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(12) # EUROPEAN PATENT APPLICATION

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(54) **Hanger for parts to be coated.**

(57) A hanger (2) comprises a spine (4) and an array of prongs (6) projecting from the spine. The prongs taper from the spine and are triangularly-based pyramids. Apertured parts (8) to be coated are pushed onto the prongs, prior to lowering the hanger, into a coating bath.

The invention provides secure attachment of the parts on the hanger and good electrical contact between the parts and the hanger. The latter is of advantage in electrical coating processes.

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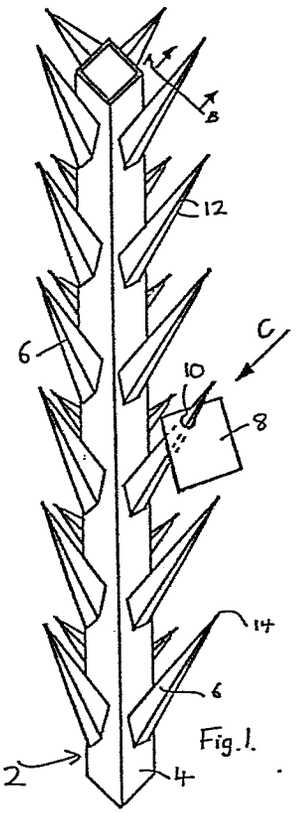

Fig. 1.

HANGER FOR PARTS TO BE COATED

The invention relates to a hanger for parts to be coated under electrical influence, comprising an upwardly inclined prong projecting from a support member. In practice a plurality of prongs preferably project from the same support member.

Such hangers have been used in electro-painting baths. A part to be painted and which has an aperture, is slid over a prong, which is chrome plate for improved electrical contact with the part. The prongs are round in transverse cross-section. However, the contact achieved with this apparatus has not always been sufficient to achieve reliable, high-quality painting.

Moreover, a part hung on a prong, especially a light, mass-produced part, can be dislodged from its prong by the fluid forces acting on the part as the hanger is immersed. For this reason it has been the practice to wire the parts on to the prongs, which is a tedious operation.

It is an object of the present invention to overcome these problems.

The present invention is characterised in that the hanger comprises a prong which tapers from its root to its distal end and has sharp, longitudinally extending corners. When a part is placed on a prong the area of contact between the prong and the part is small, but the electrical contact is good. Moreover, the part is securely retained on the hanger and the unpainted area of the part is small.

Preferably the prong is a pyramidal prong.

The invention will now be further described, by way of example, with reference to the accompanying drawings, in which:

Fig. 1 shows the hanger with a part to be painted attached to it;

Fig. 2 is a part view along the arrow C of Fig. 1; and

Fig. 3a is a transverse cross-section of a prong along the line A-B in Fig. 1, and Figs. 3b and 3c are transverse cross-sections of other embodiments of prong.

The metal hanger 2 of Fig. 1 comprises a central, box-section spine 4. The spine acts as a support member for prongs 6, a row of which projects from each of the four sides of the spine. The hanger 2 is shown in its orientation for dipping into a colour

bath, with its spine 4 vertical, and the prongs 6 constituting a generally upwardly facing array.

Each prong 6 is a sharp-cornered, triangular pyramid. The transverse cross-section of a prong is shown as an equilateral triangle in Fig. 3a.

Parts to be painted, which have an aperture are, slid over the prongs to positions such as that of the metal plate 8 in Fig. 1. As is shown by Fig. 2, the prong 6 contacts the inner wall of the aperture 10 of the plate 8 to be painted at the three sharp corners 12 of the prong. The plate may be firmly secured on the prong and a good electrical contact is then provided between the plate and the hanger 2. The hanger 2 is then lowered into the colour bath. The painted plate has only three tiny areas left unpainted, at the inner wall of the aperture 10.

Any part may be painted provided it has an aperture which is within the range of sizes of circumcircles defined by the tapering corners of the prongs.

The prongs 6 should be of harder material than the parts to be painted, at least at the corners 12 of the prong. This condition may be achieved in many known ways, for example, using a hanger constructed of a hard metal, surface hardening the hanger or by using a metal which shows considerable work hardening.

In the above example the prongs 6 are shown with sharp ends 14. It may be preferred, for safety reasons, to round off the ends.

It will be appreciated that the invention is not limited to the use of the prongs described. Figs. 3b and 3c show alternative prongs in transverse cross-section, and depict an isosceles triangle and a spherical triangle with concave sides, respectively. Another alternative is a prong of star cross-section. Prongs with other than three corners may be used; the basic requirement is simply that the prongs should have fairly sharp corners.

CLAIMS

1. A hanger (2) for parts (8) to be coated under electrical influence, comprising an upwardly inclined prong (6) projecting from a support member (4), characterised in that the prong tapers from its root to its distal end and has sharp, longitudinally extending corners (12).

2. A hanger according to claim 1, characterised in that the prong is a pyramidal prong.

3. A hanger according to claim 2, characterised in that the prong is of triangular transverse cross-section.

4. A hanger according to claim 3, characterised in that the faces of the prong are concave in transverse cross-section.

AMENDED CLAIMS

CLAIMS

1. A hanger (2) for parts (8) to be coated under electrical influence, comprising an upwardly inclined prong (6) which projects from a support member (4) and tapers from its root to its distal end, characterised in that the prong is of triangular transverse cross-section, and has sharp, longitudinally extending corners (12).

2. A hanger according to claim 1, characterised in that the faces of the prongs are concave in transverse cross-section.

Fig.3

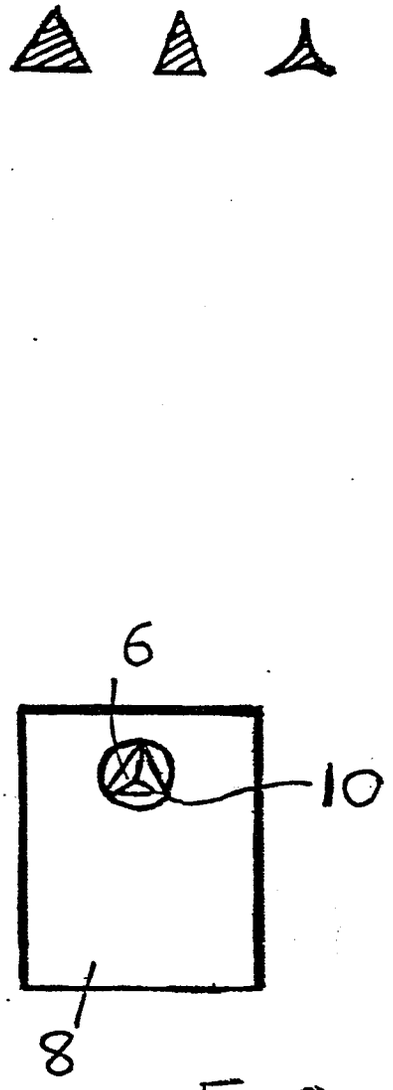

Fig.2

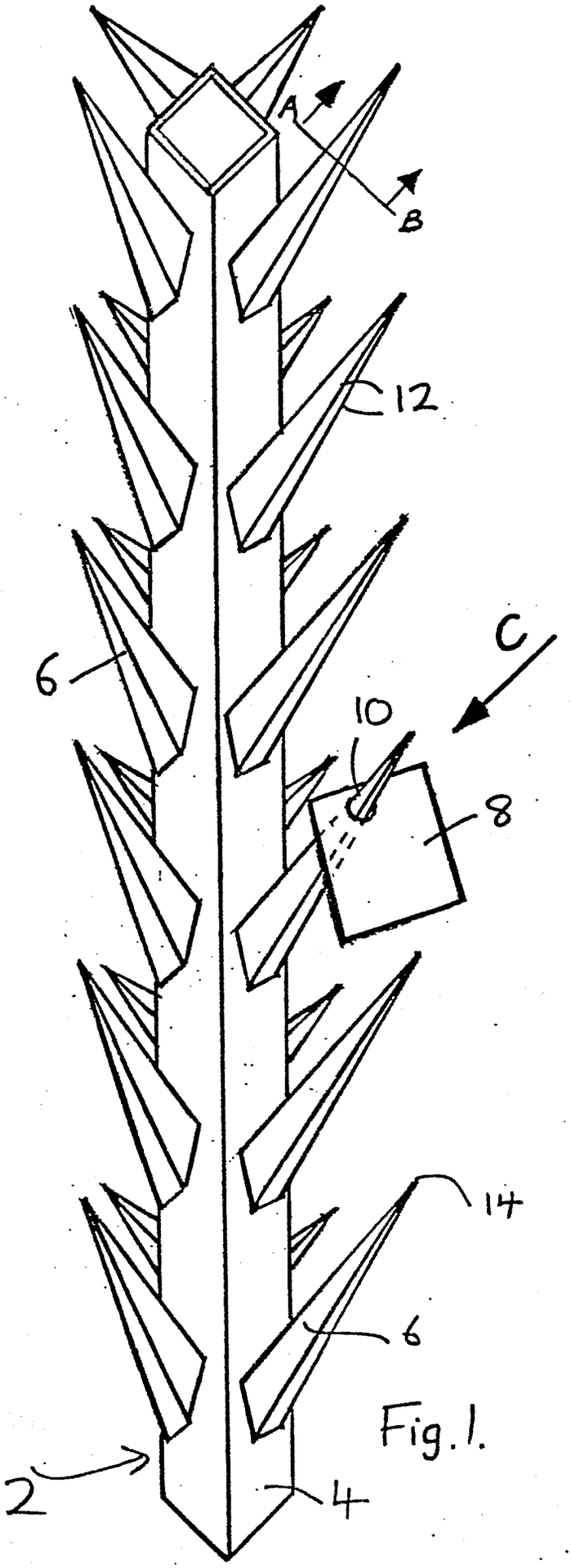

Fig.1.

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EUROPEAN SEARCH REPORT

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. ³)
X	FR-A-1 333 180 (HUCHET) * Figure 4 *	1	C 25 D 13/22

TECHNICAL FIELDS SEARCHED (Int. Cl. ³)

C 25 D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	22-11-1983	NGUYEN THE NGHIEP

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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