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2,556,231

DRESS SHIELD

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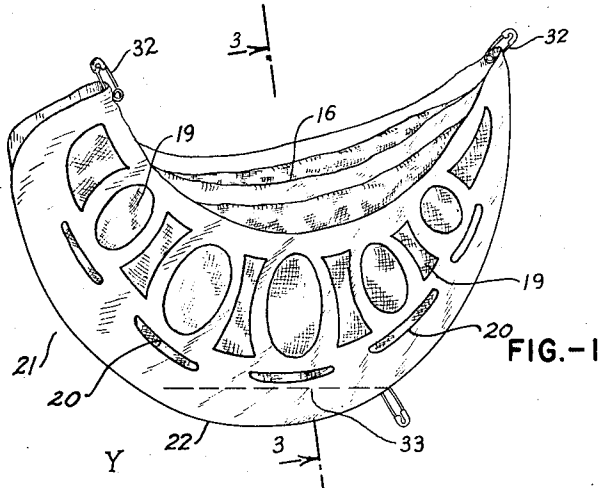


FIG.-1

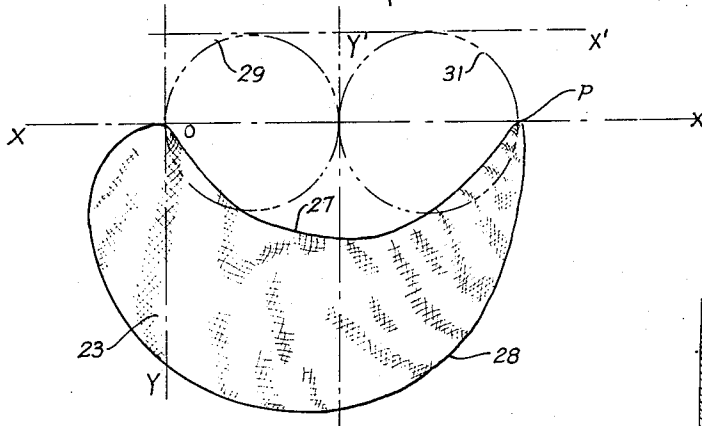


FIG. -2

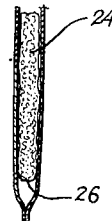


FIG. -4

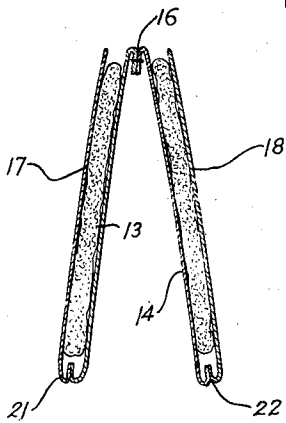


FIG.-3

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DRESS SHIELD

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3 Claims. (Cl. 2—53)

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This invention pertains to a shield for protecting garments from the deleterious effects of perspiration. More particularly this invention pertains to a shield of novel shape and conformation providing a pair of open pocket members into which a readily replaceable perspiration absorbing pad may be inserted.

Various other inventors have previously provided dress shields having pockets into which replaceable absorbent pads could be placed. However, these prior shields, while serviceable, have not fully realized the possibilities for utility inherent in such devices. Realizing this, the present inventor has devised a dress shield of different shape and arrangement that is of increased utility and which satisfies, among others, the following objects:

To provide a dress shield made of plastic or other moisture resistant material having two irregularly shaped pockets into which replaceable moisture absorbing pads may be inserted;

To provide openings in the exterior surfaces of said pockets through which moisture may be admitted to said pads;

To provide means for retaining excessive moisture in said pockets;

To provide means for readily and economically attaching the interior and exterior members together during manufacture to form moisture retaining pockets;

To provide a dress shield of novel shape and conformation which serves to give greater protection to the garments of active wearers;

To provide perspiration absorbing pads that are readily replaceable in exposed pockets of the garment shield;

To provide a dress shield which may be easily cleaned before insertion of new pads without removing the shield from the garment;

To provide a dress shield that may be worn without pads or that may be worn with more than one pad in each pocket to provide protection in accordance with actual needs.

Further objects and advantages of the present invention will be apparent from the appended description and drawings in which:

Fig. 1 is a perspective view of the garment protecting shield of this invention showing the replaceable pads in position of use;

Fig. 2 is a plan view of a replaceable pad formed in accordance with this invention showing the geometrical determination of a shape suitable to this invention;

Fig. 3 is a cross sectional elevation taken along the line 3—3 of Fig. 1; and

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Fig. 4 is a further cross sectional elevation showing the details of a separate means for joining the edges of said shield.

Briefly stated the present invention provides a dress shield for protecting garments from the deleterious effects of body perspiration. The shield is designed for placement in the armscye of a garment in such manner that impervious interior faces of the shield are in engagement with the garment being worn by the user. Exterior faces of shape similar to the interior faces are adjoined thereto in such manner as to provide two separate pockets having an upwardly disposed opening adjacent the seam of the garment. Separate moisture absorbing pads are provided for insertion in said pockets and are readily removable therefrom whenever the garment is removed and it is desired to change the pads due to the absorption of perspiration.

In order that body perspiration may be absorbed by the absorbent pads, openings or cutouts are formed in the exterior face of said pockets. These openings are of novel shape, size and placement so that all the perspiration exuded by the wearer will be absorbed by the pad. As a further feature of this invention the dress shield is of a novel geometrical shape which tends to protect the garment of the wearer even while the wearer's arms are raised to a working position.

Referring now to the drawings the features of this invention will be more fully described and explained. In Figs. 1 and 3 it will be noted that the applicant provides a garment shield 11 made up of four similarly shaped members, at least two of the members 13 and 14 are formed of an impervious washable material and are attached together along an upper curved edge 16. These interior members 13 and 14 are normally in engagement with the garment being worn by the user and when the shield 11 is properly placed in the garment, the member 13 will be in engagement with the arm of the garment while the member 14 is in engagement with the body of the garment. The upper curved edge 16 will itself be adjacent to the armscye of the garment. Preferably the members 13 and 14 are of a plastic or otherwise washable material which is impervious to the moisture of perspiration.

The other two of the above mentioned four members are the exterior members 17 and 18. These members likewise may be made of the same type of materials as that used for the interior members 13 and 14. If the exterior members 17 and 18 are made of the same type of material, however, it is necessary that cutouts or apertures

19 to be formed in the face thereof. Inasmuch as these interior members 17 and 18 are in engagement with the body of the wearer it will be readily apparent that these apertures are provided so that body perspiration may be introduced into the interior of the pocket formed by joining the members 17 and 18 to the internal members 13 and 14 respectively along the lower edges 21 and 22. When the edges have been joined together by means of stitching as shown in Figs. 1 and 3 or by heat sealing the plastic fabric as shown in Fig. 4, it will be apparent that this device provides two pockets in side by side arrangement into which perspiration absorbing pads 23 may be placed.

The pads 23 are themselves made of any suitably absorbent material such as soft paper, fabric or the like and in the embodiment shown the applicant has provided a pad having a soft, paper and cotton filler 24 and an exterior fabric binder 26 similar to cheesecloth or the like. A deodorant may be used in the pad if desired.

The novel shape of the pads 23 and likewise of the dress shield itself is best explained in conjunction with Fig. 2. In this figure it will be noted that the applicant provides a pad having an upper edge 27 of regular curvature which in actuality is a segment of a circle. The exterior edge 28 is of compound curvature which closely approximates the curvature of a cardioid. While the product actually manufactured or which might serve the purposes of this invention would not necessarily assume this exact shape, the curvature which results from the construction indicated in Fig. 2 closely conforms to that desired by the applicant. If the X and Y axes are taken as indicated in Fig. 2 and if the primary circle of construction is of a diameter equal to the diameter of the circle of construction 29 as shown, and if the revolved circle 31 is of identical diameter the curve traced by the point "P" on the circumference of the circle 31 as it is rolled about the stationary circle 29 will correspond to the curvature of the lower edge 28. The location of this point "P" with respect to the X and Y axes and therefore the location of the curve 28 is determined by the formula $Rho = a(1 - \cos \theta)$ when Rho is the distance from the center O of the coordinate axes X and Y, when a is equal to the diameter of the circles 29 and 31, and when θ is the angle the point "P" makes with the X and Y axes. The curve 28 shown in Fig. 2 can actually be derived through use of this formula. However it should be noted that the representation of Fig. 2 is correct only if the drawing sheet is viewed from an upside down position.

The construction indicated on Fig. 2 is likewise useful in determining the location and curvature of the upper edge 27. If an axis Y' is passed parallel to the Y axis and tangent to the circles of construction 29 and 31 at their point of tangency, the intersection of this axis Y' with an axis X' which is located tangent to the uppermost limit of the circles of construction 29 and 31, determines the location of the center of a circle of which the curve 27 is a segment. This construction is useful in a still further manner inasmuch as the axis Y' determined as above corresponds with the location of the seam of the garment with which the dress shield is to be used.

If a dress shield made according to the foregoing description is attached in the garment by means of safety pins 32 or the like in such position that the seam of the garment coincides with the axis Y', the shield of this invention will tend

to give greater protection to the garment being worn. This result is obtained because the pads and shield formed as indicated present perspiration absorbing surfaces in contact with the wearer's arm and body when the wearer's arms are held in a forward position such as is normal when writing or otherwise doing work at a table or bench. Previous shields have not been designed to provide protection when the wearer's arms were lifted to this normal position and if prior forms of shields are shifted to give this requisite protection they become too bulky or otherwise bothersome to the wearer. By reason of the form shown the applicant therefore provides a shield which offers greater protection to the wearer's garment without being too bulky or cumbersome.

Other advantages of the applicant's device are inherent in the provision of the positive juncture of the interior faces 13 and 14 along the curved edge 16. By reason of this juncture no perspiration is allowed to pass downwardly between the pockets and onto the garment since the faces 13 and 14 and the juncture thereof provide an impervious garment protecting shield. Inasmuch as the edges of the faces 13 and 14 are turned under after they are stitched or heat sealed the edge 16 is a smooth surface that will not chafe the wearer's armpit. A further advantage of the applicant's device is inherent in the provision of openings 19 in the exterior faces 17 and 18. These openings 19 are of such size and placement that any excessive perspiration of a quantity greater than that which can readily be absorbed by the pads 23 will be retained in the area defined by the line 33 and the lower edges 21 and 22 of the separate pockets. It will be noticed that no openings are provided in this general area so entrapped moisture cannot escape but will be retained in the pocket by the sealed edges 21 and 22. In the arrangement of openings 19 it should be noted that slits 20 are provided under the oval shaped openings 19. These slits 20 tend to entrain any moisture which travels down the outer surface of faces 17 and 18 between openings 19.

Further it should be noted that the applicant provides pockets which are open along their upper edge in such manner that the shield 11 need not be removed from the garment when the pads 23 are to be replaced. When the wearer wishes to change the pads in the shield 11 the pads 23 may be removed directly from the separate pockets and new pads may be replaced therein. Since the interior and exterior surfaces 13, 14, 17 and 18 are made of a moisture impervious material, any perspiration or moisture on the shield may be removed at the time of pad replacement by the simple expedient of washing or wiping the perspiration therefrom, and this operation too may be carried out without removing the shield from the garment.

While one specific form of this invention has been shown and described it should be understood that the applicant is not to be limited strictly to the shape shown and described. The essential purpose of providing the form shown is to provide added protection for the wearer's garment whenever the wearer's arms are raised to a working position. Prior forms of dress shields were generally lunar in shape and the term "of cardioid shape" or "of cardioid curvature" in the appended claims is intended to distinguish from such previous shapes and to describe any shape providing a segment extending forwardly with respect to the armscye of the

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garment. It will be obvious that many modified shapes and forms might be adapted to serve the purpose of this invention in this respect and for that reason the inventor should not be limited to the single technical form shown and described, but should only be limited within the scope of the following claims and by the terminology used therein as modified by the specific definitions included in this specification.

What is claimed is:

1. A garment protecting shield for use at the armseye of wearing apparel comprising a pair of plastic moisture impervious interior members having lower edges of substantially semi-cardioid curvature and upper edges of circular curvature, a heat sealed seam joining said plastic upper edges together to provide a moisture impervious seal, a pair of exterior members formed of plastic moisture impervious material having lower edges of substantially semi-cardioid curvature corresponding to the lower edges of said interior members, each of said exterior members being disposed adjacent to one of said interior members, heat sealed seams imperviously joining the lower edges of the separate plastic interior and exterior members together to provide a pair of moisture retaining pockets in side by side relation, openings in said exterior members to allow ingress and egress of moisture at points substantially above the bottom of said pockets, and moisture absorbing pads of shape corresponding to said interior and exterior members for insertion in said pockets, said pads being formed of a soft cotton base filler material enclosed in a cotton binder of open weave.

2. A garment protecting shield for use at the armseye of wearing apparel comprising a pair of moisture impervious interior members having lower edges of substantially semi-cardioid curvature and upper edges of regular curvature, means joining said upper edges together to provide a moisture impervious seal, a pair of exterior members formed of moisture impervious material having lower edges of substantially semi-cardioid curvature corresponding to the lower edges of said interior members, each of said exterior members being disposed adjacent to one of said interior members, means joining the lower edges of the separate interior and exterior members together to provide a pair of moisture retaining pockets in side by side re-

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lation, openings in said exterior members to allow ingress and egress of moisture at points substantially above the bottom of said pockets, and moisture absorbing pads of shape corresponding to said interior and exterior members for insertion in said pockets, said pads being replaceable as desired.

3. A garment protecting shield for use at the armseye of wearing apparel comprising a pair of moisture impervious plastic members having lower edges of substantially semi-cardioid curvature and upper edges of regular curvature, a heat sealed seam joining said upper edges together to provide a moisture impervious seal, a pair of exterior members formed of moisture impervious plastic material having lower edges of substantially semi-cardioid curvature corresponding to the lower edges of said interior members, each of said exterior members being disposed outwardly from and adjacent to one of said interior members, heat sealed seams joining the lower edges of the separate plastic interior and exterior members together to provide a pair of moisture retaining pockets in side by side relation, openings in said exterior members to allow ingress and egress of moisture at points substantially above the bottom of said pockets, additional openings in said exterior members disposed in positions beneath said first openings and adapted to intercept moisture coursing gravitationally away from said first-named openings, and moisture absorbing pads of shape corresponding to said interior and exterior members for insertion in said pockets, said pads being replaceable as desired.

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