Dec. 15, 1959 B. THIEBAULT 2,916,790

TAB ASSEMBLY FOR ARTICLES MADE OF SYNTHETIC RESINS AND THE LIKE

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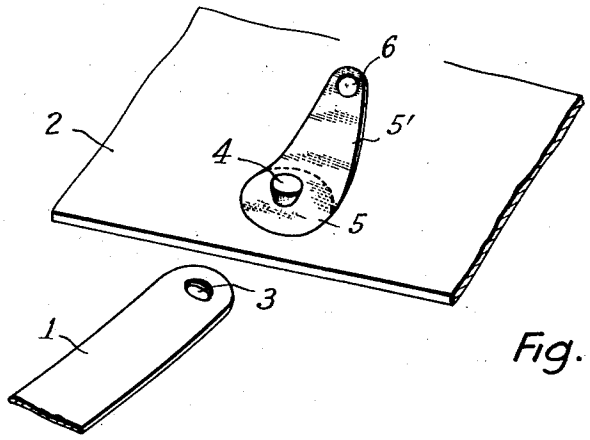


Fig. 1

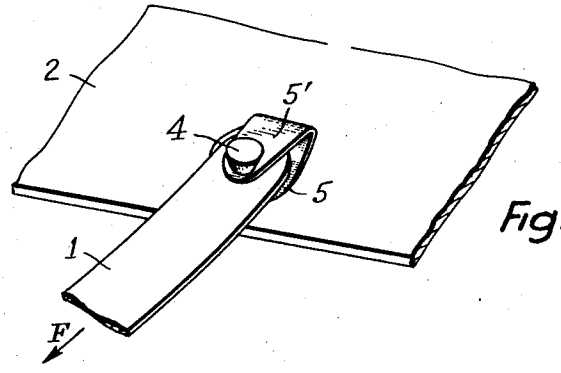


Fig. 2

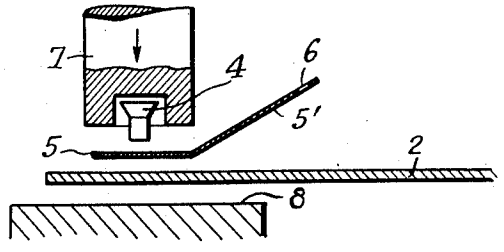


Fig. 3

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TAB ASSEMBLY FOR ARTICLES MADE OF SYNTHETIC RESINS AND THE LIKE

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3 Claims. (Cl. 24—265)

This invention relates to an improved tab assembly of the type used for attachment purposes on various articles, such as respirators, helmets, coat pockets, briefcases, garters, and the like, and which is particularly, although not exclusively, useful in connection with such articles when made of synthetic resins, for example, polyvinyl chloride compositions.

It has been customary in the textile arts to employ strips, tabs, tags or webs of flexible or elastic material, secured to a base element by means of a rivet made of metal or other rigid substance, extending through the base element and the tab or strip, generally through a restricted aperture formed in the latter and which is distended by the projection of the rivet therethrough. The rivet is formed with an enlargement or head for retaining the tab in position. In many cases a safety flap or retainer member is provided having its opposite ends transversed by the rivet on opposite sides of the tab, so as to prevent accidental withdrawal of the tab from the rivet when a strong pull is exerted on the tab.

It is the general object of the invention to provide an improved tab assembly of this general kind. A more specific object is to provide an improved tab assembly in connection with a base element made of synthetic resin sheet material. In connection with such synthetic resin sheet materials the use of conventional rivets is objectionable since the insertion thereof is liable to damage the material and, moreover, the resulting assembly is a composite one in which many of the benefits derivable from the resin sheet material, such as resistance to chemical agents, are impaired through the presence of a metallic rivet. Therefore, it is an object of this invention to provide a unitary assembly of the type described which will retain the above mentioned desirable characteristics of the resin sheet material from which the base material, retainer flap member and/or tab are all made.

In accordance with an aspect of the invention, the improved tab assembly comprises a headed pin and a retainer flap both made of a weldable material, such as a thermoplastic resin which preferably is similar to the material from which the base element is made, the headed pin and flap being secured to the base element by a welding or fusing operation so as to constitute a homogeneous unit.

The above, and other objects, features and advantages of the invention will be apparent in the following description which is to be read in connection with the accompanying drawings illustrating an embodiment of the invention, and wherein:

Fig. 1 is a perspective view of the assembly prior to the insertion of the tab and to the folding of the retainer flap thereover;

Fig. 2 shows the completed assembly; and

Fig. 3 is a simplified sectional view illustrating a process of making an assembly according to the invention.

As illustrated, a tab 1 which may be made of any desired flexible or elastic material, for example, a rubber band, is to be removably attached to a base element 2 made of a synthetic resin sheet material, such as polyvinyl chloride resin. The tab 1 is formed with a small hole 3 which is capable of being distended to permit forcing through it of a pin 4 having an enlarged, for example, flared head. The pin 4 projects from the base element 2 and is made of a similar material. A retainer flap 5, made from the same material as the base element 2 and the pin 4, has one end portion bonded, on one side, to the base element 2 and, on the other side, to the end face of pin 4. The hole 3 of the tab 1 is then passed around the pin 4 over the bonded end of flap 5, and finally the other or free end part 5' of the flap is folded over and the pin 4 is inserted in the perforation 6 at the free end of the flap with the latter lying over the upper surface of the tab 1, as is clearly apparent from Fig. 2. With this arrangement withdrawal of the tab 1 by a pulling force exerted in the direction indicated by the arrow F, is prevented.

In accordance with this invention, the base element 2, pin 4 and flap 5 are bonded together by a suitable welding, fusing or other bonding operation as permitted by the characteristics of the material forming these elements.

Thus, as illustrated in Fig. 3, a heating electrode 7 of appropriate shape and having a recess in its lower end surface, as shown, for receiving the enlarged head of the pin 4, may be applied vertically from above the assembly, that is, in a direction perpendicular to the plane of the base element 2. As shown, the electrode includes active surface portions adapted to be applied against the upper surface of the pin head 4 and the retainer flap 5, so as to press both these elements into engagement with the upper surface of the base element 2, with the under surface of the latter being placed upon a suitable backing surface 8. Heating of the electrode 7 will thus serve to bond the pin 4 to flap 5 and the flap to the base element 2, thereby providing a strong unitary assembly which will retain all the inherent advantageous characteristics of the constituent sheet material, including resistance to chemical agents, washability, freedom from hard cutting parts, and the like in contrast with what is obtained when a metal pivot pin or rivet is used.

The elastic strip 1 may be readily removed for example, for replacement, by first detaching the free, apertured end of flap 5 from the pin, and then distending the apertured end of the tab 1 to withdraw it from around the pin 4. Experience has shown that respirator masks made from polyvinyl chloride material are usually longer-lived than the elastic strips used to attach such masks, so that, if the described arrangement is used to connect each strip to the mask, the fact that the tab or strip 1 is readily detachable is an appreciable advantage.

What I claim is:

1. In an assembly of the type described, a base element of bondable plastic sheet material, a retainer flap member of bondable plastic material having an end portion bonded to said base element on one side of said end portion, a pin of bondable plastic material having an end bonded to said end portion of the flap member on the opposite side of the latter so that said base element, flap member and pin are solidly joined together to form a homogeneous assembly, said pin having an enlarged other end, said flap member having a perforation in its opposite end adapted to be passed over said enlarged end of the pin, and a flexible tab having an end with a hole therein adapted to receive said pin prior to the insertion of the latter in said perforation of the flap member so that said tab is removably retained by said flap member on said pin.

2. The assembly claimed in claim 1, wherein said flap member and said pin are made of polyvinyl chloride base material.

3. The assembly claimed in claim 1, wherein said base element, said flap member and said pin are made of polyvinyl chloride base material.

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