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MASSIVE SLEEPER CONSTRUCTION FOR FLOORING

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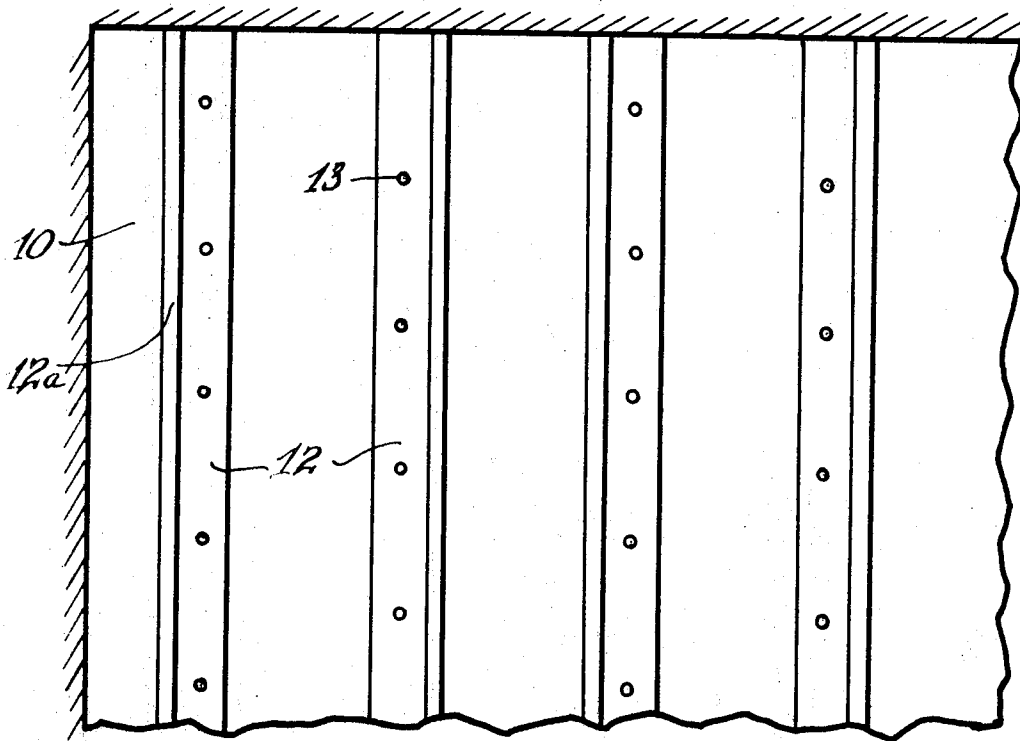


Fig. 1.

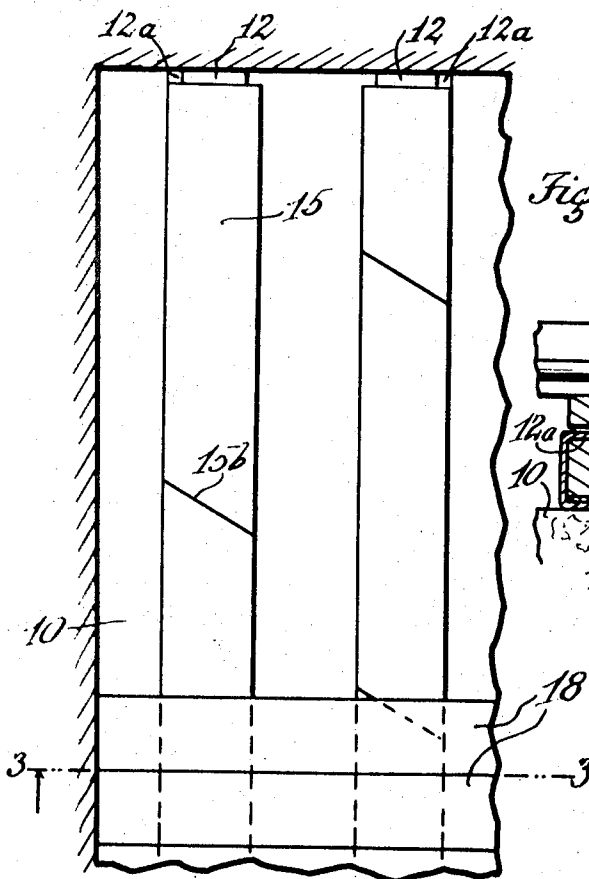


Fig. 2.

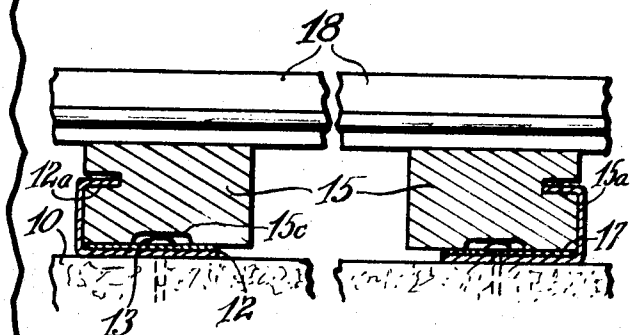


Fig. 3.

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MASSIVE SLEEPER CONSTRUCTION FOR FLOORING

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3 Claims

ABSTRACT OF THE DISCLOSURE

A sleeper construction for flooring. Pairs of metallic retainers are secured in parallelism to a supporting surface below the flooring. The retainers are lone and positioned in the manner of sleepers; and sleeper sections are laid on each retainer in longitudinal succession. Each pair of retainers is bent up on the outer side to form facing channels defining inward hooks. The sleeper sections are grooved in the outer sides to receive the hooks from the retainers, becoming interlocked against separation from the same, but freely slidable along the retainers; and the base portions of the latter receive a layer of mastic before the sleeper sections are mounted on the retainers. The sleeper series terminates endwise spacedly from a wall toward which the flooring is laid; and flooring also terminates in this manner. Thus, when the flooring, nailed to the sleeper sections, expands from moisture the sleeper sections slide along the retainers to relieve the pressure of the flooring and prevent it from buckling; and the retainers serve as fixed guides to prevent the sleeper sections from being thrown out of line. The mastic between the sleeper sections and the retainers serves to ease the sliding of the sleeper sections, and prevents the flooring from creaking or rattling.

My invention relates to flooring in gymnasiums, factories and other places where the traffic is heavy, and more particularly to means for maintaining the flooring in good condition not only during the dry season, but also during damp or rainy weather. While flooring laid in the conventional manner remains stable during favorable weather, it has a tendency to expand when the air is moist or damp. In that event flooring nailed down on a fixed sleeper installation will buckle during expansion, form surface cracks between the floor boards, and even bulge or rise out of place, throwing the sleepers out of line. Even when allowance for lateral flooring expansion is made by leaving a space before the wall where the flooring terminates, the usual nailed attachment of the flooring to the sleepers either resists the expansion or gives way as the flooring expands, so that the floor boards become loosened from the sleepers.

The present invention has for its primary object to remedy the above situation by providing a sleeper installation which not only retains the flooring against buckling or separation, but yields laterally to the expansive pressure of the floor boards during damp or inclement weather, so that the flooring remains firm and its surface level at all times.

A further object is to provide an installation of massive sleepers for the firm support of flooring subjected to heavy weight or traffic, and to check the sleepers against deviation or displacement by seating them in metallic retainers.

Another object is to make the retainers in lengths similar to conventional sleepers, and interlock the sleepers with the retainers to hold the sleepers down, while disposing them slidably in the retainers to move with the lateral expansion of the flooring.

A still further object is to make the sleepers in sec-

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tions extending along the retainers in end-to-end succession.

An additional object is to interpose a mastic layer between the sleeper sections and the retainers in order to ease the sliding of the sleeper sections and prevent the floor from creaking or rattling.

A better understanding of the invention may be gained by reference to the accompanying drawing, in which:

FIG. 1 is a plan view of a base for the flooring, showing a number of retainers secured thereto;

FIG. 2 is a similar view showing a pair of sleeper sections laid on the retainers, and a number of floor boards laid on the lower portions of the sleeper sections; and

FIG. 3 is an enlarged section on the line 3—3 of FIG. 2, partly broken away.

Referring specifically to the drawing, 10 denotes a concrete base on which the sleeper installation is erected. In the present case a set of the retainers 12 mentioned above is laid in parallelism as shown in FIG. 1, and secured to the base by nails 13 driven into holes previously made in the concrete. The retainers are in lengths similar to wooden sleepers, being about 10 feet long, the retainers in each row being staggered from those in the next row. The retainers are of heavy sheet metal, being flat at the bottom and raised from one side with an inward channel 12a. As shown in FIG. 3, the retainers in each pair of rows have their channels 12a facing each other. After the retainers have been nailed down, they receive a layer 17 of mastic on the flat bottom portion, the mastic being permanently adhesive.

Each retainer 12 is designed to receive a sleeper made up of a series of sections 15 laid in endwise succession, each section being about three feet long. When mounted on the retainers as seen in FIG. 2, the sleeper sections in each retainer row are staggered from those in the next row; and the sleeper sections meet endwise on a bias, as seen at 15b, in FIG. 2, in order not to create a crevice or weak point where a joint of floor boards occurs above. The sleeper sections are lengths of 2-by-4 lumber adapted to seat on the flat bottoms of the retainers as shown in FIG. 3; and the sleeper sections for each pair of retainers are made with a slot 15a in the outer side to freely receive the horizontal hook of the channel 12a and interlock with the retainer, as seen in the same figure. Each series of sleeper sections terminates in spaced relation to the wall toward which it extends, in order to permit endwise movement of the sleeper sections. Also, it is noted in FIG. 3 that the sleeper sections are made with a wide, longitudinally-extending recess 15c on the under side, in order to clear the heads of the nails 13 which secure the retainers to the concrete base.

After a series of the sleeper sections 15 have been laid in interlocking engagement with the retainers 12 as described, the flooring 18 is laid across the sleepers and fastened to them by nails in the usual manner. It will be held down by the sleeper sections, since the latter are locked against upward separation from each pair of retainers. However, in case the floor boards assume a creeping movement from lateral expansion due to dampness or inclement weather, then the sleeper sections will slide in unison with the creeping movements of the floor boards, relieving the same of excessive lateral pressure and buckling as a result. The massive sleeper sections will thus serve as a firm and permanent support for the flooring; and such strains as they may receive from excessive weight on the floor between pairs of the retainers will only seat the sleeper sections more firmly in the retainer channels. Further, the loose joints in the retainer channels avoid binding of the sleeper sections in them in case dust accumulates or sleeper sections warp in their joints with the channels. Further, the slot 15a in each sleeper is made between its upper and lower por-

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tions, so that a sufficient amount of stock is present in the upper portion for the adequate support of the flooring. Further, the provision of the mastic will eliminate creaking or rattling underneath the floor, and ease the sliding of the sleeper sections when the flooring expands. Finally, the novel sleeper installation is quite simple and durable; and it is also economical, since the conventional sleepers of full length are replaced by short pieces or remnants which are cheaper and more readily available.

I claim:

1. A floor assembly comprising in combination:
a rigid floor base;

a plurality of elongated, substantially-rigid, retainers (12) extending in substantially parallel, cooperating pairs and secured in substantially fixed relation on said rigid floor base,

said pairs of retainers being channel-shaped with a lower flange secured to said floor and including a vertically extending web portion terminating in an upper inwardly extending, continuous flange,

said upper flanges of a respective pair being spaced from each other and being coplanar;

generally rectangular cross-sectioned sleeper sections, substantially shorter in length than said retainers, disposed end-to-end in overlying relation to the lower retainer flange of a respective pair of cooperating retainers,

said sleepers having laterally-opening, longitudinal end-to-end slots reciprocally engaged on the respective upper flanges of said retainers and including thereabove coplanar upper surfaces, inner portions of said sleepers of said pairs being spaced from each other,

terminal ends of adjacent sleepers extending along said retainers comprising complemental angular margins disposed on a bias with respect to the

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general direction toward which said retainers extend; and

flooring elements disposed edge-to-edge relation on the coplanar upper surfaces of said sleepers above said upper retainer flanges and being fixedly secured to said sleepers and extending substantially normal to said sleepers whereby expansion and contact floor stresses are relieved by relative movement of the sleeper sections and flooring elements with respect to said retainers,

certain adjacent flooring elements partially overlapping at their edges the complemental angular margins of said sleepers.

2. The structure as claimed in claim 1 in which said sleepers and lower retainer flange have a layer of mastic interposed therebetween whereby noise is dampened.

3. The structure as claimed in claim 1 in which said retainer bottom flanges are secured to said rigid floor base by headed, driven fasteners,

said sleepers having a longitudinal, downwardly opening slot in the undersurface thereof overlying said fastener head and permitting some relative movement of the sleepers with respect to the retainers.

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U.S. Cl. X.R.

52—480

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,562,990 Dated February 16, 1971

Inventor(s) William A. Boettcher

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

In the heading to the printed specification, line 4, "4757 N. Clark St." should read -- 4507 N. Clark St. --.

Signed and sealed this 14th day of September 1971.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

ROBERT GOTTSCHALK
Acting Commissioner of Pat.