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(54) **Body temperature-adjustable clothing**

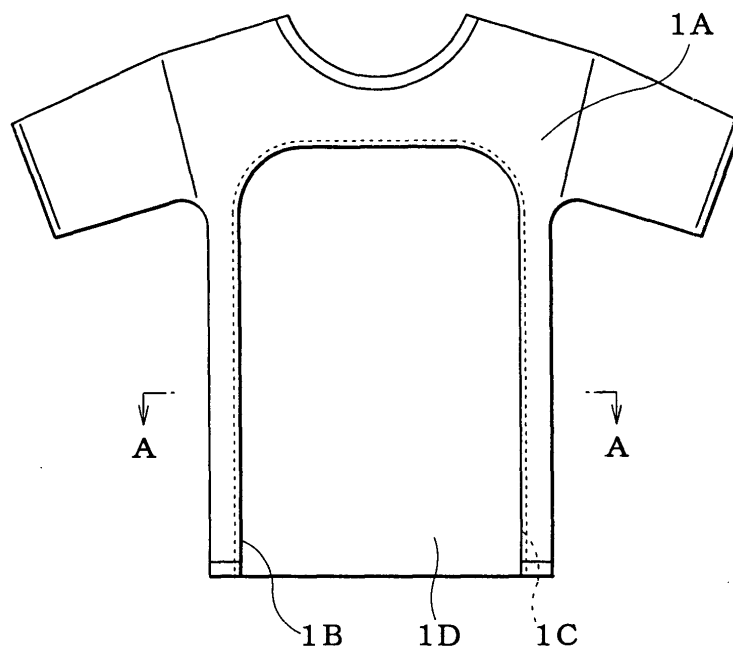
(57) Clothing having an open portion at a part thereof to adjust the body temperature, by which the body temperature can easily be adjusted.

An open portion 1B is formed on a part of clothing 1, and this open portion 1B is covered with a ventilative net material 1E. The net material 1E of the open portion 1B is covered with a patch cloth 1D. This patch cloth 1D is detachable from the open portion 1B by a fastener.

When one wearing the clothing feels hot, the fas-

tener 1C is unzipped and the patch cloth 1D is detached, and the net material 1E of the open portion 1B is exposed. And, the ventilation can be made well through the net material 1E, and the raised body temperature can be gradually lowered. When feeling cool, the patch cloth 1D is attached again to the open portion 1B, and thus warmth can be kept. The open portion 1B may be formed at an appropriate portion of an upper clothing or a lower clothing.

FIG. 1



DescriptionBACKGROUND OF THE INVENTION

(1) Field of the Invention

[0001] The present invention relates to clothing of a novel structure by which the body temperature can be adjusted.

(2) Background Information

[0002] The human body has a function of physiologically adjusting the body temperature to the temperature change of the surroundings. Namely, in order to keep the body temperature at about 36°C, when the surroundings are hot by outside temperature change, the human body sweats from its skin for radiation, and when the surroundings are cold, the heat source in the body is combusted to keep the body temperature.

[0003] However, since there is a limit in this human body's function, clothes are used to keep the body temperature as a supplemental measure.

[0004] It is generally considered proper to keep the temperature between the skin surface of the human body and the innermost layer of the clothes at 32±1°C, and the humidity therebetween at 50±10%.

[0005] Accordingly, it is usual to wear a heavy clothes on another in a cold season, and wear a thin clothing in hot summer days. However, when the temperature changes in a day or when the body temperature rises by the movement or exercise of the body, in a case of wearing the clothing on another, the outer clothing is taken off. But this clothing will be carried around and is bulky, such being cumbersome. Further, in the summer season, persons often wear only a single clothing, and in such a case, they cannot take off the clothing and must be patient.

SUMMARY OF THE INVENTION

[0006] It is an object of the present invention to provide clothing of which a part is detachable, by which the body temperature can be adjusted within a wider range than usual only by one clothing.

[0007] The present invention provides clothing of which a part can be detached, and the detached open portion is covered with a ventilative net material.

[0008] As the detachable part of the clothing, one which is detachable by a fastener(zipper) may be mentioned.

[0009] Further, the present invention provides one of which the detachable part is formed on a front, a back, or a sleeve or arm of an upper clothing covering the upper part of the body, and one of which the detachable part is formed on a leg portion of a lower clothing covering the lower part of the body.

BRIEF EXPLANATION OF THE DRAWINGS**[0010]**

5 Fig.1 is a front view showing an example of the present invention in which an open portion is formed on a front of a T-shirt.

Fig.2 is a front view showing a state where a patch cloth is removed from the clothing of Fig.1.

10 Fig.3 is a perspective view showing the patch cloth removed from the clothing of Fig.1.

Fig.4 is an enlarged partially cutaway cross-sectional view along the line A-A of Fig.1.

15 Fig.5 is a rear view showing another example of the present invention wherein an open portion is formed on a back of a T-shirt.

Fig.6 is a front view showing a further example of the present invention wherein an open portion is formed on a jacket.

20 Fig.7 is a rear view of Fig.6.

Fig.8 is a front view showing still further example of the present invention wherein an open portion is formed on an open-necked shirt type clothing.

Fig.9 is a rear view of Fig.8.

25 Fig.10 is a rear view showing a state where a patch cloth for a back and a patch cloth for a sleeve or arm are removed from the clothing of Fig.8.

30 Fig.11 is a rear view showing another example of the present invention wherein an open portion is formed on a trousers type clothing.

EXAMPLES

[0011] Reference to Figs.1 to 4.

35 **[0012]** A substantially downward U-shaped open portion 1B is provided on a front 1A of an upper clothing 1 which has no buttoned placket in front, such as a T-shirt or a sports shirt. A patch cloth 1D which correspondingly covers the open portion 1B, is formed. On the internal edge portion of the open portion 1B, an outward piece 1C1 of a fastener 1C formed along the open portion is provided, and an inward piece 1C2 thereof is provided on the external edge portion of the patch cloth 1D. The outward piece 1C1 and inward piece 1C2 of the fastener 1C are disengageable to each other, by which the patch cloth 1D can be detached from or attached to the clothing. Further, the open portion 1B is always covered with a ventilative net material 1E.

40 **[0013]** The patch cloth 1D is usually made of a cloth having the same material and color as the clothing 1, but if it is possible to keep the equivalent level of warmth, a cloth of different type can be used. Further, a patch cloth of different design such as pattern or color may be used.

55 **[0014]** By wearing this clothing 1, it is possible to keep the body temperature constant. When the external temperature rises or the body temperature rises by, for example, exercise, the fastener 1C is unzipped and the

patch cloth 1D is detached to expose the net material 1E. Through this net material 1E, a ventilation property can be secured and the raised body temperature gradually lowers, to make the wearing person comfortable. Since this net material 1E is adapted to cover the open portion 1B, the clothing 1 can hold its own shape and close-fitting feeling can be maintained. Further, by changing the mesh size of the net material 1E, a ventilation suitable for the purpose can be obtained.

[0015] When the body temperature lowers and the wearing person feels chilly, by attaching the patch cloth 1D again to the open portion 1B by the fastener 1C, the effect for keeping the warmth can be increased again.

[0016] Reference will be made to Fig.5. Similar open portion 11B like the one provided on the above front 1A is formed on a back 11A of clothing 11 such as a T-shirt or a sports shirt, and a patch cloth 11D for the back 11A is detachable by a fastener 11C. This open portion 11B is likewise covered with a net material. This clothing 11 can be used similarly like the clothing 1 having the open portion formed on the front.

[0017] On the T-shirt, etc., open portions can be formed on not only the front but also the back at the same time. When wearing the one having the open portions on the front and the back, the ventilation can further be improved and various types of body temperature adjustment can be made by the attachment and detachment of two pieces of the patch cloth.

[0018] Reference will be made to Figs.6 and 7. An open portion 2B is likewise formed on a back 2A of clothing 2 which fastens in front such as a jacket or a shirt, and a patch cloth 2D detachable by a fastener 2C is provided. The open portion 2B is likewise covered with a net material (not shown). This clothing 2 can adjust the body temperature similarly through the net material by detaching or attaching the patch cloth 2D.

[0019] Reference will be made to Figs.8 to 10. An open portion 2B is formed on a back body 2A of an open-necked shirt 21, and a patch cloth 2D detachable by a fastener 2C is provided and a net material 2E is provided on the open portion 2B. Further, open portions 2G, 2G are formed on back side portions 2F1, 2F1 of right and left sleeves 2F, 2F, and patch cloth 2I, 2I for sleeves detachable by fasteners 2H, 2H are likewise provided. Net materials 2J, 2J are provided on the open portions 2G, 2G.

[0020] Various types of temperature adjustment can be made for the clothing 21 by appropriately attaching and detaching the patch cloth 2D of the back 2A and the patch cloth 2I, 2I of the right and left sleeves 2F, 2F.

[0021] Reference will be made to Fig.11. Open portions 3B, 3B are formed on back side portions 3A1, 3A1 of right and left leg portions 3A, 3A of clothing 3 which covers the legs such as trousers. On the open portions 3B, 3B, patch cloth 3D, 3D detachable by fasteners 3C, 3C are provided. On the open portions 3B, 3B, net materials 3E, 3E are provided which are exposed when the patch cloth 3D, 3D are detached. In this clothing, radia-

tion can be accelerated by appropriately detaching the patch cloth 3D, 3D, and warmth can be kept by attaching the patch cloth.

[0022] The above-mentioned open portion is formed in a substantially U-shape which opens toward the lower edge portion of the clothing, but may be formed in an appropriate shape from the viewpoints of design, etc. Further, it may be formed in a closed shape which does not open toward the lower edge portion of the clothing, such as a substantially rectangular, circular or oval shape. As the net material which covers the open portions formed on the front, back, sleeve of upper cloth, and the leg of trousers, a black colored net material may preferably be used, since the inside skin is hardly seen. However, other colors may be used from the viewpoints of design or fashion.

[0023] According to the present invention, as mentioned above, when the patch cloth is detached by the faster, the net material is exposed, and thus a ventilation can be secured while wearing the clothing. Further, when the body temperature lowers, the patch cloth is attached to the open portion to return to the original state, by which the warmth can be kept. Thus, the body temperature can easily and securely be adjusted by the present invention.

[0024] Since the patch cloth detached from the open portion can be rolled up into a small piece, it can be put in a bag, pocket, etc., and will not cause inconvenience. This clothing is simple in the structure and its parts are few as mentioned above, whereby it can be produced at low costs.

Claims

1. A body temperature-adjustable clothing, which comprises an open portion at a part of the clothing to adjust the body temperature, wherein the open portion is covered with a ventilative net material, and the open portion is further covered with a detachable patch cloth by which a ventilation is controlled
2. The body temperature-adjustable clothing according to Claim 1, wherein the patch cloth is provided detachably by a fastener to the open portion.
3. The body temperature-adjustable clothing according to Claim 1, wherein the clothing is an upper clothing which is put on over a head, such as a T-shirt or a sports shirt, and the open portion is formed on a front portion thereof.
4. The body temperature-adjustable clothing according to Claim 1 or 2, wherein the clothing is an upper clothing which is put on over a head, such as a T-shirt or a sports shirt, and the open portion is formed on a back thereof.

5. The body temperature-adjustable clothing according to Claim 1 or 2, wherein the clothing is an upper clothing which is put on over a head, such as a T-shirt or a sports shirt, and the open portion is formed on a front and a back thereof.

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6. The body temperature-adjustable clothing according to Claim 1 or 2, wherein the clothing is an upper clothing which is fastened in front, such as a jacket or an open-necked shirt, and the open portion is formed on a back thereof.

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7. The body temperature-adjustable clothing according to Claim 1 or 2, wherein the clothing is an upper clothing which is fastened in front, such as a lounge or business suit, or an open-necked shirt, and the open portion is formed on a back thereof and a back side portion of a sleeve thereof.

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8. The body temperature-adjustable clothing according to Claim 1 or 2, wherein the clothing is a lower clothing, such as trousers, and the open portion is formed on a back side of a leg portion thereof.

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FIG. 1

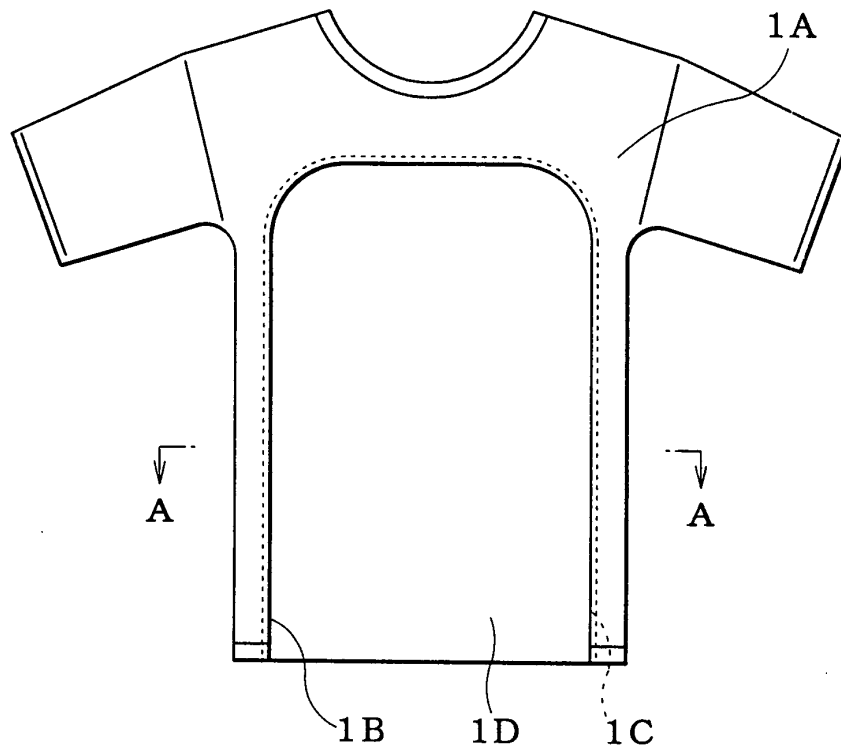


FIG. 2

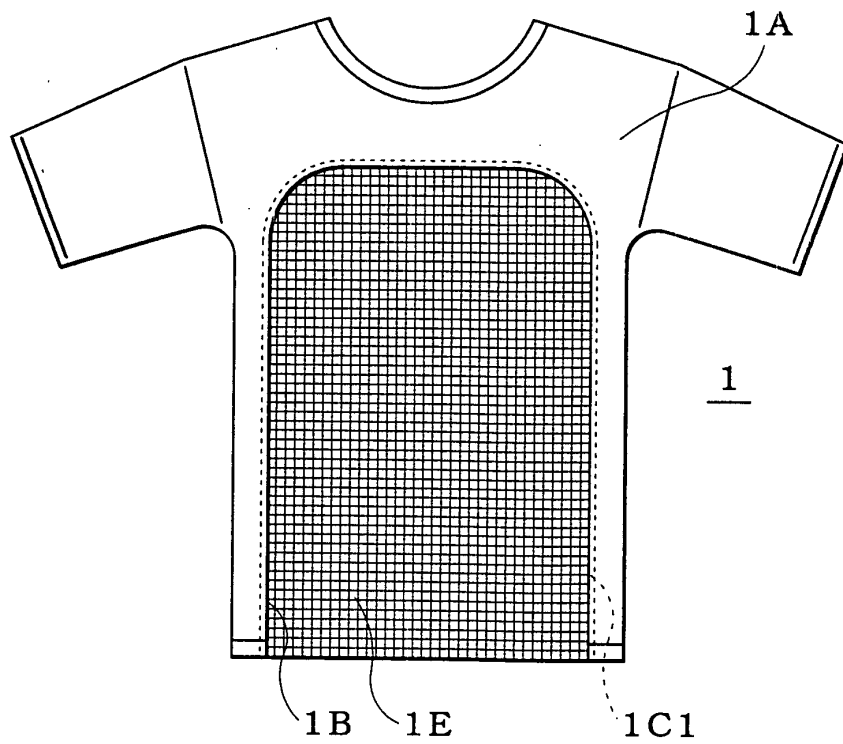


FIG. 3

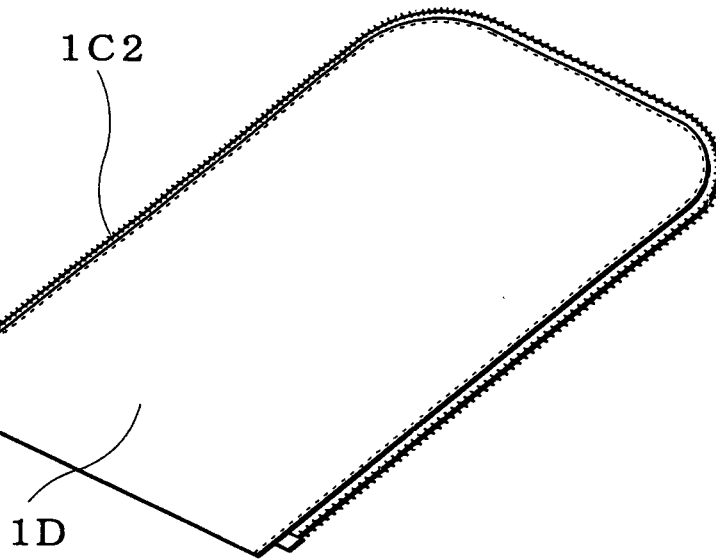


FIG. 4

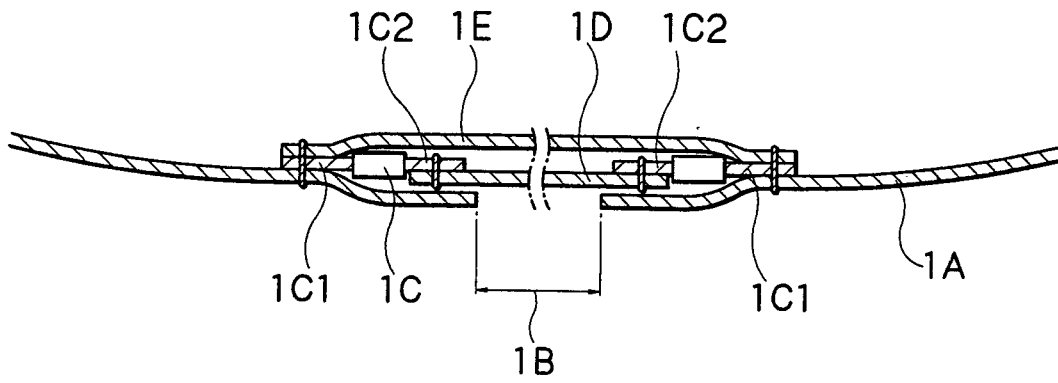


FIG. 5

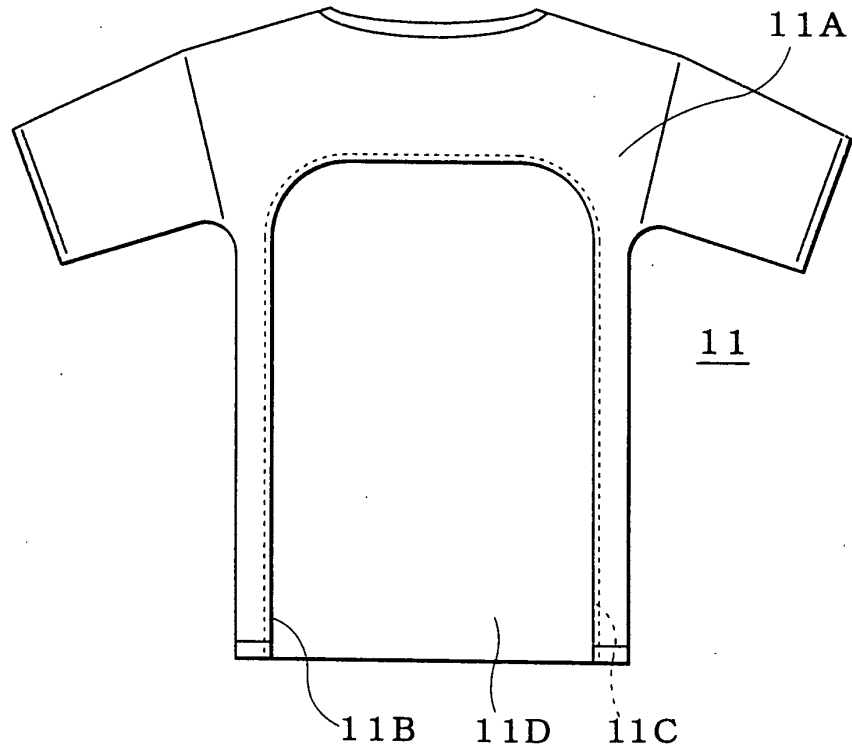


FIG. 6

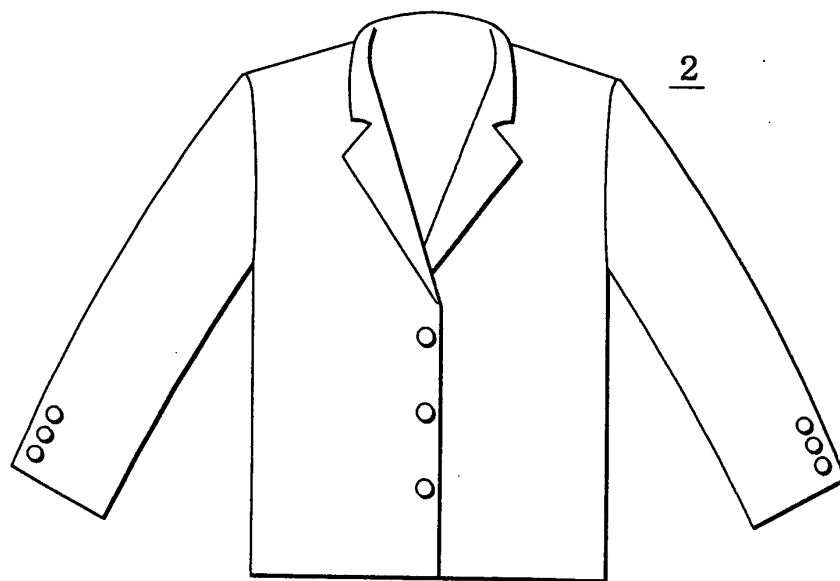


FIG. 7

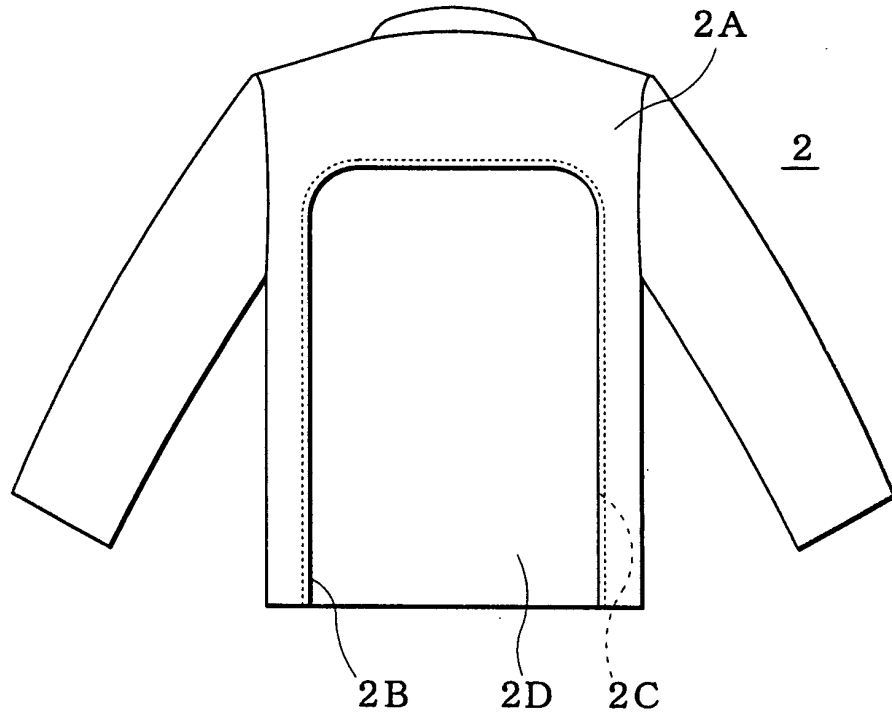


FIG. 8

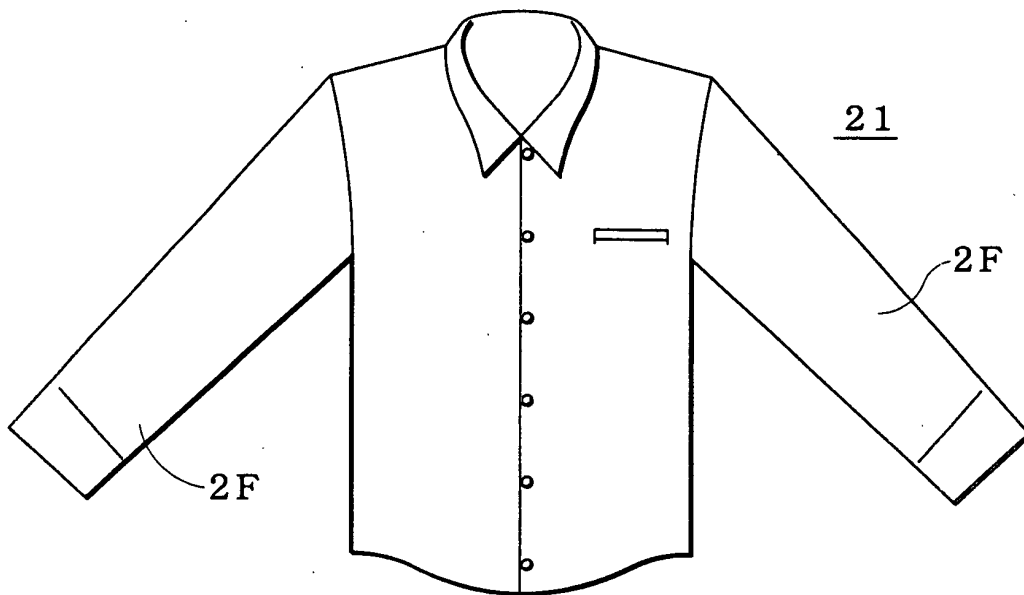


FIG. 9

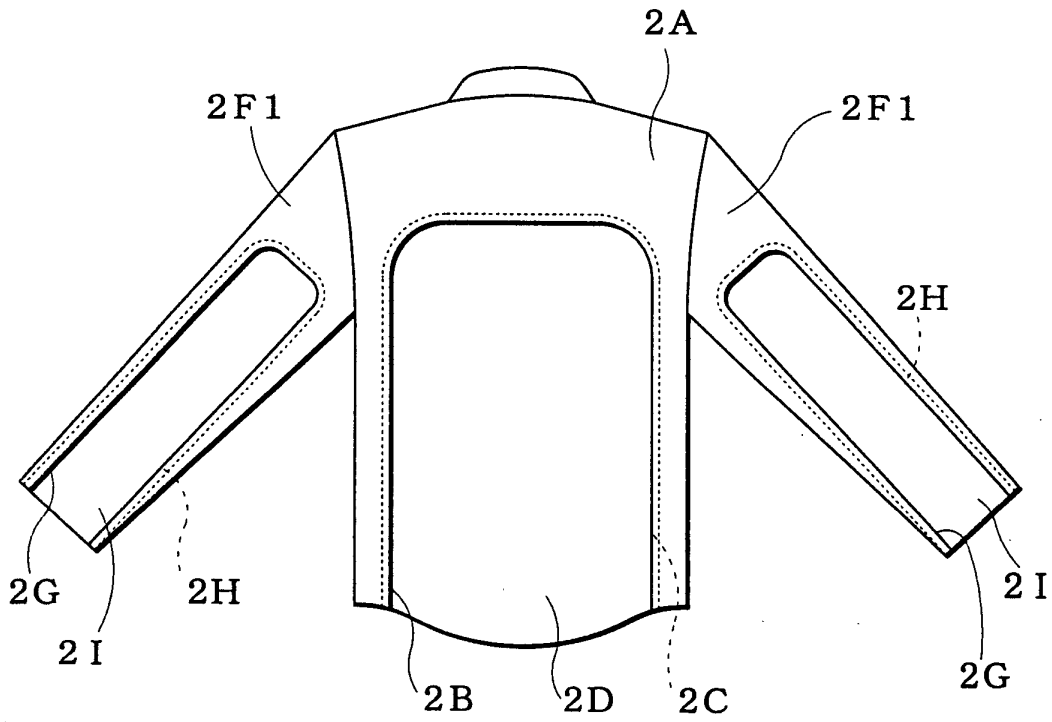


FIG. 10

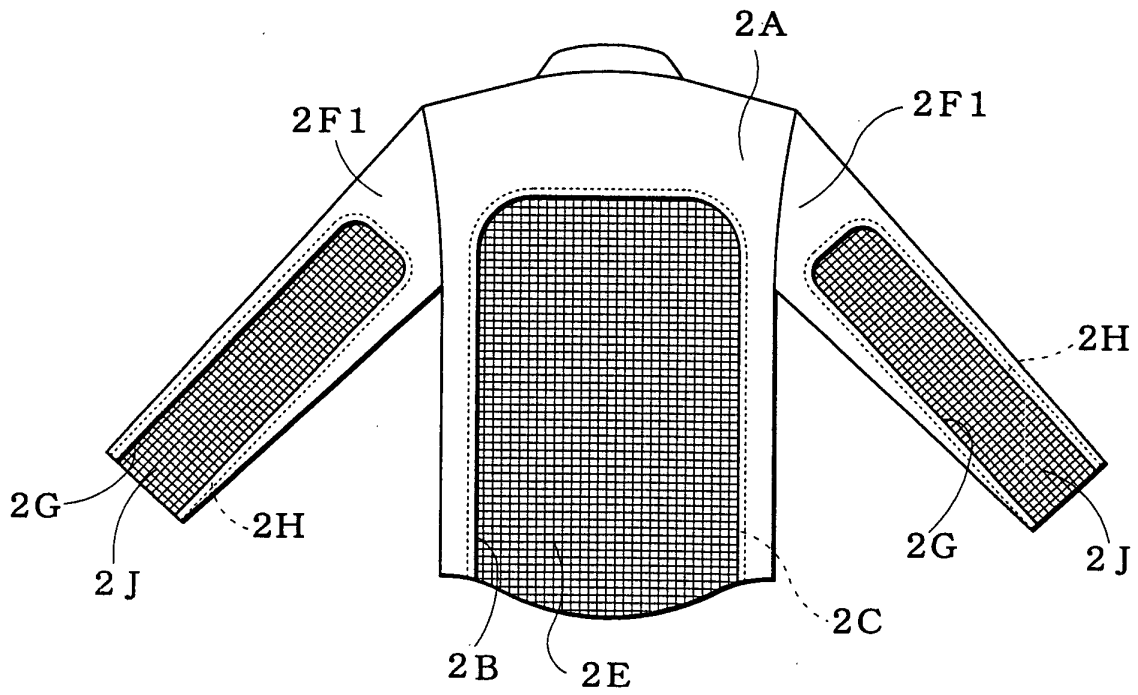


FIG. 11

