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Merrell

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[54] **ICE FLOOR**

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[52] **U.S. Cl.** **161/37,** 52/177, 161/160, 220/9

[51] **Int. Cl.** **B32b 5/18**

[58] **Field of Search** ..... 161/36, 37, 44, 68, 159, 161/160; 52/408, 615, 177, 181; 220/9 LG, 9 D, 9 F

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[57] **ABSTRACT**

A removable cover floor for an ice rink in an auditorium, comprising individual rectangular panels each having a metal top surface, a foam plastic core, and a plywood bottom surface. Between the upper and lower surfaces, the edges of a panel have a wooden frame with lifting slots therein.

2 Claims, 3 Drawing Figures

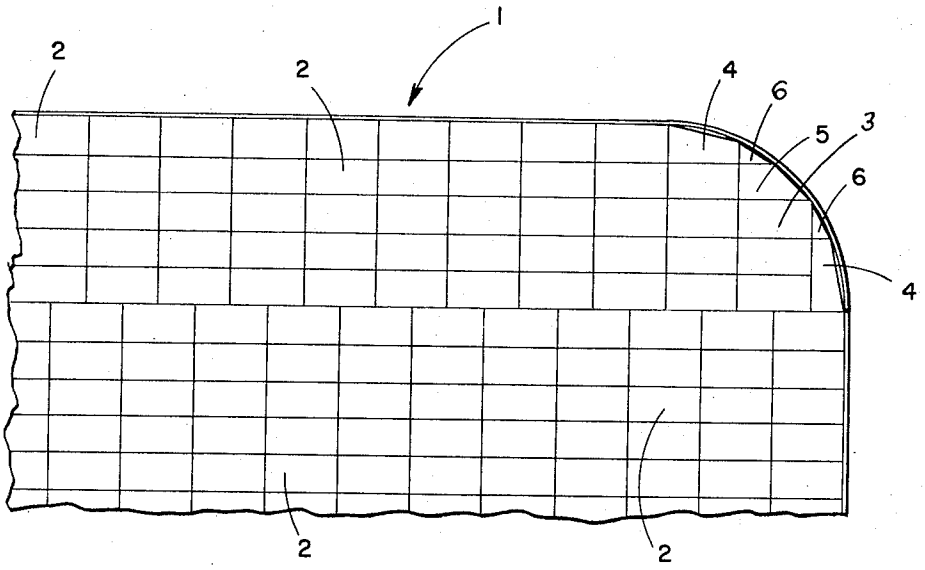


FIG. 1

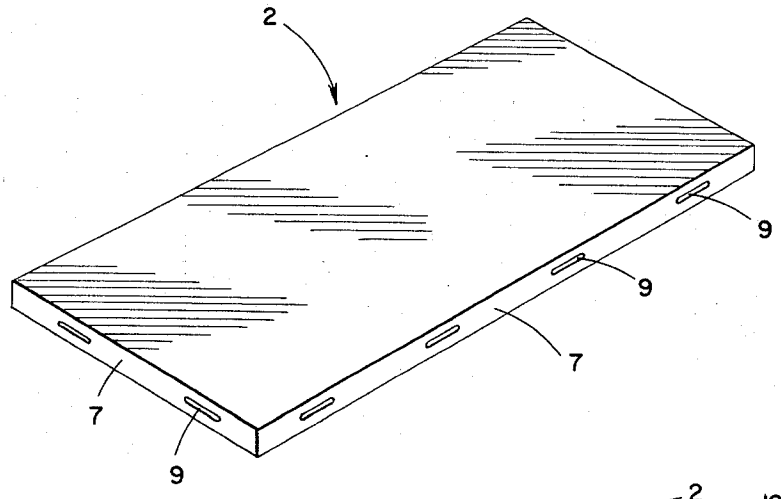


FIG. 2

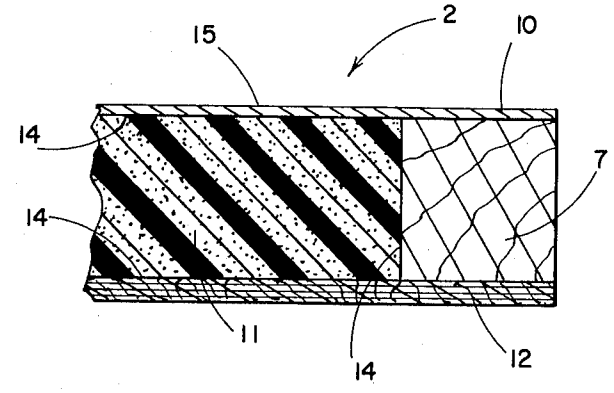


FIG. 3

ICE FLOOR

The present invention relates to flooring construction, and more particularly, to temporary floor panels for covering an ice rink.

The shortcomings and expense of the conventional methods for temporary covering of ice surfaces when arenas are committed to other uses such as sports events and conventions are well known. The common sub-floor usually used over ice rinks is merely plywood, which is heavy, it makes a cold floor by being a poor heat insulator for this use, and the upper surface is relatively easily dented and gouged, requiring frequent replacement.

The object of the present invention is to provide a sub-floor which is light-weight, durable and economical, with excellent thermal characteristics.

Briefly, my invention comprises standard sized laminated panels having a relatively thin metal top surface, a relatively thick, light-weight, heat-insulating core, and a rigid bottom surface, bonded together. The edges of the panel at the sides and ends preferably comprise a wooden frame with convenient handling apertures therein.

The invention will be clearly understood by reference to the following detailed description of a particular construction, and to the accompanying illustrative drawings, wherein:

FIG. 1 is a plan view of one-fourth of an ice rink, showing an arrangement of cover panels of the present invention.

FIG. 2 is a perspective view of one of the ice floor panels.

FIG. 3 is a cross section of a floor panel near one edge thereof.

Referring first to FIG. **1**, an ice rink **1** is covered by a plurality of sub-floor panels **2**. Panels **2** are rectangular, being four feet by eight feet, for example. At the rounded corners of the rink, special size and shape corner panels **3**, **4**, **5**, and **6** may be provided. All panels are precisely dimensioned to have a good edge-to-edge adjacent fit.

A single panel **2** is shown in FIG. **2**. An edge frame **7**, to be further shown later, has handling apertures **9** therein, such as hand-holes for convenient lifting and placement of the panels **2**.

As shown in FIG. **3**, each panel **2** has a continuous metal top surface **10**. It may be any hardened ST aluminum alloy, for example, approximately one-eight inch thick. It does not need to be Alclad since a top finish will be applied to it. The center of panel **2** comprises a foam plastic core **11**, which may be approximately one and one-half inches thick and of relatively high density in the range of about two to four pounds per cubic foot. Many materials can be used, extruded polystyrene being a good material for an ice rink cover panel.

The bottom of panel **2** comprises a rigid protective lower surface **12** of three-eights inch plywood for example, or other economical surface material.

The plastic core **11** is slightly less in area than the upper and lower surfaces, and the frame **7** is provided on all four panel sides, flush with the outer edge of the panel. Frame **7** may be of any suitable material, such as wood, and preferably contains the exterior apertures **9** shown in FIG. **2**.

The overall size of the panel **2** is thus four feet by eight feet by two inches, for example, although the size can obviously be changed. The contacting surfaces of the panel components are coated with a suitable bonding adhesive **14**, such as an epoxy for example, and held together under a moderate pressure for room-temperature hardening.

After assembly and bonding, the panel is given a top finish **15**, and for the present application this may comprise a marine type non-skid finish consisting of a primer coat, and then a sprayed coat or coats of enamel mixed with a pumice rock.

The present floor panel structure makes an excellent sub-floor over ice. The four by eight foot panels weight less than **110** pounds each. They have a load bearing capacity of **40** pounds per square inch. From a time just prior to placing a panel on an ice surface until **35** hours after, the upper surface temperature change of the panel is only six degrees F.

For use over an ice rink in an arena, auditorium, convention hall or the like, a suitable covering such as carpet may be placed over the present sub-floor, or the floor may be used bare. For instance, when a basketball floor is layed on top of the present ice floor panels, bleachers or seats may be moved directly onto the finished upper surface of the present invention, up to the edges of the basketball flooring.

While in order to comply with the statute, the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise the preferred form of putting the invention into effect, and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

I claim:

1. A removable load-bearing panel for a sub-floor over ice, comprising:

a. a sheet metal top surface,

b. a rigid lower surface,

c. a heat-insulating core of plastic foam bonded between said surfaces,

d. a wooden frame bonded between said surfaces and to the outer edges of said core, said frame having flat smooth outer sides whereby a plurality of panels can be placed contiguous to each other to form a floor, and including panel handling means provided in the outer sides of said frame, said handling means being hand holds for lifting and placement of said panel.

2. A thermal insulating floor for installation over an ice rink or the like, comprising:

a. a plurality of removable floor panels of predetermined size, each said panel comprising

b. a metal top surface,

c. a rigid lower surface,

d. a light-weight heat-insulating core material bonded between said surfaces,

e. a rigid frame around said core material bonded between said surfaces and to the outer edges of said core material,

f. said frame having flat smooth outer sides whereby said panels are laid edge-to-edge and end-to-end in flush contacting relation, and

g. a plurality of apertures in the outer sides of said frame forming hand holes for lifting and positioning said panels.

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