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P. B. WEST

3,246,370

TEXTILE FIBER CONDENSING TRUMPET

Filed April 24, 1963

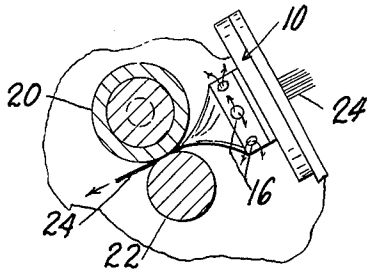


FIG. 1

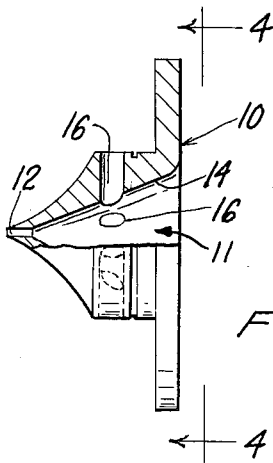


FIG. 2

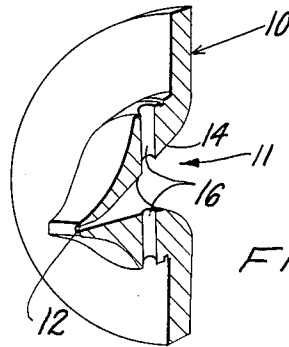


FIG. 3

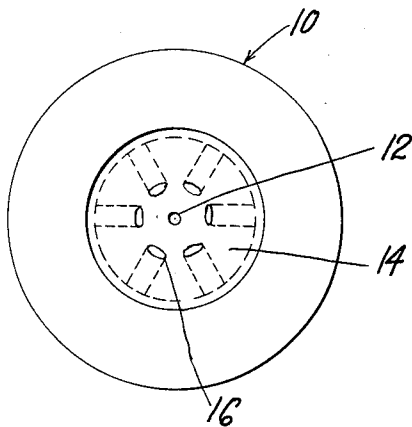


FIG. 4

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TEXTILE FIBER CONDENSING TRUMPET

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8 Claims. (Cl. 19—150)

This invention relates to condensing trumpets or funnels used in textile machinery and more particularly to a novel vented condensing trumpet.

When a sliver is fed at relatively high speeds into a conventional condensing trumpet, having an inner wall continuously converging to and upon an exit bore therein, air entrained in the sliver is forced therefrom causing substantial turbulence within the trumpet and within and about the sliver. This turbulence has a deleterious effect upon the sliver in that it dislodges fibers from the sliver and additionally disarrays those in the sliver causing an undesirable fuzziness thereof. Moreover, the dislodged fibers add to the problem of avoiding lint and fly in the machinery.

To overcome these problems, a sliver trumpet is provided, according to the present invention, having an exit bore and an inner wall continuously converging into and upon said bore. Positioned on the inner walls are a plurality of vent holes extending through the walls. By providing the vent holes in the wall of the trumpet, air entrained in a sliver passing therethrough is permitted to escape with minimal turbulence and with minimal deleterious effect on the fibers thereof. Moreover, lint and fly is substantially reduced about the machinery.

Other features, advantages and objects of this invention will be apparent to those skilled in the art from the following detailed description of a preferred embodiment thereof together with the accompanying drawings, wherein:

FIG. 1 is a side elevation of a trumpet, according to the present invention, in operation;

FIG. 2 is an enlarged side elevation, partly in section, of the trumpet shown in FIG. 1;

FIG. 3 is an enlarged isometric view, partly in section, of the trumpet shown in FIG. 1;

FIG. 4 is a plan view of the trumpet shown in FIG. 2 along the line 4—4 thereof.

Referring to the drawings, and particularly FIGS. 2 and 3, a condensing trumpet 10 is provided which has an entrance 11 and an exit bore 12. An inner wall 14, having a generally frusto-conical configuration, is provided which continuously converges to and upon the exit bore 12.

Spaced from the exit bore 12 on the wall 14 are positioned a plurality of vent holes 16 which extend, at substantially right angles to the axis of the trumpet, through the wall 14. Preferably the holes 16 are of small diameter relative to the fiber staple length, e.g. 1/4 inch, to prevent fibers of substantial length from passing therethrough. Also the holes 16 are preferably spaced from the exit bore 12 by a distance approximately in the range of from 25-75% of the fiber staple length of the fibers with which the trumpet is to be used thereby positioning the holes 16 along that portion of the trumpet in which the air is expelled from the sliver passing therethrough in order that a minimal amount of turbulence is created therewithin. Finally, to provide an even flow of air out of the trumpet, the vent holes 16 are preferably disposed symmetrically about the inner wall 14, FIG. 4.

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In operation, FIG. 1, a sliver 24 to be condensed is fed through the trumpet 10. As the sliver 24 approaches the exit bore 12 and is restricted by the inner wall 14 and the bore 12, the air entrained in the sliver 24 is forced out and escapes through the vent holes 16. The sliver 24 then passes through the exit bore 12 and is processed as between the rolls 20, 22 in FIG. 1.

Although but a single embodiment of this invention has been described, it will be understood by those skilled in the art that various modifications may be made without departing from the true spirit and scope thereof. Nothing aforesaid is intended in any way to limit the scope of the following claims.

What is claimed is:

1. A vented condensing trumpet for use in textile machinery comprising:
 - an open-ended tubular wall member having at one end thereof an entrance and at the opposite end thereof an exit bore of reduced radial dimension relative to the remainder of said member; and,
 - intermediate said entrance and said exit bore, a plurality of spaced-apart openings in said wall extending therethrough from within said member thereby to permit entrained air to escape smoothly from a sliver within said trumpet and exit bore.
2. The condensing trumpet claimed in claim 1 wherein said openings are spaced from said bore by a distance in the range of 25-75% of the staple length of the fibers in said sliver.
3. The condensing trumpet claimed in claim 1 wherein said openings extend through said wall at substantially right angles to the axis of said trumpet.
4. The condensing trumpet claimed in claim 1 wherein said openings are small in diameter relative to the fiber staple length of said sliver.
5. The condensing trumpet claimed in claim 1 in which said tubular member is frusto-conical with said exit bore at the apex thereof.
6. A vented condensing trumpet for use in textile machinery comprising:
 - an open-ended frusto-conical wall member having an entrance at the base and an exit bore at the apex thereof; and,
 - in said wall extending therethrough from within said member, a plurality of symmetrically disposed openings spaced from said exit bore a distance in the range of 25-75% of the staple length of the fibers in a sliver passing through said member, thereby to permit entrained air to escape smoothly from said sliver within said trumpet and exit bore.
7. The condensing trumpet claimed in claim 6 wherein said openings are small in diameter relative to the fiber staple length of said sliver.
8. The condensing trumpet claimed in claim 7 wherein said openings extend through said wall at substantially right angles to the axis of said trumpet.

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DONALD W. PARKER, *Primary Examiner.*