Dec. 21, 1954 J. E. COSTON 2,697,436

ADJUSTABLE INTRAVENOUS BOARD

Filed July 28, 1953 2 Sheets-Sheet 1

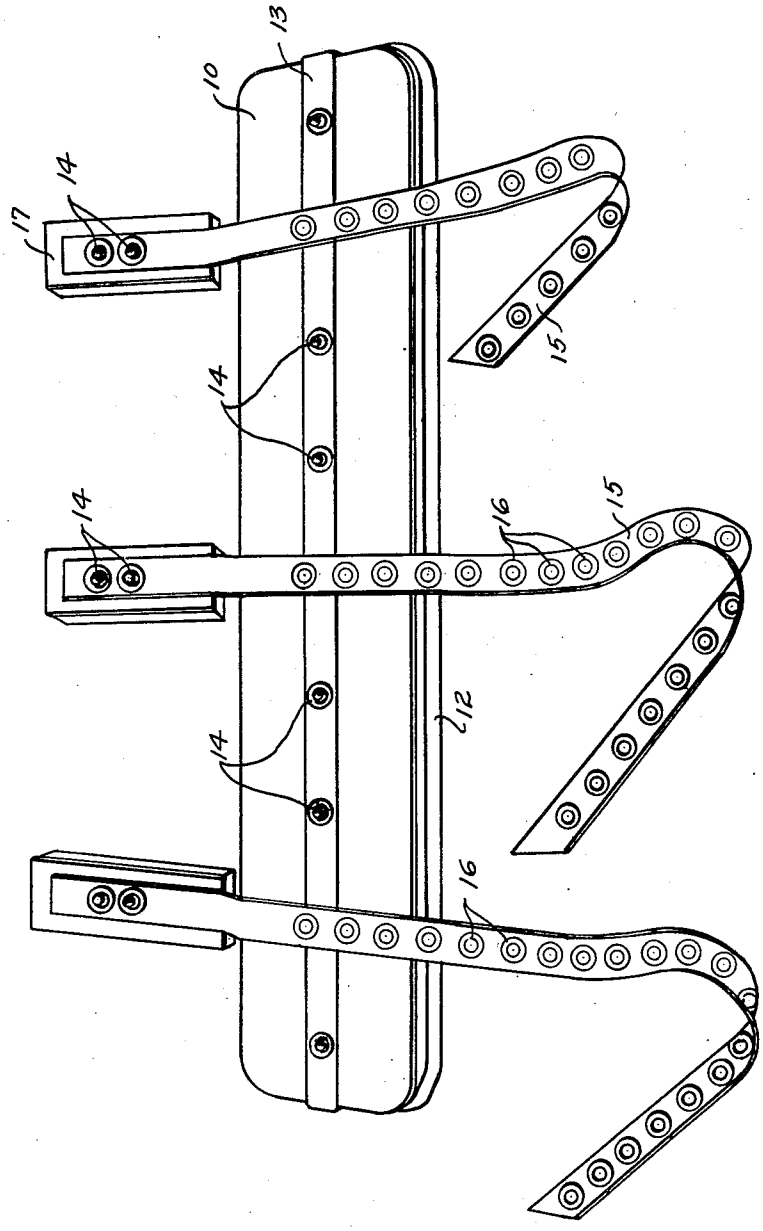


Fig. 1.

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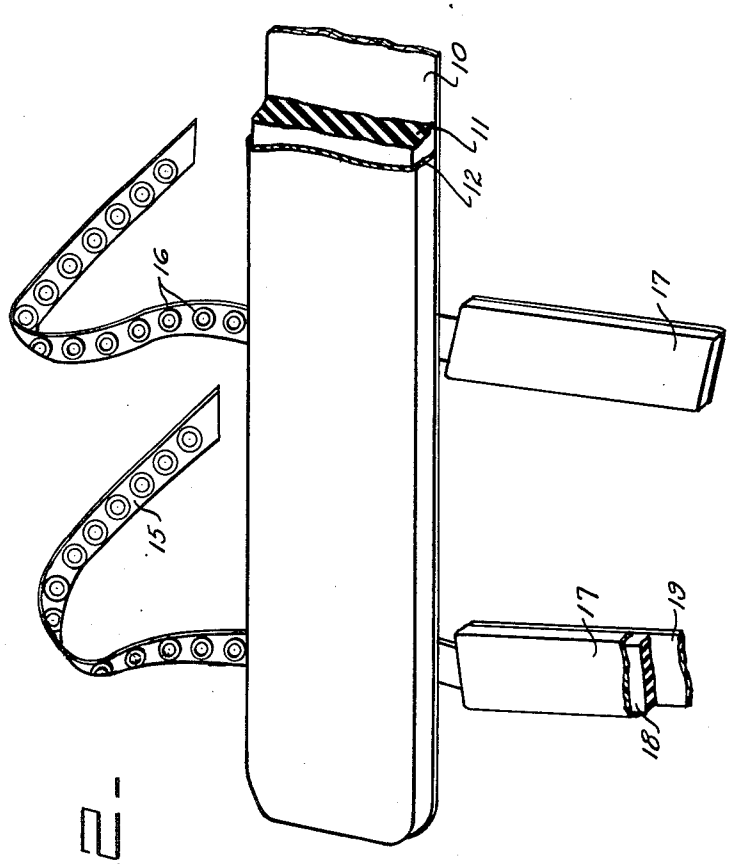


FIG. 2.

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ADJUSTABLE INTRAVENOUS BOARD

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5 Claims. (Cl. 128—214)

(Granted under Title 35, U. S. Code (1952), sec. 266)

The invention described herein may be manufactured and used by or for the Government for governmental purposes without the payment of any royalty thereon.

This invention relates to arm supports for use in administering medications or liquid feeding to patients and more particularly to intravenous boards or supports that are readily adjustable to any size arm to immobilize the arm for injection, that are comfortable to the patient, and that are easily cleaned.

In many cases, where the patient is not in too serious a condition, intravenous injections in the arm can be made without any arm support or in restricting arm movements, but where the patient is seriously ill and is restless, it is essential that the arm into which the injection is to be given must be immobilized, or substantially so, to avoid accident and injury to the patient by the injection equipment. The most usual practice is to tie a gauze-wrapped board to the patient's arm. Such an arm board is ordinarily uncomfortable and may become extremely uncomfortable to a restless and seriously ill patient. Movement of the patient often tightens the gauze ties causing more discomfort and requiring the attendant to loosen the ties. A seriously ill patient needs a great deal of attention and care so the added duties of readjusting the arm board and the ties works a great hardship on the nurse or attendant as well as causing additional discomfort to the patient.

In the present invention the intravenous board is made of balsa wood which is strong but light in weight. This board is padded on one face with sponge rubber to cushion the arm. A plurality of one of the elements of snap fastening grippers are positioned centrally and longitudinally along the other face of the board to which two or more arm bands with the other element of the snap fastening gripper attached thereto may be selectively snapped. The ends of the arm bands have companion elements of the snap fastening grippers thereon to permit circumferential adjustment of each arm band about the patient's arm. The various parts are padded or covered wherever necessary to avoid irritating edges coming in contact with the patient's arm and to facilitate cleaning. It is therefore a general object of this invention to provide a readily adjustable and attachable arm board for use in intravenous arm injections which will immobilize the arm without discomfort to the patient and which is easily maintained in a clean condition.

These and other objects, advantages, features, and uses will become more apparent as the description proceeds when considered with the accompanying drawings, in which:

Fig. 1 is an isometric view of the bottom side of the arm board and arm bands thereon, and

Fig. 2 shows a partial isometric view of the top side of the arm board with arm bands thereon.

Referring to both Figs. 1 and 2, the arm board is made of a stiff slat member **10**, preferably of an elongated piece of balsa wood or other light weight material, with the top side thereof having a resilient or cushion material **11**, as sponge rubber or the like, affixed thereto. The resilient material **11** is enveloped in a white non-porous plastic sheet **12** which has the edges turned over the resilient material and fixed to the top side of the stiff member **10** as by cementing, or the like.

Fixed centrally and lengthwise on the bottom of the stiff member **10** is a strip of heavy cloth tape, or the like, **13** as by cementing or tacking in any well known manner. Equidistantly spaced along the tape **13** are a

plurality of the male snap fastener members or aligned one half companion snap fasteners or gipper elements **14**, nine being shown although any desirable number may be employed. The stiff member **10** and the tape **13** may be covered with a white plastic material as the resilient pad **11** or may be painted with several coats of white paint in order to prevent the arm board from absorbing fluids and to facilitate cleaning.

On selected grippers **14** are snapped flexible, non-stretchable, bendable arm bands **15** which have a plurality of the female snap fasteners or the other half companion snap fasteners or gripper elements **16** equidistantly spaced therealong for approximately three-fourths of the band from one end thereof. On the end of each arm band free of the gripper elements **16** are two male gripper elements **14** spaced apart an amount equal to the spacing of the gripper elements **16** and fixed to the side of the band **15** opposite that of the gripper elements **16** so that the bands may be formed in substantially a circle around the arm board and resilient pad with the two gripper elements **14** snapped into any selected two gripper elements **16**. Also on the end of each arm band **15** on the side opposite the two gripper elements **14** is a pad **17**. Each of the pads **17** is made of a soft or resilient material **18**, as cotton or sponge rubber or the like, that is covered with white plastic material **19** in a similar manner as the resilient pad **11**. If cotton material or the like is used, it may first be wrapped with adhesive tape to hold it in place on the end of the arm band. The arm bands are made of non-stretchable fabric tape material and although three are shown and may be sufficient, more or less in number may be used where desirable or necessity requires.

In the use of the arm board for intravenous feeding or injections, the arm of the patient is laid on the arm board with the elbow against the resilient pad **11** and extended. The desirable number of arm bands **15** are adjustably snapped onto the arm board with one of the gripper elements **16** on each band snapped on the selected gripper element **14**. The ends of each arm band **15** are brought over the patient's arm and adjustably snapped together with the pad **17** against the arm. The resilient pads **11** and **17** cushion the patient's arm in comfort yet the arm is held firmly extended so that there is little danger of the patient doubling the arm at the elbow to cause injury from the injection apparatus. The arm board and arm bands being covered or painted with a non-porous white material make them easily maintained clean. The adjustability of the arm bands along the arm board, the adjustability of the extent of the ends of the arm bands with respect to the arm board, and the adjustability of the circumferential length of the arm bands make the arm board adaptable for any size or length arm. Although the arm board device of this invention has been specifically shown and described for applications of intravenous injections, it is to be understood that it may have many applications of supporting human or other members, as for use as temporary splints, knee supports, or the like. The arm boards may also find application in pairs or plural numbers to provide a supporting means.

Although a single embodiment of this invention has been illustrated to show the advantages thereof and how it may be carried out, it is to be understood that many modifications and changes may be made in the constructional details and features without departing from the spirit and scope of the invention and I desire to be limited only by the scope of the appended claims.

I claim:

1. An adjustable intravenous arm support comprising, a stiff elongated member having a resilient pad on one face thereof and one element of detachable companion fastening means positioned at a plurality of points longitudinally along the other face thereof, and a plurality of flexible, non-stretchable bands each having the other element of the detachable companion fastening means thereon connected to the companion element on said elongated member and each having the ends thereof adjustably connectable transversely around said elongated member and over said resilient pad to securely support an arm therein in comfort.

2. An adjustable intravenous arm support comprising,

a stiff elongated light weight member having a resilient pad on one face thereof and a plurality of aligned one-half companion snap fasteners longitudinally arranged on the other face thereof, and a plurality of bendable bands each having a plurality of the other one-half companion snap fasteners distributed longitudinally thereof and having at least one of the one-half companion snap fasteners on one end thereof, said bands being removably attached to said member by said companion snap fasteners in a transverse relation with the ends thereof looped over said resilient pad with a circumference adjustable by said companion snap fasteners on the end and longitudinally of said bands.

3. An adjustable intravenous arm board for supporting a human arm for intravenous injections comprising, a stiff slat having a resilient pad on one side thereof and a plurality of one element of companion snap fastening grippers on the other side thereof aligned longitudinally of said slat, and a plurality of flexible, non-stretchable fabric bands each having two of said one element of companion snap fastening grippers on one end thereof and a plurality of longitudinally arranged other element of said companion snap fastening grippers spaced apart an amount equal to the distance between said two of the one element of said snap fastening grippers, the desired number of said bands being positioned substantially transversely at desired intervals along said slat and retained in position by said companion snap fastening grippers, and the outer ends of each of said bands being fastened by said two companion snap fastening grippers over the resilient pad at positions of said other elements of said companion snap fastening grippers to meet circumferential requirements of the arm to be supported.

4. An adjustable intravenous arm support comprising; a stiff elongated member having a resilient pad on one face thereof and a plurality of removable transversely extending longitudinally displaced bands on the other face thereof with adjustable fastening means on the ends of each band for adjustably supporting an arm on the resilient pad of said stiff member, said bands each having a soft pad on the end thereof facing the resilient pad to prevent contact between the adjustable fastening means on a supported arm; and liquid impervious means over said resilient pad and said soft pads to prevent liquids being absorbed therein.

5. An adjustable intravenous arm board comprising; a stiff slat having a resilient pad on one side thereof and a plurality of one element of snap fastening grippers longitudinally aligned on the other side thereof; a plurality of fabric bands each having a plurality of the other element of said snap fastening grippers along one side thereof and at least one of said one element of said snap fastening grippers on one end of each band on the other side thereof, said last mentioned grippers adapted to be snap fastened to at least one of said other elements on the same band and one of said other elements on each of said bands being snap fastened to one each of said one element on said slat at selected longitudinal positions, the said other side of said bands each having a soft pad thereon at said one end; and a liquid impervious material over said resilient pad and said soft pads to prevent the absorption of liquids therein.

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