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LINT COLLECTOR FOR CIRCULAR LOOMS

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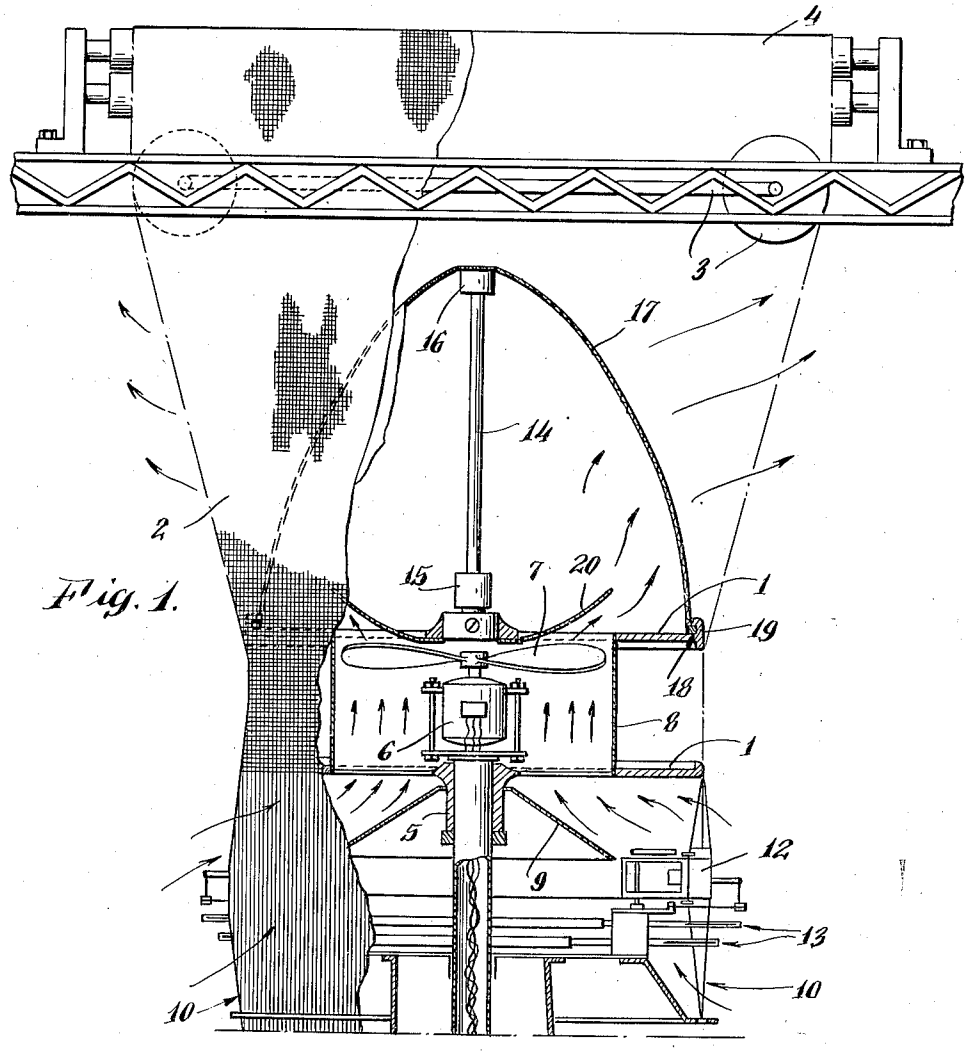

Fig. 1.

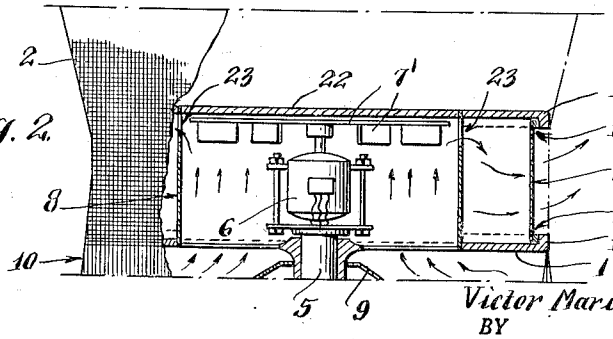

Fig. 2.

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LINT COLLECTOR FOR CIRCULAR LOOMS

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6 Claims. (Cl. 139—13)

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The present invention relates to apparatus for the removal of fluff and dust from circular weaving looms, and particularly to the type of loom described in my co-pending application Serial No. 746,281, filed May 6, 1947, now Patent No. 2,480,690, wherein the fluff and dust is picked up from the periphery of the loom in the vicinity of the weft laying mechanism and conducted by suction toward the center of the loom.

In this type of loom, suction is provided by a fan located at the end of the loom shaft adjacent the cloth take-up zone, the cloth immediately surrounding the fan being held in cylindrical form by circular crowns arranged above and below the fan. In the said co-pending application, the fan delivers the collected fluff and dust directly into the natural container formed by the cloth between the uppermost circular crown and the cloth take-up beam. Hence the air delivered by the fan escapes through the cloth which retains the fluff and dust and removes it from the loom progressively as the cloth is wound up.

In certain cases, it may not be convenient for the cloth to be so loaded with fluff and dust as to necessitate a subsequent treatment for removal. It is therefore the object of this invention to provide means for collecting the fluff and dust, said means being interposed between the delivery side of the fan and the woven cloth.

In the accompanying drawings given by way of illustrative examples:

Fig. 1 is an elevation in part section of a first embodiment of the invention; and

Fig. 2 is a fragmentary view of an alternative form.

Referring to the drawings, circular crowns 1 support the tubular cloth 2 below the point where it is stretched to substantially flat formation by stretcher 3 prior to winding on beam 4. At the upper end of loom shaft 5 which drives the weaving mechanism, there is mounted an electric motor 6 driving a fan 7, both conveniently located, as a working unit, between the crowns 1. A deflector 9 guides the air obliquely through the warp threads 10 as it is sucked in by the fan along a path indicated by the arrows in the vicinity of the shuttles 12 and of the shed opening means controlling heddles 13.

In accordance with the embodiment of Fig. 1, cylinder 8 is surmounted by a column 14 fitted into boss 15 and carrying hub 16. Column 14 thus supports bell-shaped dust bag 17, the periphery of which is provided with a flexible retaining ring or wire 18 engaging with lugs 19

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spaced around the periphery of the upper one of crowns 1.

The upper opening of cylinder 8 may be conveniently provided, for example, with a flexible non-return valve 20.

It will be readily understood that flock and dust sucked in by the fan is collected in bag 17 without being returned to the atmosphere surrounding the loom. Each time the supply of warp is exhausted, retaining ring 18 can be disengaged from lugs 19, and bag 17 can then be removed and emptied.

In the embodiment of Fig. 2, fan 7' is shown as being a centrifugal blower and the upper opening of cylinder 8 is closed by a partition 22 while louvers or vents 23 are provided in the walls of the cylinder.

In this embodiment, a circular strip of cloth 24 is stretched around the outside of crowns 1 and held in place by two rings 18', similar to the single ring of Fig. 1, engaging with lugs 19'.

Accordingly, the flock and dust sucked in by the centrifugal blower is guided outwardly through vents 23 into the annular space bounded by crowns 1, cylinder 8 and strip 24 which acts in the same manner as bag 7'.

Obviously the invention is not limited to the two examples illustrated and described herein but includes all modifications of the general principles falling within the scope of the appended claims.

What is claimed is:

1. In a circular weaving loom including a fan for removal of flock and dust, the fan being situated axially in the weaving zone, in a position to suck air inwardly through the warp threads and weaving zone and discharge it in the direction of the woven cloth, the provision of a filter intermediate the woven material and the discharge side of the fan.

2. The invention as in claim 1 wherein the discharge of the fan is directed axially, the filter comprising a cloth bag supported coaxially with the loom and having its periphery firmly connected around the discharge of the fan.

3. The invention as in claim 2 further comprising a non-return valve in the discharge opening of the fan.

4. The invention as in claim 1 wherein the fan comprises a centrifugal blower, the discharge thereof being directed radially, the filter comprising a cloth strip entirely surrounding the fan and having its longitudinal edges firmly connected to either side of the discharge.

5. In a circular weaving loom, an axial dis-

charge fan situated in the weaving zone coaxial with the loom, a duct surrounding the fan and concentric therewith, a non-return valve at the upper discharge end of the duct, and a bell-shaped cloth bag the edge of which is connected to the periphery of the duct discharge.

6. In a circular weaving loom, a centrifugal fan situated in the weaving zone coaxial with the loom, a duct surrounding the fan concentrically therewith and having a closed upper end, vents in the curved wall of the duct, an annular flange extending radially outward from each end of the duct, and a strip of cloth surrounding the duct and spaced therefrom to leave an annular chamber bounded by the wall of the duct, the annular flanges and the cloth strip, the edges of the latter being connected to the periphery of both flanges.

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