Title: WIRE WINDING SPOOL

Abstract: A wire winding spool, comprising a tubular body (1) for supporting a coil of wire provided, at its ends, with wall elements (2, 3) for containing the coil, at least one of the wall elements being provided with at least one pin for engaging means for turning the spool, each wall element (2, 3) being associated with the corresponding end of the tubular body (1) so as to rest against an abutment (1a) provided on the outer surface of the wall of the body, clamped against it by a fold (1b) of the end portion of the wall.
WIRE WINDING SPOOL

Technical Field

The present invention relates to a wire winding spool.

Background Art

It is known that spools for winding wire which comprise a tubular body for supporting the coil of wire, provided at its ends with wall elements for containing the coil, are widely used in the industrial field.

Known spools have a certain constructive complexity, which derives in particular from assemblies obtained by welding.

Disclosure of the Invention

Therefore the aim of the present invention is to provide a spool which has maximum simplicity.

This aim is achieved by a wire winding spool, according to the invention, comprising a tubular body for supporting a coil of wire provided, at its ends, with wall elements for containing said coil, at least one of the wall elements being provided, at the surface directed outwardly, with at least one pin for engaging means for turning said spool, characterized in that each wall element is associated with the corresponding end of the tubular body so as to rest against an abutment provided on the outer surface of the wall of said body, clamped against it by a fold of the end portion of said wall.

Brief Description of the Drawings

Further characteristics and advantages of the present invention will become better apparent from the description of some preferred but not exclusive embodiments thereof, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a perspective view of the spool according to the invention;
Figure 2 is a view of a detail of Figure 1;
Figure 3 is a perspective view of a first variation of the spool.
according to the invention;

Figure 4 is a view of a detail of Figure 3;

Figures 5 to 8 are views of details of the spool shown in Figure 4 related to further variations.

5 Ways of carrying out the Invention

With reference to Figures 1 and 2, the reference numeral 1 designates a tubular body for supporting a coil of wire, which is provided at the ends with two wall elements 2 and 3, which are mirror-symmetrically identical.

Therefore, only the element 2 is described; it is formed by a flat flange 4 with a stiffening fold 4a at the outer edge and welded driving pins 5a, 5b; as regards such pins, it should be considered that they might be absent in the element 3.

The flange 4 is associated with the end of the tubular body 1 so as to rest against an abutment 1a provided on the outer surface of the wall of the body, clamped against it by a fold 1b of the end portion of the wall, which is obtained very easily by plastic deformation of the material.

It should be noted that the fold 1b, besides performing the function indicated above, acts as an effective guide for the penetration of the spindle designed to support the spool during operation.

A first variation of the invention is shown in Figures 3 and 4, and in such variation the wall elements 6 and 7 arranged at the ends of the tubular body 8 have mirror-symmetrically identical shapes, which are now described with reference to the element 6.

Such element comprises a flat flange 9 and a complementary flat flange 10 which adheres thereto and is joined by seaming to the flange 9 at an outer edge 10a, and is provided with pins 11a, 11b which are formed monolithically and which might be absent in the element 7.

In this case also, the element 6 is associated with the end of the body 8 so as to rest against an abutment 8a and be clamped against it by a fold 8b.

The complementary flanges provided so as to form, by being joined
by seaming at the corresponding outer edge to corresponding flat flanges, the wall elements of the variations of Figures 5 to 8, all have a camber at the inner edge, so as to come into contact with the fold of the end portion of the wall of the tubular body which, in all of such variations, clamps the wall elements against corresponding abutments.

More particularly, a complementary flange 12 (see Figure 5) has a camber which, from an inner edge 12a in contact with a fold 13a of the wall of a tubular body 13, extends along the entire extension of the complementary flange, with pins 14 which are formed monolithically, so as to be spaced from a corresponding flange 15.

Complementary flanges 16 and 17 of Figures 6 and 7 also have cambers which, by extending from inner edges 16a, 17a, cover their entire extension, and there are also studs 16b, 17b which are deep so as to come into contact with contiguous flanges, respectively 18 and 19; the complementary flange 16 has pins 16c which are formed at the studs, while the complementary flange 17 has pins 17c which are formed in gaps between the studs.

Finally, a complementary flange 20 (see Figure 8) has a camber 20a only at the inner edge, while the rest adheres to a corresponding flange 21; there are also pins 20b which are formed monolithically.

The described invention is susceptible of numerous other modifications and variations, all of which are within the scope of the appended claims; all the details may further be replaced with other technically equivalent elements.

The disclosures in Italian Patent Application no. MN2007A000017, from which this application claims priority, are incorporated herein by reference.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such
reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.
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CLAIMS

1. A wire winding spool, comprising a tubular body for supporting a coil of wire provided, at its ends, with wall elements for containing said coil, at least one of said wall elements being provided, at the surface directed outwardly, with at least one pin for engaging means for turning said spool, characterized in that each wall element is associated with the corresponding end of the tubular body so as to rest against an abutment provided on the outer surface of the wall of said body, clamped against it by a fold of the end portion of said wall.

2. The spool according to claim 1, characterized in that each wall element comprises exclusively a flat flange with a stiffening fold at the outer edge.

3. The spool according to claim 1, characterized in that each wall element comprises a flat flange and a complementary flange which is joined by seaming to the outer surface of the flange at the outer edge.

4. The spool according to claim 3, characterized in that the complementary flange has a flat shape which is adapted to adhere to the contiguous flange.

5. The spool according to claim 3, characterized in that the complementary flange has a camber at least at the inner edge, so as to come into contact with the fold of the end portion of the wall of the tubular body.

6. The spool according to claim 5, characterized in that the complementary flange has a camber which extends along the entire extension thereof.

7. The spool according to claim 5, characterized in that the complementary flange has a camber which extends along the entire extension thereof and has deep studs, pins being provided which are formed monolithically at the bottom of the studs.

8. The spool according to claim 5, characterized in that the complementary flange has a camber which extends along the entire
extension thereof and has deep studs, pins being provided which are formed monolithically at gaps between the studs.

9. The spool according to claim 5, characterized in that the complementary flange has a camber only at the inner edge.

10. The spool according to one or more of the preceding claims, characterized in that at least one wall element provides for the presence of at least one pin which is rigidly coupled to said element.

11. The spool according to one or more of the preceding claims, characterized in that at least one wall element has at least one pin obtained monolithically from said element.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

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)

B65H

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)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Further documents are listed in the continuation of Box C.

See patent family annex.

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Name and mailing address of the ISA

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Authorized officer

Lemmen, Rene
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