March 23, 1937. G. E. HENNING 2,074,391

APPARATUS FOR CONDITIONING MATERIALS

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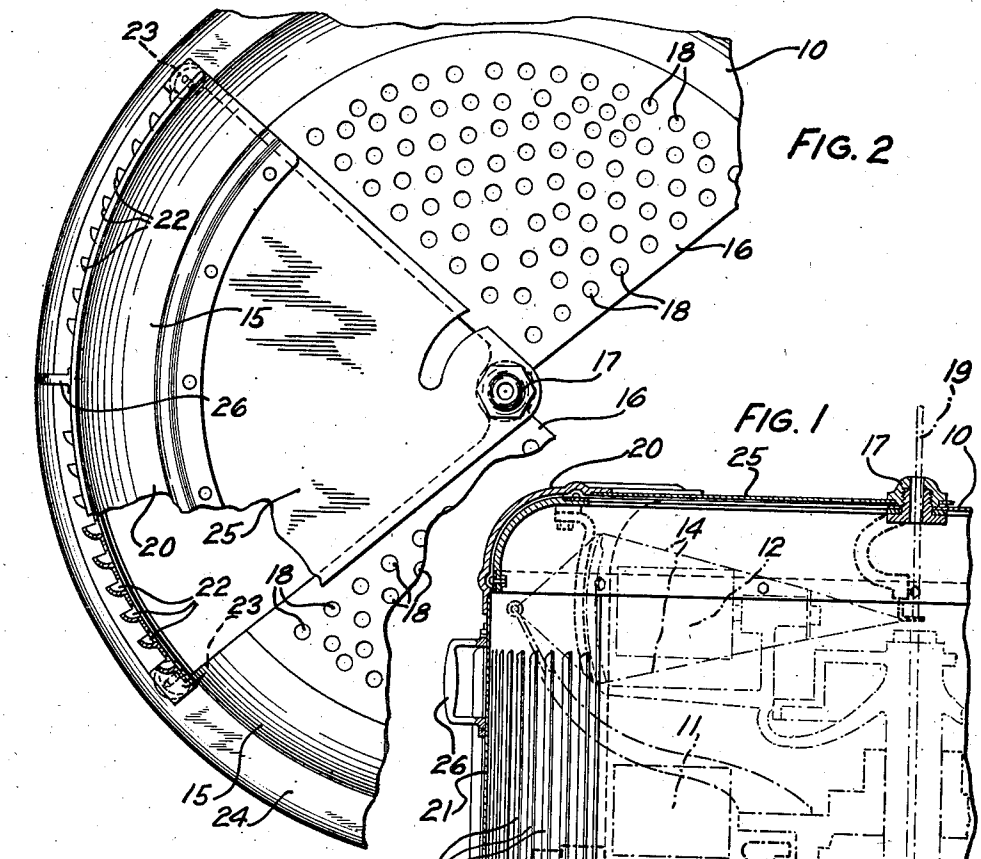


FIG. 2

FIG. 1

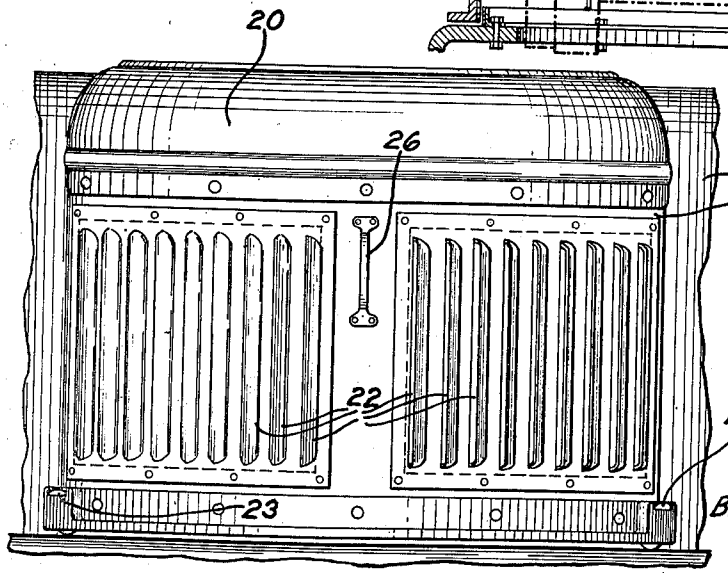


FIG. 3

INVENTOR
G. E. HENNING
BY H. A. Whitehorn
ATTORNEY

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APPARATUS FOR CONDITIONING MATERIALS

George E. Henning, Baltimore, Md., assignor to Western Electric Company, Incorporated, New York, N. Y., a corporation of New York

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7 Claims. (Cl. 96—2)

This invention relates to a method of and apparatus for conditioning materials and more particularly to the method of and apparatus for ventilating braiders.

In braiding machines of the type shown in applicant's Patent No. 1,895,462 of January 31, 1933, the braiding units are rotated at high speed necessitating for the purpose of safety a hood enclosing these units. The heat given off by the braiding units during their rotation reduces the relative humidity of the air in the hood, affecting the braiding material to the extent that the braiding operation is made more difficult.

Objects of the invention are to provide a simple, efficient and practical method of and apparatus for conditioning materials.

In accordance with one embodiment, the invention contemplates a hood for a rotating unit carrying material to be conditioned, the hood having apertures so arranged that air will be drawn into the hood through certain apertures by the force created by the rotating unit and forced from the hood through certain other apertures.

Other objects and advantages will be apparent from the following detailed description taken in conjunction with the accompanying drawing, wherein—

Fig. 1 is a fragmentary sectional view of the apparatus;

Fig. 2 is a fragmentary top plan view of the hood, a portion thereof being shown in section, and

Fig. 3 is a fragmentary front elevational view of the hood.

Referring now to the drawing, Fig. 1 illustrates a hood 10 for rotating units 11 and 12 of a high speed braider indicated generally at 13. The units 11 and 12 carry spools of thread 14 spaced radially therearound, the thread being used in covering rubber covered wire by braiding as the latter is fed through the braiding unit.

In the present embodiment of the invention the hood 10 is of the general contour shown in Fig. 2 which is of a circular formation. The rear portion of the top of the hood in this embodiment may be open as shown since this type of hood was designed for braiding machines where a plurality of braiding machines are employed and positioned back to back requiring no hood covering at the back for the purpose of safety. This portion may be closed, however, if desired without departing from the spirit and scope of the present invention. The side wall of the hood is indicated at 15, and top portions 16 are provided extending inwardly to an apertured bracket 17, as illustrated in Fig. 2. These top portions have a plurality of apertures 18 therein which may be termed as intake ports or apertures. The aperture in the bracket serves as an outlet for the braided wire 19 as it leaves the braiding apparatus. A door 20, constituting a portion of the hood 10, is of the general contour shown in Figs. 2 and 3 and is positioned to cover the front opening in the wall 15 of the hood and arranged to be moved arcuately to permit access to the rotating units 11 and 12 when the braiding apparatus is at rest. The door 20 comprises a front portion 21 having a plurality of louvers 22 therein for permitting the escape of air from the hood, as will be described hereinafter.

The door 20 is mounted upon rollers 23 which ride upon a ledge 24 extending around the hood 10. A top portion 25 of the door 20 is pivotally connected to the apertured bracket 17 so as to permit movement of the door to one side or the other, as desired. This movement of the door may be brought about manually by the aid of a handle 26.

During the operation of the high speed braider 13, the braiding units 11 and 12 are rotated rapidly, causing a disturbance of the air in the hood 10 and the braider. The plurality of apertures 18, as well as the open space at the rear of the top of the hood 10, form an intake port area. This permits the fan-like force created by the rapid rotation of the braiding units to draw air into the hood and to force it from the hood through the louvers 22.

In the present construction of braiding machines, particularly the form of braider illustrated schematically in Fig. 1 of the drawing, the braiding unit 11 creates a greater circulating force than the braiding unit 12 and for this reason the louvers 22 are positioned in the general direction of rotation of the unit 11 which rotates in a direction opposite the direction of rotation of the braiding unit 12. The rotation of the braiding units 11 and 12 while the door 20 is closed will, therefore, constantly draw air into the hood 10 through the intake port area and force it from the hood through the louvers 22, the direction of the circulation of the air being across the braiding units so that the air will contact continuously with the spools of thread carried by the braiding units, thus maintaining a proper relative humidity within the hood and around the braiding units so that the threads will not become dry and portions thereof tend to separate. The high speed of rotation of the

braiding units creates heat within the hood which would reduce the relative humidity of the air in the hood in the absence of provision for causing a circulation of air therethrough. The relative humidity of the air present in the room may be sufficient to maintain the desired condition in the apparatus but, if desired, air at a predetermined relative humidity may be directed to the intake port area of the hood by any suitable means (not shown). The braider referred to above, as ordinarily constructed, provides sufficient force to draw the desired amount of air through the device when equipped with a hood of the character described. If desired, however, the fan-like action of the rotating units may be increased by the utilization of well known expedients.

It will be understood that the nature and embodiment of the invention herein described are merely illustrative and that many changes and modifications may be made therein without departing from the spirit and scope of the invention.

What is claimed is:

1. A braider ventilating apparatus comprising a hood for covering rotatable elements of a high speed braider, a door constituting a portion of the hood having an inlet port adjacent the axis of the rotating elements, and an aperture adjacent the periphery of the rotating element so that a fan-like action created by the rotation of the elements will cause a suction of air into the housing through the intake ports and a forcing of the air through the exhaust port.

2. A machine comprising means including a high speed rotary element for changing a raw material into a finished product, a housing having air inlet means at the top and a side wall normally surrounding said element and spaced from the radially outer limits thereof to provide a clearance space around the element, and means providing an air outlet from said clearance space and communicating therewith, the rotation of said element causing a draft of air from said inlet means to said clearance space and to said outlet to maintain atmospheric conditions within the housing constant.

3. A machine comprising means including oppositely rotating high speed rotary elements for changing a raw material into a finished product, a housing having a side wall structure normally surrounding the elements and spaced from the radially outer limits thereof to provide a clearance space around the elements, and means providing an air outlet passageway positioned in the general direction of rotation of one of the rotary elements, the rotation of the elements causing a circulation of air from the clearance space through the passageway.

4. A machine comprising means including upper and lower oppositely rotating elements for changing a raw material into a finished product, a housing having a side wall structure normally surrounding said elements and spaced from the radially outer limits thereof to provide a clearance space around the elements and means providing an outlet passageway positioned in the general direction of rotation of the lower element, the rotation of said elements causing a circulation of air from said clearance space to said passageway.

5. A yarn fabricating machine including upper and lower rotary elements, the lower of which creates a greater air circulating force, and a housing structure having inlet and outlet passageways serving as air-directing means facilitating the flow of air to and from the rotary elements, the outlet passageway being positioned in the general direction of the lower rotary element.

6. A yarn fabricating machine including upper and lower rotary elements creating air circulatory forces and a housing structure having a downwardly directed inlet passageway and louvers serving as air-directing means facilitating the flow of air to and from the rotary elements, thereby to effect circulation of the air from the inlet passageway toward the rotary elements and outwardly through the louvers.

7. A yarn fabricating machine including upper and lower rotary elements creating air circulatory forces and a housing structure having a downwardly directed inlet passageway and louvers serving as air-directing means facilitating the flow of air to and from the rotary elements, thereby to effect circulation of the air from the inlet passageway toward the rotary elements and outwardly through the louvers, said louvers being positioned in the general direction of rotation of the lower rotary element.

GEORGE E. HENNING.