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[54] CLOTH ROLL SUPPORT HAVING TWO MODES OF MOVEMENT

1 Claim, 3 Drawing Figs.

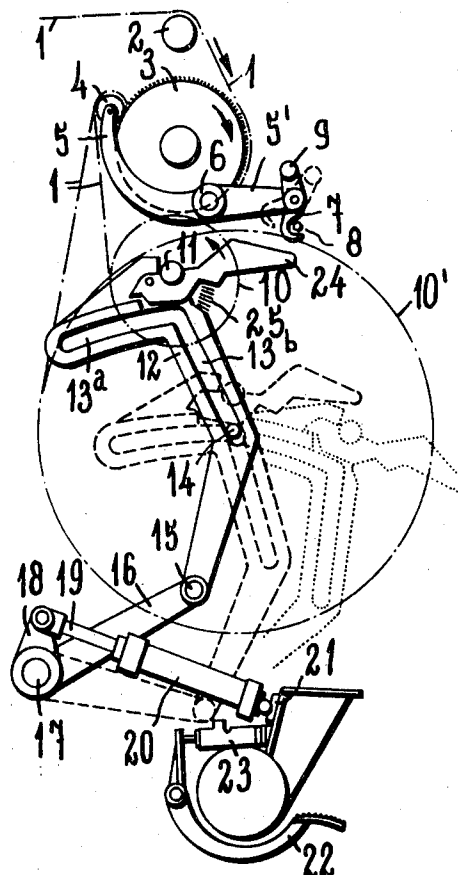
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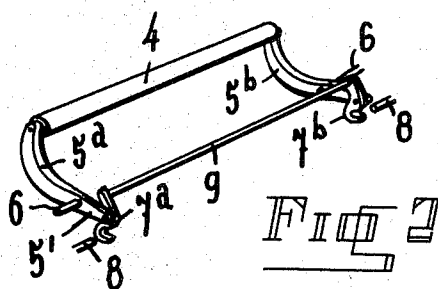
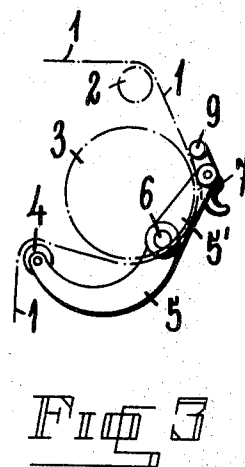
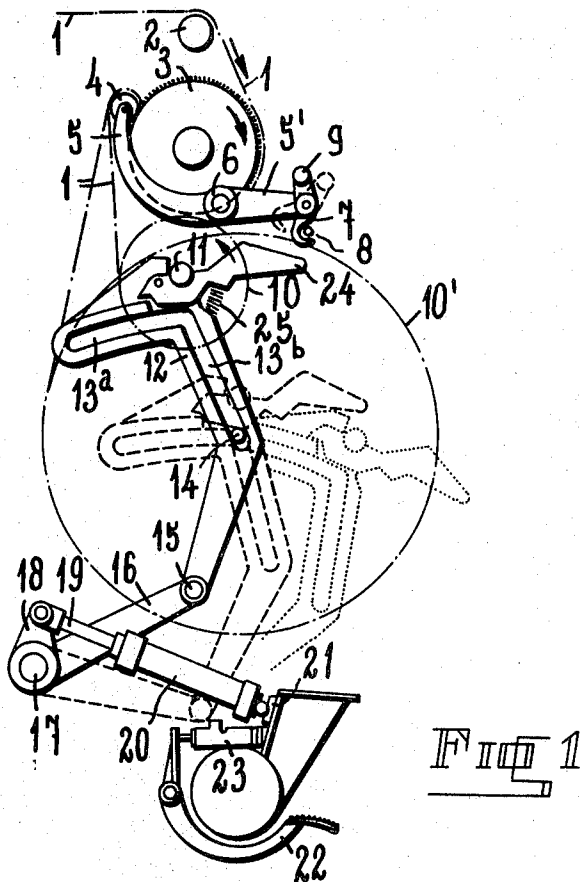
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ABSTRACT: A pair of brackets support a cloth beam in driven engagement with a sand beam. Each bracket has a releasable latch for rotatably retaining one end of the cloth beam in position on the bracket. A control member is pivotally connected to the lower end of each bracket for raising the brackets to hold the cloth beam in engagement with the sand beam and for lowering the brackets. Each bracket has an inverted L-shaped guide in which is engaged a guiding pin fixed in the machine. When the guiding pin is in the vertical leg of the L-shaped guide it permits up and down movement of the bracket, and when it is in the horizontal leg of the L-shaped guide it permits the bracket to be pivoted into a position in which the cloth beam can be removed by releasing the latches.





CLOTH ROLL SUPPORT HAVING TWO MODES OF MOVEMENT

BACKGROUND OF THE INVENTION

The invention relates to a weaving machine in which the fabric running over the chest beam runs around the sand beam and in which the cloth beam resiliently presses against the sand beam for driving the cloth beam by friction action.

Weaving machines are known which have the advantage that the cloth beam having the fabric wound thereon presses against the sand beam in order to drive the cloth beam by the sand beam, owing to which separate adjustable driving mechanism for the cloth beam can be omitted. Such weaving machines have the drawback that handling of the cloth beam is difficult, especially when the cloth beam is to be removed in order to subject the fabric just woven to a further treatment. Such weaving machines must be stopped in order to allow the removal of the woven fabric. Stopping of the weaving machine leads to the possibility of varying effects in the fabric especially when weaving machines have a high operating speed.

SUMMARY OF THE INVENTION

The object of the invention is to provide a weaving machine which allows removal of the cloth beam without the need of stopping the weaving machine whereas the weaving operation can be continued for a while without a cloth beam situated in the weaving machine.

According to the invention use is made of a weaving machine having the woven fabric situated around a large part of the circumferential surface of the sand beam, which weaving machine is characterized by the fact that an auxiliary beam cooperates with the sand beam at that side of the line of contact between the sand beam and the cloth beam which is opposite to the side of approach of the fabric to the sand beam which fabric runs over the auxiliary beam when going from the sand beam to the cloth beam. When now the cloth beam is removed from the weaving machine and the fabric which has passed the auxiliary beam has been cut the fabric will remain in tensioned condition on the weaving machine, as a result of the large surface of contact with the sand beam, whereas the fabric runs free from the auxiliary beam and hangs down. When sufficient length of the fabric has been woven the fabric can be wound by hand around an empty cloth beam which cloth beam can be situated in the weaving machine.

According to the invention it is advantageous to adapt the weaving machine in such a manner that the auxiliary beam and the cloth beam are mounted independent of each other and that they can move independent of each other to and from the sand beam. The independent situation of the cloth beam allows removing of the cloth beam of the machine, whereas the independent movement of the auxiliary beam is advantageous when a fabric or a warp has to be situated around the sand beam when a new warp beam is rigged into the weaving machine. To facilitate the above measures a weaving machine according to the invention has been adapted in such a manner that the ends of the auxiliary beam and/or the cloth beam are supported in brackets which can be displaced with respect to the sand beam. These brackets cooperate with a pressing device for, pressing the auxiliary beam and/or the cloth beam against the sand beam. The pressure of the auxiliary beam against the sand beam is desired in order to maintain a good contact of the woven fabric with the sand beam for maintaining a correct tension of the warp on the shed, whereas the pressing of the cloth beam against the sand beam is required in order to be able to drive the cloth beam by frictional contact with the sand beam.

A practical embodiment according to the invention is attained in that the rockable brackets have been supported at a point between their ends on a pin mounted on the frame of the machine and one end of the brackets cooperates with a pivotable pressure device. The machine is such that the pressing devices for the rockable brackets of the auxiliary beam are adapted as hooks which form a link between the frame of the

machine and the brackets when the hooks remain in a rocked position, which hooks are connected to each other by a shaft running parallel to the sand beam. The auxiliary beam can be easily brought in an inoperative position, by means of this shaft, and a fabric can be easily wound around the sand beam. The pressing device for the rockable brackets of the cloth beam has been shaped as a shaft provided with arms which shaft has been rotatably mounted in the frame of the machine and a pneumatic ram cooperates with the shaft whereas the arms of the shaft have been pivotably connected to the free ends of the rockable brackets. The cloth beam can be easily brought in touch with the sand beam by controlling the pneumatic ram. In the same manner the cloth beam can be removed from the sand beam whereas the resilient operation of the pneumatic ram will allow an enlarging of the diameter of the cloth beam when the fabric is wound thereon. Adjusting the cloth beam will be superfluous under these circumstances.

A practical embodiment of a weaving machine according to the invention is such that the brackets of the cloth beam are provided with L-shaped guides which have been situated in such a manner that one leg of the guide has been adapted for movement of the cloth beam to and from the sand beam under the influence of the actuating or releasing of the pneumatic ram, whereas the other leg of the guide has been adapted for lateral displacement of the cloth beam during which displacement the brackets pivot around the connection with the arms of the pressing device. The last movement is advantageous when the cloth beam is to be brought out of the weaving machine and to facilitate the lifting of the beam out of the brackets.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a diagrammatical side view of the winding system for the fabric in a weaving machine having brackets for an auxiliary beam cooperating with the sand beam and for a cloth beam which can be resiliently pressed against the sand beam of the weaving machine;

FIG. 2 shows a perspective view of the auxiliary beam with its brackets; and

FIG. 3 shows a detail of FIG. 1 in which the auxiliary beam is positioned out of contact with the sand beam.

DESCRIPTION OF THE PREFERRED EMBODIMENT

A fabric 1 leaving the shed runs in weaving machines around a chest beam 2 to a sand beam 3. The circumferential surface of the sand beam 3 has been rubbed in a known manner to prevent sliding of the fabric over the sand beam and by a correct speed in the driving of the sand beam 3 with respect to the production speed of the weaving machine the fabric will remain in its correct tension.

According to the invention an auxiliary beam or roller 4 cooperates with the sand beam which roller has been rotatably supported in brackets 5a and 5b (FIG. 2); the brackets 5a and 5b are pivotably connected at 6 to a pin of the frame of the weaving machine which for the sake of clarity has not been indicated in the drawing. The brackets 5a and 5b can be made of elastic material in order to obtain a resilient pressing of the auxiliary beam against the sand beam. The projecting arms 5' of the brackets 5a and 5b are provided with a pressing device in the shape of hooks 7a and 7b respectively. In the position in which the auxiliary beam 4 presses against the sand beam the hooks are positioned around pins 8 situated on the frame of the weaving machine. The hooks 7a and 7b which in the central part are pivotably connected to the arms 5' are interconnected by means of a connecting bar 9 which runs parallel to the sand beam. After releasing the hooks 7 from their pins 8 the arms 5a and 5b together with the auxiliary beam can swing into a position which has been indicated in FIG. 3. In this position a fabric 1 can be easily positioned around the sand beam 3 and over the auxiliary beam. When now the auxiliary beam has been brought into the position according to FIG. 1 and the hooks 7 are placed behind the pins 8 the weaving operation

can be started without wrapping the fabric 1 on the cloth beam. The woven fabric hangs down like a blind from the auxiliary beam 4, until sufficient length of fabric has been woven to wrap around a cloth beam. An empty cloth beam together with one or more windings of the fabric thereon will be pressed now against the sand beam 3 that is to say against the fabric which remains around the sand beam. A nearly empty cloth beam has been indicated with the reference numeral 10 in FIG. 1. The cloth beam 10 presses with its shaft 11 at each end on a bracket 12. The brackets 12 are provided with an inverted L-shaped guiding slot 13a and 13b. In each guiding slot fits a pin 14 which has been situated on the frame of the weaving machine. The end of each bracket 12 at 15 has been pivotally connected to a control member consisting of an arm 16 of a rotatably mounted shaft 17. A pneumatic ram acts on an arm 18 and further on the shaft 17 and the arm 16. The piston rod 19 has been connected to the arm 18 and the cylinder 20 of the ram has been supported on a part 21 of the weaving machine. When the cloth beam 10 is nearly empty the brackets 12 are in such a position that the pin 14 remains under in the guide 13b. The fabric 1 runs from the auxiliary beam 4 immediately to the cloth beam. This part of the fabric and further the auxiliary beam 4 have been positioned at that side of a line of contact between the sand beam and the cloth beam 10 which is remote from the side of approach of the fabric to the sand beam. When the diameter of the cloth beam increases as a result of the winding of the fabric thereon the brackets 12 together with the beam 10 will be lowered against the spring action of the ram 19, 20. The diameter of the cloth beam 10 can be increased to such an extent that the guide 13b has placed its upper part around the pin 14. A completely filled cloth beam has been indicated with a dash-dot line 10'.

When now during the weaving a cloth beam has to be removed from the weaving machine a pedal 22 is pressed down by the foot of the operator and this pedal controls a valve 23 which has been mounted on the part 21 of the weaving machine. By controlling the valve the pneumatic ram 19, 20 is released and the beam 10 will be freed from the sand

beam 3 and will be lowered until the part 13a of the guide in the brackets 12 comes at the pin 14. In this position the cloth beam together with the brackets 12 can be swung outwardly around the pivots at the end 15 and the pin 14 slides in the guide 13a. When now the pedal 22 is released the brackets 12 cannot move upwardly and the cloth beam can be removed from its bearings in the brackets 12. In order to facilitate the removal of the cloth beam the bearings for the ends of the shaft 11 of the cloth beam are rotatably retained in position on the brackets 12 by releasable latches consisting of rocker arms 24 which can be pressed down against the action of a spring 25. When a fresh cloth beam must be installed the beam can be positioned in the bearings in the rocker arms 24 and the beam together with the brackets 12 can be pushed into the weaving machine until the pin 14 for each bracket comes from the part 13a into the part 13b of the guide. Then the beam will be automatically moved upwards as the pedal 22 is not used and air can enter into the ram 20, 19.

I claim:

1. A weaving machine comprising a cloth beam, a driven sand beam around which the woven fabric travels, and an auxiliary beam which is arranged adjacent to the sand beam so as to cause the fabric to travel between the sand beam and the auxiliary beam and then over the auxiliary beam to the cloth beam, wherein the improvement comprises a pair of brackets for supporting the cloth beam in driven engagement with the sand beam, each having a releasable latch for rotatably retaining one end of the cloth beam in position on the bracket, and a control member pivotally connected to the lower end of each bracket for raising the brackets to hold the cloth beam in engagement with the sand beam, and for lowering the brackets, each bracket having an inverted L-shaped guide in which is engaged a guiding pin which is fixed in the machine and which when in the vertical leg of the L-shaped guide permits up and down movement of the bracket, and when in the horizontal leg of the L-shaped guide permits the bracket to be pivoted into a position in which the cloth beam can be removed by releasing the latches.

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