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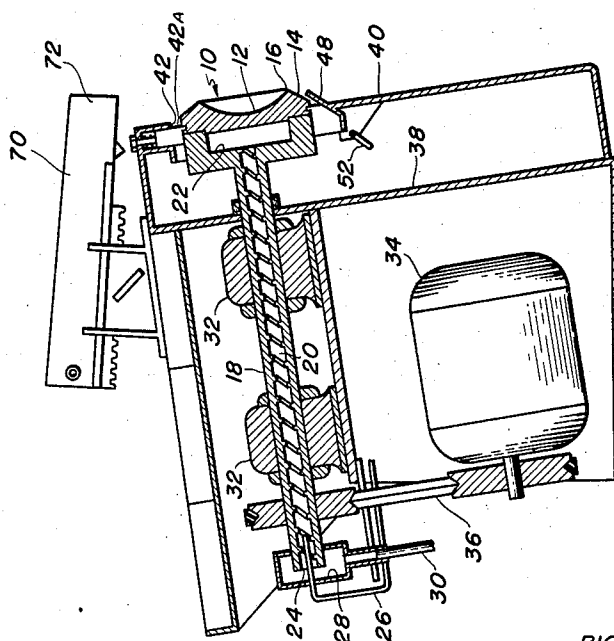
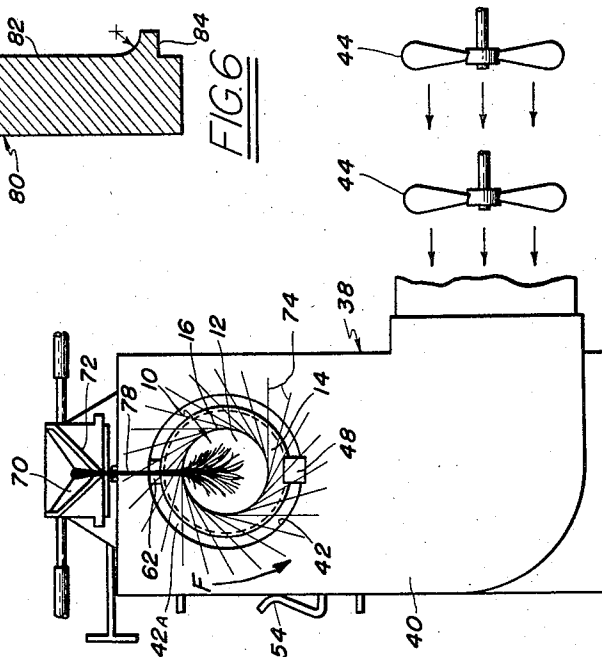
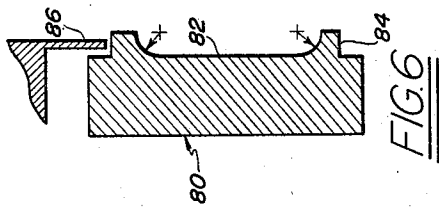
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APPARATUS FOR FORMING MINERAL FIBERS AND THE LIKE

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## APPARATUS FOR FORMING MINERAL FIBERS AND THE LIKE

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12 Claims. (Cl. 18—2.5)

The present invention relates to an improved apparatus for forming glass fibers and the like from fusible inorganic materials.

In the art of mass producing glass and mineral wool fibers, it is common practice to deliver a stream of molten material, such as glass or slag, onto a rotating slag-receiving surface of a rotor. The molten material is centrifuged from the slag-receiving surface into the path of a high velocity fiberizing blast normally composed of super-heated steam, the material centrifuged from the rotor being in the form of finely divided molten streams which are blasted by the steam and formed into solidified material of fibrous form.

It is therefore an object of this invention to provide an apparatus for fabricating glass or mineral fibers from fusible inorganic materials directly from a rotating body.

It is another object of this invention to provide an apparatus for fabricating glass or mineral fibers in a more facile, economical and efficient manner, which fibers are of a finer texture and grade than heretofore obtainable.

Other objects will become apparent as the description proceeds.

To the accomplishment of the above and related objects, my invention may be embodied in the forms illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that specific change may be made in the specific constructions illustrated and described, so long as the scope of the appended claims is not violated.

In the drawings:

Fig. 1 is a vertical section of one embodiment of this invention;

Fig. 2 is a front elevation thereof;

Fig. 3 is a side elevation showing the apparatus in operation;

Fig. 4 is an enlarged sectional illustration of one portion of the apparatus;

Fig. 5 is a front elevation of the arrangement of Fig. 4; and

Fig. 6 is a cross-section of an alternative rotor construction.

Referring to the drawings, the apparatus comprises a rotor, indicated generally by the reference numeral 10, of generally cylindrical shape and having a forwardly directed, spherically concave face or slag-receiving surface 12. The rotor face angles rearwardly to provide a deflecting rim 14 and to define an annular centrifuging edge 16.

The rotor 10 is supported for rotation in a substantially vertical plane by means of a hollow shaft 18 which is provided with helically threaded bore 20. As shown in Figs. 1 and 4, the rotor 10 is hollow as indicated by the reference numeral 22, which opens into the hollow center of the shaft 18. With the rotor 10 turning in the direction of the arrow "F" (Fig. 2), the helix 20 is so

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formed as to direct a stream of water introduced into the open end 24 toward and into the rotor interior 22.

For delivering water into the open shaft end 24 is a supply line 26 which is connected to a suitable source of cool flowing water. Water which drains from the open end 24 is collected by a suitable housing 28 which empties through an outlet 30.

The shaft 18 and the rotor 10 are supported in the illustrated position by means of suitable bearings 32, and a suitable motor 34 and drive belts 36 serve to rotate the shaft 18 at the proper speed.

In the illustrated working embodiment of this invention, the rotor 10 is set at an angle with the vertical of approximately ten degrees (10°). Thus, it will be noted that the shaft 18 inclines upwardly. Even though this shaft is so inclined, the helix 20 is effective to carry water delivered by the supply line 26 upwardly and into the rotor interior 22 while the shaft 18 is being rotated.

Surrounding the rotor 10 is an air chamber or compartment 38 having a front panel 40. In the front panel is provided an opening 42A which encircles the rotor periphery at a point just to the rear of the rotor face 12, 14. As will be noted in the figures, the diameter of the opening 42A is somewhat larger than the outer diameter of the rotor 10 for forming an annular orifice or duct which has as its inner edge the outer peripheral surface of the rotor 10 and as its outer edge the rim 42. The significance of the defining walls of the annular duct will become more apparent from the following.

Suitable air fans 44 (Fig. 2) mounted in tandem supply a quantity of air to the interior of the housing 38, which air flows normally around the rotor 10 and forwardly out of the duct 42. The resulting annular stream of air emanating from the housing and surrounding the rotor 10 is indicated by the reference numeral 46 of Fig. 3.

An angular baffle or deflecting plate 48 is located in the duct 42 adjacent the bottom of the rotor, and is inclined upwardly so as to direct a stream of air upwardly and forwardly with respect to the rotor face 12. This deflector 48 may be composed of a flat plate rigidly secured in an inclined position to the housing plate 40, with the lower end of the deflector being located to the rear of the plate 40, and the forward end 50 projecting outwardly in front of the plate 40 so as to provide a passage-way or the like with the inclined edge 14 of the rotor. It may be stated at this point that while the rotor edge 14 is shown in the illustrated embodiment as being inclined, actually it can be cut rearwardly at right angles and still perform the intended purpose satisfactorily.

A damper or adjustable deflecting plate 52 is pivotally mounted to the rear of the deflecting plate 48 for regulating the amount of air or other fluid which may be delivered to the deflector 48. A suitable handle 54 is secured to the damper 52 for effecting manual operation thereof from the exterior of the housing 38.

With the fans 44 operating, a portion of the air which emanates from the duct 42 is deflected upwardly in the direction of the arrow 56. This upward deflection is utilized for a very practical purpose which will be explained more fully hereinafter. More or less air may be delivered to the deflector 48 by changing the position of the damper 52.

A circumferential groove 58 is provided in the outer periphery of the rotor 10 for receiving the lip 60 of an air guard 62 which in the illustrated embodiment is composed of a block of bronze. The block 62 is supported from the upper plate 64 of the housing 38 by means of a headed stud 66 which is loosely received through a suitable opening in the plate 64. A compression spring 68 bears between the block 62 and the plate 64 for yieldably urging the block 62 downwardly for causing contact of

the lip 60 with the bottom of the rotor groove 58. The force with which the block 62 is urged downwardly may be adjusted by threading the stud of bolt 66 into the block 62 and turning the bolt until the desired engagement with the rotor is obtained. As is illustrated in the drawings, the air guard 62 is mounted at the top of the rotor 10 for a purpose which will be explained.

A trough 70 is positioned immediately above the rotor with its delivering end 72 disposed slightly forwardly of the upper edge of the rotor 10. A cupola 73 which normally carries a supply of molten inorganic material delivers a stream 76 of molten material, such as slag or glass, to the trough 70, from which the stream gravitates as indicated by reference numeral 78. It will be apparent from an examination of Fig. 2 that the delivering end 72 of the trough will be directly above and in front of the air guard 60, so that air emanating from the annular duct 42 will not intercept the gravitating stream 78 before it contacts the rotor face 12.

In operation, the rotor 10 is rotated at relatively high speed, and air under a relatively low pressure is delivered to the interior of the housing 38 by means of the fans 44. Simultaneously therewith, molten slag is delivered to the trough 70 for providing the gravitating stream 78. Stream 78 as it approaches the front of the rotor 10 is deflected and disintegrated rearwardly onto the rotor face 12 by the deflected air flow 56. By reason of the rotary action, the molten slag is centrifuged outwardly being tangentially discharged from the rotor edge 16 into the path of the annular air stream 46 (Fig. 3). The rotor 10 is cooled during this period of operation by water injected into the hollow shaft 18 by means of the supply line 26. So long as the apparatus is operated as just explained, a continuous supply of mineral fiber will be produced.

The exact details of operation will now be given. As explained earlier, the deflector 48 produces a current of air as indicated by the reference numeral 56. This current of air extends upwardly and forwardly with respect to the rotor face 12, and during operation turns as indicated by the drawings to deflect rearwardly the gravitating stream 78. Because of the force with which this current of air 56 deflects the slag stream 78, the latter is shredded or disintegrated over the rotor surface 12 to form a uniformly thin film. Due to the rapid rotation of the rotor, the slag is centrifuged outwardly toward the peripheral edge 16 as indicated by Fig. 2. Bearing in mind that a cooling flow of liquid, such as water, fills the interior 22 of the rotor, it will be appreciated that the slag on the rotor surface 12 will be cooled during its centrifuging movement. By the time the slag is centrifuged to the discharging edge 16 it is effectively plasticized. As a consequence, by the time the material is thrown or centrifuged clear of the rotor, it is almost completely frozen and needs to travel only the tangential distance between the edge 16 and the outer periphery of the rotor 10 in order to completely freeze or solidify. Thus, it immediately becomes apparent that the apparatus is effective to discharge or centrifuge directly from the rotor 10 fibers 74 which are substantially completed.

The gaseous medium emanating from the duct opening 42A, as indicated by the reference numeral 46 (Fig. 3), then serves to carry the finished fibers 74 in a forward direction from the rotor 10. It should be understood that this medium 46, which in the present instance is air, serves only as a carrier and serves no function in blasting or attenuating to any appreciable extent the fibrous material 74 which is discharged from the rotor 10. The carrier 46 conveys the finished fibers 74 forwardly into a suitable collecting chamber or bin in accordance with usual procedures.

The gaseous medium (air) which is delivered to the housing 38 by means of the fans 44 is at relatively low pressure so that the velocity of the air as it emanates from the duct 42A is relatively low. Thus the air stream 46

which engages and carries the fibrous filaments away from the rotor 10 lacks sufficient impact force to effectively attenuate the filaments and serves only to carry the filaments away from the rotor as rapidly as they are formed. The size and shape of the filaments are thus dependent upon the speed at which the rotor turns and the viscosity of the fiber-forming substance and is effected negligibly, if at all, by the force of the air stream 46.

Since the centrifuged filaments 74 are carried away as rapidly as they are formed, and the impact force of the carrier stream 46 is insufficient to attenuate the filaments, it also happens that the impact force of the air stream 46 is sufficiently low to materially reduce or eliminate the tendency to sever or break the formed fibers 74. Thus, the filaments or fibers 74 produced by this invention are substantially longer than fibers produced by prior apparatuses and are of a diameter which is better suited for the customary uses. It is customary to form the filaments into wool bats, and it has been discovered that by increasing the length of the fibers, the integral strength of the bats becomes greater. Thus, the longer fibers produced by this invention serve in the production of wool bats having greater strength and thermal insulating properties than has heretofore been achieved.

Rotor temperature constitutes a critical operating feature of this invention. This temperature is easily and effectively controlled by varying the flow of cooling liquid or water delivered from the supply line 26 to the interior of the shaft 18. If more cooling is desired, more liquid is introduced into the shaft. Less cooling is achieved by reducing the amount of liquid delivered to the shaft. It has been discovered that by varying the temperature of the rotor 10 in conjunction with the rotational speed, fibers of different texture and diameter may be produced. Thus, it is obvious that this apparatus may be easily manipulated to produce whatever type or character of fiber is desired.

With reference to the rotor itself, as mentioned previously, the slag-receiving face 12 is spherically concave. During operation, a plastic slag film forms on the face 12 from which filaments of plasticized material are centrifuged. After a period of operation, this slag film increases in thickness with the portion contiguous to the rotor face hardening or freezing and forming radial channels or grooves which interfere with the proper discharge of material from the rotor. Therefore, it is necessary to remove this hardened, thickened film in order to secure optimum operation of the apparatus. By forming the rotor face 12 spherically concave, the hardened film automatically cleans or removes itself, because as the film cools, it contracts and becomes smaller than the concave surface 12, whereupon it no longer can adhere to the surface. This constitutes an important feature of this invention whereby the rotor is automatically self-cleaning.

The air stream 46 which emanates from the annular duct 42A serves primarily as a conveying medium of the centrifuged filaments and also as a source for the deflector blast which is developed by the deflector 48. It will, of course, be apparent that while a deflector 48 has been shown, a separate source of pressure fluid may be utilized by positioning a jet in the place normally occupied by the deflector 48 and producing a stream of fluid in the direction of the arrow 56 (Fig. 3).

The deflecting air 56 effectively disintegrates the gravitating slag stream 78 and then deflects the disintegrated mass onto the rotor face 12. Air currents generated during rotation of rotor 10 serve to retain or hold the mass in intimate contact with the rotor face in the form of the thin film just described, and simultaneously contributes to the tempering of the film to the proper degree of plasticity. This tempering is aided by the cooled rotor so that as the film is discharged from the rotor, it is properly conditioned or plasticized for optimum formation of fibers directly from the rotor.

It so happens that the deflected air blast tends to

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return to the rotor face 12 only when the rotor is turning. With the rotor stationary, and the annular stream 46 in operation, the deflected blast 56 continues outwardly away from the face 12; however, when the rotor is set in motion, the deflected blast turns rearwardly sufficiently to perform the function previously described.

Considering in more detail the action of the deflecting stream 56, as is illustrated in the drawings, the stream path first projects forwardly and upwardly, turns more or less straight upwardly, then tends to turn somewhat rearwardly. The main force of the path is not directly toward the fiberizing surface 12 of the rotor 10, but instead is at an angle thereto. Actually, the stream 56 may be envisaged as a deflecting baffle which is contacted by the falling slag 78. The slag 78 is then deflected rearwardly onto the face 12.

Instead of comparing the stream 56 as a slag-deflecting baffle, it may be considered as following a path which intersects the forward portion of the slag 78 at about point 79 (Fig. 3) thereby disintegrating the slag and deflecting or forcing it rearwardly onto the face 12. It will be noted that point 79 is adjacent the upper portion of rim 16 so that the angular depending path of slag 78 intersects rotor face 12 near the center.

Referring now to Fig. 6, an alternative rotor design 80 will be described. The fiberizing surface 82 of this rotor is flat with the peripheral edges having a radius substantially equal to the depth dimension of surface 82. The outer front portion is annularly notched at 84 and is adapted to receive a flat, plate-like air guard 86. All other features of the apparatus are the same as previously described. In some instances, this rotor design is preferred in order to obtain a slight difference in apparatus performance.

A brief review of prior art devices at this point is in order to understand fully the significance of this invention. Prior devices generally utilize steam under high pressure and velocity as the gaseous medium. This steam, because of its relatively high velocity and impact force, effected an undesirable attenuation and severance or breakage of centrifuged material, which condition restricted the efficiency of the apparatus and reduced the quality of the finished product. Furthermore, it occurred that rotor speeds had to be kept within critical limits in order to obtain filaments of a desired diameter. For example, if disc speeds were too high, the secondary attenuation produced by the steam blast served to produce fibers which were too thin and frangible for normal use. Also, the filaments produced were of extremely short length and tended to become slivers rather than elongated threads or fibers.

This invention overcomes these undesirable features associated with the use of high pressure steam in the respect that the gaseous medium utilized for carrying the finished filaments away from the rotor performs no secondary attenuating function, and further possesses insufficient impact force to sever or break the centrifuged filaments into short lengths. This permits the use of optimum and efficient rotor-centrifuging speeds which determine effectively the diameter and the length of the finished filaments. Thus, it may be understood that by increasing the centrifuging speeds, thinner filaments may be produced.

Since the present invention needs only low velocity air as the carrying and deflecting medium, it at once becomes evident that the need for high pressure, steam generating plants is completely eliminated, thereby reducing substantially the cost of initial equipment installation as well as cost of operation. By the use of air or a similar low velocity gaseous medium, in combination with the centrifuging element a finer grade of fibrous product is produced which contains more fiber for a given quantity of finished material than any of the products produced according to prior art methods.

In order to facilitate a complete understanding, and

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to constitute a full disclosure of this invention, some typical specifications for a working embodiment of this invention are given in the following. It will, of course, be understood that the invention is not limited to these specifications, and are given only for the purpose of aiding a person skilled in the art to practice the invention.

For the rotor 10 the face 12 is formed with a three and three quarter inch ( $3\frac{3}{4}$ " ) radius to a depth of one and one-half inches ( $1\frac{1}{2}$ " ). This face 12 is machined to a mirror smooth surface. The angular rim portion 14 is cut back to approximately thirty-five to forty degrees ( $35-40^\circ$  ), and the overall diameter of the rotor is eight inches (8" ), while the rotor edge 16 has a diameter of six inches (6" ). Rotor speeds may range from forty-five hundred to fifty-five hundred (4500-5500) revolutions per minute, and the width of the air duct 42A is five-eighths inch ( $\frac{5}{8}$ " ). The velocity of the air stream 46 emanating from the duct 42A is approximately twenty-five thousand (25,000) feet per minute, as compared to the usual steam velocity of approximately sixty-five thousand (65,000) feet per minute. The quantity of air used is approximately three thousand (3,000) cubic feet per minute at sixty (60) inches of water (2.17 pounds per square inch) as compared to steam at, say, 90.0 pounds per square inch.

What is claimed is:

1. An apparatus for fabricating mineral wool comprising a rotor having a rearwardly extending supporting shaft and a forwardly exposed slag-receiving face, said rotor being set at an angle of approximately ten (10) degrees with the vertical and said face being spherically concave, said shaft and rotor being hollow to receive therein a cooling flow of water, the interior of said shaft being threaded progressively toward said rotor whereby water which is introduced into the distal end of said shaft will be forced into said rotor as said shaft rotates, a housing encompassing said rotor and having an opening through which said face extends, said opening having a diameter larger than that of the rotor thereby providing an annular duct which is defined at its inner perimeter by said rotor and at its outer perimeter by said housing, a deflector positioned in said annular duct near the bottom thereof for deflecting an air stream upwardly at an angle in front of said face, a blower for introducing air under pressure into said housing for forcing air through said duct in an annular stream, said deflector deflecting a portion of said air upwardly in front of said face, a slag trough disposed above said rotor and serving to deliver a stream of molten slag adjacent to and in front of said rotor face, and an air guard in said duct for preventing said air stream from impinging the gravitating slag stream, said air guard comprising a peripheral groove in said rotor and a member bearing in said groove, said member being carried by said housing, the upwardly deflected air from said deflector acting on said gravitating slag stream to direct it onto said rotor face from which said slag is centrifuged into plasticized filaments which are carried forwardly continuously by said annular stream of air.

2. An apparatus for fabricating mineral wool comprising a rotor having a rearwardly extending supporting shaft and a forwardly exposed slag-receiving face, said rotor being set at an angle of approximately ten (10) degrees with the vertical and said face being spherically concave, said shaft and rotor being hollow to receive therein a cooling flow of water, the interior of said shaft being threaded progressively toward said rotor whereby water which is introduced into the distal end of said shaft will be forced into said rotor as said shaft rotates, a housing encompassing said rotor and having an opening through which said face extends, said opening having a diameter larger than that of the rotor thereby providing an annular duct which is defined at its inner perimeter by said rotor and at its outer perimeter by said housing, a deflector positioned in said annular duct near the bottom thereof for deflecting an air stream upwardly at an

angle in front of said face, said deflector deflecting a portion of the air which flows through said annular duct upwardly in front of said face, a slag trough disposed above said rotor and serving to deliver a stream of molten slag adjacent to and in front of said rotor face, and an air guard in said duct for preventing said air stream from impinging the gravitating slag stream, said air guard comprising a peripheral groove in said rotor and a member bearing in said groove, said member being carried by said housing, the upwardly deflected air from said deflector acting on said gravitating slag stream to direct it onto said rotor face from which said slag is centrifuged into plasticized filaments which are carried forwardly continuously by said annular stream of air.

3. An apparatus for fabricating mineral wool comprising a rotor having a rearwardly extending supporting shaft and a forwardly exposed slag-receiving face, said face being spherically concave, said shaft and rotor being hollow to receive therein a cooling flow of water, a housing encompassing said rotor and having an opening through which said face extends, said opening being larger than said rotor thereby providing a duct which is defined at its inner perimeter by said rotor and at its outer perimeter by said housing, a deflector positioned in said duct near the bottom thereof for deflecting air which moves through said duct into a stream which moves upwardly at an angle in front of said face, a slag trough disposed above said rotor and serving to deliver a stream of molten slag adjacent to and in front of said rotor face, and an air guard in said duct for preventing said air stream from impinging the gravitating slag stream, the upwardly deflected air from said deflector acting on said gravitating slag stream to direct it onto said rotor face from which said slag is centrifuged into plasticized filaments which are carried forwardly continuously by said stream of air.

4. An apparatus for fabricating mineral wool comprising a rotor having a forwardly exposed slag-receiving face, said rotor being hollow to receive therein a cooling flow of water, a member having an opening encompassing said rotor, said opening being larger than said rotor thereby providing a duct which is defined at its inner perimeter by said rotor and at its outer perimeter by said housing, a deflector positioned in said duct near the bottom thereof for deflecting an air stream upwardly at an angle in front of said face, and a slag trough disposed above said rotor and serving to deliver a stream of molten slag adjacent to and in front of said rotor face, the upwardly deflected air from said deflector acting on said gravitating slag stream to direct it onto said rotor face from which said slag is centrifuged into plasticized filaments which are carried forwardly continuously by said stream of air.

5. An apparatus for fabricating mineral wool comprising a rotor having a forwardly exposed slag-receiving face, means for producing an enveloping stream of fluid around the periphery of said rotor forwardly and axially of said rotor, fluid-deflecting means disposed adjacent the rotor periphery for directing a portion of said stream of fluid radially inwardly in front of said rotor, and means for delivering a stream of molten slag in front of said rotor face, said deflected stream of fluid acting on said slag stream to direct it onto said rotor face from which said slag is discharged in the form of fibrous material.

6. An apparatus for fabricating mineral wool comprising a rotor having a rearwardly extending supporting shaft and a forwardly exposed slag-receiving face, said face being dish-shaped and having a flat bottom and a radiused inner periphery, said shaft and rotor being hollow to receive therein a cooling flow of water, a housing encompassing said rotor and having an opening through which said face extends, said opening having a diameter larger than that of the rotor thereby providing an annular duct which is defined at its inner perimeter by said rotor and at its outer perimeter by said housing, a deflector positioned in said annular duct near the bottom thereof

for deflecting air which moves through said duct into a stream which moves upwardly at an angle in front of said face, a slag trough disposed above said rotor and serving to deliver a stream of molten slag adjacent to and in front of said rotor face, and an air guard in said duct for preventing said air stream from impinging the gravitating slag stream, the upwardly deflected air from said deflector acting on said gravitating slag stream to direct it onto said rotor face from which said slag is centrifuged into plasticized filaments which are carried forwardly continuously by said annular stream of air.

7. An apparatus for fabricating mineral wool comprising a rotor having a rearwardly extending supporting shaft and a forwardly exposed slag-receiving face, said rotor being set at an angle of approximately ten (10) degrees with the vertical and said face being spherically concave, said shaft and rotor being hollow to receive therein a cooling flow of water, the interior of said shaft being threaded progressively toward said rotor whereby water which is introduced into the distal end of said shaft will be forced into said rotor as said shaft rotates, a housing encompassing said rotor and having an opening through which said face extends, said opening having a diameter larger than that of the rotor thereby providing an annular duct which is defined at its inner perimeter by said rotor and at its outer perimeter by said housing, a deflector positioned in said annular duct near the bottom thereof for deflecting an air stream upwardly at an angle in front of said face, said deflector deflecting a portion of the air which flows through said annular duct upwardly in front of said face, a slag trough disposed above said rotor and serving to deliver a stream of molten slag adjacent to and in front of said rotor face, and an air guard in said duct for preventing said air stream from impinging the gravitating slag stream, the upwardly deflected air from said deflector acting on said gravitating slag stream to deflect it onto said rotor face from which said slag is centrifuged into plasticized filaments which are carried forwardly continuously by said annular stream of air.

8. An apparatus for fabricating mineral wool comprising a rotor having a forwardly exposed slag-receiving face, said rotor being hollow to receive therein a cooling flow of water, a member having an opening encompassing said rotor, said opening having a diameter larger than that of the rotor thereby providing an annular duct which is defined at its inner perimeter by said rotor and at its outer perimeter by said member, means for directing an air stream upwardly at an angle in front of said face, and a slag trough disposed above said rotor and serving to deliver a stream of molten slag adjacent to and in front of said rotor face, the upwardly directed air stream acting on said gravitating slag stream to direct it onto said rotor face from which said slag is centrifuged into plasticized filaments which are carried forwardly continuously by an annular stream of air issuing from said annular duct.

9. An apparatus for fabricating mineral wool comprising a rotor having a forwardly exposed slag-receiving face, a member having an opening encompassing said rotor, said opening being larger than said rotor thereby providing a duct which is defined at its inner perimeter by said rotor and at its outer perimeter by said member, means for directing a fluid stream upwardly at an angle in front of said face, and means for delivering a stream of molten slag adjacent to and in front of said rotor face, the upwardly directed air stream acting on said gravitating slag stream to direct it onto said rotor face from which said slag is centrifuged into plasticized filaments which are carried forwardly continuously by a stream of fluid issuing from said duct.

10. An apparatus for fabricating mineral wool comprising a rotor having a forwardly exposed slag-receiving face, first means for delivering a stream of molten slag in front of said rotor face, second means for producing a forward low velocity flow of fluid around the periphery

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of said rotor, said velocity lying between the limits of being insufficient to induce a rotor face-directed flow of fluid of such magnitude as will force said molten slag onto said rotor face but sufficient to carry centrifuged fibers forwardly, and third means for directing a stream of fluid upwardly in front of and adjacent to said rotor face, whereby said slag stream is directed and retained against said rotor face.

11. An apparatus for fabricating mineral wool comprising a cylindrically shaped rotor mounted for rotation about a substantially horizontal axis and having a forwardly projecting frusto-conical portion, said portion extending radially inwardly from an annular edge on said rotor and terminating in a slag-receiving face, means for producing a flow of fluid around the periphery of said rotor forwardly and axially of said rotor, a stationary deflecting plate positioned adjacent said rotor in the path of said flow of fluid and radially opposite said annular edge, said plate being angled inwardly in front of said frusto-conical portion, and means for delivering a stream of molten material in front of said rotor face.

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12. An apparatus for fabricating mineral wool comprising a cylindrically shaped stepped diameter rotor mounted for rotation about a substantially horizontal axis, a forwardly exposed slag-receiving face on the smaller diameter portion of said rotor, means for producing a flow of fluid around the periphery of said rotor forwardly and axially of said rotor, a stationary deflecting plate positioned adjacent said rotor in the path of said flow of fluid and radially opposite said smaller diameter portion, said plate being angled inwardly in front of said rotor, and means for delivering a stream of molten material in front of said rotor face.

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