July 7, 1931. S. DE FAVERI 1,812,936

CELLULAR MATERIAL FOR SAFETY GARMENTS

Filed Aug. 15, 1929

Fig. 1

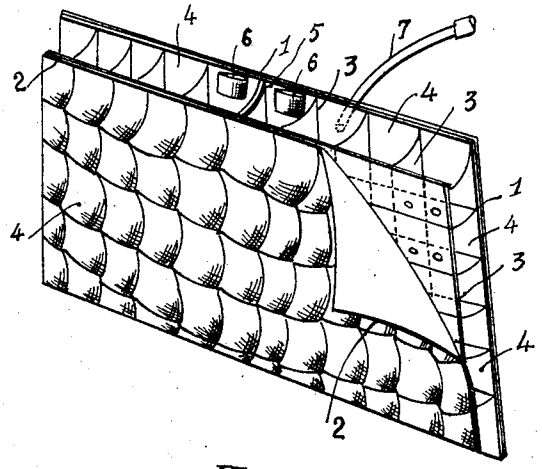
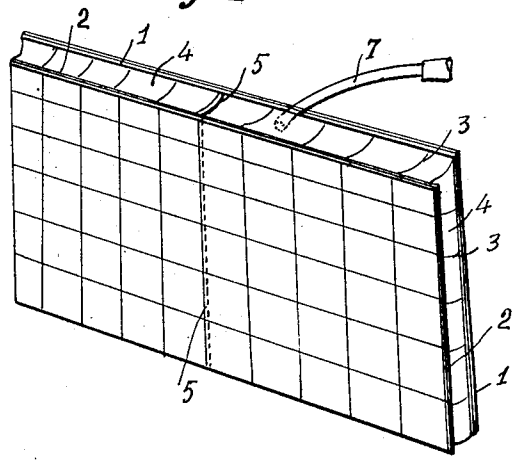


Fig. 2



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CELLULAR MATERIAL FOR SAFETY GARMENTS

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The present invention relates to a material or fabric made of independent groups of intercommunicating cells or pockets arranged in honeycomb manner for the purpose of protection and safety.

The invention is illustrated by way of example in the attached drawings, in which Figure 1 is a perspective view of a portion of the material inflated, whilst Figure 2 is a similar view of the same piece deflated.

As shown by the drawings, the said material is constituted by one or more layers 1 of ordinary rubber material or special flexible material united together by means of rubberizing or other suitable chemical process, and connected with other layers 2 united together in the same way as the former with partition material 3 suitably arranged to form the cells or pockets 4. The latter intercommunicate, and may if desired, be separated into groups by means of dividing partitions 5.

In each, or at least in some, of the said cells 4, is arranged a small cushion 6 formed of buoyant material which preferably does not fill said cells, but serves to keep the walls thereof from completely collapsing and thus preventing possible internal adhesion thereof, and also providing a certain irreducible minimum of buoyant capacity to the material as a whole. This cushion may be fixed in any inner part of its cell or it may be movable, that is, completely free in the cell.

Each group communicates with an inflating tube 7 through which is supplied air or gas under pressure.

The air or gas entering into the cells produces an inflation of the material which in this manner assumes a greater capacity for floating on water and is able to sustain the person wearing it without other support being necessary. The wearer of the material is therefore able to keep afloat.

With such a class of material, garments may be made for protection and safety.

The material thus made protects from cold, water, noise, magnetic attraction, and from deleterious actions and poisonous gases; it also protects against sonorous vibrations by modulating them and being closely adherent to the body it preserves the heat of the person wearing it.

The material coloured with dark dyes may also protect against the attacks of sharks.

On jumping from various heights into the water, the person wearing the dress made with the material described, is only partially submerged and can then arrange himself horizontally with the face turned upwards. This is due to the compensating action of the intercommunicating cells of the material and to their special arrangement.

In the case of one cell or groups of cells being torn, the water flowing into this part cannot invade the adjacent group of cells and owing to the small cushions 6 the material preserves its floating properties even in the event of the water reaching all the cells into which the article is subdivided.

Owing to each group being provided with a tube for inflation by means of air, a garment can be provided composed of various sections of material each of which is formed of a variable number of divisions. The several tubes provided for the inlet and retention of the air, or gas, may be provided with retaining valves and assembled together by means of collecting tubes.

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

1. A material for use in the production of garments for protection and safety, including the combination, with a plurality of layers of flexible material and partitions connected to said layers so as to form a plurality of cells, of imperforate means dividing said cells between the layers of said flexible material into distinct and independent groups, and means providing compensatory inter-communication between the individual cells within each group thereof.

2. A material for use in the production of garments for protection and safety, including the combination, with a plurality of layers of flexible material and partitions connected to said layers so as to form a plurality of cells, of imperforate means dividing said cells between the layers of said flexible material into distinct and independent groups, means providing automatic compensatory in-

ter-communication between the individual cells within each group thereof, and means for independently inflating each distinct group of cells.

3. A material for use in the production of garments for protection and safety, including the combination, with a plurality of layers of flexible material and partitions connected to said layers so as to form a plurality of cells, of imperforate means dividing said cells between the layers of said flexible material into distinct and independent groups, means providing automatic compensatory inter-communication between the individual cells within each group thereof, and additional means for assuring the operation of said material as a whole as a safety device, including a plurality of bodies of buoyant material individually arranged in a number of said cells in order to serve the double purpose of preventing the complete collapse of said cells and possible consequent internal adhesion of the walls thereof, and also of providiing the material as a whole with an irreducible minimum of buoyant capacity inherent in each group of cells.

4. A material for use in the production of garments for protection and safety, including the combination, with a plurality of layers of flexible material and partitions connected to said layers so as to form a plurality of cells, of imperforate means dividing said cells between the layers of said flexible material into distinct and independent groups, means providing compensatory inter-communication between the cells within each group thereof, and additional means for assuring the operation of said material as a whole as a safety device, including a plurality of bodies of buoyant material and of relatively smaller dimensions than said cells spaced within a number of the same so as to occupy only a portion of the space in each, in order to serve the double purpose of preventing the complete collapse of said cells and possible consequent internal adhesion of the walls thereof and also of providing said material as a whole with an irreducible minimum of buoyant capacity.

5. A material for use in the production of garments for protection and safety, including the combination, with a plurality of layers of flexible material and partitions connected to said layers so as to form a plurality of cells, of imperforate means dividing said cells between the layers of said flexible material into distinct and independent groups, means providing compensatory inter-communication between the cells within each group thereof, auxiliary means for assuring the operation of said material as a whole as a safety device, including a plurality of bodies of buoyant material individually arranged within a number of said cells in order to serve the double purpose of preventing the complete collapse of said cells and possible consequent internal adhesion of the walls thereof, and also of providing said material as a whole with an irreducible minimum of buoyant capacity, a plurality of air supply tubes communicating with the various cell groups for the additional and individual inflation thereof, and automatic air valve controlling the passage of air through each of said tubes.

SERAFINO DE FAVERI.