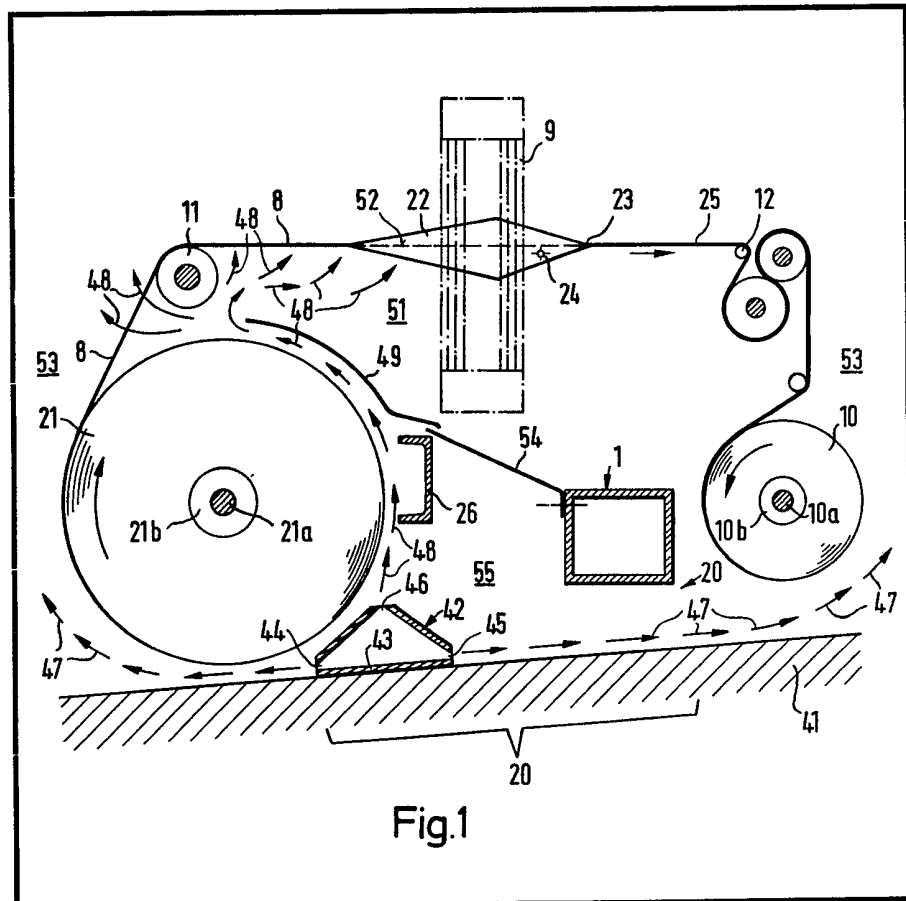


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(54) Looms having means for ventilation and cleaning

(57) A loom has a ventilation air supply duct (42) with first exit apertures (44, 45) for air to pass below the warp beam (21) and cloth beam (10) along the floor into the regions around the loom—more particularly into the weaver's alleys—and second exit apertures (46) delivering air to the interior of the loom and particularly towards the warp sheet (8) to condition the warp yarns and/or to clean the loom.



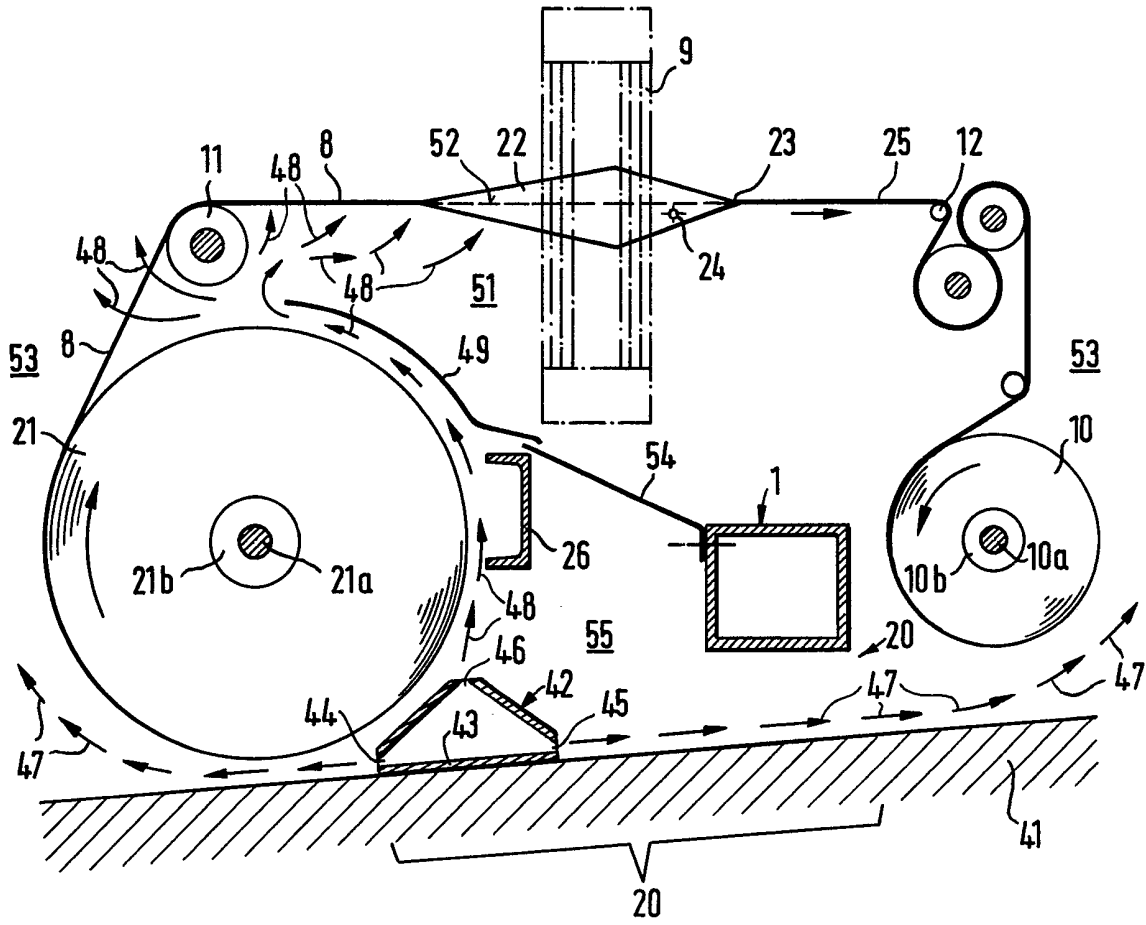


Fig.1

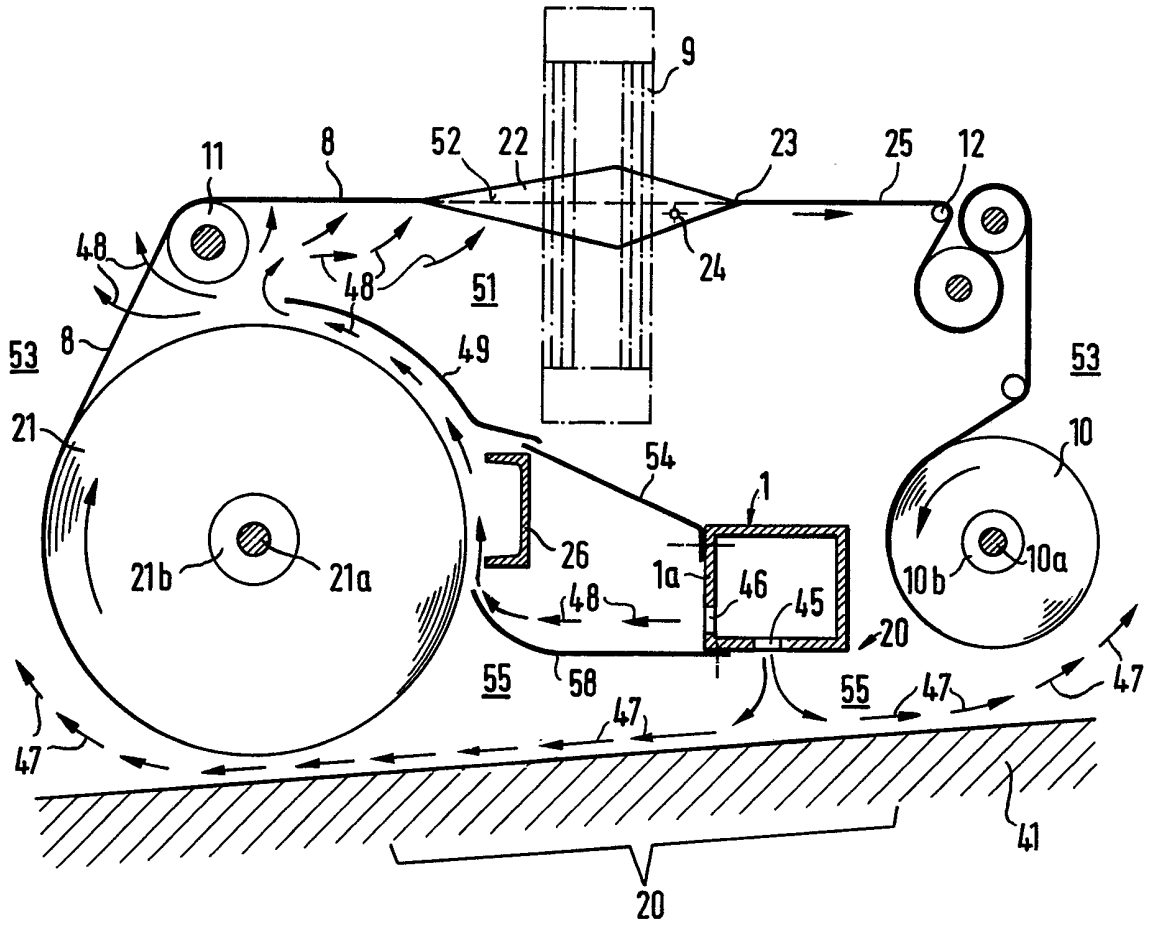


Fig.2

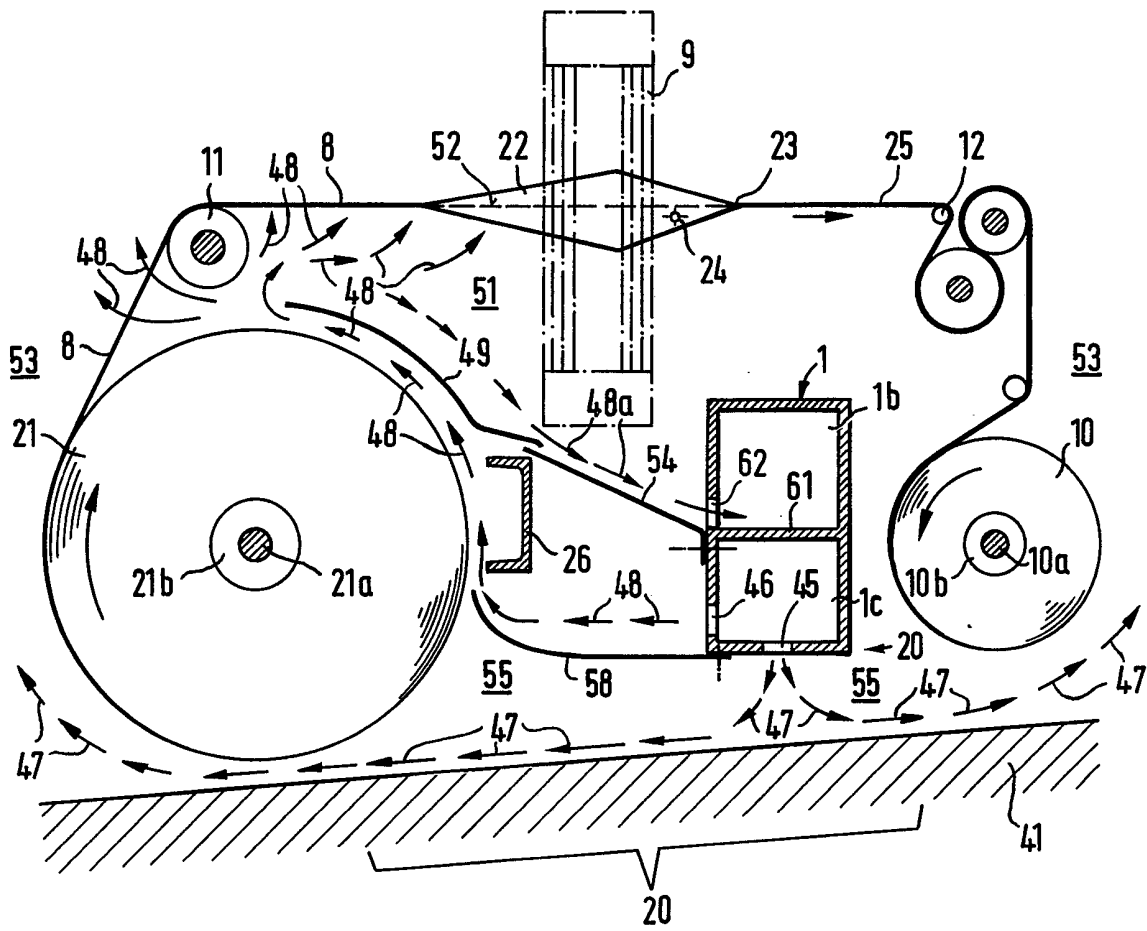


Fig.3

SPECIFICATION

Looms having means for ventilation

5 This invention relates to looms having means for ventilation, preferably by means of conditioned air.

10 In Swiss patent specification 490 549, a loom is described in which the ventilation air goes through a duct to near the warp yarns and then issues through exit orifices into the space below the warp sheet. Since the warp sheet and the cloth produced from the warp sheet form a kind of top closure member, the only way for most of the entering air to leave is at the sides of the machine, e.g. through the side frames or cheeks. A separate air-conditioning facility is used to air-condition the weave room.

20 According to the present invention, a loom has a ventilation air supply duct extending parallel to the line of pick and located close to the floor in the space below the weaving plane and between the warp beam and the cloth beam, the air supply duct being formed with: first exit apertures for air to be guided below the warp beam and/or the cloth beam and through into the weave room; and second exit apertures for air to be guided into the interior regions of the loom. Consequently, some of the supplied air can flow through into the weave room below the warp beam and/or cloth beam. This air reaches more particularly the regions where the operative has to work (the weaver's alleys of the weave room). The remainder of the supplied air can be used to condition the warp yarns and/or to clean the loom. The air supply duct can be located near the floor where ducting can be fitted more readily than elsewhere in the loom and an air supply duct immediately below the weaving plane is not required.

35 The invention may be carried into practice in various ways but three looms embodying the invention will now be described by way of example with reference to the accompanying drawings, in which:

40 *Figure 1* is a diagrammatic cross-section of a first loom embodying the invention; and

50 *Figures 2 and 3* are similar sections of two further looms embodying the invention.

In the loom shown in Fig. 1, warp threads 8 go from a warp beam 21 having a shaft 21*a* and a tube 21*b* over a back rest 11, through healds for the formation of a weaving shed 22 to the fell 23 where a reed (not shown) beats up the weft thread which has been picked along the line of pick 24. Cloth 25 goes over a breast beam 12 and other rollers to be taken up on a cloth beam 10 having a shaft 10*a* and tube 10*b*.

The loom frame 1 comprises a load bearing member 1 which is of hollow box-section and constitutes the main cross member, and comprises an additional channel-section cross

member 26, the cross members 1, 26 extending parallel to the line of pick 24. A triangular cross-section air supply duct 42 is located adjacent the floor 41 of the weave room in a space below the weaving plane and between the warp beam 21 and cloth beam 10. The base of the triangular duct 42 is parallel to the floor 41. At its three vertices the triangle is formed with air exit apertures 44, 45, 46.

70 Air issuing from the first exit apertures 44, 45 flows along the floor, as indicated by arrows 47, below the beams 21, 10 and through into the weave room 53. Air leaving the second exit apertures 46 rises in the direction indicated by arrows 48, to be guided by a deflector plate 49 around the warp beam 21. Near the back rest 11 the air from the apertures 46 enters the space 51 immediately below the warp sheet 8 and the weaving plane 52.

85 The air used to condition the premises, whose flow is indicated by arrows 47, conditions the weave room 53 particularly in the weaver's alleys, the place where the operative is most of the time when she has to work on the loom. A baffle plate 54 is attached to the main cross member 1 to deflect the machine-conditioning air towards the warp beam 21 in the direction indicated by arrows 48. The baffle plate 54 and the deflector plate 49 also separate the space 51 below the weaving plane 52 from the bottom space 55 between the warp beam 21 and cloth beam 10.

The main cross member 1 of the loom shown in Fig. 2 constitutes an air supply duct and is formed in its bottom wall with first exit apertures 45 for the room-conditioning air, as indicated by arrows 47, and in one of its side walls 1*a* with second air exit apertures 46 for the loom-conditioning air, as indicated by arrows 48. A baffle plate 58 extends horizontally from the bottom of the cross member 1. The loom-conditioning air is guided between the plates 58, 54, as indicated by arrows 48, to the warp beam 21 and upwardly across the warp beam.

The main cross member 1 of the loom shown in Fig. 3 is of rectangular cross-section and subdivided by a horizontal partition 61 into two parts 1*b*, 1*c*. The part 1*c* serves as an air supply duct for the room-conditioning air, as indicated by arrows 47, and for the loom-conditioning air, as indicated by arrows 48. The part 1*b* serves as an extractor duct for the air from the space 51 which flows as indicated by arrows 48*a* and enters the part 1*b* through apertures 62.

120 In all three looms, the air supply duct 42, 1, 1*c* serves the two purposes of supplying air for conditioning to both the weave room and the loom (two-zone conditioning). The loom can be covered at the top. If required, an air duct can also be provided above the weaving plane 52. The room-conditioning air associated with the arrows 47 and that proportion

of the loom-conditioning air which issues from the loom as indicated by arrows 48 can be extracted, e.g. by an additional conditioning facility located, for example, in the ceiling of the weave room.

5 Instead of conditioned air, the air supply ducting 42, 1, 1 c can deliver ordinary unconditioned fresh air for renewing the air in the weave room 53 and for cleaning the space 51 inside the loom.

10 In the case of the loom shown in Fig. 1, the duct 42 may be formed only with the apertures 44 or only with the apertures 45 as air exit apertures for conditioning the weave room. In this event, air for conditioning the weave room reaches the room by flowing either under the warp beam 21 or under the cloth beam 10 but not both so that when a number of looms are present in a weave room, each weaver's alley receives conditioning air from only one side.

CLAIMS

25 1. A loom having a ventilation air supply duct extending parallel to the line of pick and located close to the floor in the space below the weaving plane and between the warp beam and the cloth beam, the air supply duct being formed with: first exit apertures for air to be guided below the warp beam and/or the cloth beam and through into the weave room; and second exit apertures for air to be guided into the interior regions of the loom.

35 2. A loom as claimed in Claim 1 in which the air supply duct is of triangular cross-section, the base of the triangle extending substantially parallel to the base of the said space, the air exit apertures being located at the vertices of the triangle.

40 3. A loom as claimed in Claim 1 in which the air supply duct is constituted by a load bearing member of the loom frame.

45 4. A loom as claimed in Claim 3 in which there is attached to the exterior of the load bearing member a baffle for separating the air flows issuing respectively from the first and second exit apertures.

50 5. A loom as claimed in any of the preceding claims which includes an air extraction duct in the region above the air supply duct.

55 6. A loom as claimed in Claim 5 when appendant to Claim 3 or Claim 4 in which the interior of the load bearing member is divided longitudinally into parts, one part constituting the air supply duct and the other part constituting the air extraction duct.

7. A loom substantially as described herein with reference to Fig. 1 or Fig. 2 or Fig. 3 of the accompanying drawings.