A pivot assembly according to any preceding claim, characterised in that the knob end (14) on each rib or strut (2) is formed by cropping the rod material from which the ribs or struts are formed a short distance beyond the end of its flattened portion (15).

Patentansprüche

1. Anlenkung (1) für Schirmdachstangen oder -streben (2) der Art, daß sie ein einem abgeflachten Bereich benachbartes Knaufende aufweist, mit einer Raste oder einem Läufer in zwei Teilen (3, 4), die von einer Verriegelungseinrichtung zusammengehalten werden und im verriegelten Zustand radiale Schlitze (12) bilden, von denen jeder zu einem Hohlraum (13) führt, so daß die Stangen oder Streben beim Gebrauch schwenken können, während das dazugehörige Knaufende im Hohlraum (13) eingekäfigt ist, dadurch gekennzeichnet, daß eines der Teile ein Innenteil (3) ist und ein rohrförmiges Körperstück (8) mit einem Bohrloch (5) zum Festhalten eines Schirmstocks (6) und ein

äußeres, ringförmiges Flanschstück (7) aufweist, das einem Ende des rohrförmigen Körperstücks (8) benachbart ist, dessen anderes Ende geteilt ist, um mindestens zwei Zungen (9) zu bilden, und daß das andere Teil ein Außenteil (4) ist, das eine Muffe (10) aufweist, die das Körperstück (8) des Innenteils (3) ohne Abstand umfaßt und einen nach außen gerichteten Ringflansch aufweist, der mit dem Ringflansch (7) des Innenteils (3) so im Eingriff ist, daß der Hohlraum (13) für jeden Schlitz gebildet wird, wobei die Schlitz in einem der Ringflansche vorgesehen sind und wobei ein Anschlag an den Zungen (9) des Innenteils (3) der zum Eingriff mit der Muffe (10) des Außenteils (4) bringbar ist, vorgesehen ist, um zu verhindern, daß die Teile nach der Aufnahme auf einem Schirmstock voneinander getrennt werden.

2. Anlenkung nach Anspruch 1, mit einer Raste, dadurch gekennzeichnet, daß die radialen Schlitzze (12) im Ringflansch (11) des Aussenteils (4) vorgesehen sind und daß einzelne Hohlräume (13) für die Knaufenden (14) durch radiale Zwischenwandpaare (16) in einer ringförmigen Nut (17) in diesem Ringflansch gebildet werden.

3. Anlenkung nach Anspruch 2, dadurch gekennzeichnet, daß der Ringflansch (7) des Innenteils (3) einen im wesentlichen U-förmigen, radialen Querschnitt aufweist, wobei die Basis (18) des U die Hohlräume im Ringkranz (11) des Außenteils (4) wirksam abschließt, und daß der Außenschenkel (19) des U nach außenläuft, um einen Falz zur Aufnahme eines Rands (20) des Ringkranzes (11) des Aussenteils (4) zu bilden.

4. Anlenkung nach Anspruch 1, mit einem Läufer, dadurch gekennzeichnet, daß die radialen Schlitzze (12) im Ringkranz (7) des Innenteils (3) gebildet sind und einzelne Hohlräume (13) für die Knaufenden (14) durch radiale Zwischenwandpaare (21) in einer radialen Nut (22) in diesem Ringkranz gebildet sind und daß die Muffe (10) des Außenteils eine Verlängerung (23) aufweist, die auf der einen Seite den üblichen Verschluss in einem Gehäuse (24) enthält und daß der Ringkranz (11) des Außenteils (4) einen im wesentlichen U-förmigen, radialen Querschnitt mit radialen Zwischenwänden (24), die Anschläge für die Knaufenden (14) bilden, aufweist.

5. Anlenkung nach Anspruch 4, dadurch gekennzeichnet, daß ein engeres U-Stück (26), das entlang der Außenseite des Ringkranzes (11) des Außenteils (4) vorgesehen ist, einen Falz zur Aufnahme eines Rands (27) des Ringkranzes (7) des Innenteils bildet.

6. Anlenkung nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß die Zungen (9) des Innenteils (3) und die Muffe (10) des Außenteils (4) durch einen Schnappvorgang in gegenseitigen Eingriff bringbar sind.

7. Anlenkung nach Anspruch 6, dadurch gekennzeichnet, daß der Schnappvorgang durch nach außen gerichtete Rippen oder « Klauen » (28) auf den Zungen (9) bewirkt wird, die über einen reduzierten Durchmesser aufweisenden Bereich (29) in der Muffe (10) hinweggeschoben werden, um zu verhindern, daß die zwei Teile (3,

4) nach dem Zusammenbau mit den Stangen oder Streben (2) und vor dem Aufstecken auf den Schirmstock (6) voneinander getrennt werden.

8. Anlenkung nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß die zwei Teile (3, 4) der Raste bzw. des Läufers aus thermoplastischem Kunststoff bestehen.

9. Anlenkung nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß das Knaufende (14) an jeder Stange oder Strebe (12) dadurch gebildet wird, daß das Stangenmaterial, aus dem die Stangen oder Streben gemacht sind, kurz nach dem Ende des abgeflachten Bereichs (15) abgeschnitten ist.

Revendications

1. Un ensemble de pivotement (1) pour des baleines ou tendeurs de parapluie (2) du type comportant une extrémité panneau adjacente à une portion aplatie, l'ensemble comprenant un cran coulissant ou patin en deux parties (3, 4) pouvant être maintenues ensemble à l'aide d'un moyen de verrouillage et présentant dans la condition de verrouillage des fentes radiales (12) aboutissant chacune dans une cavité (13), de façon que lors de l'utilisation du parapluie, les baleines ou tendeurs puissent pivoter, tandis que l'extrémité pommeau respective est maintenue prisonnière dans la cavité (13), le dit ensemble de pivotement étant caractérisé en ce qu'une des parties est une partie intérieure (3) comportant une portion de corps tubulaire (8) avec un alésage (5) pour ajustage de précision sur un manche de parapluie (6) et une portion de rebord annulaire extérieure (7) adjacente à une extrémité de 12 portion de corps tubulaire (8), l'autre partie étant une partie extérieure (4) comportant une portion de manchon (10) s'ajustant avec précision sur la portion de corps (8) de la partie intérieure (3) et ayant une portion de rebord annulaire extérieure (11) s'engageant avec la portion de rebord (7) de la partie intérieure (3) de manière à constituer la cavité (13) pour chaque fente, une butée sur les languettes (9) de la partie intérieure (3) étant prévue pour s'engager avec la portion de manchon (10) de la partie extérieure (4) afin d'interdire à ces éléments de se séparer après le montage sur un manche de parapluie (6).

2. Un ensemble de pivotement selon la revendication 1, comprenant un cran coulissant, et caractérisé en ce que les fentes radiales (12) sont formées dans la portion de rebord (11) de la partie extérieure (4), et que les cavités individuelles (13) pour les extrémités pommeau (14) sont formées par des paires radiales de membranes (16) à travers un évidement annulaire (17) dans cette portion de rebord.

3. Un ensemble de pivotement selon la revendication 2, caractérisé en ce que la portion de rebord (7) de la partie intérieure (3) présente une section transversale radiale généralement en forme d'U, avec la base (18) de cette section en forme d'U obturant efficacement les cavités (13)

dans la portion de rebord (11) de la partie extérieure (4), l'aile extérieure (19) de la section en forme d'U étant coudée extérieurement de manière à former un encastrement pour la mise en place d'une jante (20) de la portion de rebord (11) de la partie extérieure (4).

4. Un ensemble de pivotement selon la revendication 1, comprenant un patin, et caractérisé en ce que les fentes radiales (12) soit formés dans la portion de rebord (7) de la partie intérieure (3), les cavités individuelles (13) pour les extrémités pommeau (14) étant formées par des paires radiales de membranes (21) à travers un évidement annulaire (22) dans cette portion de rebord, la portion de manchon (10) de la partie extérieure (4) comportant une prolongation (23) incorporant le cliquet usuel dans un logement (24) sur un côté de la prolongation, la portion de rebord (11) de la partie extérieure (4) présentant une section transversale radiale généralement en forme d'U avec des membranes radiales (25) assurant un moyen de butée pour les extrémités pommeau (14).

5. Un ensemble de pivotement selon la revendication 4, caractérisé en ce qu'une section en forme d'U plus étroite (26) prévue autour de l'extérieur de la portion de rebord (11) de la partie extérieure (4) assure un encastrement pour la mise en place d'une jante (27) de la portion de rebord (7) de la partie intérieure (3).

6. Un ensemble de pivotement selon une quelconque des revendications précédentes, caractérisé en ce que l'engagement entre les languettes (9) de la partie intérieure (3) et la portion de manchon (10) de la partie extérieure (4) est prévu avec une action déclic.

7. Un ensemble de pivotement selon la revendication 6, caractérisé en ce que l'action déclic est assurée au moyen de nervures ou de « barbelures » extérieures (28) sur les languettes (9) poussées au-delà d'une portion (29) de diamètre réduit à l'intérieur de la portion de manchon (10), de manière à interdire aux deux pièces (3, 4) de se séparer après l'assemblage avec les baleines ou tendeurs (2), et avant le montage sur le manche de parapluie (6).

8. Un ensemble de pivotement selon une quelconque des revendications précédentes, caractérisé en ce que les deux parties (3, 4) du cran coulissant ou du patin sont réalisées à partir de matière thermoplastique.

9. Un ensemble de pivotement selon une quelconque des revendications précédentes, caractérisé en ce que l'extrémité pommeau (14) sur chaque baleine ou tendeur (2) est formée en taillant le matériau de tige initiale à partir duquel les baleines ou tendeurs sont réalisés, sur une courte distance au-delà de l'extrémité de leur portion aplatie (15).

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Fig. 5

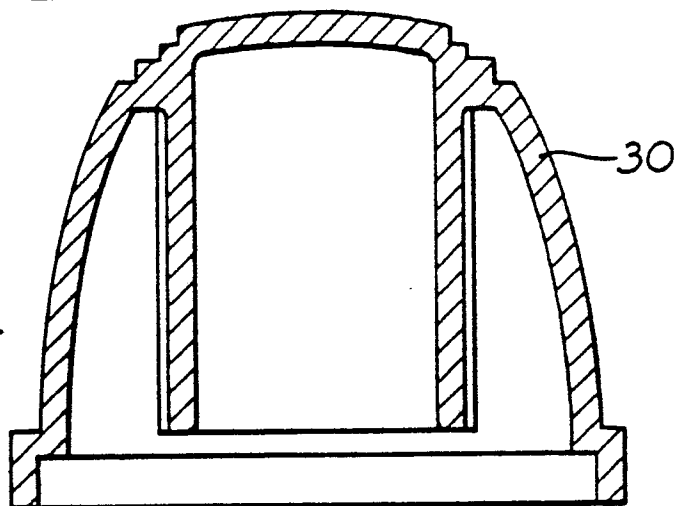


Fig. 1

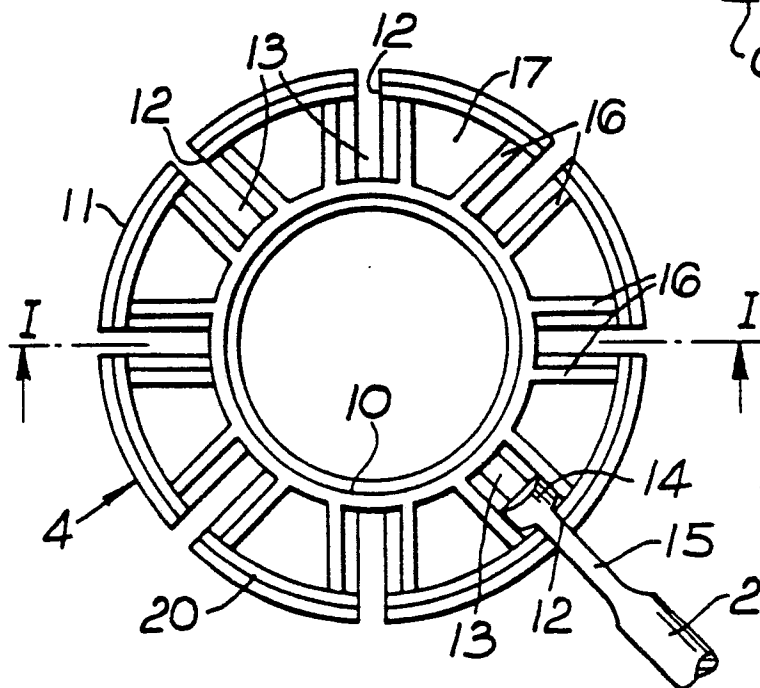
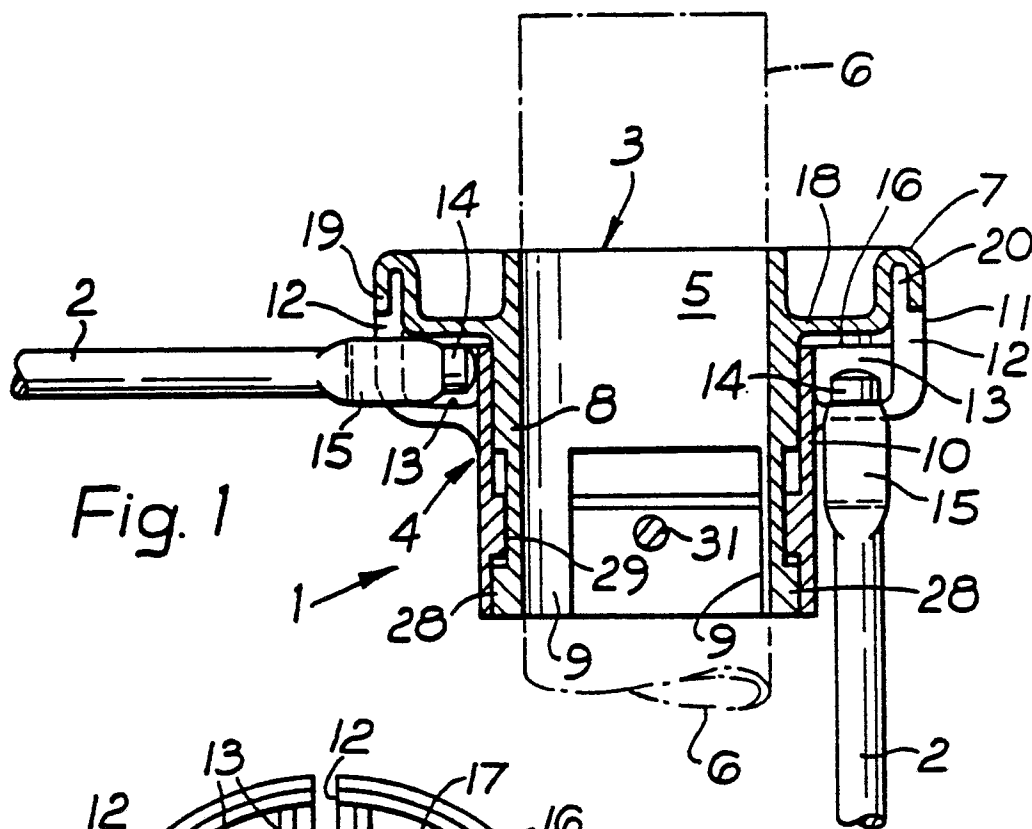


Fig. 2

