United States Patent [19]

Bird et al.

[11] **3,872,516**

[45] **Mar. 25, 1975**

[54] **DISPOSABLE HEAD COVERING GARMENT**

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[73] Assignee: **Johnson & Johnson,** New Brunswick, N.J.

[22] Filed: **Mar. 29, 1973**

[21] Appl. No.: **346,232**

[52] **U.S. Cl.** **2/202,** 2/204, 2/200

[51] **Int. Cl.** **A42b 1/04**

[58] **Field of Search** 2/202, 203, 204, 205, 68, 2/6, 171, 198, 200; 128/142.7

[56] **References Cited**

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Primary Examiner—Werner H. Schroeder
Assistant Examiner—Peter Nerbun

[57] **ABSTRACT**

This application is directed to a surgical hood which is made from an inexpensive, nonwoven fabric and may be discarded after a single use. The hood comprises three separate pieces, a top, and two side pieces. The lower edge of each side piece has an elongated area which is of sufficient length to be used as a tie to secure the hood in place. The strength of the nonwoven fabric is in the direction of the ties coming off the lower portion of the hood.

2 Claims, 3 Drawing Figures

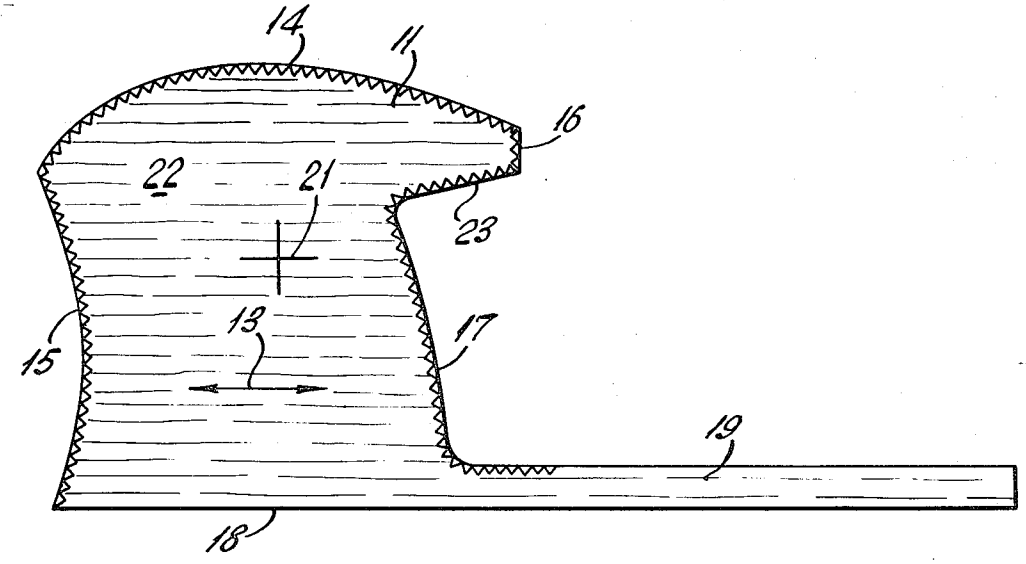


Fig. 1.

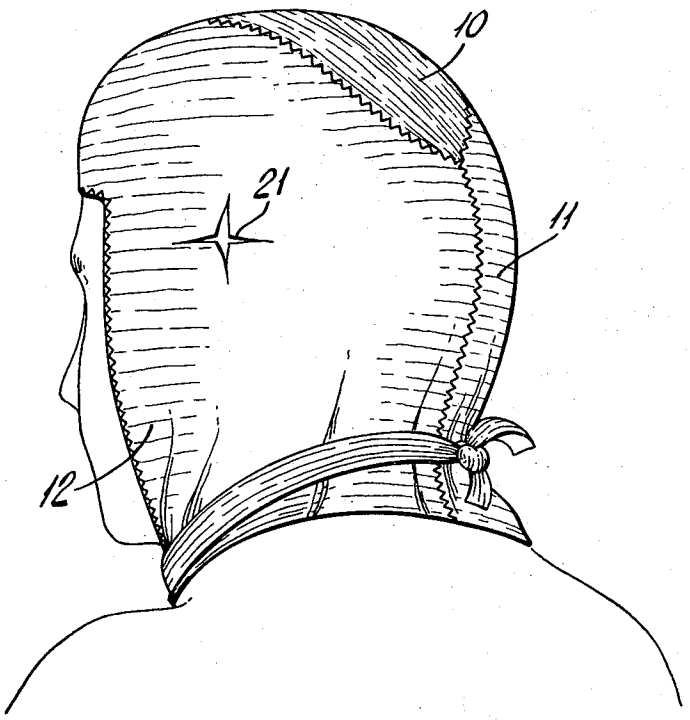


Fig. 3.

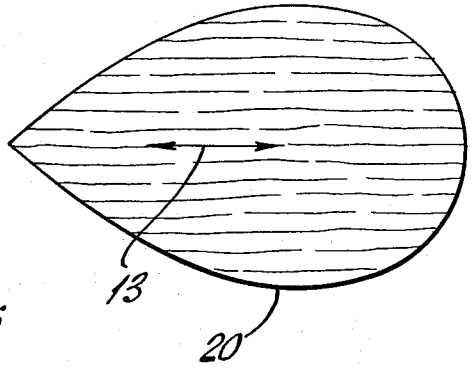
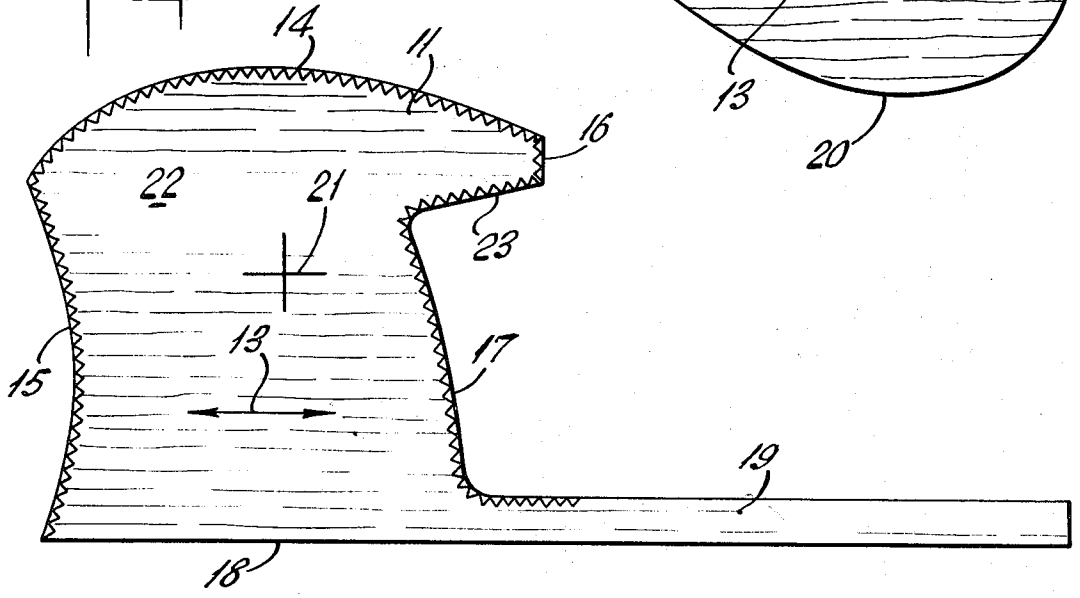


Fig. 2.



DISPOSABLE HEAD COVERING GARMENT

BACKGROUND OF THE INVENTION

The operating room staff, i.e., those present in the operating room during surgical procedures, generally wear caps to totally enclose their hair. This is considered to be necessary in order to maintain the sterile condition of the operating room. Particles of various types of foreign matter such as dust, dirt, etc. are carried on various parts of the body including the hair. These particles carry bacteria which can be transmitted from the operating room staff to the patient. The use of caps prevents these particles from falling onto the surgical patient during an operation. For many years these caps have been made and modeled in a fashion similar to a military garrison cap which covered the upper portion of the head generally above the ears. This was considered to be adequate to prevent particles from falling from the head of the surgeon during an operating procedure.

Men's hairstyles have changed significantly over the last few years. Hair is being worn longer, and the wearing of long sideburns and beards is commonplace. The previously employed design of surgical caps is inadequate to completely enclose these new hairstyles and thus does not prevent the transmission of bacteria. The previously employed caps were usually made from woven fabrics such as linen or muslin. These caps were reusable and were thoroughly cleaned and sterilized after each use. The processing of linen or muslin fabric articles to clean and sterilize them after use is a time consuming and therefore expensive task. For that reason, in recent years there has been a substantial increase in the availability and usage of single use disposable garments. Applicants have developed an inexpensive, single use head covering or surgical hood that can be used to completely cover the head and hair of surgeons. This hood covering or hood is adequate to completely enclose the hair of the surgeon when the hair is long or where the surgeon has relatively large sideburns.

BRIEF DESCRIPTION OF THE DRAWINGS

Referring now to the drawings in which:

FIG. **1** is a perspective view of the surgical hood of the present invention secured on the head.

FIG. **2** is a side view of one of the side panels of the hood, the other panel being a mirror image of the one shown.

FIG. **3** shows the general configuration of the top or crown of the hood.

DETAILED DESCRIPTION OF THE DRAWINGS

FIG. **1** shows the hood of the present invention as it is worn by the wearer. The hood is composed of a top piece or crown **10** which is secured to side panels **11** and **12** by sewing or adhesive bonding. The panels **11** and **12** as well as the top **10** are made from an oriented, nonwoven fabric **22** which has considerably more strength in the machine direction than in the cross machine direction. The fabrics are employed in the hood in such manner that the patterns for the crown and the side portions are made with the machine direction or strength of the fabric placed in the direction of the arrow **13** shown in FIGS. **2** and **3.** Each of the side panels **11** and **12** has a top portion **14** to be secured to the crown **10** to form the top of the hood. Each of the side panels has a back portion **15** which is secured to the back portion of the other panel to form the back of the hood. The top front portion **16** of each panel is secured to the top front portion of the other panel to form the front of the hood which covers the forehead of the wearer. An opening in the front of the hood is formed by the front sides **17** of the side panels. The lower edge **18** of the side panel extends outwardly beyond the front of the hood to form the ties **19.** The ties should be of sufficient length so they may be crossed under the chin of the wearer and tied at the back of the neck as shown in FIG. **1.**

The design of the hood of the present invention allows a single size to fit the great majority of wearers. In general, the crown pattern is a tear drop shape having a width of about 6 inches and a length of about 12 inches. Each of the side panels is about 12 inches in height from the bottom **18** to the top **14.** The distance from back **15** to the top front portion **16** is about 13 inches. The length from the back **15** to the opening **17** is about 9 to 10 inches. The ties **19** extend about 15 to 16 inches beyond the opening **17** of the hood and are about 1 inch high. In a flat configuration, the front portion **16** extends beyond the open area **17** by a distance of about 3¼ to about 2 ½ inches. This allows the forehead of the wearer to be covered and the hood to be tightly drawn against the forehead. It should be understood that these dimensions are only representative and not exact and could be varied slightly without changing the function of the hood.

The hood is assembled by stitching or adhesively bonding the side panels **11** and **12** to the crown **10.** The back edges **15** of each of the side panels **11** and **12** are then stitched or adhesively bonded to each other. The front portion **16** of each of the side panels also are stitched or adhesively bonded to each other. It has been found to be advantageous to apply stitching **23** to the fabric around the open area **17** in the front of the hood. This allows the transmission of force from the ties **19** to the open area **17** to pull the fabric around the open area tightly against the cheeks of the wearer. The stitching is particularly advantageous in the high stress areas of the hood. These areas are between the tie **19** and the open area **17** and between the open area **17** and the front portion **16.**

The nonwoven fabric from which the hood is made should have sufficient elasticity to prevent binding of the ears when the hood is drawn tight. However, a cross cut **21** may be placed in each of the side panels **11** and **12** to prevent the hood from binding the ears.

The nonwoven fabric **22** may be of any fiber composition and construction that meets the requirements set forth herein. A carded fabric made from rayon fibers and drawn after the formation of the carded web has been found to meet the fabric requirements for the product of the present invention.

The nonwoven fabric **22** must be of sufficient strength to allow the hood to be drawn tightly around the head without tearing the fabric. As the force necessary to securely fix the hood in place is applied in the direction of the length of the ties **19,** the strength of the fabric must be in the direction of the ties **19.** We have found that the strength of the fabric should be in the range of 20 to 30 pounds per three ply 1 inch width in the machine direction or the tie direction and at 2 to 3 pounds per three ply 1 inch width in the cross ma-

chine direction. A carded nonwoven fabric weighing from 480 to about 600 grains per square yard and print bonded with an acrylic binder has been found to be suitable to fabricate the hood of the present invention.

In addition to the physical properties mentioned above, the fabric must also meet flammability requirements. The fabric may be treated with various well known flame retardant finishes to meet these requirements.

What is claimed is:

1. A surgical hood made from a nonwoven fabric comprising a crown portion which is generally a teardrop shape, two side panels, each having a top edge, a back edge, and an elongated lower edge, the top edge of each of the side panels being secured to the crown portion, the back edges of each of the panels being secured to the back edge of the other panel, the elongated portions of the side panels being of sufficient length to overlap each other under the chin of the wearer and be secured at the back of the neck of the wearer, the material of the cap being an oriented nonwoven fabric which has a machine direction strength of at least 20 pounds per three ply 1 inch width and a cross machine direction strength of 2 to 3 pounds per three ply 1 inch width, with the machine direction strength of the fabric being in the direction of the length of the elongated lower edge.

2. The hood of claim 1 in which the nonwoven fabric is a carded rayon fabric.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,872,516 Dated March 25,1975

Inventor(s) William H. Bird and Richard F. Caffrey

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

In Column 1, line 39, "hood covering" should read --- head covering ---.

In Column 2, line 26, " 2 1/2 " should read --- 3 1/2 ---.

Signed and sealed this 17th day of June 1975.

(SEAL)
Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents
and Trademarks