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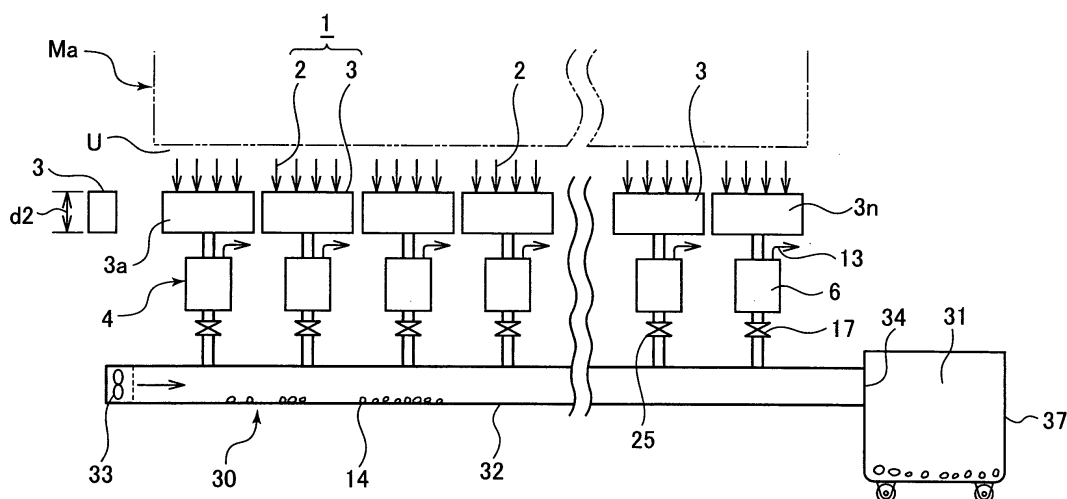
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(54) **Dust collecting and processing system in textile machine**

(57) The present invention provides a dust collecting and processing system that sucks and collects fly waste generated during operation of a spinning machine or the like. In the dust collecting and processing system, a centrifugal separator is applied to a fly waste sucking section to prevent a possible variation in suction force and to reduce a machine frame size and power consumption. The dust collecting and processing system includes a large number of units (U) arranged in a machine frame (Ma) in one direction and each including a fly waste suction line (1) that sucks fly waste or the like, and a fly waste

separating means (4) for separating the fly waste from suction air. The dust collecting and processing system sucks the fly waste generated during operation of each of the units (U) for separating and collecting the fly waste or like. The fly waste separating means (4) is provided for the fly waste suction line (1) in association with at least one unit (U). The fly waste separating means (4) includes a centrifugal separator (6). The centrifugal separator (6) separates and sucks the fly waste so that the separated fly waste is collected in a dust collecting section (31) via a fly waste conveying means (4).

FIGURE 1



Description

Field of the Invention

[0001] The present invention relates to a dust collecting and processing system installed in various textile machines such as a spinning machine and a winder to collect and process fly waste, dust or the like generated during operation.

Background of the Invention

[0002] For example, a dust collecting and processing system such as the one shown in Figure 9 is a conventional apparatus installed in a textile machine such as a spinning machine to collect and process fly waste, dust or the like generated during operation. This conventional dust collecting and processing system includes a long duct 41 located in a machine frame Ma in a longitudinal direction thereof and to which units U are directly connected so that fallen fiber from the unit U can be sucked and collected in the long duct 41.

[0003] In the conventional dust collecting and processing system, collected fly waste or the like passes through the long duct 41, directly connected to the units U, into a dust collecting chamber 42. In the dust collecting chamber 42, a dust adhering filter 43 separates fly waste 44 from suction air 45. The fly waste 44 is collected in a dust collecting vehicle 48 via a conveying means 47 such as a belt conveyor 46 or an axial flow fan duct. The suction air 45 is emitted to the atmosphere through a discharging port. In the conventional dust collecting and processing system, when the fly waste 44 covers the entire surface of the dust adhering filter 43, a passage is switched to a bypass dust collecting chamber 42A provided adjacent to the dust collecting chamber 42 so as to constitute another line. The dust collecting chamber 42 and the bypass dust collecting chamber 42A are thus alternately used. The line to which the passage has been switched is set to the atmospheric pressure. The fly waste 44 sticking to the dust adhering filter 43 falls into a dust discharging section 49 under gravity. The fallen fly waste 44 is discharged into the dust collecting vehicle 48 via the belt conveyor 46 or the conveying means 47.

[0004] The conventional dust collecting and processing system is disclosed in, for example, Abstract and Figures 1 and 2 of the Unexamined Japanese Patent Application Publication (Tokkai) No. 2002-13032, the Unexamined Japanese Patent Application Publication (Tokkai-Hei) No. 2-289135, and Figures 1 to 4 of the Unexamined Japanese Patent Application Publication (Tokkai) No. 2006-346669. The conventional dust collecting and processing system has problems described below.

(1) After the fly waste starts to stick to the dust adhering filter, the static pressure in the long duct lowers gradually to vary a suction force until the fly waste

covers the entire surface of the dust adhering filter.

(2) In this configuration, the static pressure is maintained by the long duct. This increases a pressure loss. Therefore, the cross sectional size d1 of the duct needs to be increased, thus increasing the size of the machine frame.

(3) To avoid the problems (1) and (2) relating to the static pressure variation and the pressure loss, respectively, the size of the blower must be increased, thus increasing the quantity of consumed energy.

(4) An operating section such as for bypass switching is provided in the dust collecting chamber. Thus, the operating section is likely to be blocked with collected fly waste or the like.

Summary of the Invention

[0005] An object of the present invention is to provide a dust collecting and processing system in a textile machine which prevents a possible variation in suction force caused by blockage of meshes provided in a dust collecting chamber of a spinning machine or the like and which divides a duct extending in the longitudinal direction of a machine frame into shorter sections, thus reducing the size of the machine frame and power consumption. That is, an object of the present invention is to provide a dust collecting and processing system including a maintenance-free dust collecting chamber.

[0006] According to an aspect of the present invention, a dust collecting and processing system in a textile machine includes a large number of units arranged in a machine frame in one direction and each including a fly waste suction line that sucks fly waste or the like. The dust collecting and processing system also includes a fly waste separating means for separating the sucked fly waste from suction air. The dust collecting and processing system sucks the fly waste or the like generated during operation of each of the units, and separates and collects the fly waste or the like. In the dust collecting and processing system, the fly waste separating means is provided for the fly waste suction line in association with at least one unit. The fly waste separating means has a centrifugal separator. The centrifugal separator separates and sucks the fly waste so that the separated fly waste is collected in a dust collecting section via a fly waste conveying means.

[0007] According to an aspect of the present invention, in the above-described dust collecting and processing system in the textile machine, at least one blower means is provided for each preset frame span unit, and the blower means allows the centrifugal separators in the frame span to perform suction.

[0008] According to an aspect of the present invention, in the above-described dust collecting and processing system in the textile machine, the fly waste separating means is provided for each machine frame.

[0009] According to an aspect of the present invention, in the above-described dust collecting and processing

system in the textile machine, the fly waste separating means is provided for each section including a plurality of units in the machine frame.

[0010] According to an aspect of the present invention, in the above-described dust collecting and processing system in the textile machine, the fly waste separating means is provided for each of the units in the machine frame.

[0011] According to an aspect of the present invention, in the above-described dust collecting and processing system in the textile machine, the centrifugal separator for the fly waste separating means includes a centrifugal separating chamber, a suction flow introducing means, a suction air discharging means, a collected dust accommodating chamber, and a fly waste discharging means. The centrifugal separating chamber is formed by a cylindrical space. The suction flow introducing means is connected to the fly waste suction line. The suction flow introducing means introduces a suction flow into the cylindrical space toward a tangential direction of the cylindrical space to generate a whirling flow in the cylindrical space. The suction air discharging means upwardly discharges suction air separated in the centrifugal separating chamber. The collected dust accommodating chamber accommodates the fly waste separated in the centrifugal separating chamber, in a dust collecting space provided under the cylindrical space. The fly waste discharging means discharges the fly waste accommodated in the collected dust accommodating chamber.

[0012] According to an aspect of the present invention, in the above-described dust collecting and processing system in the textile machine, the fly waste discharging means has a discharging pipe connected to the dust collecting space and a valve provided in the discharging pipe. The dust collecting and processing system includes a pressure reducing means for setting a pressure of an area located downstream of the valve lower than a pressure in the dust collecting space so that the fly waste accommodated in the lower collected dust accommodating chamber is discharged without need to stopping the suction.

[0013] According to an aspect of the present invention, in the above-described dust collecting and processing system in the textile machine, a bypass passage is provided on an upstream side of a suction port in the centrifugal separator. In the dust collecting and processing system, to discharge the fly waste accommodated in the lower collected dust accommodating chamber, the suction is stopped with another centrifugal separator allowed to continuing the suction.

[0014] According to an aspect of the present invention, in the above-described dust collecting and processing system in the textile machine, a partition plate member is provided between the centrifugal separating chamber and the collected dust accommodating chamber to perform opening and closing control such that the centrifugal separating chamber and the collected dust accommodating chamber are opened to or closed from each other.

[0015] The above-described dust collecting and processing system in the textile machine exerts, for example, the following effects.

[0016] First, a possible variation in static pressure is inhibited to enable the operation under the minimum required static pressure. This enables saving of energy consumed by the dust collecting and processing system.

[0017] Second, compared to the conventional long duct scheme, the dust collecting and processing system according to an aspect of the present invention divides the duct into sections for suction. This enables a reduction in the pressure loss in the duct and in the cross sectional area d_2 of the duct. As a result, the machine frame size can be reduced, and energy can be saved.

[0018] Third, the capacity of the blower can be reduced on the basis of the above-described first and second effects.

[0019] Fourth, the centrifugal separator uses no operating section or mesh. This reduces the risk of possible blockage with the fly waste. The dust collecting and processing system is thus in an almost maintenance-free condition.

[0020] Other features, elements, processes, steps, characteristics and advantages of the present invention will become more apparent from the following detailed description of preferred embodiments of the present invention with reference to the attached drawings.

Brief Description of the Drawings

[0021]

Figure 1 is a schematic diagram showing an example of a dust collecting and processing system in a textile machine according to an embodiment of the present invention and illustrating an example of a configuration in which four units in a machine frame are defined as one section so that suction can be separately carried out in each section.

Figures 2A to 2C are diagrams showing for every how many units in the machine frame each fly waste separating means is provided. Figure 2A is a schematic diagram showing an example of a configuration in which one fly waste separating means is provided for one machine frame. Figure 2B is a schematic diagram showing an example of a configuration in which the fly waste separating means is provided for each section including a plurality of units in the machine frame. Figure 2C is a schematic diagram showing an example of a configuration in which the fly waste separating means is provided for each of the units in the machine frame.

Figure 3A is a schematic plan view of a centrifugal separator constituting the fly waste separating means. Figure 3B is a schematic sectional view taken along line 3B-3B in Figure 3A.

Figure 4 is a partly broken schematic perspective view showing the internal structure of the centrifugal

separator.

Figure 5 is a schematic diagram illustrating effects of the centrifugal separator.

Figure 6 is a schematic front view showing an entire spinning machine according to an embodiment of the present invention.

Figure 7 is a schematic side view of the spinning machine.

Figure 8 is a schematic front view showing an entire draft device in the spinning machine.

Figure 9 is a diagram showing a specific example of a conventional long-duct-type dust collecting and processing system.

Detailed Description of the Preferred Embodiments

[0022] A dust collecting and processing system in a textile machine according to an embodiment of the present invention will be described with reference to the drawings.

[0023] First, an example of a textile machine in which a dust collecting and processing system according to an embodiment of the present invention is used will be described on the basis of a spinning machine M shown in Figures 6 to 8.

[0024] The spinning machine M is configured such that a large number of spinning units U (hereinafter simply referred to as units U) are arranged in one machine frame Ma in one direction. In the spinning machine M, first, a sliver L is fed to a draft device D and formed into a spun yarn Y by a spinning section Sp. Subsequently, the spun yarn Y is wound around a winding section W via a nip roller Rn, a slab catcher Z, and the like to form a package PW. In the drawings, P is a yarn splicing vehicle that performs yarn splicing. The yarn splicing vehicle P travels inside and in a lower part of the spinning machine M in a longitudinal direction of the spinning machine M.

[0025] As shown in Figure 7, in each of the units U, the sliver L housed in a can K located in the rear of the machine frame Ma is inserted through a trumpet T via a guide G and conveyed to the draft device D. Subsequently, the sliver L passes through the draft device D, where the sliver L is drafted to a predetermined thickness. The drafted sliver L is formed into the spun yarn Y by the spinning section Sp. The spun yarn Y is then wound into a package PW by a winding section W at a front side of the machine frame Ma. The draft device D includes a plurality of roller pairs that operate at different feeding speeds such that the feeding speed of the roller pair increases gradually from the roller pair located most upstream to the roller pair located most downstream side.

[0026] As shown in Figures 6 to 8, in the draft device D, a back roller Rb, a third roller Rt, a middle roller Rm having an apron belt E, and a front roller Rf are arranged at predetermined intervals in a direction in which the sliver L is fed. The back roller Rb, the third roller Rt, the middle roller Rm, and the front roller Rf are each composed of a vertical pair of rollers.

[0027] The draft device D is a device that drafts the sliver L to the predetermined thickness. The draft device D performs the drafting on the basis of the rotation speed of each of the rollers, which varies so as to increase gradually from the upstream side to the downstream side. The sliver L drafted to the predetermined thickness is supplied to the spinning section Sp, which forms the sliver L into the spun yarn Y.

[0028] The vertical pair of rollers constituting each of the rollers in the draft device D is composed of a bottom roller and a top roller. The bottom roller is a lower roller located on the side of a main body frame of the spinning machine M. The top roller is provided so as to be able to contact with the bottom roller and leave from the bottom roller.

[0029] The top rollers, that is, a back top roller Rb1, a third top roller Rt1, a middle top roller Rm1, and a front top roller Rf1 are integrally installed on a draft cradle 56. The draft cradle 56 as a whole moves pivotably around a support shaft 58 serving as a rotating center, to allow the top and bottom rollers to contact and leave each other.

[0030] The draft cradle 56 can be pivotably moved by gripping a handle 59. When the draft cradle 56 is lowered, a hook section at the lower tip of the handle 59 is engaged with a fixed roller. As a result, the vertical pair of the top and bottom rollers constituting each draft roller can be held in a pressure contact state.

[0031] As shown in Figure 6, the top rollers for a lateral pair of units, a total of two units, are installed on the draft cradle 56 in the longitudinal direction of the machine frame Ma. Thus, the handle 59 is operated to elevate and lower the draft cradle 56 to allow the top roller pairs for the two lateral units to integrally contact and leave the respective bottom roller pairs.

[0032] Suction mouths 54 are arranged on the opposite sides of the draft cradle 56 to suck fly waste or waste fiber raised by rotation of the front top roller Rf1. The suction mouths 54 exert a suction force only while spinning is being performed with the sliver L drafted. When the draft cradle 56 is elevated and the spinning is not carried out, the suction force of the suction mouths 54 is blocked. Consequently, the suction force acts only on the spinning units U in operation. Fibers, fly waste or the like raised by the fast rotating rollers can thus be efficiently sucked.

[0033] In the embodiment shown in Figure 8, the top rollers for the two lateral units are installed on the draft cradle 56. Passages 54a and 54b of the suction mouths 54 are provided for the front top rollers Rf1 respectively.

[0034] Now, the dust collecting and processing system in the textile machine according to the embodiment of the present invention will be described. The dust collecting and processing system according to the embodiment of the present invention is effectively used for textile machines such as spinning machines as described above. In the dust collecting and processing system described below, the large number of units U are arranged in the

machine frame Ma in one direction. Each of the units U in the machine frame Ma includes a fly waste suction line 1 that sucks fly waste or the like, and a fly waste separating means 4 for separating the sucked fly waste from suction air. The thus configured dust collecting and processing system sucks fly waste or the like generated during operation of each of the units U for separating and collecting the fly waste or the like.

[0035] In the dust collecting and processing system according to the embodiment described below, the fly waste suction line 1 includes a suction passage 2 and a junction duct 3. The suction passage 2 extends from a fly waste sucking section of each of the units U in the machine frame Ma. The junction duct 3 joins a plurality of the suction passages 2 together.

[0036] The fly waste separating means 4 is provided for the fly waste suction line 1 in association with at least one unit U. In the preferred embodiment, the dust collecting and processing system may be configured such that the fly waste separating means 4 is provided for each machine frame Ma as shown in Figure 2A, for every plural (in the illustrated example, four) units U in the machine frame Ma as shown in Figure 2B, or for each of the units U in the machine frame Ma as shown in Figure 2C.

[0037] Where the fly waste separating means 4 is provided for every plural units U in the machine frame Ma and for each of the units U in the machine frame Ma, the junction duct 3 is divided into junction ducts 3a to 3n.

[0038] In the dust collecting and processing system according to the present embodiment, one or more blower means (not shown in the drawings) are provided for each preset frame span unit. The blower means allows the fly waste separating means 4 in the frame span to perform suction.

[0039] Next, the fly waste separating means 4 will be described.

[0040] The fly waste separating means 4 has a centrifugal separator 6 as shown in Figures 3A to 5. The centrifugal separator 6 includes a centrifugal separating chamber 8, a suction flow introducing means 11, a suction air discharging means 13, a collected dust accommodating chamber 16, and a fly waste discharging means 17. The centrifugal separating chamber 8 is formed of a cylindrical space 7.

[0041] The suction flow introducing means 11 is connected to the fly waste suction line 1. The suction flow introducing means 11 introduces a suction flow 9 into the cylindrical space 7 toward a tangential direction of the cylindrical space 7 to generate a whirling flow 10 in the cylindrical space 7. The suction air discharging means 13 upwardly discharges suction air 12 separated in the centrifugal separating chamber 8. The collected dust accommodating chamber 16 accommodates fly waste 14 separated in the centrifugal separating chamber 8, in a dust collecting space 15 provided under the cylindrical space 7. The fly waste discharging means 17 discharges the fly waste 14 accommodated in the collected dust accommodating chamber 16.

[0042] The centrifugal separating chamber 8 of the centrifugal separator 6 is closed by a top plate 18. An air discharging pipe 19 is attached to the top plate 18 for the suction air discharging means 13. The air discharging pipe 19 extends downward from the top plate 18 and is open at a lower end thereof. The air discharging pipe 19 also extends upward from the top plate 18 and is open at an upper end thereof. An air discharging valve 20 is provided in the passage of the air discharging pipe 19.

[0043] A cylinder 21 with a diameter D4 equivalent to that of the air discharging pipe 19 is provided so as to extend from the centrifugal separating chamber 8 to the collected dust accommodating chamber 16 in the centrifugal separator 6. An upper end 21a of the cylinder 21 is sealed by a sealing plate 22. The upper end 21a of the cylinder 21 is provided such that a gap G1 is created between the upper end 21a and a lower end 19a of the air discharging pipe 19. A lower end 21b of the cylinder 21 is fixed to a bottom plate 23. The cylindrical space 7 and the cylindrical dust collecting space 15 are formed around the periphery of the cylinder 21. The bottom plate 23 is designed to be able to be opened and closed.

[0044] The fly waste discharging means 17 has a fly waste discharging pipe 24 and a fly waste discharging valve 25. The fly waste discharging pipe 24 is connected to the dust collecting space 15. The fly waste discharging valve 25 is provided in the fly waste discharging pipe 24. A pressure reducing means such as a sucker or a blower is provided in the centrifugal separator 6 to set the pressure of an area located downstream of the fly waste discharging valve 25 lower than the pressure in the dust collecting space 15. Thus, the fly waste 14 accommodated in the lower collected dust accommodating chamber 16 can be discharged without the need to stop the suction.

[0045] Moreover, in the preferred embodiment, a bypass passage can be provided on an upstream side of a suction port in the centrifugal separator 6. In this case, to discharge the fly waste accommodated in the collected dust accommodating chamber 16, the suction can be stopped with another centrifugal separator continuing the suction.

[0046] A partition plate member 26 is provided between the centrifugal separating chamber 8 and the collected dust accommodating chamber 16. The partition plate member 26 performs opening and closing control such that the centrifugal separating chamber 8 and the collected dust accommodating chamber 16 are open to or closed from each other. The partition plate member 26 forms a gap G2 between the centrifugal separating chamber 8 and the collected dust accommodating chamber 16. The partition plate member 26 is movable along the cylinder 21 so that the centrifugal separating chamber 8 and the collected dust accommodating chamber 16 are closed from each other.

[0047] Next, the operation aspect of the centrifugal separator 6 will be described. The suction flow 9 from the fly waste suction line 1 generates the whirling flow

10 in the centrifugal separating chamber 8, forming the cylindrical space 7, under the effect of the suction flow introducing means 11. While the whirling flow 10 moves whirling, the suction air 12 is discharged through the air discharging pipe 19, constituting the suction air discharging means 13. The fly waste 14 separated from the suction air 12 is fed to the collected dust accommodating chamber 16 through the gap G2, formed by the partition plate member 26.

[0048] The separated fly waste 14 is present in the collected dust accommodating chamber 16 in the centrifugal separator 6. Thus, as described below, the fly waste 14 is taken out from the closed space by two methods, that is, online discharge in which the fly waste 14 is discharged without stopping the suction and offline discharge in which the fly waste 14 is discharged with the suction stopped.

(1) Online Discharge (the method of discharging the fly waste without stopping the suction)

[0049] The fly waste discharging valve 25 is provided in the fly waste discharging pipe 24 connected to the interior of the dust collecting space 15. The pressure of the area located downstream of the fly waste discharging valve 25 is set lower than the pressure in the dust collecting space 15. As a method of reducing the pressure, a sucker using compressed air or suction by a blower is used. Since the reduced pressure is set for the area located downstream of the fly waste discharging valve 25, the fly waste discharging valve 25 is opened to allow the collected fly waste 14 to be taken out from the closed space. Alternatively, the partition plate member 26 or the like may be used to temporarily disconnect the collected dust accommodating chamber 16 from the centrifugal separating chamber 8 to set the pressure in the collected dust accommodating chamber 16 equivalent to the atmospheric pressure. Then, the bottom plate 23 may be opened to allow the fly waste 14 to fall under gravity. In this case, after the fly waste 14 falls, pressure balance is desirably gradually adjusted before the partition plate member 26 is opened.

(2) Offline Discharge (the method of discharging the fly waste with the suction stopped)

[0050] A bypass is provided in front of the suction port in the centrifugal separator 6. To discharge the fly waste, the suction is stopped, and another centrifugal separator 6 in operation is allowed to continue suction. The bottom plate 23 of the stopped centrifugal separator 6 is opened to allow the fly waste 14 to fall downward under gravity for discharging. Thus, the fly waste 14 can be taken out from the closed space.

[0051] With either of the online and offline discharging methods, discharge timing is such that the discharging operation is performed every given period. The given period for the discharge timing can be set by using a fiber

sensor or the like to monitor the amount of collected fly waste.

[0052] The fly waste 14 discharged from the units and span in the machine frame is collected in a dust collecting section 31 by a fly waste conveying means 30. In the present embodiment, the fly waste conveying means 30 may be composed of a blower duct 32 having an axial flow fan 33 at one end, and a fly waste discharging port 34 at the other end, or a belt conveyor 35.

[0053] Moreover, in the present embodiment, the dust collecting section 31 is provided at the fly waste discharging port 34 of the fly waste conveying means 30.

A dust collecting box or a dust collecting vehicle 37 is positioned in the dust collecting section 31. The dust collecting box or the dust collecting vehicle 37 collects the fly waste 14.

[0054] In the present embodiment, the fly waste sucked through the fly waste suction line is not limited to fly fiber but includes fly dust.

[0055] While the present invention has been described with respect to preferred embodiments thereof, it will be apparent to those skilled in the art that the disclosed invention may be modified in numerous ways and may assume many embodiments other than those specifically set out and described above. Accordingly, it is intended by the appended claims to cover all modifications of the present invention that fall within the true spirit and scope of the invention.

Claims

1. A dust collecting and processing system in a textile machine (M) **characterized by** comprising a centrifugal separator (6) that separates and collects fly waste generated in each unit (U).
2. A dust collecting and processing system in a textile machine (M) which comprises a large number of units (U) arranged in a machine frame (Ma) in one direction and each including a fly waste suction line (1) that sucks fly waste and a fly waste separating means (4) for separating the sucked fly waste from suction air, to suck the fly waste generated during operation of each of the units (U) for separating and collecting the fly waste and the like, the system being **characterized in that:**

the fly waste separating means (4) is provided for the fly waste suction line (1) in association with at least one unit (U), and
the fly waste separating means (4) has a centrifugal separator (6), and the centrifugal separator (6) separates and sucks the fly waste so that the separated fly waste is collected in a dust collecting section (31) via a fly waste conveying means (4).

3. The dust collecting and processing system in a textile machine (M) according to Claim 2, **characterized in that** at least one blower means is provided for each preset frame span unit, and the blower means allows the centrifugal separators (6) in the frame span to perform suction. 5
4. The dust collecting and processing system in a textile machine (M) according to Claim 2 or Claim 3, **characterized in that** the fly waste separating means (4) is provided for each machine frame (Ma). 10
5. The dust collecting and processing system in a textile machine (M) according to Claim 2 or Claim 3, **characterized in that** the fly waste separating means (4) is provided for each section including a plurality of units (U) in the machine frame (ma). 15
6. The dust collecting and processing system in a textile machine (M) according to Claim 2 or Claim 3, **characterized in that** the fly waste separating means (4) is provided for each of the units (U) in the machine frame (Ma). 20
7. The dust collecting and processing system in a textile machine (M) according to any one of Claim 2 through Claim 6, **characterized in that** the centrifugal separator (6) for the fly waste separating means (4) comprises: 25

a centrifugal separating chamber (8) formed by a cylindrical space (7);

a suction flow introducing means (11) connected to the fly waste suction line (1) to introduce a suction flow into the cylindrical space (7) toward a tangential direction of the cylindrical space (7) to generate a whirling flow in the cylindrical space (7); 35

a suction air discharging means (13) that upwardly discharges suction air separated in the centrifugal separating chamber (8); 40

a dust accommodating chamber (16) that accommodates fly waste separated in the centrifugal separating chamber (8), in a dust collecting space (15) provided under the cylindrical space (7); and 45

a fly waste discharging means (17) for discharging the fly waste accommodated in the dust accommodating chamber (16). 50
8. The dust collecting and processing system in a textile machine (M) according to Claim 7, **characterized in that** the fly waste discharging means (17) includes a discharging pipe (19) connected to the dust collecting space (15) and a valve (20) provided in the discharging pipe (19), and 55

the system comprises a pressure reducing

means for setting a pressure of an area located downstream of the valve (20) lower than a pressure in the dust collecting space (15) so that the fly waste accommodated in the lower collected dust accommodating chamber (16) is discharged without stopping suction.

9. The dust collecting and processing system in a textile machine (M) according to Claim 7, **characterized in that** a bypass passage is provided on an upstream side of a suction port in the centrifugal separator (6) so that to discharge the fly waste accommodated in the lower collected dust accommodating chamber (16), the suction is stopped with another centrifugal separator continuing suction.
10. The dust collecting and processing system in a textile machine (M) according to Claim 7, **characterized in that** a partition plate member is provided between the centrifugal separating chamber (6) and the collected dust accommodating chamber (16) to perform opening and closing control such that the centrifugal separating chamber (6) and the collected dust accommodating chamber (16) are open to or closed from each other.

FIGURE 1

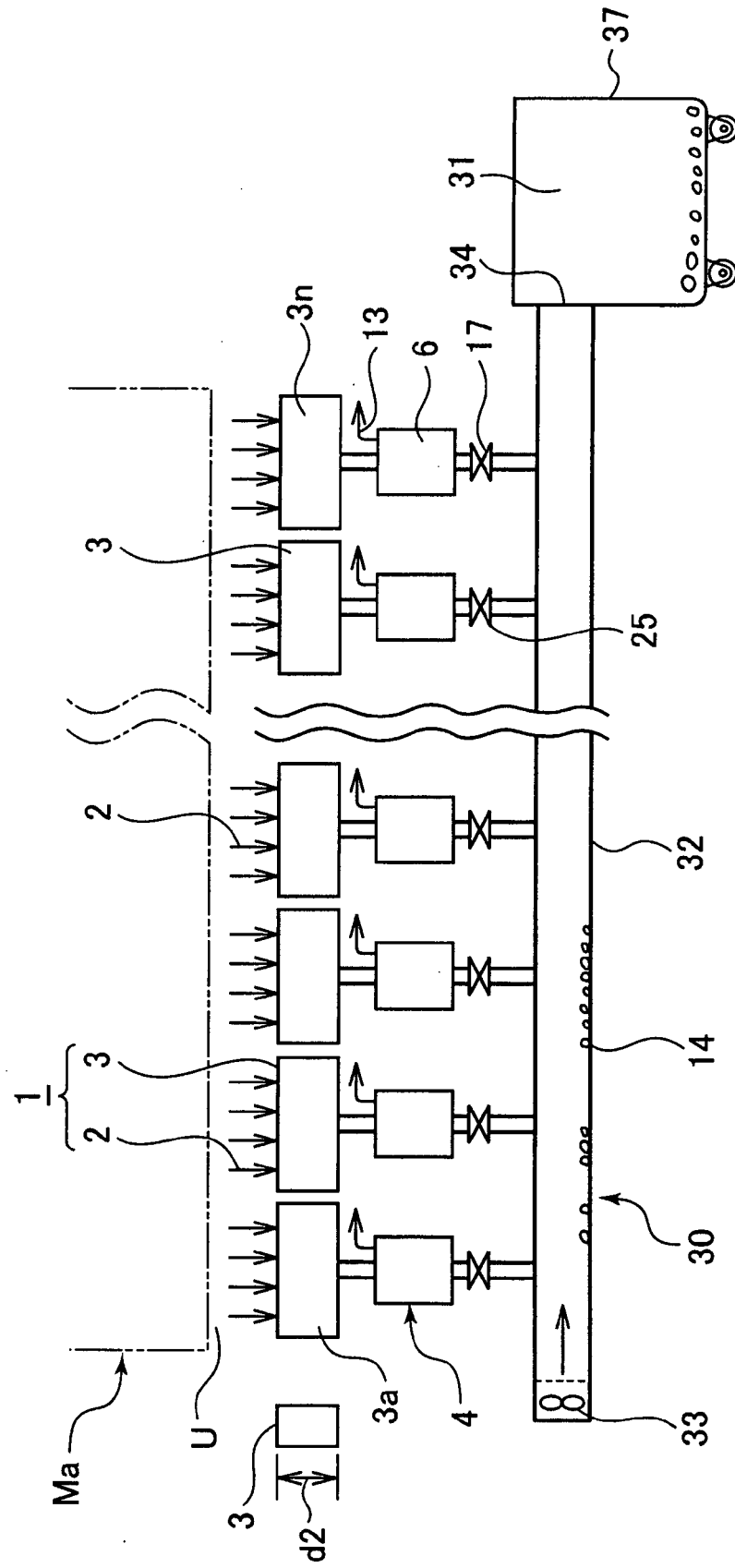


FIGURE 2A

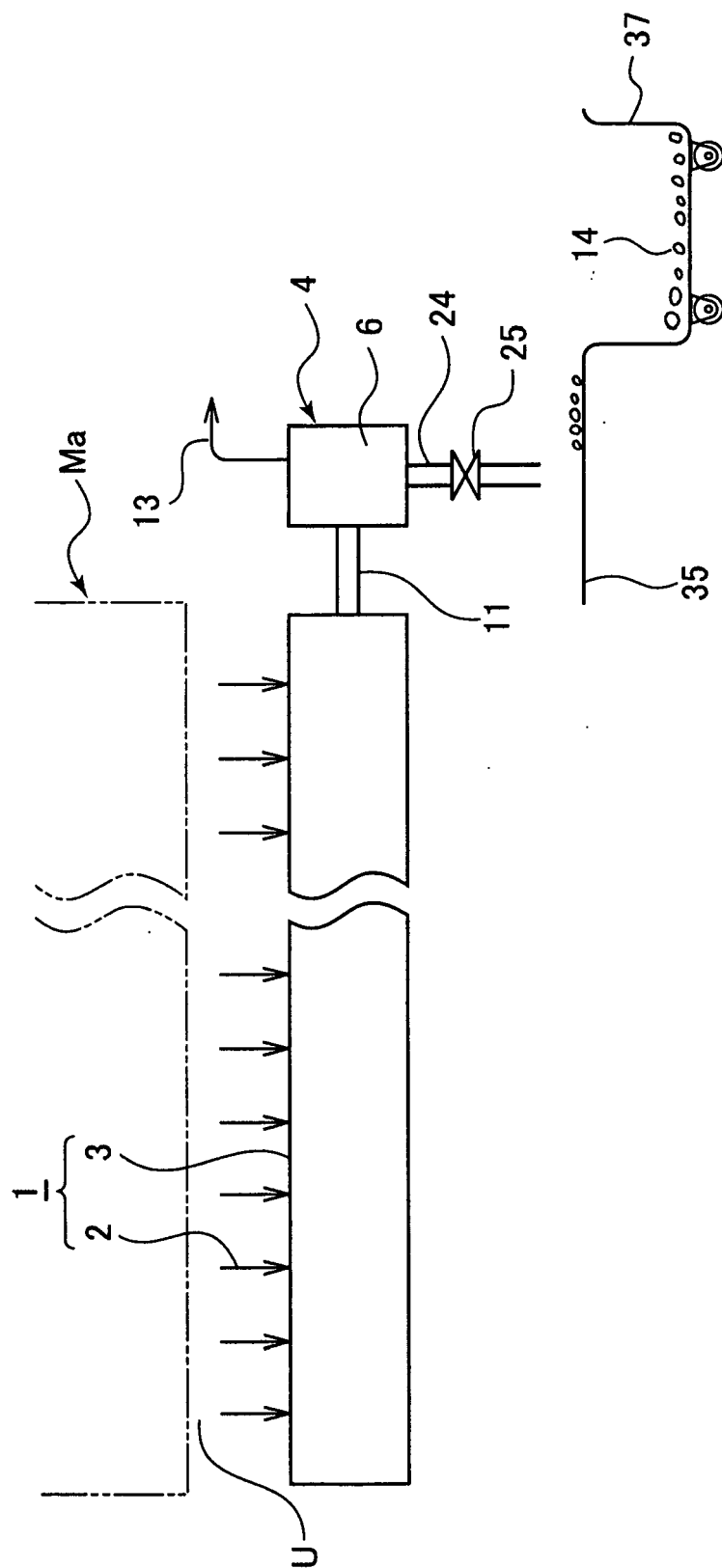


FIGURE 2B

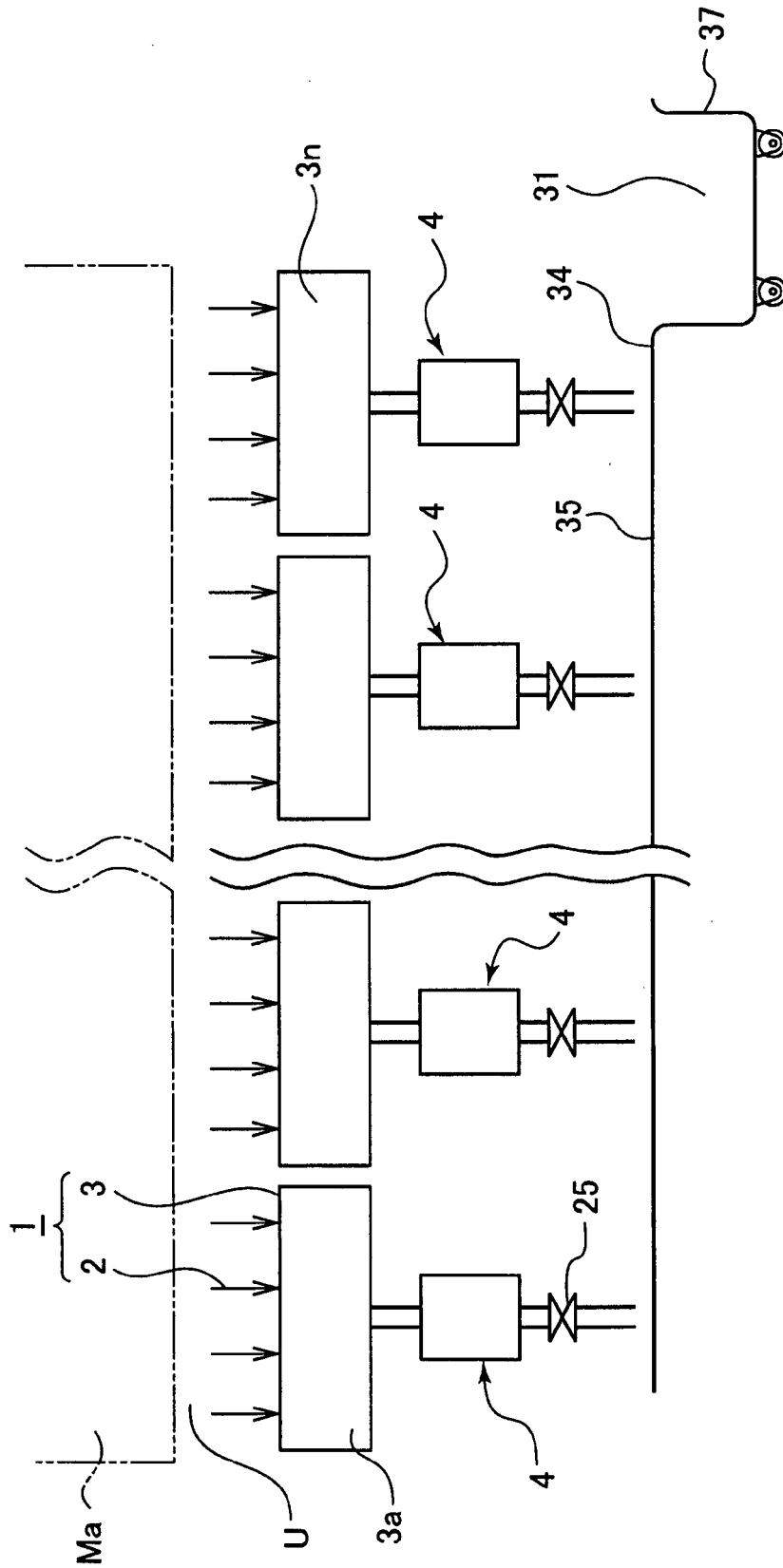


FIGURE 2C

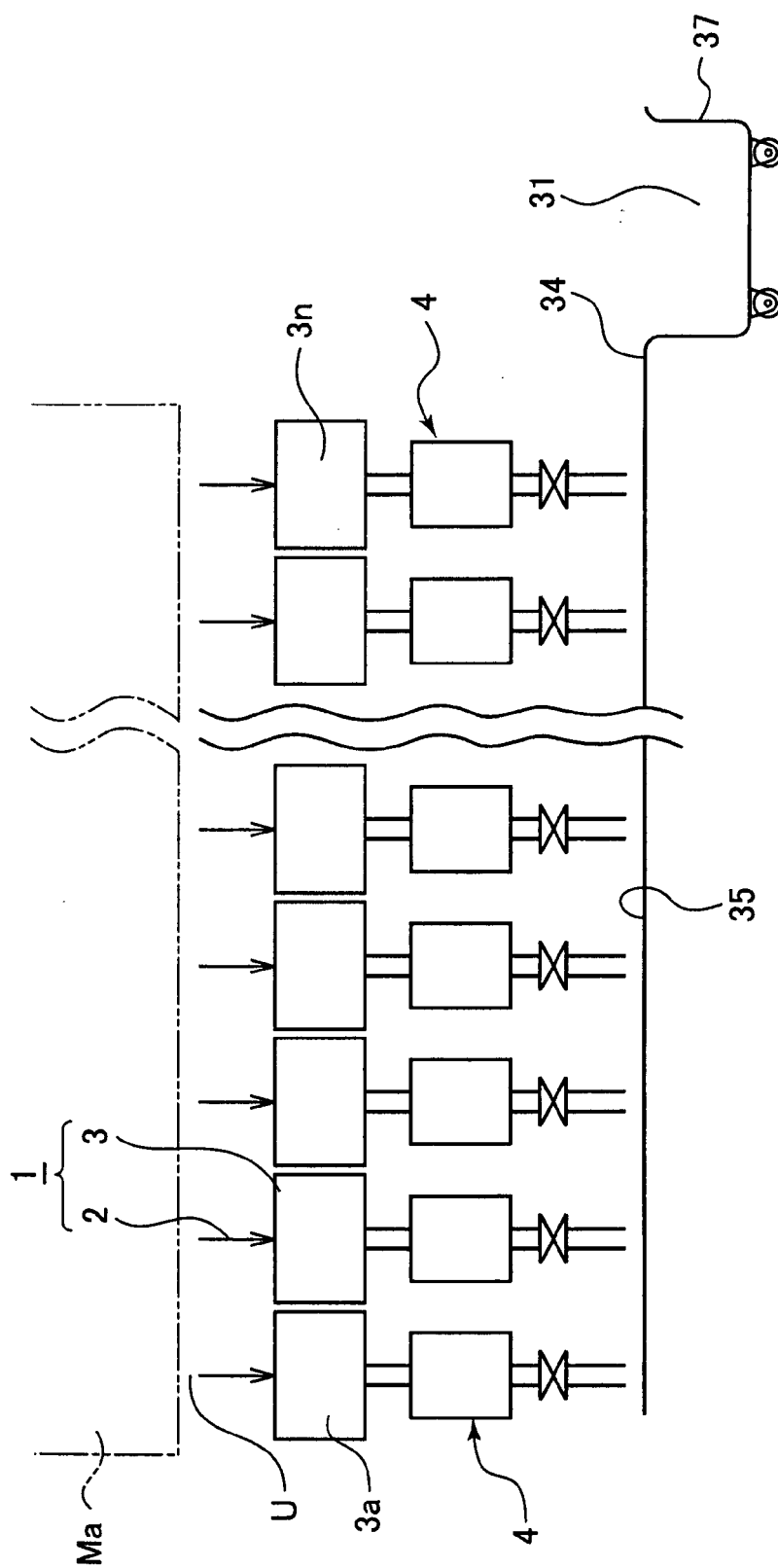


FIGURE 3A

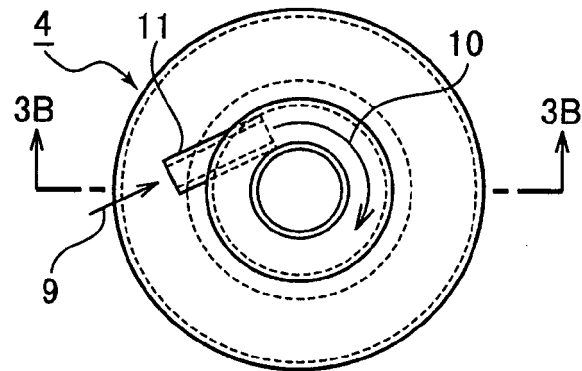


FIGURE 3B

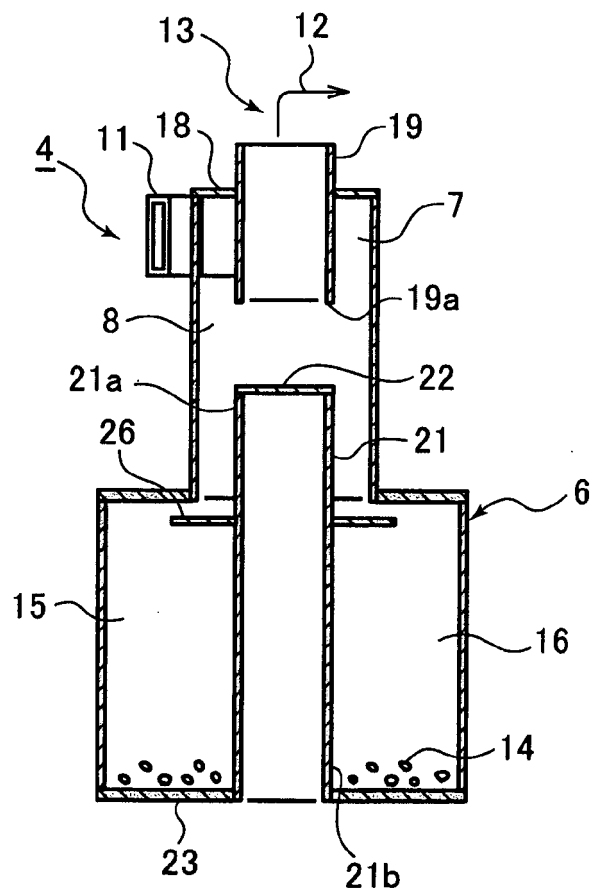


FIGURE 4

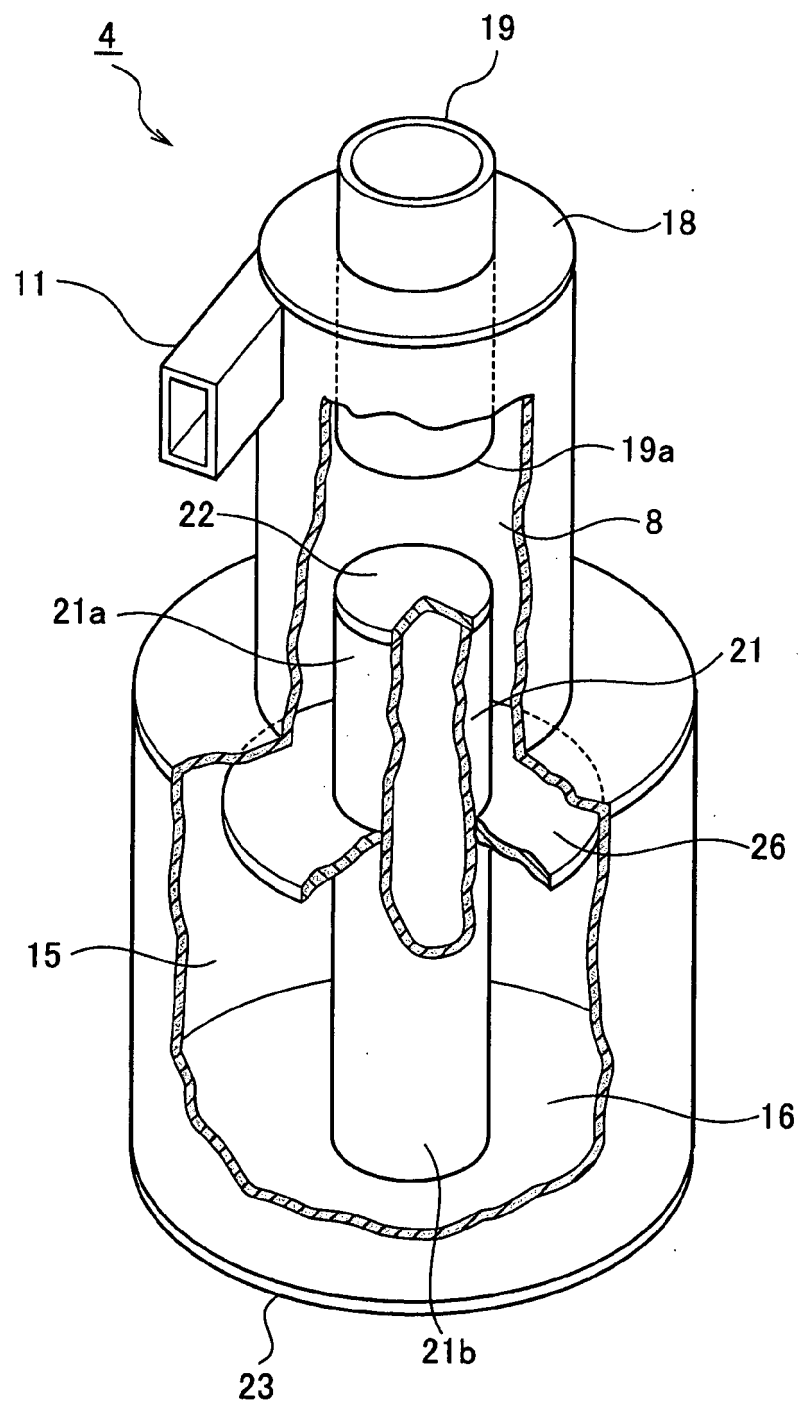


FIGURE 5

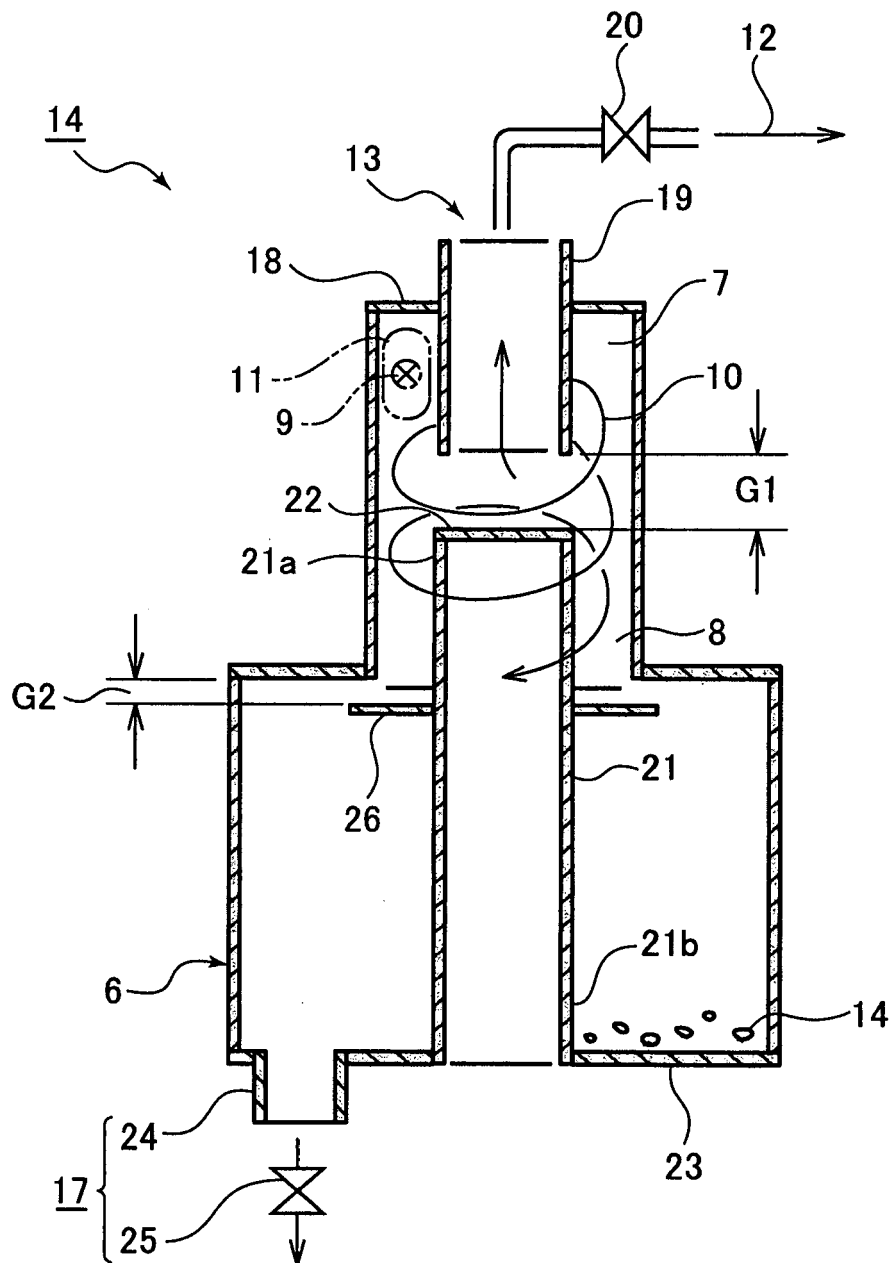


FIGURE 6

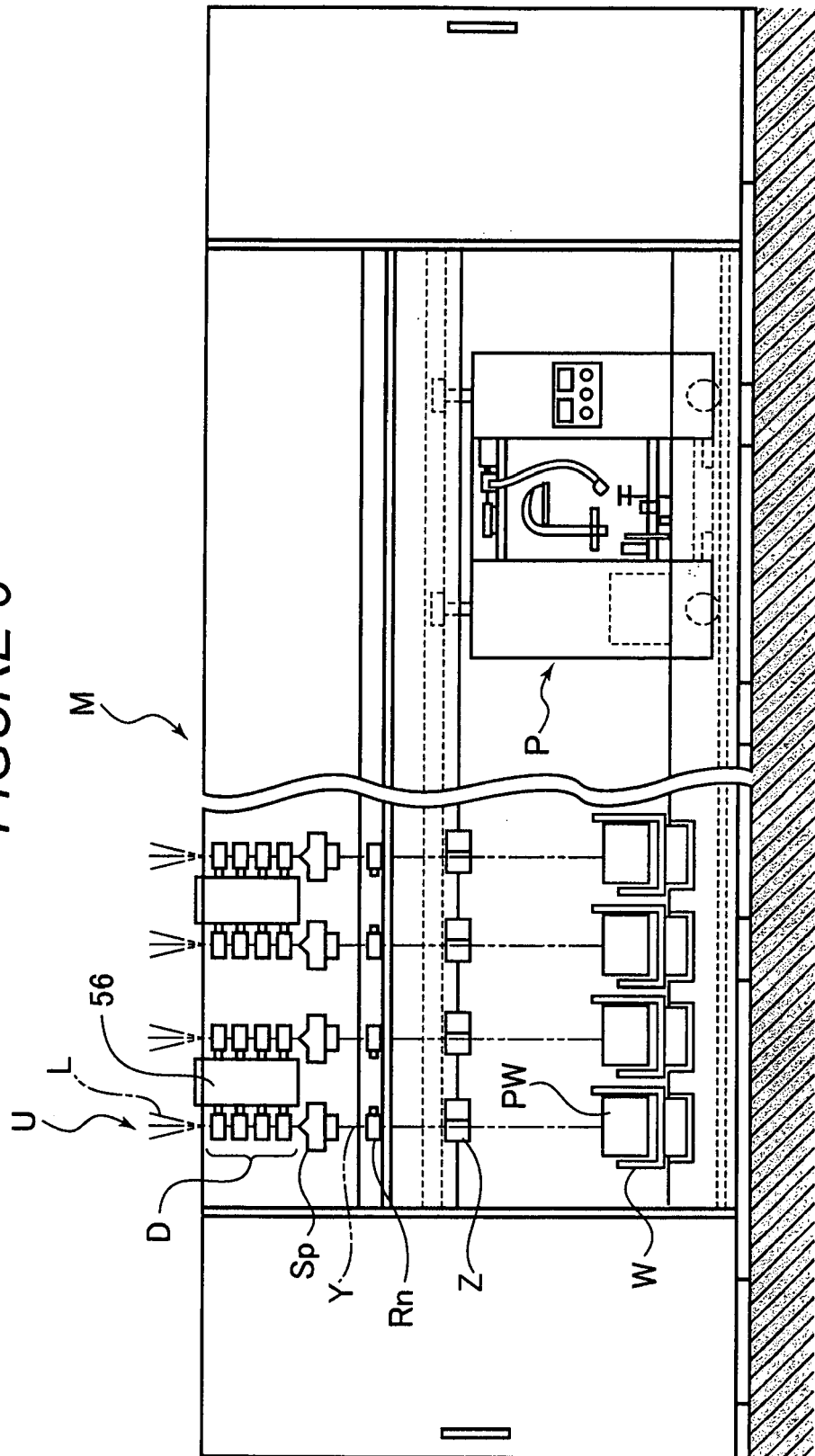


FIGURE 7

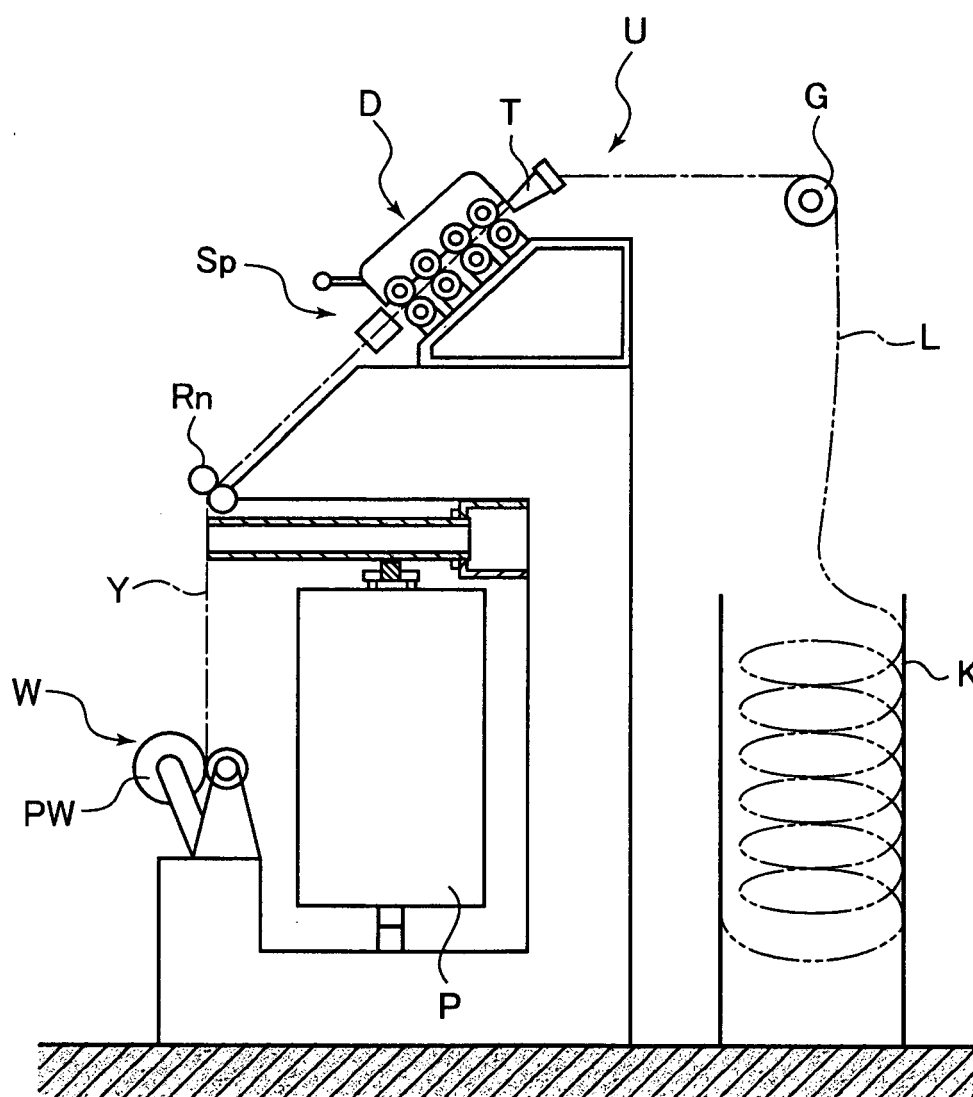


FIGURE 8

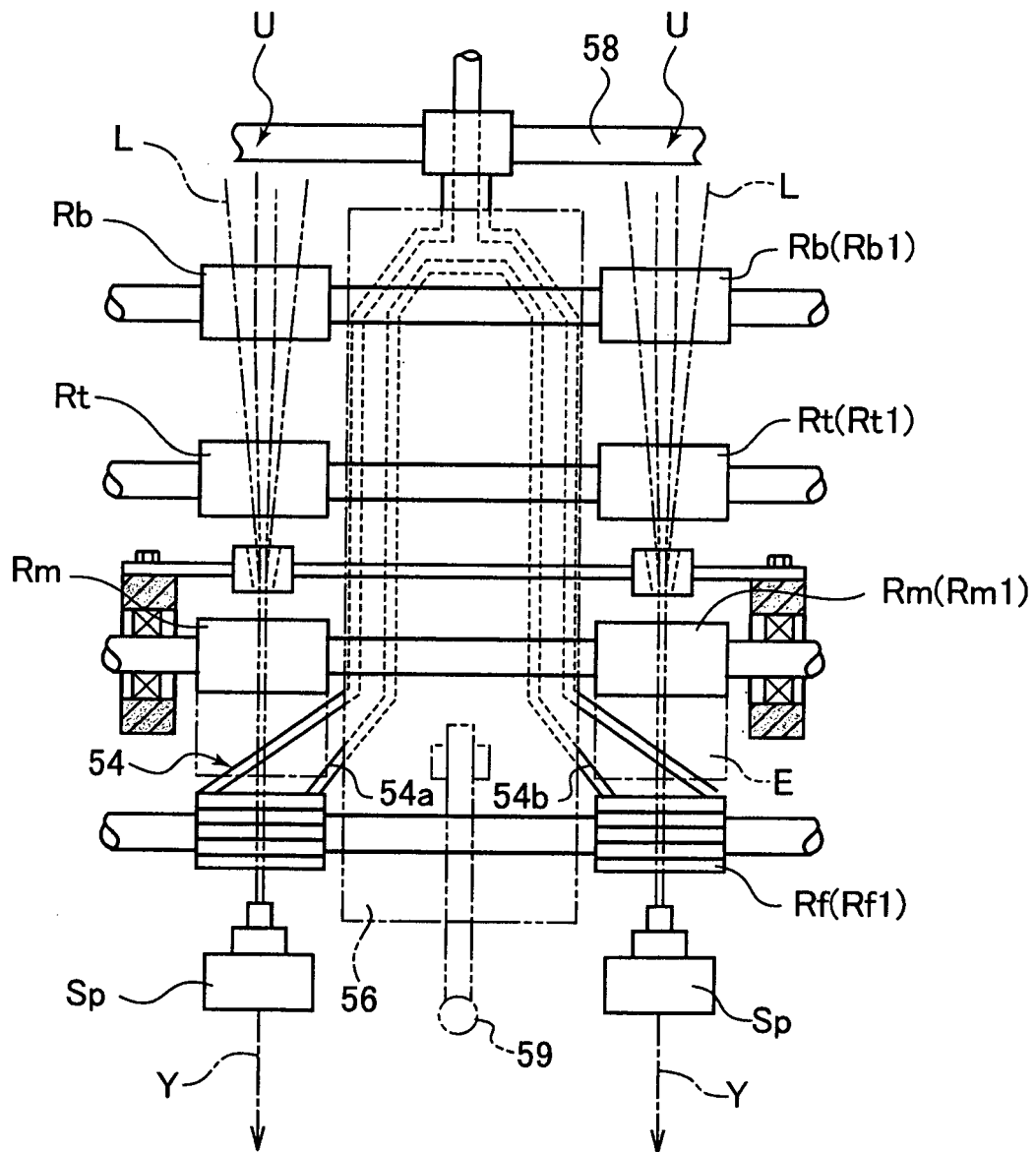
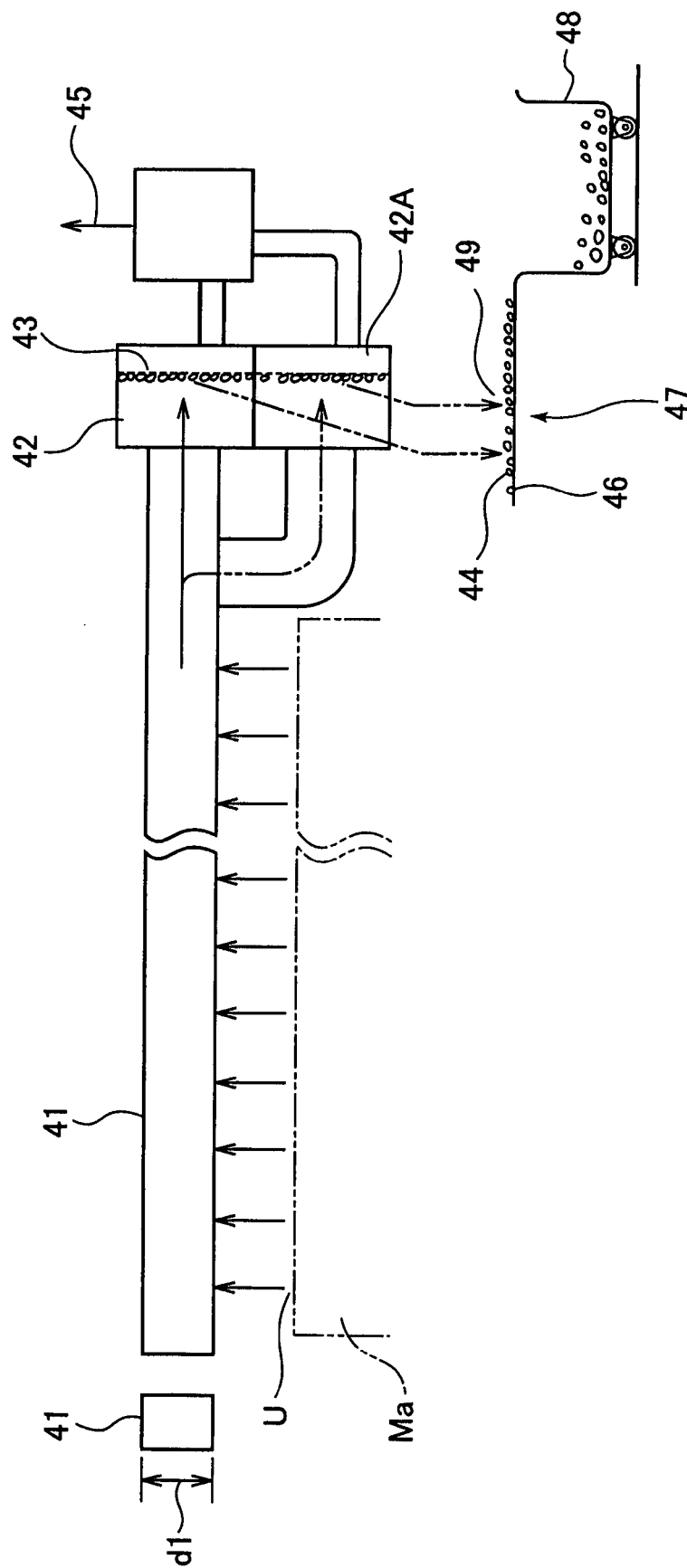


FIGURE 9





EUROPEAN SEARCH REPORT

Application Number
EP 08 01 6287

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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Y	* column 1, line 55 - column 3, line 27; figures 1-3 *	2-10	
Y	----- WO 96/31641 A (RIETER AG MASCHF [CH]) 10 October 1996 (1996-10-10) * page 7, line 7 - page 9, last line ; figure 1 *	2-10	
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Place of search Munich		Date of completion of the search 28 January 2009	Examiner Dreyer, Claude
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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