(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 048 612 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
02.11.2000 Bulletin 2000/44

(51) Int Cl.[7]: **B68G 1/00**

(21) Application number: **99303369.5**

(22) Date of filing: **29.04.1999**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

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(54) **Plastic form for a cushion material**

(57) A plastic form (1) for a cushion material which includes at least one material of 10-30 weight percent selected from a group consisting of ceramic, loess, and elvan and at least one resin of 70-90 weight percent selected from a group consisting of polyethylene, polypropylene, polyvinyl chloride, polyester, polyurethane and silicone. The plastic form is characterized in that it is formed in substantially the shape of sphere and has a hollow portion therein.

FIG. 1

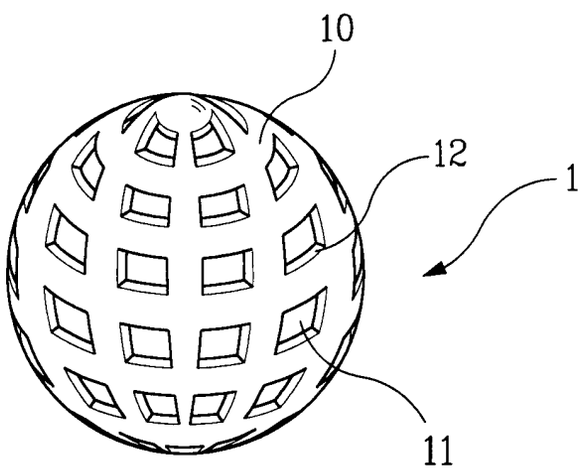

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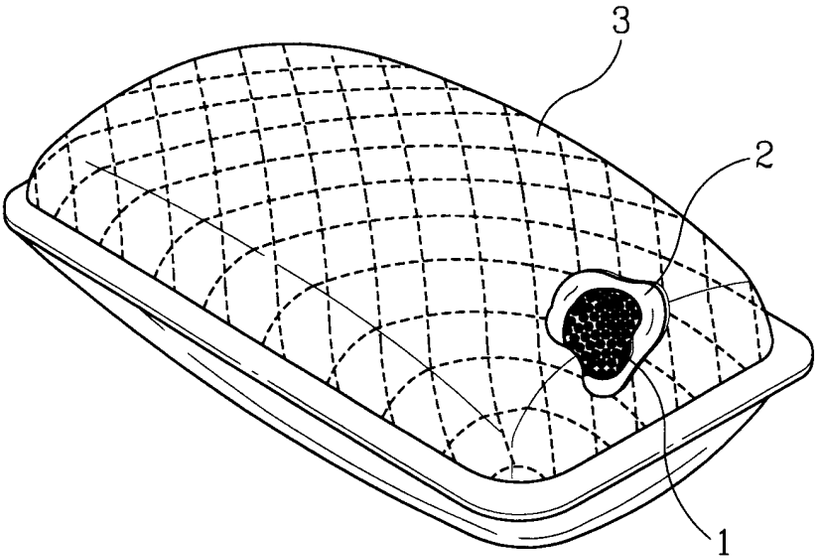
FIG. 2



Description

[0001] The present invention relates to a plastic form for cushion material, and more particularly to a plastic form which has an improved massage effect, the plastic form being suitable for use in materials for a cushion such as a back rest, and a pillow.

[0002] Conventionally, cotton, chaff, buckwheat husk, etc have been employed in these kinds of cushion material manufacturing. However, cushion material employing natural material cannot be washed. Thus, unpleasant odours can result and germs can propagate. In a serious case, a respiratory disease may be caused. Cushion materials manufactured from plastic chips are disclosed in Korean Utility Model No. 91-3113 and Patent No. 95-10708. However, these cushion materials have a sharp section, and therefore do not provide a good level of comfort and provide a low massage effect.

[0003] Accordingly, the object of the present invention is to provide a plastic form which has an improved massage effect and does not result in unpleasant odours or the propagation of germs.

[0004] In accordance with one aspect of the present invention there is provided a plastic form for a cushion material, which includes at least one material of 10-30 weight percent selected from a group consisting of ceramic, loess, and elvan and at least one resin of 70-90 weight percent selected from a group consisting of polyethylene, polypropylene, polyvinyl chloride, polyester, polyurethane and silicone, which is characterized in that the plastic form is formed in substantially the shape of sphere and has a hollow portion therein.

[0005] A plastic form according to a preferred embodiment of the invention employs at least one material selected from a group consisting of ceramic, loess, and elvan. The ceramic, loess, and elvan may be used in isolation or as a mixture. If the content of this material is too low, the antibiosis and deodorizing properties may be reduced and the radiation effect of the far infrared may be reduced, thus it is desirable to include at least 10 weight percent of this group. Additionally, a higher content of this material group increases the antibiosis and deodorizing properties and enables the emission of plenty of far infrared rays, which is good for the human body. However, if the content is more than 30 weight percent, the formability of a plastic is decreased, thus a 10-30 weight percent of content is preferable.

[0006] The plastic form of the present invention may be manufactured in substantially the shape of a hollow sphere. The hollow gives the plastic form elasticity and makes the weight of the plastic form light. Further, the spherical shape includes no edge portion, thus being comfortable to touch as well as providing an excellent massage effect. Additionally, the spherical shape provides much space between spheres, which provides good ventilation. The size of the hollow may be controlled in accordance with the usage, the required elasticity, and the plasticity of the plastic material. That is, a small sized hollow may be used when a more powerful massage effect is needed, while a large sized hollow may be used when greater elasticity is needed.

[0007] Further, a plurality of openings may be formed in the plastic form of the present invention to improve the elasticity. Hence a shock absorbing action is possible.

[0008] In addition, an antioxidant, a UV blocking agent or a flame retardant, which are generally added to plastic forms, may be added to the plastic form of the present invention. Further, a plasticizer may be added to control elasticity.

[0009] It is preferable for a vinyl resin such as polyethylene, polypropylene, polyvinvyl chloride, or polyester, etc to be used individually or as a mixture for the resin of the present plastic form. Additionally, a resin such as a polyurethane or silicone, etc or mixtures thereof may be employed to produce a good cushion material.

[0010] The plastic form of the present invention may be produced by injection molding or blow-molding because the plastic form has a hollow portion.

[0011] The characteristics of the present invention will be understood more fully from the following detailed description and accompanying drawings showing preferred embodiments of the invention.

FIG. 1 is a perspective view of a plastic form according to a preferred embodiment of the present invention;
FIG. 2 shows a plurality of plastic forms being used in a pillow;
FIG. 3 shows a plastic form according to another preferred embodiment of the present invention;
FIG. 4 shows a plastic form according to another preferred embodiment of the present invention;
FIG. 5 shows a plastic form according to another preferred embodiment of the present invention; and
FIG. 6 shows a plastic form according to another preferred embodiment of the present invention.

[0012] Fig. 1 shows a perspective view of a plastic form according to a preferred embodiment of the invention. The plastic form (1) comprises a body (10) and hollow portion (11). A plurality of openings (12) are formed all around the surface of the plastic form (1) to provide strong elasticity and a good ventilation characteristic and to give an excellent massage effect.

[0013] The plastic form of the invention may be used in many applications such as in a pillow, cushion, bedclothes, etc. Fig. 2 shows plastic forms according to the present invention used as pillow filling.

[0014] Fig. 3 shows a perspective view of a plastic form according to another preferred embodiment of the invention. Inside hollow portions (22) and outside hollow portions (21) are formed in the body (20) of the plastic form. At least one inner hollow portion and at least two outer hollow portions are required not to be separated

from each other. In a preferred embodiment of the present invention, the inside hollow portions (22) and the outside hollow portions (21) are formed as two ranks, but three ranks or four ranks may be formed by lessening the size of the hollow portions and the intervals between ranks.

[0015] Fig. 4 shows a plastic form according to another preferred embodiment of the invention, where only one inside hollow portion (22') and a plurality of outside hollow portions (21') are formed in the plastic form body (20').

[0016] Similarly, in the preferred embodiments shown in Fig. 5 and Fig. 6, a plurality of hollow portions (31, 31') having a similar shape to the plastic form body (30, 30') may be formed in the plastic form body (30, 30'). Three hollow portions are formed in Fig. 5, and four hollow portions are formed in Fig. 6. Through these hollow portions (31, 31'), elasticity and ventilation characteristics may be increased.

[0017] The following example describes the invention in more detail.

Example 1

[0018] 100g of raw ceramic and 900g of raw polypropylene were stirred, so as to be mixed completely. 15mm diameter plastic forms were formed by injection molding after the mixture was heated to about 100°C.

[0019] As described above, the plastic form of the invention has no corner edge, and so gives a good feeling. Further, the plastic form of the present invention contains a material radiating infrared rays and has an excellent massage effect to help one's health. Additionally, the plastic form of the present invention may be formed substantially in the shape of sphere, which gives more spaces between forms, to provide an excellent ventilation characteristic. The plastic form of the present invention has excellent elasticity because a hollow portion is formed in the plastic form and the plastic form includes many openings communicating with the hollow portions. Thus, a more comfortable and pleasant cushion condition may be maintained. The plastic form containing ceramic, loess and/or elvan has an excellent antibacterial effect.

[0020] It is to be understood that the foregoing description is only illustrative of the preferred embodiment of the invention. Various alternatives and modifications can be devised by those skilled in the art without departing from the present invention. Thus, the present invention is intended to cover all such alternatives and modifications which fall within the scope of the appended claims.

Claims

1. A plastic form for a cushion material which includes at least one material of 10-30 weight percent selected from a group consisting of ceramic, loess, and elvan and at least one resin of 70-90 weight percent selected from a group consisting of polyethylene, polypropylene, polyvinyl chloride, polyester, polyurethane or silicone which is characterized in that:

the plastic form is formed in substantially the shape of a sphere and has a hollow portion therein.

2. A plastic form for a cushion material, as set forth in claim 1, wherein a first hollow portion is formed in the plastic form, and a plurality of openings communicating with the hollow portion are formed around the surface of the plastic form.

3. A plastic form for a cushion material, as set forth in claim 1, wherein the hollow portion comprises at least one inner hollow portion and at least two outer hollow portions, which are formed around the inside hollow portion.

4. A plastic form for a cushion material, as set forth in claim 1, wherein the hollow portion comprises a plurality of hollow portions having a similar shape to the plastic form.

5. A plastic form for a cushion material, as set forth in claim 1, wherein the plastic form is formed by injection molding or blow-molding.

FIG. 1

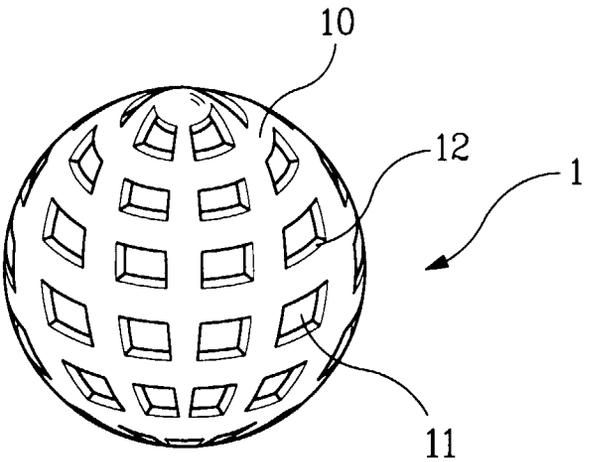


FIG. 2

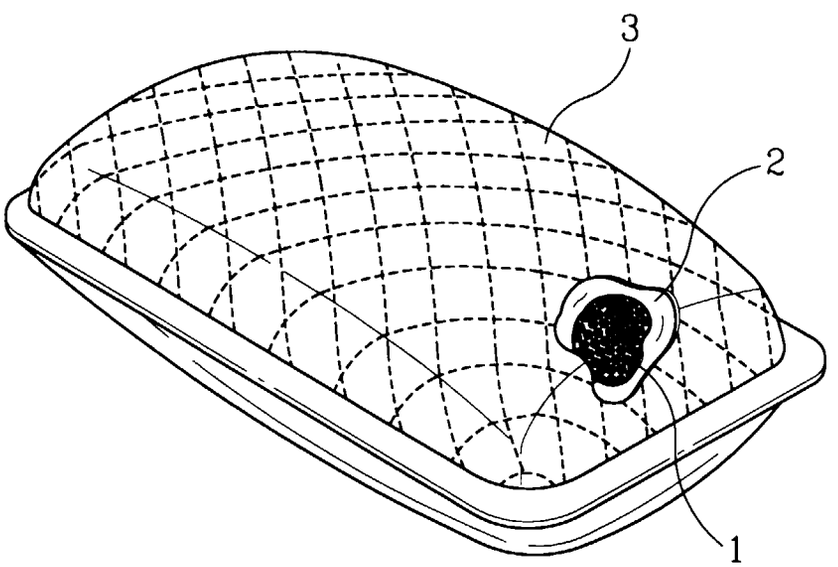


FIG. 3

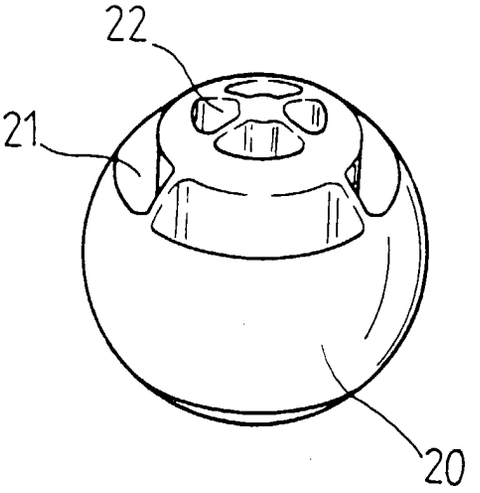


FIG. 4

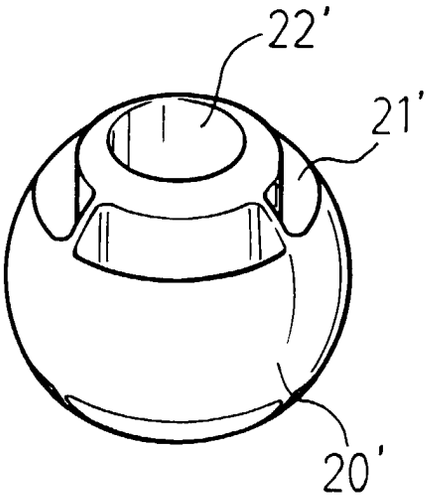


FIG. 5

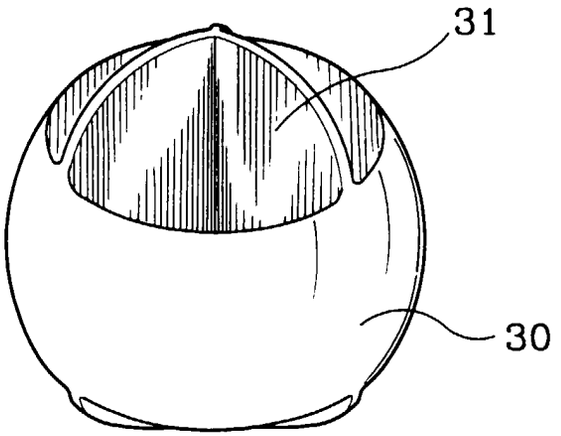
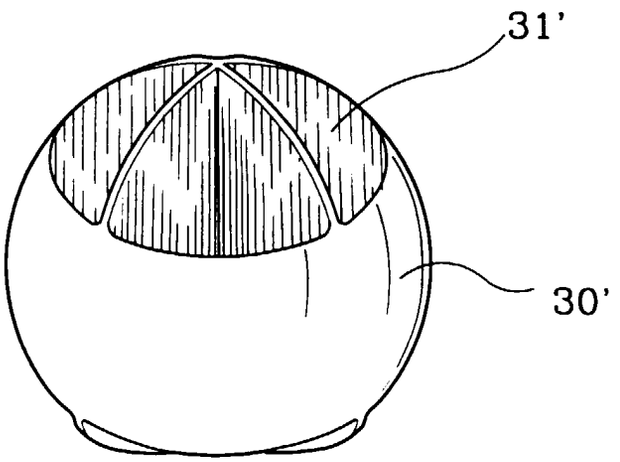


FIG. 6



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EUROPEAN SEARCH REPORT

Application Number
EP 99 30 3369

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	US 5 608 936 A (NOMURA KIYOSHI) 11 March 1997 (1997-03-11) * the whole document *	1	B68G1/00
A	GB 2 246 070 A (HIRATA KOICHI) 22 January 1992 (1992-01-22) * page 3, paragraph 6 - page 5, paragraph 1; figures *	1	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

B68G

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	7 October 1999	Martin, A

CATEGORY OF CITED DOCUMENTS

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07-10-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5608936 A	11-03-1997	NONE	
GB 2246070 A	22-01-1992	CA 2027213 A	18-01-1992
		HK 1007549 A	16-04-1999
		US 5152019 A	06-10-1992

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