May 17, 1938. J. DUNGLER 2,117,603

OPENING OF TEXTILE FABRICS FROM ROPE FORM

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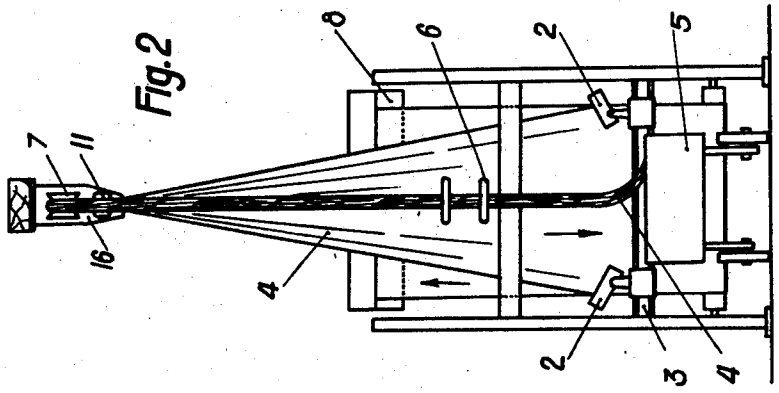


Fig.2

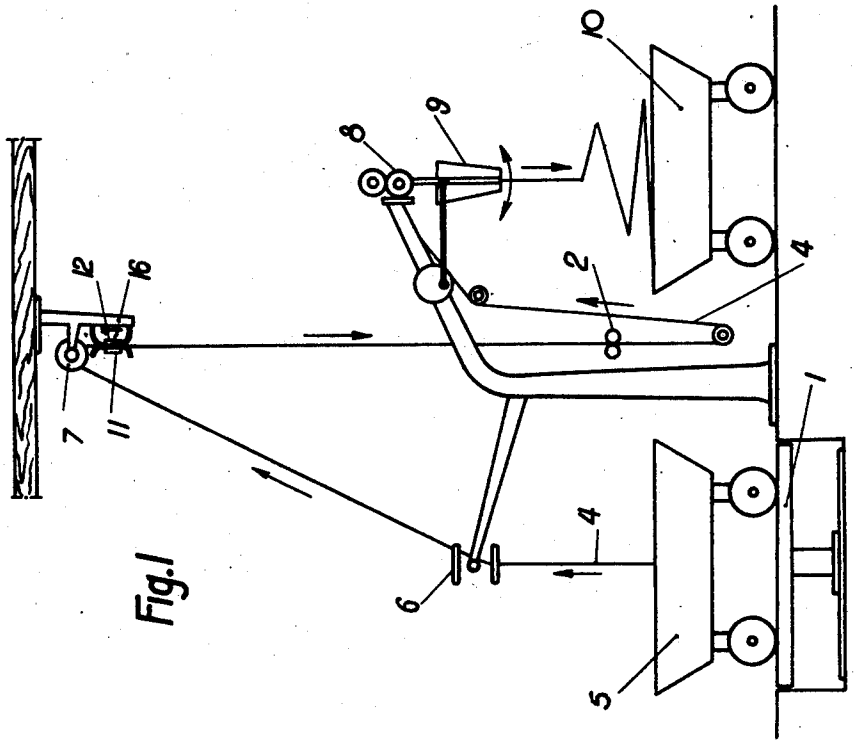


Fig.1

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Fig. 3

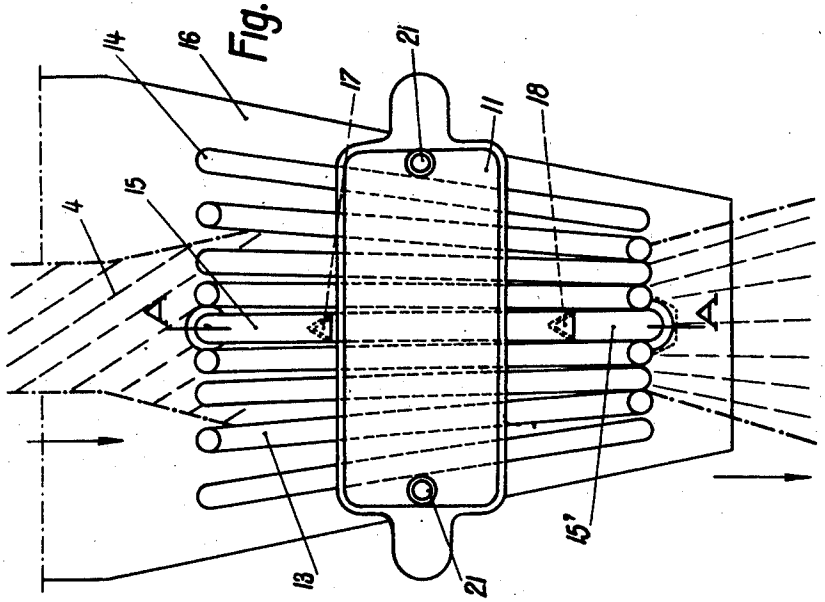
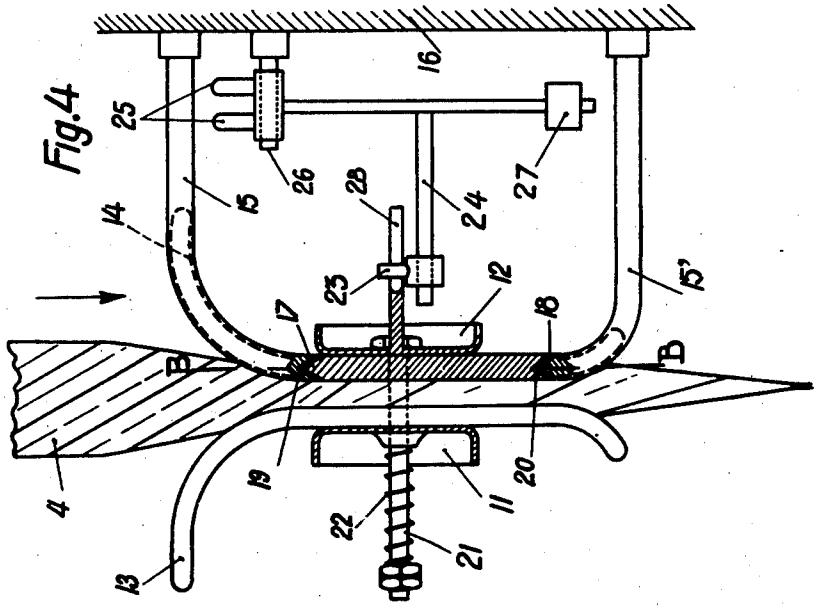


Fig. 4



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OPENING OF TEXTILE FABRICS FROM ROPE FORM

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Application June 3, 1937, Serial No. 146,169
In France July 24, 1936

5 Claims. (Cl. 117—1)

The present invention relates to plants utilized to open out, that is to straighten out, fabrics or similar materials which have been subjected to a twisted rope treatment, such as for instance dyeing, bleaching, drying, etc.

It is known that in the known opening machines the fabric which arrives in the form of a rope is submitted to the rough action of one or of several beaters turning in the opposite direction to that in which the fabric is moving, the effect of these beaters being often reinforced by one or several worms with spiral ribs.

It is recognized that if most linen, cotton or woollen fabrics may be subjected to such a rough treatment, if it is really necessary, it is not the same for more delicate fabrics of natural silk or rayon, nor for tulles, curtains, and other materials.

The subject of the present invention is to permit of opening out, in a secure manner, fabrics of all qualities and strengths, even the most delicate ones, without risk of unravelling them.

For this purpose, the object of the present invention is an improvement consisting in equipping the plant for opening out the fabrics, or similar, with means upon which the fabric in the form of a rope is made to act, and which control the untwisting device, these means being so arranged that the actual twisting of the rope is utilized to bring about the automatic control of the rotation of the untwisting device in the opposite direction to the twisting of the rope.

In order that the present invention may be readily understood, and by way of example, which is in no way restrictive, a form of execution is described hereinafter and is diagrammatically illustrated in the attached drawings; in these drawings:

Figure 1 is a view in side elevation of an improved plant according to the present invention;

Figure 2 is a front view;

Figure 3 is a front view of the automatic driving devices of the untwisting device;

Figure 4 is a vertical section according to AA.

The plant illustrated is provided, in the known manner, on the one hand with an untwisting device constituted for instance by a revolving plate 1 driven by an electric motor, and on the other hand by an opening device formed, for instance, by an oscillating selvedge guide described by the applicant in U. S. patent application No. 71,639 of March 30, 1936, said apparatus being provided with two head pieces 2, assembled on a rail-guide 3 with adjustable distance.

The fabric in the form of a rope 4, placed in a wagon 5 which rests on the revolving plate 1, passes, when it leaves the said wagon, into an adjustable clutch 6, then over a roll 7, and is then opened by the selvedge-guiding appliance 2, 2 from when it is taken by a roll 8 to be directed towards the latter treatment which, in the example shown, consists in a folding obtained by means of a mechanical folder of the known type 9, 10 being a wagon which receives the folded fabric.

According to the present invention, on the path of the fabric 4, means are introduced as a result of which the untwisting device 1 is automatically controlled so as to turn from the right to the left, or inversely, according as to whether the fabric is twisted in the direction left or right, or inversely, this automatic drive being brought about by the twisting of the fabric itself.

These means are constituted by an automatic contact maker, comprising, in the example illustrated, two plates 11 and 12, to which are attached the sets of rods 13 and 14 respectively, which are staggered with respect to each other, and converging in the direction of movement of the fabric, that is to say, downwards. The plate 12 is arranged to swivel around a vertical axis, BB with respect to the arms 15, 15' carried in a fixed support 16, this swivelling action, which is effected very gently, being permitted by the pivots 17 and 18 formed upon the plate 12 and the lower arm 15', and entering corresponding bearings 19, 20 of the upper arm 15 and the said plate 12. The other plate 11 is set up so that it can move with respect to the plate 12 by means of guiding rods 21 on which it can slide, and it is subjected to the action of springs 22 which constantly tend to bring it back towards the plate 12.

The oscillating equipment thus produced acts, by means of a fork 28 rigidly locked to the plate 12, on a finger 23, fixed at the end of a rod 24 and rigidly locked to a tipping contact device 25 mounted so as to swivel about a fixed axis 26, and provided with a drawback device such as the counterweight 27, or the like.

It is easy to perceive that when the fabric 4 passes in the form of a rope without torsion between the grids of the two plates 11 and 12, and if the adjusting is effected in such a manner that the contact-making device is then in a neutral position, the untwisting device 1 does not effect any rotating movement.

On the contrary, when the fabric shows some torsion, the latter acts upon the movable equipment 11, 12 and causes it to swivel in the direction

of the torsion, which, by means of one of the contact-making appliances **25**, causes the revolving plate **1** to turn in the direction opposite to the torsion.

If the direction of the torsion is changed, the movable equipment **11**, **12** swivels in the corresponding direction which causes the electric motor to turn the untwisting device **1**, in the reversed direction.

It is to be understood that without departing from the bounds of the present invention, other modifications and improvements in detail may be found, in the same way as the use of equivalent means may be considered.

I claim:

1. In apparatus for untwisting textile fabrics from rope form into the open condition, a rotatable member in which the fabric rope is charged, means for rotating the same, an opening device, means for passing the fabric rope to said opening device, control means in contact with the fabric rope before it reaches such opening device, which control means are movable by the condition and in the direction of twist of the said fabric rope, and contact means for the regulation of movement of the rotatable member which contact means are operated by the movement of the control means.

2. Apparatus as claimed in claim 1, the control means in contact with the fabric rope being grids between which the said rope passes, such grids being oscillatable together around the fabric rope by the twist contained in the same, and being connected with the contact means for the regulation of movement of the rotatable member to operate on their oscillation such contact means in accordance with the degree and direction of twist of the rope passing between such grids.

3. Apparatus as claimed in claim 1, the control means in contact with the fabric rope being grids between which the said rope passes, such grids being oscillatable together around the fabric rope by the twist contained in the same, and being connected with the contact means for the regulation of movement of the rotatable member to operate on their oscillation such contact means in accordance with the degree and direction of twist of the rope passing between such grids, the grids being connected together and one of them being mounted upon an axis which is parallel to the path of the fabric rope, the other grid being spring-controlled.

4. Apparatus as claimed in claim 1, the control means in contact with the fabric rope being grids between which the said rope passes, such grids being oscillatable together around the fabric rope by the twist contained in the same, and being connected with the contact means for the regulation of movement of the rotatable member to operate on their oscillation such contact means in accordance with the degree and direction of twist of the rope passing between such grids, the respective grids having bars.

5. Apparatus for restoring rope fabrics to their open condition, said apparatus comprising controlling members adapted to make contact with the moving fabric rope and movable by and in accordance with the direction of any twist therein, means for rotating the fabric rope to control the direction of rotation of the latter for taking out the twist, and connecting means between the first-mentioned means and the controlling members.

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