United States Patent [19]

Seeley

[11] **3,896,799**

[45] **July 29, 1975**

[54] **ARM BOARD**

[76] Inventor: **Wayne C. Seeley,** 238 Pleasant Acres Rd., York, Pa. 17402

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[21] Appl. No.: **477,635**

[52] **U.S. Cl.**..... **128/87 R;** 128/133; 128/DIG. 6

[51] **Int. Cl.** **A61f 5/04**

[58] **Field of Search** .... 128/87, 88, 83, 133, DIG. 6, 128/93, 89; 248/118, 118.1

[56] **References Cited**

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Primary Examiner—Richard A. Gaudet
Assistant Examiner—J. Yasko
Attorney, Agent, or Firm—Stuart S. Bowie

[57] **ABSTRACT**

An Arm Board for use in connection with intravenous feeding and similar medical procedures which in one embodiment comprises a rectangular structure having depending side walls and a padded covering and, in another embodiment, which comprises a rectangular structure with a tear-off portion suitable for strapping the arm to the board.

8 Claims, 4 Drawing Figures

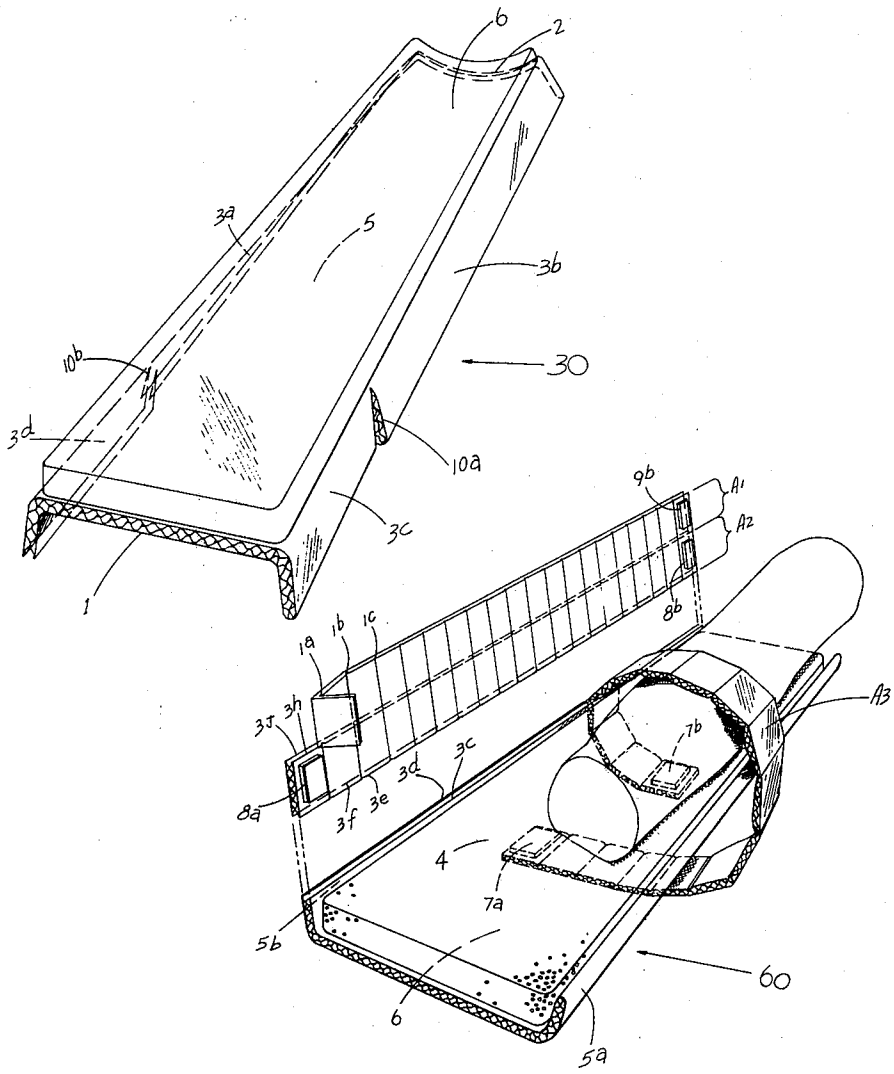


FIG-1

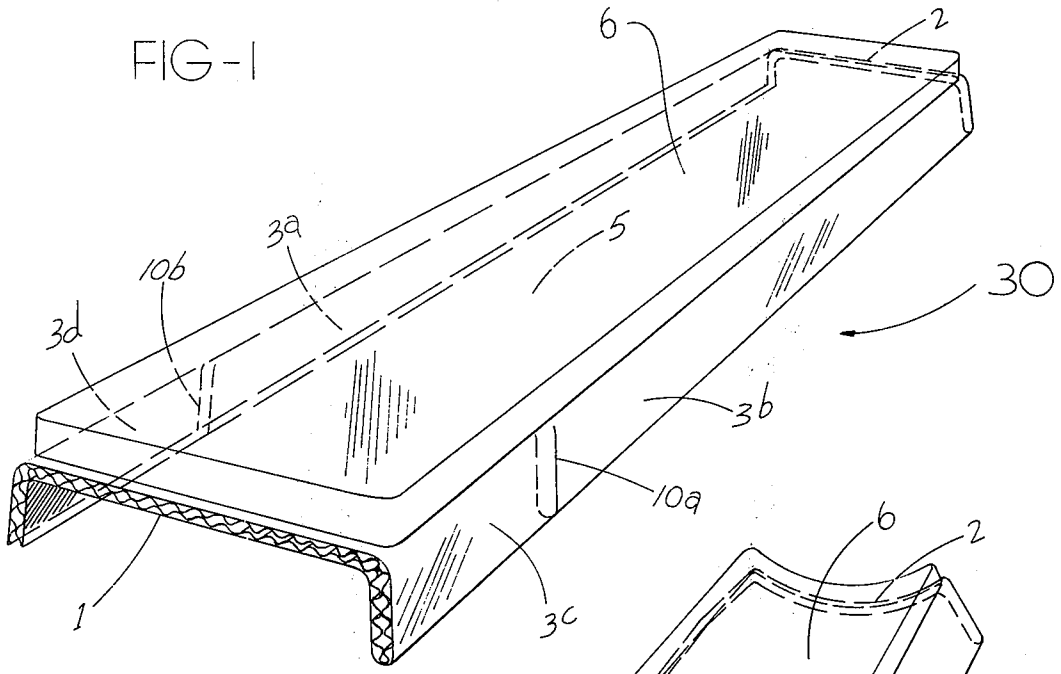


FIG-2

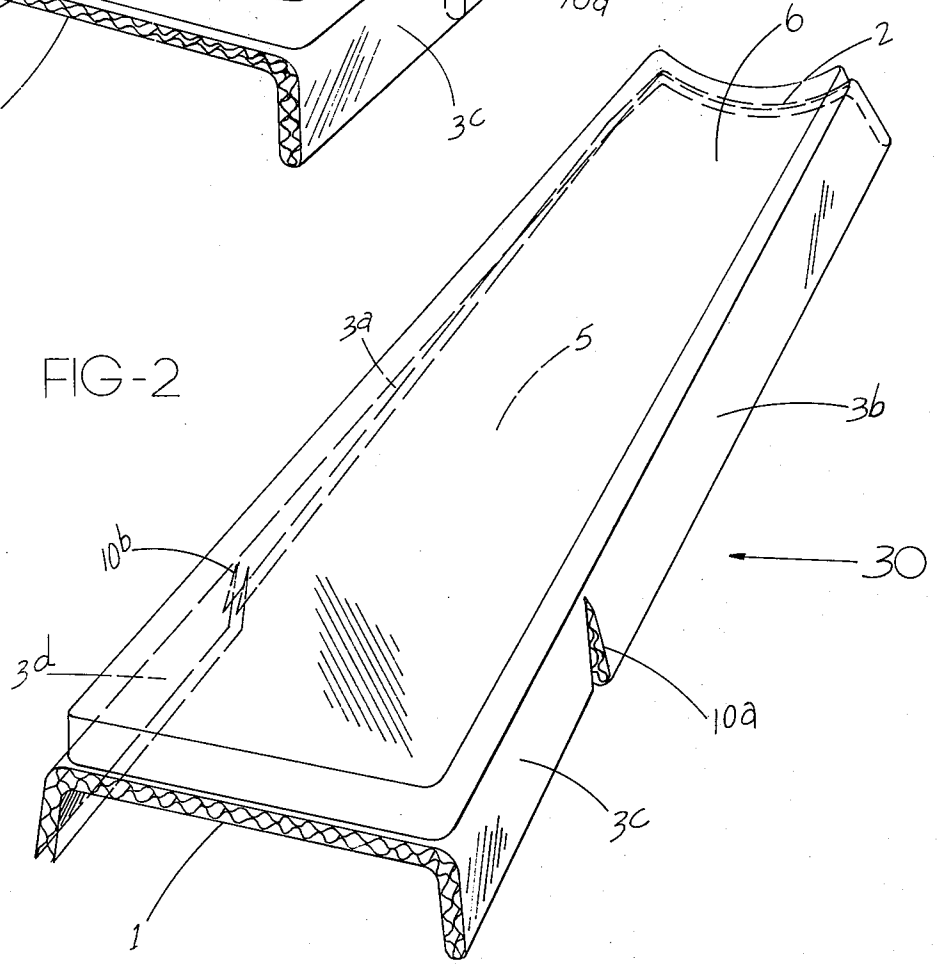
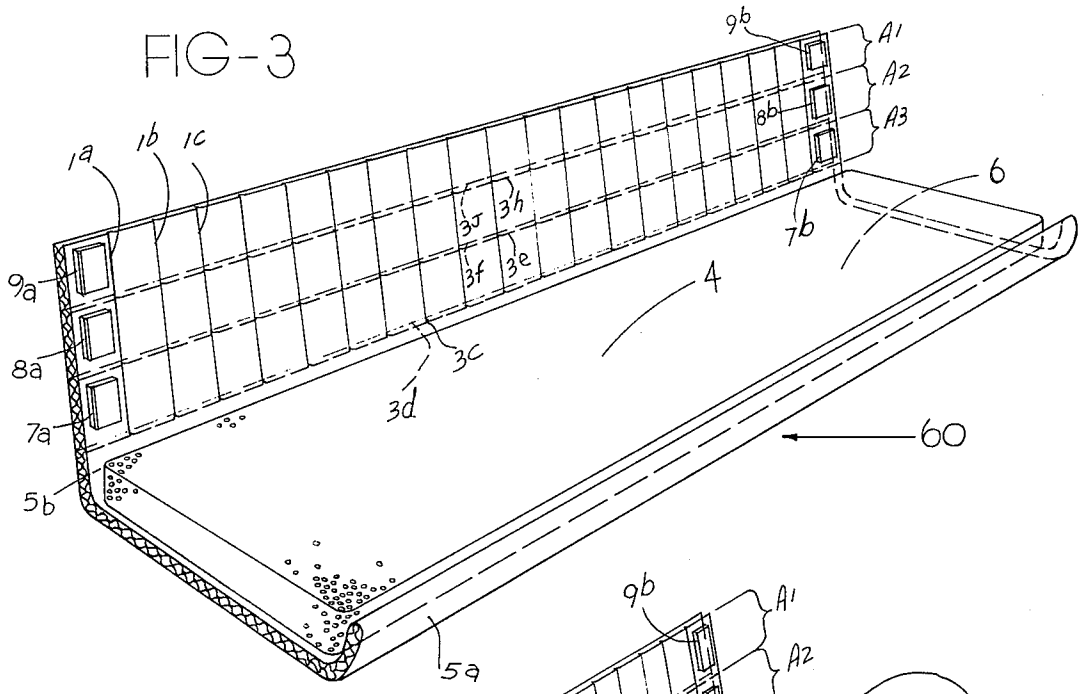


FIG-3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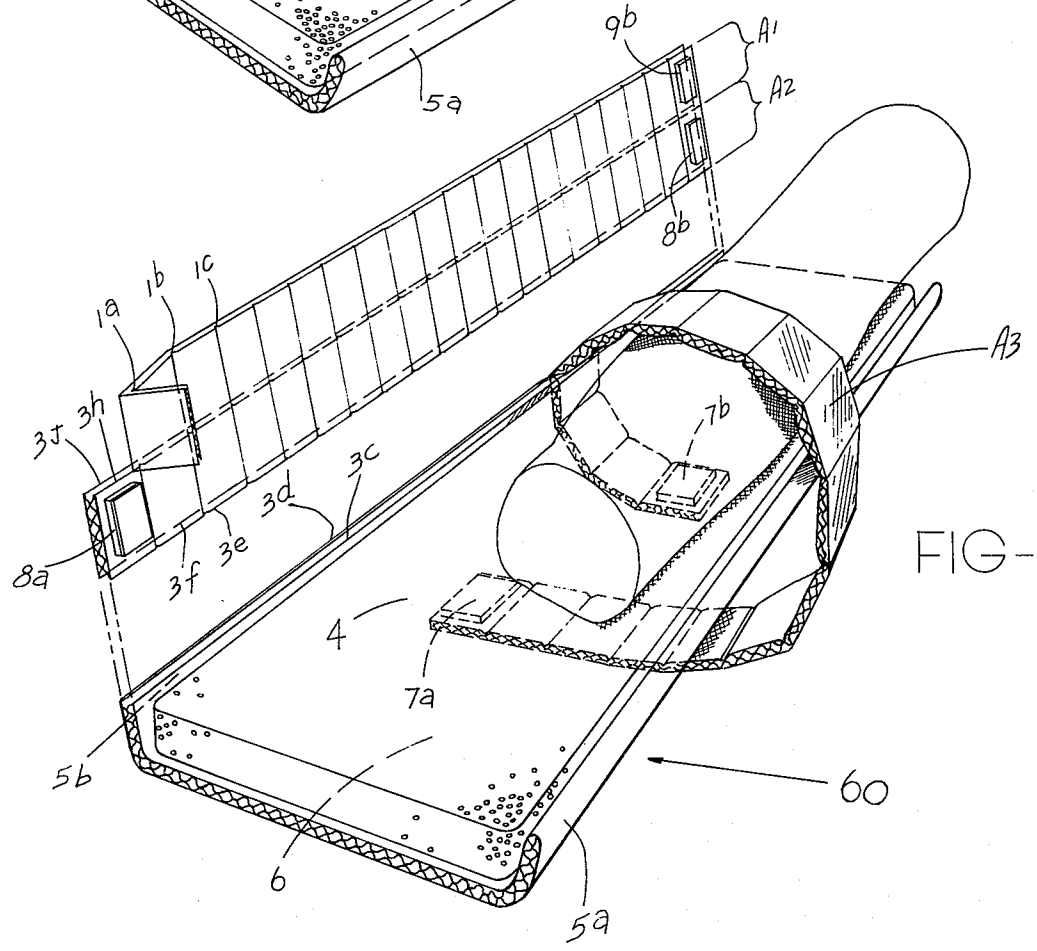
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FIG-4

ARM BOARD

BACKGROUND

The present invention relates to an Arm Board useful as a supporting device during intravenous feeding and other medical applications. The device may also be used to immobilize the arm or other limb and thus may function in the manner of a splint for emergency purposes and the like.

Despite certain advances in the art, such as that exemplified by U.S. Pat. No. 3,295,518, hospitals continue to employ make-shift devices for securing the arm or other human limb during intravenous feeding, splinting and other similar operations. Drawbacks to such make-shift affairs are described in the aforesaid patent.

While there is thus a continuing need for an arm board which is suitable for purposes of intravenous feeding and the like, many prior proposals involving meritorious concepts have not been used, primarily because they would be too expensive to manufacture.

The present invention seeks to provide an arm board which can be inexpensively manufactured and yet which is efficiently functional for the purposes aforementioned.

The present design provides a comfortable device which can be made of materials resistant to bacterial growth and which absorb blood and other fluid discharges to prevent soiling of bed sheets and clothing.

Thus, the overall purpose of the present invention is to provide a device which is suitable for supporting an arm or other limb during medical procedures such as those involved with intravenous injections, which is inexpensive to manufacture, easy to utilize and comfortable for the patient.

Other objectives, purposes and advantages of the present invention will become apparent from the following detailed description and from the drawings.

THE DRAWINGS

FIG. 1 is a perspective view of a first embodiment of the Arm Board according to the present invention.

FIG. 2 is another perspective view of the first embodiment of the invention illustrating the change in configuration when weight, such as a limb, is resting upon the surface of the board.

FIG. 3 is a perspective view of a second embodiment of the present invention.

FIG. 4 is another view in perspective of the second embodiment with one of the strap portions removed and placed about a limb resting upon the surface of the board.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The first preferred embodiment illustrated in FIGS. 1 and 2 comprises a device **30** having a main arm supporting portion **5** which is preferably rectangular in shape and preferably about 3 ½ inches wide and 18 inches long. The area **5** is actually a portion of an integral body which has depending side walls **3***a*, **3***b*, **3***c* and **3***d*. This integral structure, which has a front edge **1** and a rear edge **2**, is preferably constructed of corrugated material, such as single-faced corrugated cardboard doubled upon itself and secured to itself by adhesive or other suitable means. A slot **10***a* separates the side portions **3***b* and **3***c* and a slot **10***b* separates the side portions **3***a* and **3***d*.

The board is preferably covered with a cushion **6** which should be functional not only as a comfort pad but also to absorb liquids which may be present during medical procedures such as intravenous feeding. The material should, of course, also be antagonistic to the formation or support of bacteria.

The body of the device **30** which includes the integral surface **5** may be formed of single-faced corrugated cardboard such as that sold under the trademark Corro-Seal. The manufacturing procedure suitable for forming the device into the shape shown in FIG. **1** may be that known as progressive roll forming.

FIG. **1** illustrates the device prior to use and as it would be after the manufacturing process is completed. It will be noticed that the depending side walls **3***a*, **3***d* and **3***b*, **3***c* are not exactly perpendicular to the surface **5** but are disposed at a slight angle thereto so that the weight of the patient's arm or other limb placed onto the board **5** will be accomodated through the outward movement of the portions **3***a* and **3***b* of the side walls, as shown in FIG. **2**. The weight of the arm or limb will cause the surface **5** to deform as shown in FIG. **2**, and as indicated by the curved configuration of the rear edge in FIG. **2**. The ability of the device to deform in the manner described adds to the comfort and supporting qualities of the device.

When the arm is placed on the board, although the side portions **3***a* and **3***b* move outwardly as described, the front side wall portions **3***c* and **3***d* remain more or less in their original position.

If desired, adhesive tape or other similar fastening means may be secured about the board and about the limb of the patient to prevent undesired movement. As can be seen, the first embodiment shown in FIGS. **1** and **2** is an extremely comfortable device since its configuration is adjustable in response to the addition of weight. The side walls are not completely rigid and are able to move to provide for shifts in weight and for other movement of the arm, which is in fact necessary for true patient comfort.

FIGS. **3** and **4** illustrate a second embodiment of the arm board of the present invention. In this instance, the board **60** comprises a base portion **6** which is rectangular and of approximately the same dimentions as that of the first embodiment. The portion **6** is a part of an originally larger body of material which preferably is comprised of single-faced corrugated cardboard of the type described and which includes an upstanding side wall **5***a*, and opposing side wall **5***b* to which there is initially attached portions **A1**, **A2** and **A3**. This device may also be manufactured by progressive roll forming and is preferably fitted with a comfort pad **4** which, as in the case of the pad **6** of the first embodiment, should be not only comfortable but capable of absorbing liquids such as oil, blood, etc. Foam, such as polyurethane foam, is suitable for the purpose. The pad **4** is preferably affixed to the base **6** by means of adhesive.

The longitudinally extending portions **A1**, **A2** and **A3** are actually designed to be detached from the device and used as straps, thereby avoiding the necessity of using adhesive tape which may be unavailable when the device is utilized in an emergency environment. The straps **A1**, **A2** and **A3** are fitted with connector means, such as the pressure sensitive tabs **7***a*, **7***b*, **8***a*, **8***b* and **9***a*, **9***b*.

When an arm is placed in position, as shown in FIG. **4**, the fastening straps are detached. Thus, FIG. **4** shows

the strap A3 detached with the connector 7*a* adhered to the bottom of the device. The remainder of the strap is wrapped around the board and arm. When properly in position, the strap will be connected to the bottom of the board through connector 7*b*. In a similar fashion, the straps A1 and A2 would be detached from each other and placed around the arm in the manner of strap A3.

It will be observed, of course, that the straps A1, A2 and A3 were initially part of the side wall 5*b*, as shown at FIG. 3. The detachability of the straps is enhanced by a serration along line 3*c* and along a similar serration 3*d*, both of which occur at what becomes the top edge of the side 5*b*. The strap portions A2 and A3 are detachable, as the material is serrated along lines 3*e* and 3*f* and, similarly, portions A1 and A2 may be separated from each other due to the serration along lines 3*h* and 3*j*. To facilitate bending of the individual straps, a plurality of score lines 1*a*, 1*b*, 1*c* etc. are created on both sides of the strap portions A1, A2 and A3. The score lines preferably run perpendicularly to the lines of serration. If desired, the score lines may be made on just one side of the straps, such as the side to which the connectors 7, 8 and 9 are fastened.

As can be observed, the detachable straps A1, A2 and A3 are initially integral with the body portion of the arm board and thus are also composed of doubled over single-faced corrugated material in the preferred form.

One of the advantages of the device shown in FIGS. 3 and 4 that the straps A1, A2 and A3 can be secured to the limb as desired at any location along the arm board.

Thus, the arm board shown in FIGS. 3 and 4 is a second preferred embodiment of my invention and also provides a comfortable device for intravenous feeding and the like which is inexpensive to manufacture, sanitary and suitable for a wide variety of uses in the hospital and even in the emergency context.

The foregoing description illustrates preferred embodiments of my invention. However, the concepts employed may, based upon such description, be employed in other embodiments without departing from the scope of the invention. Accordingly, the following claims are intended to protect the invention broadly, as well as in the specific forms shown herein.

I claim:

1. An arm board having an arm supporting surface; a cushion affixed to said supporting surface; and depending flexible side walls extending away from said arm supporting surface, said side walls each comprising at least a front section and a rear section separated by a substantially vertical slot, a portion of said side walls being capable of outward movement whereby the front and rear sections of each wall may move different distances laterally.

2. The invention of claim 1 wherein the main body portion of the arm board and the depending side walls are integral.

3. The invention of claim 2 wherein the said main body portion and said side walls are comprised of corrugated material doubled upon itself.

4. A device for supporting an arm or other limb comprising:

a. a main body portion having opposing side walls;

b. one of said side walls being a one-piece integrally formed extension and having a detachable section comprising detachable strap means including cooperating fastening means thereon; said detachable strap means being detachable and sufficiently flexible to be wrapped around the arm or limb to secure the same to the main body portion.

5. The invention of claim 4 wherein the said body portion, side walls and detachable strap means are of corrugated material doubled upon itself.

6. The invention of claim 5 wherein said strap means each have contact means for securing the straps to the main body portion.

7. The invention of claim 4 wherein the strap means are scored to facilitate bending thereof after detachment from the side wall.

8. The invention of claim 4 wherein the side walls extend upwardly from the main body portion.

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