FORM 2

THE PATENTS ACT, 1970
(39 of 1970)
AND
THE PATENTS RULES, 2003

COMPLETE SPECIFICATION

(See Section 10; rule 13)

TITLE OF THE INVENTION

"RESPIRATOR MADE FROM IN-SITU AIR-LAID WEB(S)"

APPLICANT

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The following specification particularly describes the invention and the manner in which it is to be performed

What is claimed is:

1. A method of making a filtering face piece respirator, which method comprises:

(a) providing a cup shaped mold;

(b) providing a forming chamber where the mold is located and where loose fibers are introduced into air in the forming chamber;

(c) causing the loose fibers to be accumulated on the mold in the forming chamber; and

(d) bonding the fibers to each other at points of fiber intersection.

2. The method of claim 1, wherein the mold is porous and the fibers are caused to be accumulated on the mold in the forming chamber by sucking air from the forming chamber through the mold.

3. The method of claim 1, wherein the mold includes a means for causing fibers that make contact with the mold to remain thereon.

4. The method of claim 3, wherein the means includes a textured surface.

5. The method of claim 3, wherein the means includes a series of pins.

6. The method of claim 1, wherein the forming chamber is a room or enclosed area.

7. The method of claim 6, wherein the forming chamber includes a transparent portion so that the molds are visible.

8. The method of claim 1, wherein the bonding of the fibers creates a mask body, and wherein the method further comprises securing a harness to the mask body.

9. The method of claim 8, wherein the fibers are uniformly distributed throughout the mask body.

10. The method of claim 1, wherein excess loose fibers are removed from the forming chamber.

11. The method of claim 10, wherein the excess loose fibers are reintroduced into the forming chamber.

12. The method of claim 1, wherein a premade fibrous web is placed on the mold before the bonding step.

13. The method of claim 1, wherein a premade fibrous web is placed on the mold after the bonding step.

14. The method of claim 1, wherein more than one fibrous web is made on the mold, and wherein the plurality of webs are secured together at the perimeter.

15. The method of claim 1, wherein two or more forming chambers are used in series to make two or more in situ fibrous webs that reside one on top of the other.

16. A filtering face piece respirator that comprises:

(a) a mask body that comprises an in-situ web; and

(b) a harness that is secured to the mask body.

17. The respirator of claim 16, wherein the fibers are uniformly distributed throughout the in-situ web of the mask body.

18. The respirator of claim 16, wherein at least one of a shaping layer, a filter layer, and a cover web is an in-situ made web.

19. The respirator of claim 17, wherein the shaping layer and the filter layer are in-situ webs.

20. The respirator of claim 16, wherein the in situ filter layer contains nonwoven fibers and activated carbon.

21. The respirator of claim 16, wherein the in situ web contains thermally bonded staple fibers and electrically-charged microfibers.

Dated this 05 day of June 2014

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