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PROCESS FOR THE METALLIZATION OF ANNULAR PIECES
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Fig. 1 PRIOR ART

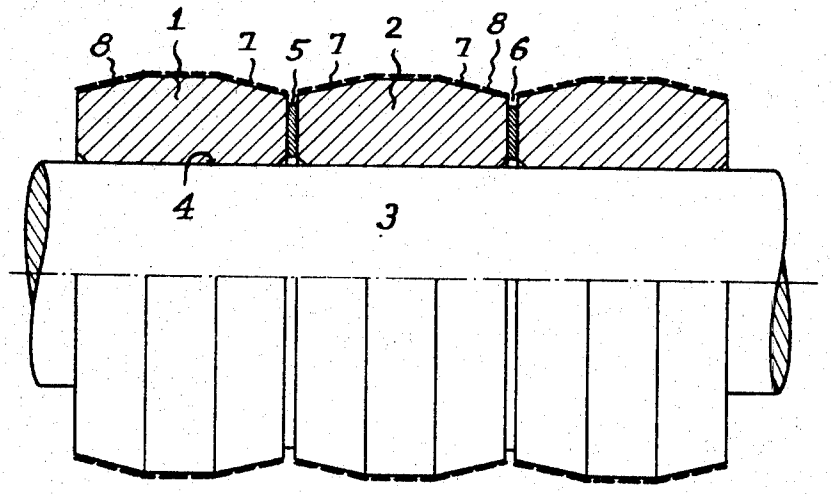
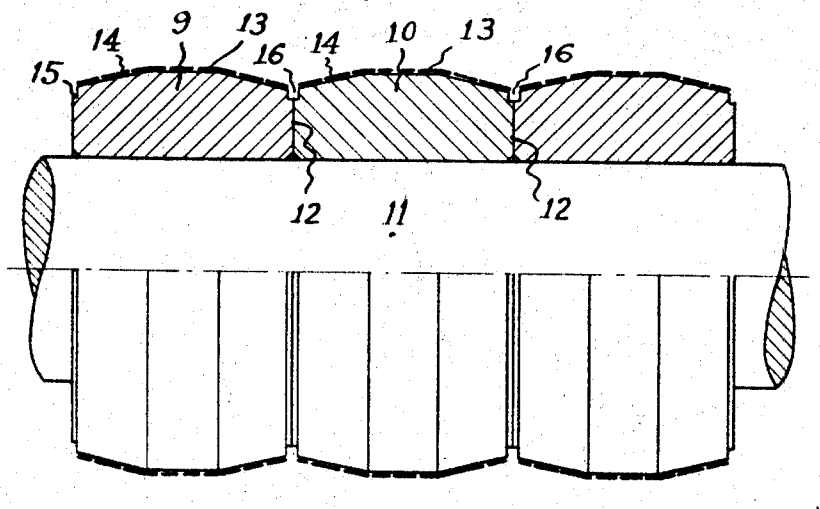


Fig. 2



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PROCESS FOR THE METALLIZATION OF ANNULAR PIECES

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U.S. Cl. 117—43 2 Claims

ABSTRACT OF THE DISCLOSURE

A process is disclosed for the metallization of annular pieces. Each annular piece has two faces and an exposed surface. The pieces are strung on a mandrel with the exposed surfaces in alignment and simultaneously metallized. Each annular piece is provided with a continuous indentation or furrow at at least one planar intersection of a face and its exposed surface such that when the pieces are aligned on the mandrel a circular groove of square section creates a disruption on the outer surface of the aligned pieces. This allows the annular pieces to be easily separated after metallization without damaging the coating.

According to a known process for metallizing annular pieces, these pieces are mounted, one beside (or on top of) the other, through their central bore, on a mandrel so as to form a line or string of pieces on the outer continuous surface of which a metal powder will be sprayed. After the entire outer surface of these annular pieces is covered with a thin metal coating, the pieces are separated one from the other by breaking the coating covering them and sliding them out of the mandrel. This process, however, is not satisfactory because small cracks appear on the coating of metal when the annular pieces are taken apart due to the disruption caused on the continuous metal surface.

To remedy this drawback, it was known (see FIGURE 1) to use a process in which a small disk was placed between each annular piece and the one next to it, said small disk having a smaller diameter than the diameter of the annular pieces, in order to form a circular groove between each annular piece. In this way, a discontinuous outer surface of the line of pieces was obtained and it was possible to disjoint the annular pieces without the risk of forming cracks in the metal coating.

However, this process is not satisfactory either since it makes the metallizing operations complicated by requiring the use of separating disks which have to be inserted between the annular pieces, thereby increasing the cost of labor.

According to the present invention, the external edge of the annular pieces is given a determined profile so as to obtain a circular groove between two adjoining annular pieces. In this way, the external surface of the line of pieces is discontinuous and the use of separating disks is avoided. Thus, under the present invention the external corners or edges of the annular pieces, formed by the intersection of the faces in contact with one another when the pieces are mounted on the mandrel and their outer surfaces, are provided with circular furrows creating, between two adjoining pieces, a circular groove, of preferably square section, thereby forming a disruption on the outer surface of the pile.

Other useful features of this invention will emerge from the following description of one embodiment of the invention, which is merely given as a non-limitative example and shown in the annexed drawings.

FIGURE 1 is a partial section view of three adjoining annular pieces as they appear when the prior art process using separating disks is practiced.

FIGURE 2 is a partial section view of three annular pieces according to the present invention.

In FIGURE 1, three annular pieces such as **1** and **2**, of a line which can comprise a greater number of pieces, are mounted, one beside the other, through their central bore **4**, on a cylindrical mandrel **3**. These annular pieces **1**, and **2** are separated by a disk **5**, the diameter of which is smaller than the diameter of the pieces, in such a way that a circular groove **6** is formed between the annular pieces. This groove **6** creates a disruption on the external surface **7** of the annular pieces thus mounted, which surface is to be coated with metal powder by any known means.

In the embodiment of the invention shown on FIGURE 2, the annular pieces **9** and **10** are mounted on the mandrel **11** through their central bore as in the preceding example, but each piece is mounted beside the other without placing the small disk **5** between one piece and the following one, their faces **12** being thus in contact one with the other. The external corners or edges formed by the faces **12** of the annular pieces and their outer surface **13** on which the metal is to be coated, are provided with circular furrows **15** which create an annular groove **16** of preferably square section between the two adjoining pieces **9** and **10** when these are placed one beside the other. These annular grooves create an equal number of disruptions of the external surface **13** of the pile of annular pieces **9**, **10**, and the string may comprise a greater number of pieces.

This solution offers the same advantages as those of the process precedently described and shown on FIGURE 1, but provides the further advantage of avoiding the use of the small disks **5** which make the operation more complicated and expensive.

What I claim:

1. A process for applying a metal coating to the exposed outer surface of a stack of at least two articles in juxtapositional arrangement and having said exposed surfaces of said articles in substantial alignment, following which application said articles are separated, comprising constructing a continuous indentation or furrow at at least one planar intersection of a face and outer surface of sufficient number of said articles such that following arrangement and alignment at least one continuous indentation resides at the intersection of the outer surface of said stack and each boundary between adjacent articles, said indentation or furrow having such size and shape whereby the coated articles can be separated without damaging said coating, and thereafter applying a metal coating to said exposed outer surface of said stack.

2. A process for the metallization of annular pieces in which the pieces are mounted in abutting relationship by means of their central bores, on a cylindrical mandrel to form a string of pieces which is first to be covered with a metal coating and then separated so as to form individually coated pieces; characterized in that the outer edges and surfaces of the contacting faces of each annular piece are provided with circular furrows creating, between two adjoining annular pieces a circular groove of square section which creates a disruption on said outer surface of the string and therefore allows the annular elements to be easily separated, after they have been coated, without damaging the coating.

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