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(54) **Airers.**

(57) A clothes airer has the line fixed to the arms (10) by cleats which extend through the arms and are snap engaged (20) with the arms.

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This invention relates to airers and driers for clothes and the like which have been washed. A well known type of airer to which the invention relates comprises a plurality of arms which support a clothes line extending in a plurality of parallel paths between the arms. The arms may be radial, extending outwardly from a central pole and in this case it is convenient to use a single length of line wound from arm to arm. Thus if three arms are employed, the line may extend as a series of triangles of successively larger size, or the line may form the equivalent of a spiral passing from a point on one arm to a point at a slightly larger radial distance from the pole on the next arm and so on, although the spiral is made of a series of angularly related straight line portions rather than being a continuous arc.

The line must support the weight of wet washing, but the line tension must not be high since it is usual to make the arms to fold or collapse to a bundle for storage, and too much tension may make the airer difficult to erect. Often the line is tied to one of the arms at one point in each triangle or like shape and is merely engaged with the other arms.

Many different arrangements or systems have been proposed for the engagement. In simpler designs the line is threaded through diametrical holes in the arms and periodically knotted. This makes adjustment necessary if the line stretches in repeated use tedious or difficult One arrangement in widespread use involves moulded plastic cleats which are riveted to the arms along their length at appropriate spacing and the line is simply wound about those cleats. The object of the invention is to simplify the airer construction.

According to the invention, an airer comprises a plurality of arms each provided with a plurality of cleats for engaging a washing line portion, and is characterised in that the cleats are engaged in holes in the arms.

Preferably the cleats are snap-engaged or are a push-fit i.e. frictionally engaged in the arms, without needing any separate attachment means. Hence the riveting step which was necessary in the prior art is avoided.

The cleat of the invention may be a plastics moulding and a material of suitable slight deformability and or resilience is preferred so as to provide secure anchorage of the cleats either by friction as a push-fit or by snap-engagement where a head or projection from the cleat is deformed during assembly and recovers to hold the cleat in position.

Preferably the arms are of tubular metal which may be round or square, apertured diametrically, and each cleat comprises a peg suitably dimensioned to pass through the aligned apertures with a head or projection at one end and a line receiving notch at the other end, these two ends lying adjacent opposite sides of the arm.

The line engaging part of the cleat may have only a single notch or recess to receive the line, a plurality of such notches or a notch or notches dimensioned to accept more than one run of the line. Where a plurality is provided, these may open in opposite directions , or be side-by-side , and in the latter case a greater length of peg will be necessary.

Where a plastic coated line is used, having some diametric deformability, the notches may be shaped to grip by line deformation rather than notch deformation.

The invention is now more particularly described with reference to the accompanying drawing wherein

Figure 1 is a diagrammatic view showing a short portion of the arm of a radial airer with a cleat according to the invention in position;

Figure 2 is an elevation of a modified cleat;

Figure 3 is an end elevation of the modified cleat.

Referring to the drawing, a tubular metal arm 10 is pierced diametrically with a pair of holes of suitable cross section to accommodate cleat 12. The cleat is a plastics moulding comprising a shank portion 14, a head 16 and a line engaging end 18. The shank 14 may be non-circular and the holes in the tube likewise so that rotation of the cleat is prevented. The purpose of the head 16, is simply to control the axial position.

Figure 1 of the drawing does not illustrate any means for preventing withdrawal of the cleat from the arm, because in this instance the shank is intended to be a push-fit i.e. a friction fit in the holes. However a suitable radial projection from the shank may be provided to be deformed and deflected in movement of the shank to the illustrated position and so as to lie within the tube or alternatively on the outer face of the tube at the line engaging end for the purposes of fixing the axial position.

The end 18 is provided with the notch comprising channel 20 opening laterally of the shank to receive the line, and the recess has a narrow throat 22 so that the end portion 24 is flexed outwardly to widen the throat to allow the line to enter. Providing the line is the same diameter as the larger portion 26 of the recess, the line will be firmly gripped by the cleat when the pressure causing the flexing is released.

As mentioned, the shank may be extended to provide more than one notch to accommodate more than one portion of line, or these may possibly be angularly related for example open to opposite lateral edges of the shank using notches of smaller dimension than that illustrated, without needing a longer shank.

In Figures 2 and 3 the shank 114 is of pear shape in cross-section, and has an elongated slot 28 which may narrow as the shank is pushed into position and recover to hold the cleat firmly. The shank also has transverse ridges 30 on one or both edges which will be located in the arm and also help hold it in place.

The line accommodating notch 120 is in this instance a slot 32 extending lengthwise of the shank

opening through a lateral jaw portion between faces 34, 35. The dotted line circle 38 shows the line position and indicates a shallow recess opposite the jaw. It will be seen that the line is inserted in the notch by a lateral movement which flexes the shanks at the thinnest zone 40, allowing the jaw faces to separate. When they recover due to the elasticity of the material, the line is gripped at 3 more or less equi-spaced zones represented by the reference numerals 34, 36, 40. The grip may be light, allowing the line tension to be adjusted by the line being pulled through the notch.

Moreover, more than one line portion may be accommodated with greater line deformation by displacing a first line part from the dotted line position further along the narrow slot portion 32, leaving the dotted line area free for a second line portion. The first one will be more tightly gripped than the second.

## Claims

1. An airer comprising a plurality of arms each provided with a plurality of cleats for anchoring a washing line portion and characterised in that the cleats are engaged in holes in the arms.

2. An airer as claimed in Claim 1 wherein each cleat has a shank which is frictionally engaged in a hole in the arm.

3. An airer as claimed in Claim 1 wherein each cleat has a shank which is a push-fit and is snap-engaged in a hole in the arm.

4. An airer as claimed in any preceding claim wherein the cleats are plastics mouldings of a material of slight deformability .

5. An airer as claimed in Claim 4 wherein each cleat comprises a shank provided with a head or projection arranged to be deformed during insertion into the hole in the arm and to recover to hold the cleat in position.

6. An airer as claimed in any preceding claim wherein the arms are of tubular metal apertured diametrically, each cleat comprises a peg dimensioned to pass through aligned apertures with a head at one end and a line receiving notch at the other end.

7. An airer as claimed in Claim 6 wherein a plurality of notches is provided.

8. An airer as claimed in Claim 4 and Claim 6 wherein the notch comprises a slot extending along the shank and a laterally opening jaw, arranged to be flexed when the line is passed through the jaw into the slot, so that the line is gripped at a plurality of points about its periphery.

9. An airer substantially as described with reference to the accompanying drawing.

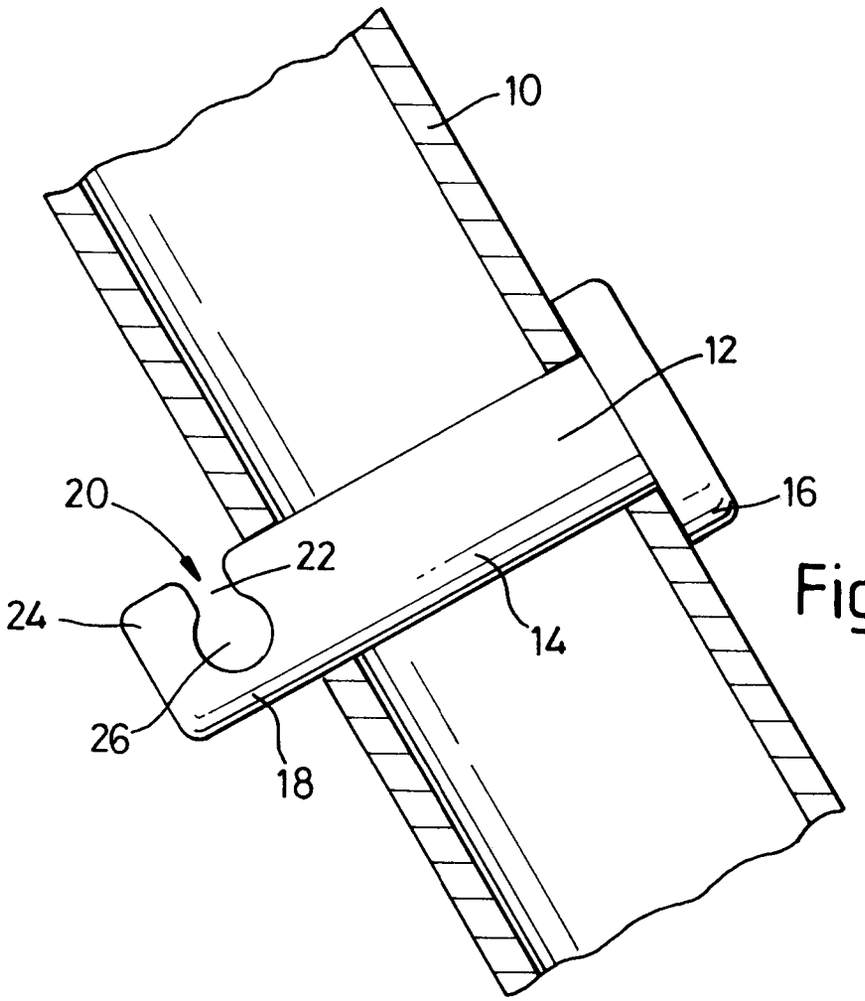


Fig. 1

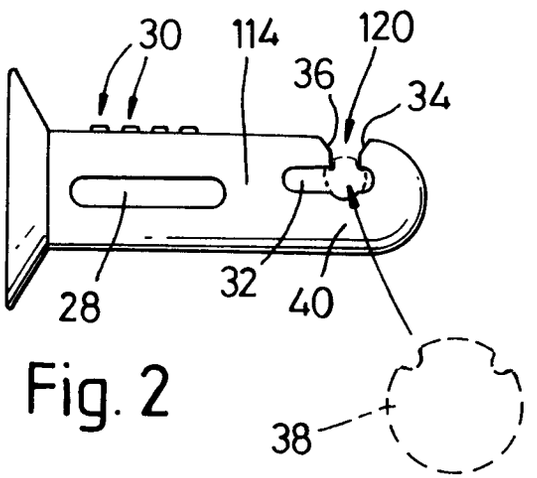


Fig. 2

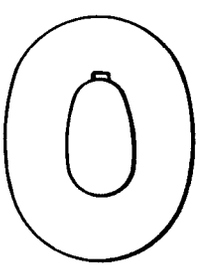

Fig. 3

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# EUROPEAN SEARCH REPORT

Application Number
EP 94 30 0097

## 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) |
|---|---|---|---|
| X | GB-A-2 009 307 (LEIFHEIT INTERNATIONAL GUNTER LEIFHEIT GMBH) | 1,3 | D06F57/04 |
| A | * the whole document * | 2,4-9 | |
| P,A | GB-A-2 263 633 (HILLS INDUSTRIES LIMITED) * the whole document * | 1-9 | |
| A | DE-A-23 10 452 (LEIFHEIT INTENATIONAL GÜNTER LEIFHEIT GMBH) * page 9, line 3 - line 21; figure 7 * | 2 | |
| A | GB-A-2 233 032 (HILLS INDUSTRIES LIMITED) * figure 2 * | 1,2 | |
| A | EP-A-0 432 110 (FAC DI CARENINI S.R.L.) | | |
| A | GB-A-1 266 664 (AB BERGSLAGSVERKEN) | | |

TECHNICAL FIELDS SEARCHED (Int.Cl.5)

D06F

The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| THE HAGUE | 3 May 1994 | Kellner, F |

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
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