Jan. 13, 1970 E. STURM 3,488,772

HAIR SPRAY FACE SHIELD

Filed Sept. 11, 1967 2 Sheets-Sheet 1

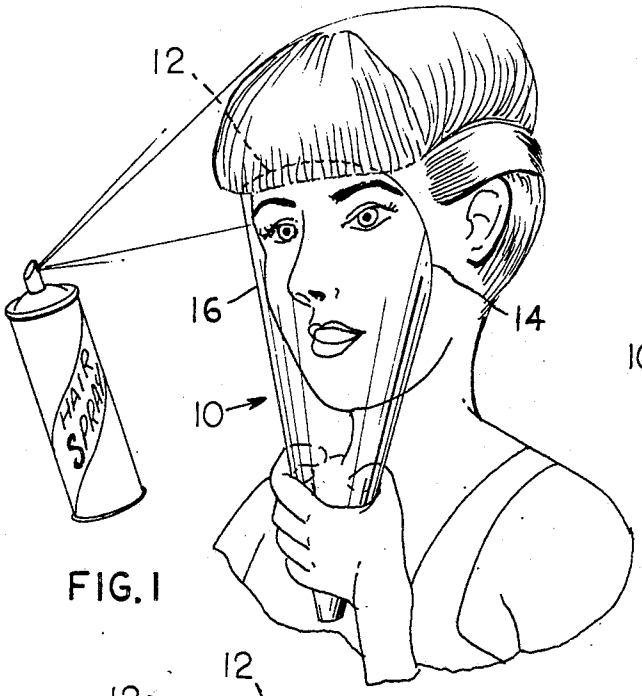

FIG. 1

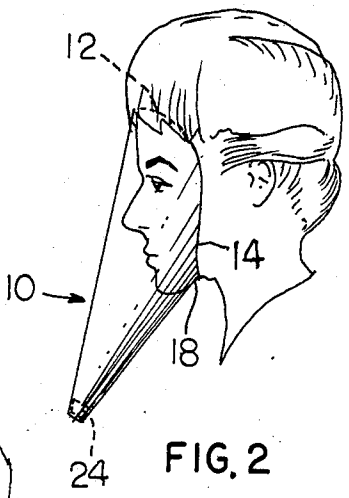

FIG. 2

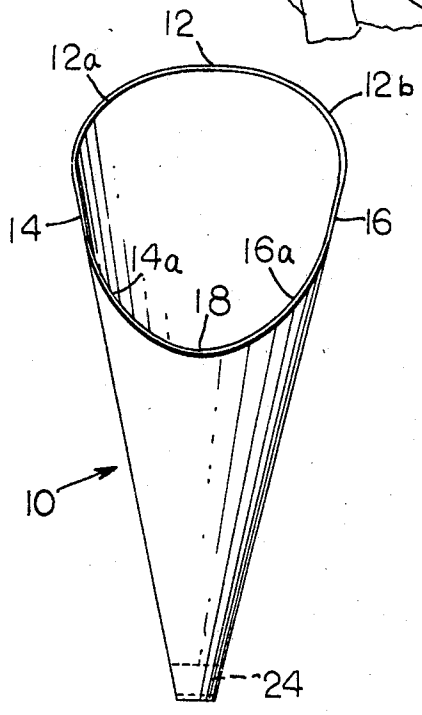

FIG. 3

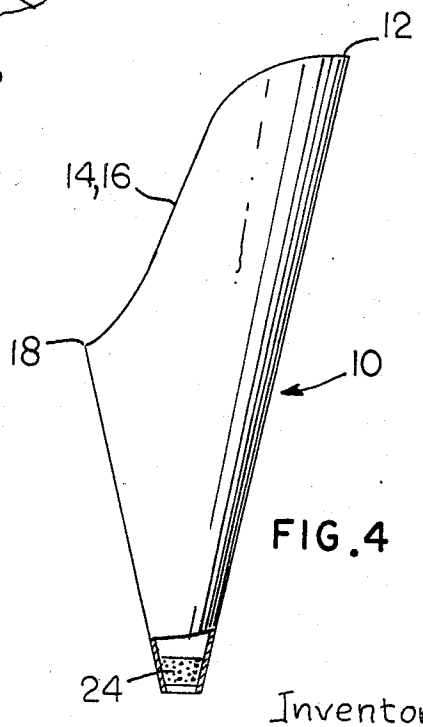

FIG. 4

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Jan. 13, 1970 E. STURM 3,488,772

HAIR SPRAY FACE SHIELD

Filed Sept. 11, 1967 2 Sheets-Sheet 2

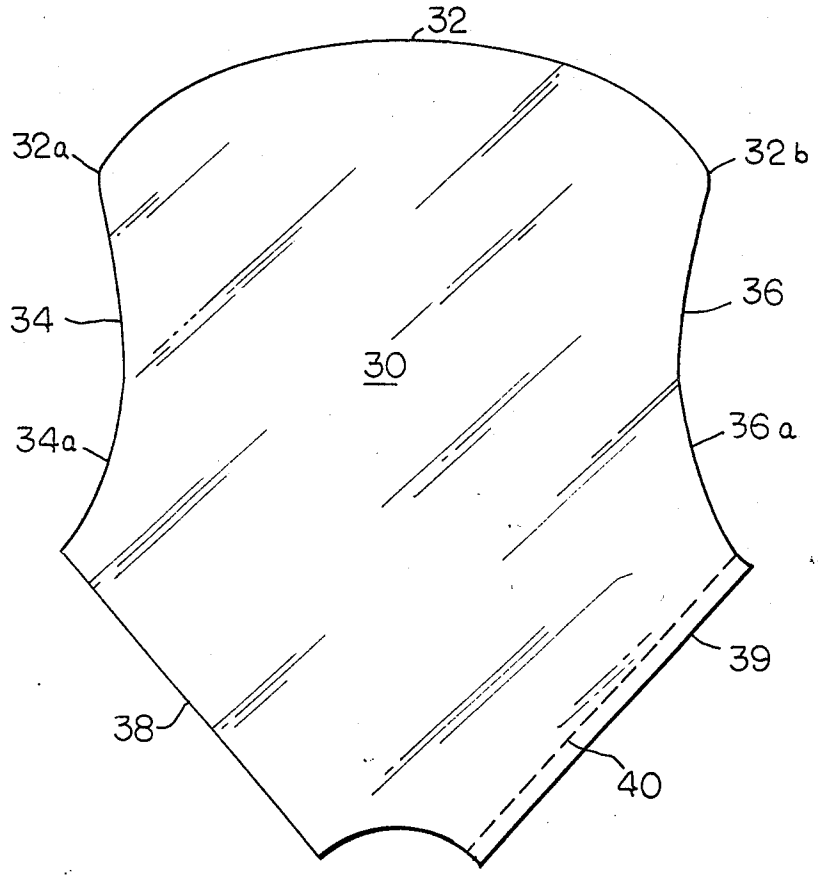

FIG. 5

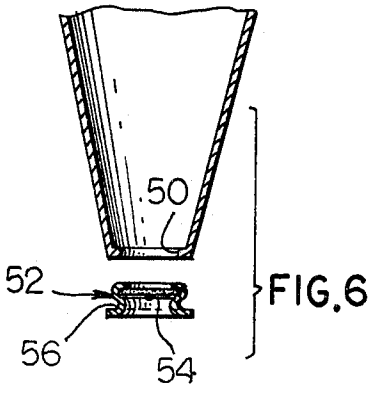

FIG. 6

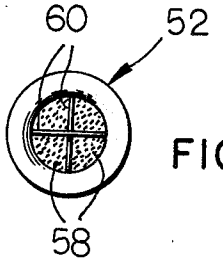

FIG. 7

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HAIR SPRAY FACE SHIELD

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Int. Cl. A45d *44/00;* A42b *1/00;* A61f *9/00*
U.S. Cl. 2—9 7 Claims

ABSTRACT OF THE DISCLOSURE

A transparent face shield is provided by a hollow cone. Portions of the large end of the cone are removed to provide edges which fit over the forehead, along the sides of the face, and under the jaw to shield a person's face. The small end of the cone is open to permit breathing. An air filter is positioned in the cone at the small end to filter the spray.

BACKGROUND OF THE INVENTION

My invention relates to a face shield, and particularly to a face shield for protecting a person's eyes, nose, and mouth from hair spray and other cosmetic sprays.

Many cosmetic preparations, particularly hair sprays, are being sold in and dispensed from aerosol containers. Such sprays are extensively used by girls and women, many of whom are unaware of or indifferent to the harmful effects of such sprays. These sprays may be irritating, harmful, or uncomfortable to the skin or eyes of the user. Further, these sprays may be irritating or harmful to the respiratory system of the user. While there have been protectors and shields provided for users to protect themselves from these sprays, these protectors or shields have not been widely accepted or used. Several reasons why these protectors or shields have not been accepted or used are: they are inconvenient to handle; or they do not provide satisfactory protection; or a person cannot see himself or herself clearly when the protector or shield is in position on the person's face.

Accordingly, an object of my invention is to provide an improved face shield that is easy to use.

Another object of my invention is to provide a face shield, particularly for women, which provides substantially complete protection to a woman's face.

Another object of my invention is to provide a face shield which permits a person to see clearly through the shield when it is in a protective position on the person's face.

Another object of my invention is to provide a face shield which, when in position, provides substantially complete protection to a person's face by a tight contact, but which permits the person to breathe air that is substantially free from spray particles.

Another object of my invention is to provide an an improved face shield which provides a clear view for the user, which provides complete protection to the eyes, nose, and mouth of the user, which permits prolonged breathing through an air filter, and which is easy to handle and use.

SUMMARY OF THE INVENTION

Briefly, these and other objects are achieved in accordance with my invention by a face shield which generally takes the shape of a hollow cone. The cone is made of flexible, transparent plastic which can be molded or formed from a sheet. A portion of the cone is removed near its large end. The remainder of the cone at the large end forms a first edge which fits over the forehead of a person. Symmetrical edges extend from opposite ends of the first edge toward the small end of the cone to intermediate locations. These symmetrical edges engage the facial sides of a person. A second edge extends between the intermediate locations for engaging the lower part of the jaw of the person. Thus, the shield generally conforms to the forehead, sides, and lower jaw portions of a person's face to provide a protective and tight cover. The small end of the cone is open to permit air to be inhaled and exhaled, and an air filter is positioned near this small end to remove spray particles. When the face shield is in use, the cone is in a nearly vertical position so that the transparent material of the cone is substantially or generally perpendicular to the line of vision of the person using the shield. Thus, the shield provides clear vision and adequate shielding, and permits filtered breathing and easy handling.

BRIEF DESCRIPTION OF THE DRAWING

The subject matter which I regard as my invention is particularly pointed out and distinctly claimed in the claims. The structure and operation of my invention, together with further objects and advantages, may be better understood from the following description given in connection with the accompanying drawing, in which:

FIGURE 1 shows a partial front view of a woman using a face shield in accordance with my invention;

FIGURE 2 shows a profile view of a woman using a face shield in accordance with my invention;

FIGURE 3 shows a rear elevation view of my face shield;

FIGURE 4 shows a side elevation view of my face shield;

FIGURE 5 shows a developed view of a sheet of material that can be shaped to form a face shield in accordance with my invention;

FIGURE 6 shows a face shield in accordance with my invention with another type of air filter; and

FIGURE 7 shows a plan view of the air filter of FIGURE 6.

DESCRIPTION OF THE PREFERRED EMBODIMENT

FIGURES 1 through 4 show various views of a preferred embodiment of my face shield which is generally designated by the reference numeral **10**. The face shield **10** is preferably formed as a single integral structure, rather than by bending a sheet of material. The face shield **10** is preferably formed as an integral structure by any suitable process, such as molding or casting a transparent, slightly flexible plastic material such as cellulose acetate. When formed, the face shield **10** has the general shape of a hollow cone with a circular cross section. Portions of the large end of the cone are omitted during forming or removed after forming to provide edge means for sealing against the user's face to exclude spray particles. The edge means includes a first edge **12** which extends around a portion of the cone at the large end, symmetrical edges **14**, **16** which extend generally downward from opposite ends **12***a*, **12***b* of the first edge **12** toward the small end of the cone and an edge **18**. Symmetrical edges **14**, **16** extend downward to intermediate locations **14***a*, **16***a* respectively. Second edge **18** extends around a portion of the cone between the intermediate locations **14***a*, **16***a*. This second edge **18** is about midway between the ends of the cone.

The small end of the cone is tapered to form a handle means as illustrated in FIGURE 1. Said end is open to permit breathing. An air filter **24** is positioned in the cone at or near this small end, and is preferably held by friction in order that the air filter **24** may be removed and replaced. The air filter **24** may be formed of any suitable material which permits air to be inhaled and exhaled, but which filters spray particles, particularly those found in cosmetics and hair sprays used by women.

FIGURES 1 and 2 show a partial front view and a profile view of a woman using my face shield **10**. In these

figures, it will be seen how the first edge **12** fits across and closely against the forehead of the woman. The symmetrical edges **14**, **16** fit along and closely against the sides of the woman's face. And, the second edge **18** fits closely against the lower part of the chin or jaw of the woman approximately at the neck. Thus, a complete shield is provided for the face, and particularly for the eyes, nose, and mouth. As seen in FIGURE 1, the face shield **10** is easily held by the woman near the small end and pressed against her face in a position to protect the front portions of her face. As seen in FIGURE 2, the shield **10** provides protection to the sides of the woman's face when held in position. Also, when held in position, the shield **10** extends downward in a somewhat vertical direction so that when the woman looks ahead, such as she would do when viewing herself in a mirror, her line of vision is generally perpendicular to the surfaces of the cone in front of her eyes. Thus, good vision in the front direction is provided. In FIGURE 2, it will also be seen that the small end of the shield **10** opens in a generally downward direction. This, in and of itself, tends to reduce the amount of spray particles which can be inhaled into the face shield **10**. However, I prefer that the filter **24** be used at this small end to provide further removal of spray particles.

It will thus be seen that my face shield **10** provides a new and improved face shield which is easy to use. The face shield provides tight and complete protection to a person's face, particularly the eyes, nose, and mouth. The thin material of the cone at the first edge **12** can fit or slide under the bangs or front locks of hair without disturbing the position of the hair. The face shield **10** permits very good vision in the front direction, so that a person can apply hair spray or other cosmetic sprays and clearly see what he or she is doing. Further, the face shield **10** provides good filtering of the air because of the downwardly directed breathing opening at the small end, and further because of the filter **24**.

While I prefer that my face shield be formed as an integral structure by molding or casting, my face shield may also be formed from a sheet of material of the desired shape that can be curved or bent to form a completed face shield. FIGURE 5 shows a developed view of a sheet **30** of suitable material which can be bent or curved to form a completed face shield such as shown in FIGURES 1 through 4. The sheet **30** has a first edge **32** which extends to ends **32***a*, **32***b*. Symmetrical edges **34**, **36** extend from the ends **32***a*, **32***b* to intermediate locations **34***a*, **26***a* respectively. The remaining edges beyond the intermediate locations **34***a*, **36***a* form the second edge. Straight edges **38**, **39** extend from the second edge toward the small end of the sheet **30**. When the sheet **30** is to be formed into a completed face shield, it is curved or bent so that one edge **38** is near or adjacent to the other edge **39** and joined to this other edge **39** at the overlapping material **40**. The edges **38**, **39** may be joined by any suitable means, such as by an adhesive or by fusing the material together. When the sheet **30** shown in FIGURE 5 is so completed, it has the same appearance as the integral face shield **10** of FIGURES 1 through 4, and forms the same first edge, symmetrical edges, and second edge.

FIGURES 6 and 7 show another type of air filter **52** which can be used with my face shield. FIGURE 6 shows a cross sectional view of my face shield with the air filter **52**, and FIGURE 7 shows a plan view of the air filter **52**. The face shield is provided with an intenal rolled edge or bead **50** which holds the air filter **52** at a groove **56**. The air filter **52** contains a suitable air filter material **54**, which may be a replaceable disc. The filter **52** may be snapped into the small end of the face shield and held by the edge or bead **50** engaging the groove **56**. The air filter **52** is provided with open sections **58** and supporting ribs **60**. The filter **52** may be made of any suitable molded plastic material.

In one embodiment of my face shield which was actually constructed, the cone was made of cellulose acetate plastic material having a wall thickness of 0.035 inch. The length of this cone between the small end and the first edge **12** was approximately 11⅝ inches, and the length of this cone between the small end and the second edge **18** was approximately 6 inches. The diameter of the cone at the small end was approximately ¾ of an inch, and the diameter of the cone at the large end (assuming that a portion had not been removed) was approximately 5¾ inches. Because of the flexibility of the plastic material forming the cone, I found that a cone of these dimensions provided adequate protection to many different facial shapes and sizes. However, I do not intend that my face shield be specifically limited to these dimensions.

It will thus be seen that my invention provides a new and improved face shield that gives good protection to the face of a person, that permits good vision when the shield is in position, and that permits breathing of air that is relatively free of spray particles while the shield is in position. While my invention has been described with reference to a specific embodiment, it is to be understood that modifications may be made. For example, the face shield may be molded or formed from a sheet. Portions of the face shield may be colored, opaque, or decorated, particularly near the small end. Various types of air filters may be used. The face shield may be provided with suitable means for hanging it on a hook or other projection. Therefore, while my invention has been described with reference to a particular embodiment, it is to be understood that modifications may be made without departing from the spirit of the invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A face shield for protecting a person's face from hair spray and the like, comprising:

(a) a hollow cone formed of flexible, transparent material;

(b) said cone having a portion removed near its large end to form edge means for substantially sealing contact with portions of the user's face, said edge means including a first edge around a portion of its large end for engaging the forehead of a person, symmetrical edges respectively extending from opposite ends of said first edge toward the small end of said cone to respective intermediate locations for engaging the sides of the face of a person, and a second edge extending around a portion of said cone between said intermediate locations for engaging the lower part of the jaw of a peson and shielding a person's face, including the eyes, nose, and mouth, when said shield is in position on a person's face;

(c) said cone tapering to form handle means adjacent its small end and having an opening at its small end;

(d) and an air filter positioned in said cone near said opening in said small end for permitting a person to breathe filtered air when said shield is in position on a person's face.

2. The face shield of claim **1** wherein said cone is an integral molded structure.

3. The face shield of claim **1** wherein said cone is formed from a sheet of material joined along an edge.

4. The face shield of claim **1** wherein said cone has formed from a sheet of material joined along an edge.

5. The face shield of claim **1** wherein said cone is formed from a sheet of material that is curved and joined along an edge, and wherein said cone has a substantially circular cross section between said small end and said intermediate locations.

6. The face shield of claim **1** wherein said air filter is held within the small end of the cone by fiction.

7. The face shield of claim **1** wherein the small end

of the cone is provided with an inwardly turned bead, and wherein the said air filter is provided with a groove for engaging said bead.

References Cited

UNITED STATES PATENTS

3,152,588 10/1964 Rogowski ---------- 128—141

3,317,921 5/1967 Zarzour ---------- 2—9
3,328,806 7/1967 Allegro ---------- 2—9

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GREGORY E. McNEILL, Assistant Examiner

U.S. Cl. X.R.

2—11; 132—1

PO-1050
(5/69)

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,488,772 Dated January 13, 1970

Inventor(s) Esther Sturm

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

Column 1, line 54, delete "an" second occurrence.

Column 3, line 67, "intenal" should be --- internal ---.

Column 4, line 52 (claim 1), "peson" should be --- person ---.

Column 4, lines 66 & 67 (Claim 3), after "has" delete "formed from a sheet of material joined along an edge." and insert --- a substantially circular cross section -

Column 4, line 74 (Claim 6), "fiction" should be --- friction

SIGNED AND
SEALED
JUN 30 1970

(Seal)
Attest

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Commissioner of Patents