

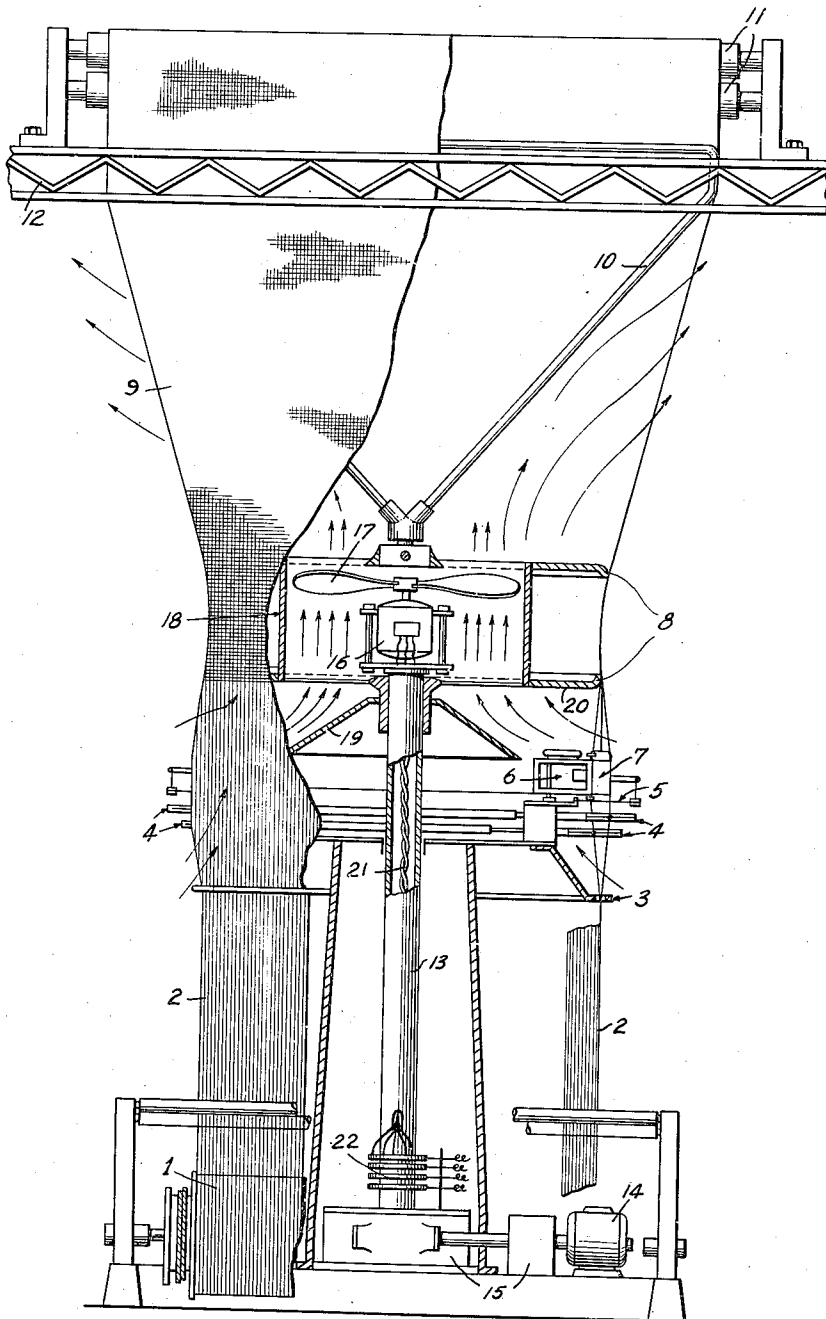
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REMOVAL OF FLUFF AND DUST IN CIRCULAR LOOMS

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REMOVAL OF FLUFF AND DUST IN
CIRCULAR LOOMSVictor Marie Joseph Ancet, Lyon, France, assignor
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5 Claims. (Cl. 139—16)

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The present invention relates to a method and means for removing flock, fluff and dust from circular weaving looms. The purpose of the present invention is to effect the removal automatically and by forced draught. In circular weaving looms, a special problem is set for the removal of fluff and dust formed during the course of weaving, particularly if very fluffy textile materials are being used. Flock, fluff and dust are most harmful both to the loom operators and to the various working parts of the loom, rapidly clogging the delicate mechanism, which it is not always easy to protect effectively, and their removal is essential.

To this end, according to the principal feature of the invention, the fluff and dust are caught at the periphery of the loom and conveyed by suction to its central zone where they are discharged either into a bag or into the sheath of fabric formed on the loom, this sheath thus acting as a natural filter bag which retains the fluff and dust and carries it away in proportion as it is itself rolled up on the cloth beam, thus preventing any from being discharged into the atmosphere of the mill.

It is to be noted that on account of the continuous elimination of the fluff and dust and of the small amount thereof in comparison with the very extensive, continually renewed, filtering surface, the retention of the fluff and dust by the cloth does not present any disadvantage.

In a particular embodiment given solely by way of example, evacuation of the fluff and dust is effected by an extractor advantageously constituted by a blower, such as a centrifugal blower, located at the end of the main shaft of the loom, at the centre of a suction cylinder forming a conveying duct and disposed between two circular rings which preserve the tubular form of the sheath before it is flattened in order to be wound up on the cloth beam.

By suitable partitions, the air on the suction side is compelled to reach the extractor by traversing the warp threads obliquely from the outside to the inside of the loom, at the zone of operation of the shuttles and of the shedding motion of the warps, a zone in which practically the whole of the fluff and dust is produced.

The accompanying drawing shows by way of example an embodiment of such a system. In the drawing the essential parts of a particular type of weaving loom are shown, together with the warps and the fabric.

These parts include on of the warp beams 1, the tubular sheet 2 of warps, the warp guide ring

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3, the healds 4 by which shedding is effected, the reed 5, one of the shuttle driving members 6, one of the shuttles 7, two circular supporting rings 8, the tubular sheath 9 of woven fabric, a stretching member 10, the cloth beam 11 for winding up the sheath, the girderwork 12 supporting the cloth beam, the central driving shaft 13, the driving motor 14, and the transmission 15.

According to the invention, at the top of the central shaft 13 is placed an electric motor 16 driving a helicoidal blower 17, the whole being located at the centre of a cylinder 18 extending between the two rings 8. A deflector 19 and a horizontal partition 20, formed by the lower ring 8, to cooperate to force the air sucked in by the blower 17 to traverse the warps obliquely in the direction of the arrows in the zone of operation of the shuttles and of the shedding motion. Since this zone is thus subjected to slight suction, the fluff and dust carried off, rises in the cylinder 18 and is forced into the tubular sheath 9 where it is stopped by the fabric within which there exists a slight superatmospheric pressure.

The motor 16 is supplied through the central shaft 13 which is hollow and serves at the same time for the accommodation of all the electric cables 21 necessary for the operation of the various parts of the loom, connection to them being made by slip rings 22 at the base.

As is obvious and as follows from what is stated above, the invention is in no way limited to the single embodiment described above in its application to the particular type of loom shown in the drawing, but includes all variations of construction and application within the scope of the claims.

What is claimed is:

1. A method of eliminating fluff and dust from circular weaving looms which comprises sucking the fluff and dust out of the warp threads, discharging it into the natural filtering bag formed by the sheath of fabric being woven on the loom, and continuously removing said fluff and dust from the loom in proportion as the woven fabric is wound up and removed.

2. In a circular weaving loom, including a shuttle moving and shedding control system and a cloth beam for winding up the woven fabric, the provision of a sucking device located axially of the loom and sucking air through the sheet of warps in the zone of operation of the control system and adapted to discharge the air laden with fluff and dust into the centre of the tubular sheath of fabric on its way towards the cloth beam.

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3. In a circular weaving loom, including a shuttle moving and shedding control system, a central control shaft therefor and a cloth beam for winding up the woven fabric, the provision of a sucking device located axially of the loom and sucking air through the sheet of warps in the zone of operation of the control system and adapted to discharge the air laden with fluff and dust into the centre of the tubular sheath of fabric on its way towards the cloth beam and means driving the sucking device and located with said device at the end of the central shaft of the loom adjacent the cloth beam.

4. In a circular weaving loom, including a shuttle moving and shedding control system, two superposed circular rings adapted to preserve the tubular form of the fabric before it is wound up, and a cloth beam for winding up the woven fabric, the provision of a sucking device located axially of the loom and sucking air through the sheet of warps in the zone of operation of the control system and adapted to discharge the air laden with fluff and dust into the centre of the tubular sheath of fabric on its way towards the cloth

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beam, said sucking device being located at a level between the two circular rings.

5. In a circular weaving loom including a shuttle moving and shedding control system and a cloth beam for winding up the woven fabric, the provision of a sucking device located axially of the loom and sucking air through the sheet of warps in the zone of operation of the control system, partitions directing the air laden with dust and fluff from said zone toward said device, and a cylinder co-axial with the loom and surrounding said device, said partitions terminating in said cylinder.

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