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METHOD OF COVERING A DRUM FILTER, OR SUCH LIKE, WITH WIRE GAUZE

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Fig. 1

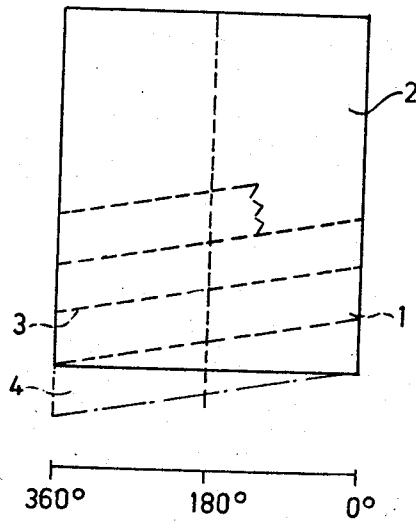
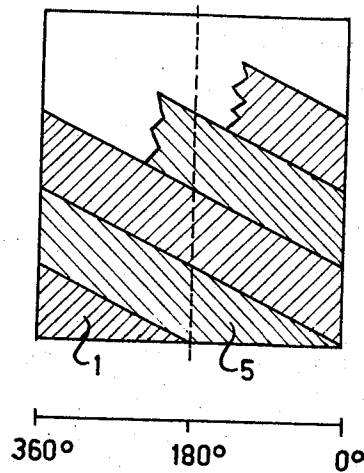


Fig. 2



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METHOD OF COVERING A DRUM FILTER, OR SUCH LIKE, WITH WIRE GAUZE

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5 Claims. (Cl. 29—419)

Drum filters covered with metal wire netting, or so-called wire gauze, are known in the cellulose and wall-board industries. In these known filter drums the wire gauze has a width corresponding to the length of the drum, and this wire gauze is wound round the drum and the meeting edges are joined across the drum by means of a seam. With varying lengths of the filter the wire gauze material must be made in different widths, which entails great expenses. In addition, it is difficult to obtain an even joint between the end edges of the wire gauze to be joined together. Consequently, the middle portions of the joint often become elongated and the joint extending across the drum can give rise to fractures in the pulp-web.

The object of the present invention is to eliminate these drawbacks. Accordingly, the invention relates to a method of covering such drum filters with a wire gauze, which can be made in a standard width and delivered by the wire gauze manufacturers to the pulp mills in rolls. The invention also aims at eliminating the difficulties of obtaining an evenly stretched wire gauze on the filter drum. These difficulties are due to the fact that it is difficult to stretch a wire cloth of great breadth uniformly. The invention is also concerned with avoiding fractures in the pulp-web caused by a transverse joint.

According to the main principle of the invention the new process is characterized by the wire gauze being wound spirally in the form of a band edge to edge along the sides of the band round the circumference of the drum. Several advantages are obtained by doing so. Thus it is not necessary for the wire gauze manufacturers to stock wire gauzes of several different widths and lengths, but they can go in for a single width, which can for example easily be joined when a different length is required. The work is facilitated by applying the gauze spirally, as the power required for stretching it is considerably less than what is called for under the conditions hitherto applied. The spirally extending jointing eliminates almost entirely the risks of fractures in the pulp web and, furthermore, it has been found that stretching along the joint mentioned is considerably less than in the transverse joint hitherto employed. The application of the wire band is cheaper, on the ground, among others, that the stretching process is simplified, and subsequent adjusting of the filter cloth, owing to elongation, for example, is also easier to perform, while the risk of a transverse fracture is simultaneously eliminated.

The wire cloth can be made in the form of a band or belt with a width of 15 to 30 cm., for example, or also be manufactured with a greater width and afterwards cut up into suitable widths of banding, and the bands can then be joined longitudinally, for example by soldering, welding or sewing, and be delivered in rolls from the wire manufacturer to the pulp mills.

In applying these wire gauze bands to the filter drum the ends of the wire band spiral are cut off flush with the end peripheries of the filter drum. The band is fixed by soldering, or other suitable jointing, on to the filter

cylinder which is caused to rotate at the same time as the band is being stretched. In the case of filter drums of great diameters the covering can be applied by winding two or more wire bands displaced or offset from one another, and in addition thereto the leading ends of the spiral windings are suitably offset to one another, for example at 180° for two bands. When the cylinder has been completely covered, the ends of the band are fixed at the end of the cylinder in question by soldering, welding or by a stretching apparatus.

If a heavy load should occur in the course of the operation of the filter drum the band can become elongated. This elongation is transmitted, however, to the last point of connection of the band, where it can be adjusted readily.

The ends of the band spiral are cut off flush with the end peripheries of the drum.

In dividing up a wire gauze into bands the side edges of the bands can be reinforced by soldering or welding, or otherwise, in order to prevent the wires of the wire cloth from becoming frayed. The same measures can be taken with the cut end edges of the band spiral.

In order to illustrate the invention two embodiments are indicated in outline in the attached drawing.

Fig. 1 shows the winding of a band intended to cover the filter drum according to the invention, and

Fig. 2 shows in the same way part of the filter surface covered by two bands wound on in pairs.

Fig. 1 thus shows in outline a wire gauze 1 wound on to drum 2 and with its longitudinal edges 3 meeting one another edge to edge. From this it will be seen that the section 4 indicated by dashes must be cut away.

Fig. 2 shows that a greater pitch is obtained by several bands 1, 5 of smaller width, which can be wound spirally parallel and edgewise to one another.

In both these figures the surface of the filter drum is shown in plan condition for the sake of lucidity.

What I claim is:

1. A method of covering a drum filter or the like with a metallic wire gauze, comprising the steps of cutting at least one band from a metallic wire gauze, forming a seam by heat treatment along the longitudinal edges of the band so as to prevent fraying of the edges, fixing one end of the band at one end edge of the drum, winding said band around the drum with adjacent turns in abutment, stretching the band longitudinally so as to press it against the drum surface along its entire length, fixing the other end of the band at the other end edge of the drum so as to maintain the band in stretched state, and cutting the band flush with the end edges of the drum.

2. A method of covering a drum filter or the like with a metallic wire gauze, comprising the steps of winding at least two parallel bands of wire gauze around the outer surface of the drum with longitudinal edges of adjacent band turns in abutment and under a longitudinal tension so as to press said bands against the surface of the drum, fixing the ends of said parallel bands at the respective end edges of said drum, and cutting off the protruding ends of said bands flush with the end edges of the drum.

3. A method of covering a cylindrical surface of a drum or the like with an extensible metallic gauze, comprising the steps of fixing one end of at least one band of metallic wire gauze onto said drum, winding said wire gauze around the surface of the drum with the edges of adjacent turns in abutment, applying a stretching force so as to maintain said band along its entire length removably pressed against the drum surface owing to the action of said stretching force and attaching the other end of the band on the drum so as to maintain said stretching force.

4. A method of covering a drum filter or the like with

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a metallic wire gauze comprising the steps of cutting at least one band from a metallic wire gauze, forming seams by heat treatment along the longitudinal edges of the band so as to prevent fraying of the edges, winding said band around the circumference of the drum with the edges of adjacent turns in abutment, simultaneously stretching said band so that the longitudinal tension will press it tightly against the surface of the drum, and attaching said band at its respective ends to the drum so as to maintain said longitudinal tension.

5. A method of covering a drum filter or the like with an extensible metallic gauze, comprising the steps of cutting at least one band from a metallic wire gauze, forming seams by heat treatment along the longitudinal edges of the band so as to prevent fraying of the edges, fixing one end of said at least one band onto the drum, winding

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said wire gauze around the surface of the drum with the edges of adjacent turns in abutment, stretching said band so as to press its entire length against the drum surface, and fixing the other end of the band on the drum so as to maintain the band in said stretched state.

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