

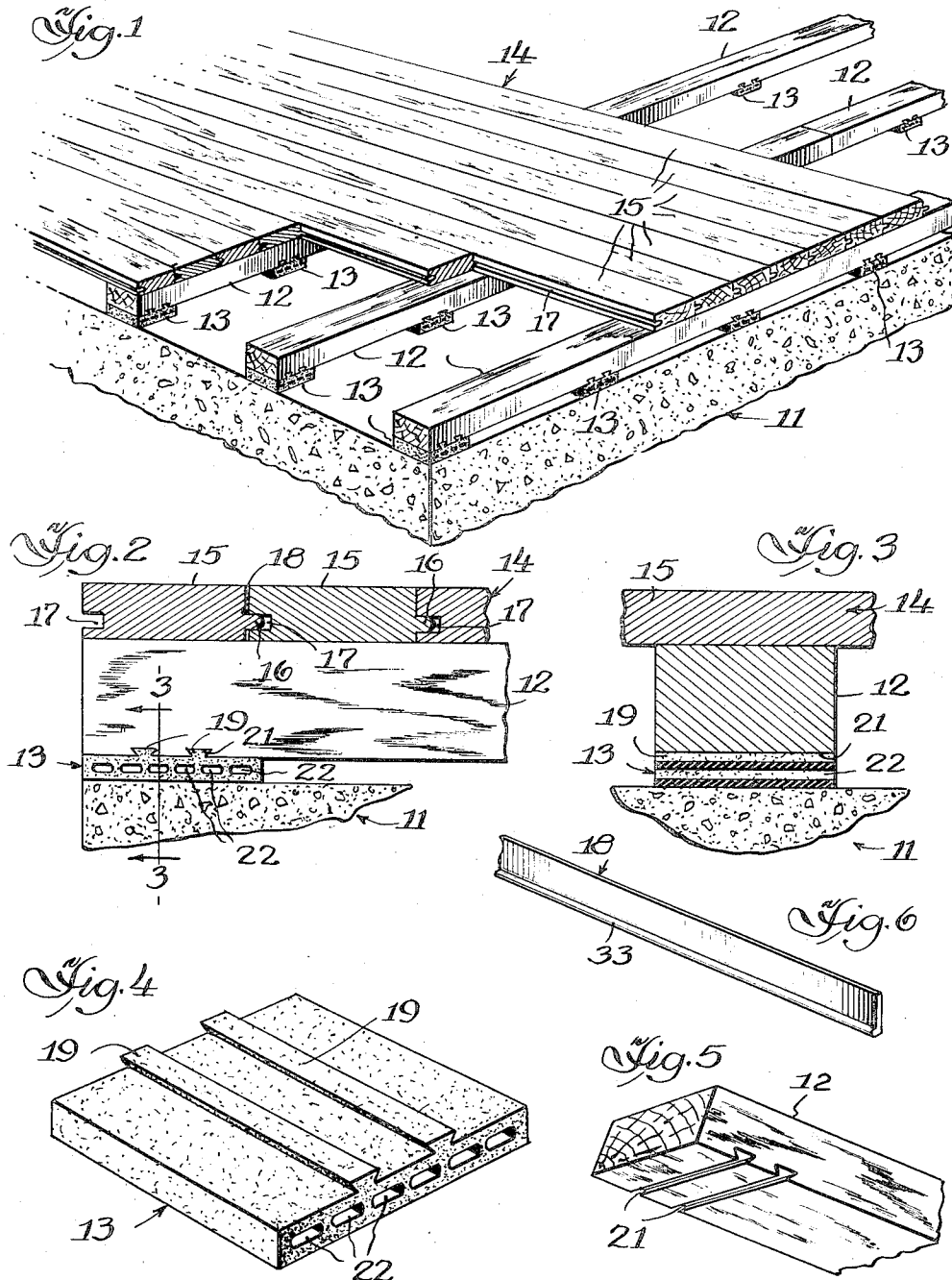
Dec. 2, 1958

S. D. NELSON
FLOOR CONSTRUCTION

2,862,255

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2 Sheets-Sheet 1



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Fig. 7

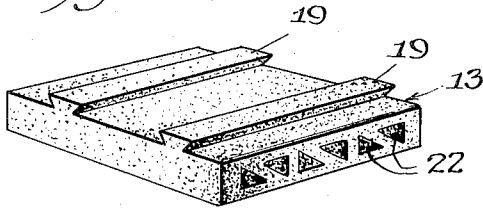


Fig. 8

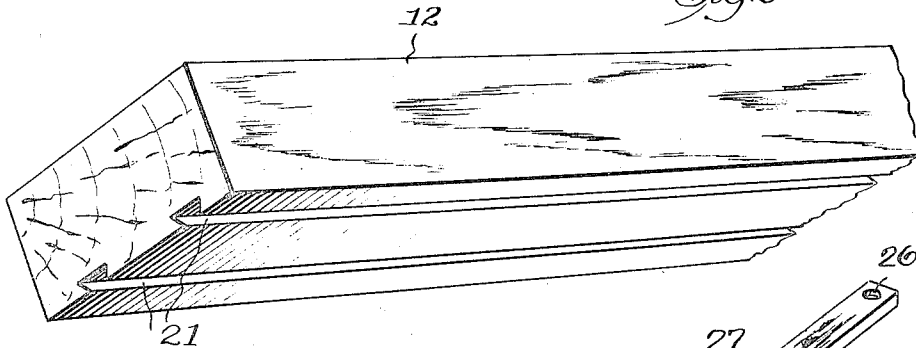


Fig. 9

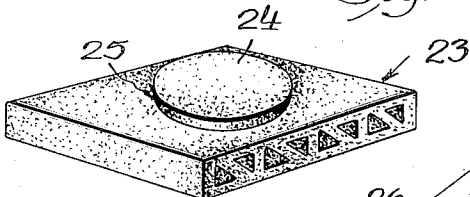


Fig. 10

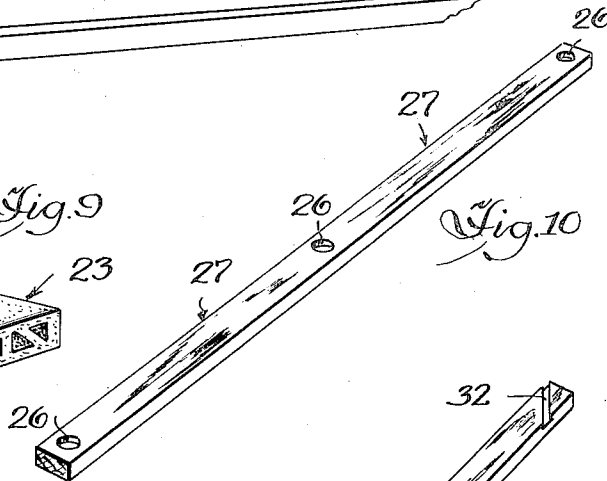


Fig. 11

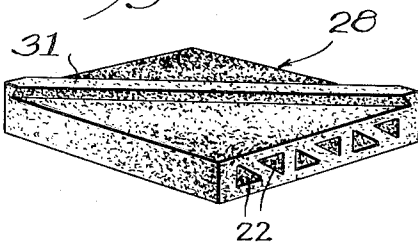
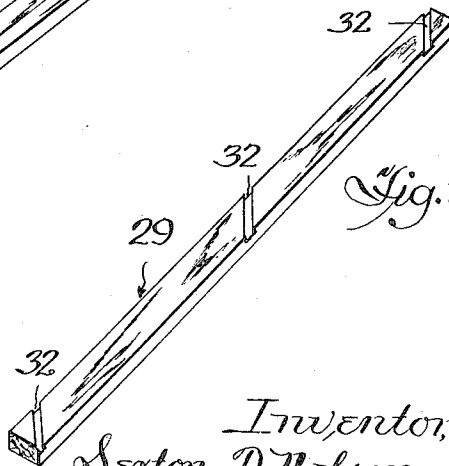


Fig. 12



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FLOOR CONSTRUCTION

Sexton D. Nelson, Chicago, Ill.

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2 Claims. (Cl. 20—6)

The present invention relates to a novel floor construction and assembly and more particularly to a novel floor installation and to a novel means and manner of resiliently supporting a floor assembly.

Among the objects of the present invention is the provision of a novel sleeper assembly for resiliently mounting any floor requiring a cushioned or resilient support.

To assure cushioning of a wood floor and to maintain such cushioning or resiliency for the life of the floor, the present invention comprehends the provision of a novel and simplified form of sleeper assembly that eliminates the squeaking of the floor and gives to the floor a resiliency and cushioning effect that effectively eliminates the rigidity and stiffness found in prior types of floors. Thus the present floor installation is particularly adapted for use in roller skating rinks, gymnasiums and dance floors where cushioning or resiliency of the floor is most desirable and whereby the participants will most thoroughly enjoy themselves and be least susceptible to tiredness or aches resulting from more rigid types of floor installations. In addition to the above uses, the present floor installation is ideally suited for use where machinery is supported and operated, or wherever a floor is subjected to vibration and a cushioned or floating support is required or desirable.

It is a further object of the present invention to obviate the objectionable features of prior types of floors, to provide a novel type and construction of floor cushions providing a resilient support for the floor sleepers, and a novel means and manner of securely but detachably joining these cushions to the underside of the spaced sleepers.

Further objects are to provide a construction of maximum simplicity, efficiency, economy and ease of assembly and operation, and such further objects, advantages and capabilities as will later more fully appear and are inherently possessed thereby.

In the drawings:

Figure 1 is a fragmentary view in perspective of a floor installation being assembled in accordance with the present invention.

Fig. 2 is an enlarged, fragmentary view, part in vertical cross section and part in end elevation, of the floor assembly of Fig. 1.

Fig. 3 is a view in vertical cross section taken in a plane represented by the line 3—3 of Fig. 2 and viewed in the direction of the arrows.

Fig. 4 is an enlarged view in perspective of one of the novel floor cushions or supports upon which the sleepers rest.

Fig. 5 is a fragmentary view in perspective of one of the novel sleepers mortised or provided with spaced dovetailed grooves for the reception of the flaring tenons or tongues of a floor cushion.

Fig. 6 is a fragmentary view in perspective of one of the expansion joint fillers.

Fig. 7 is a view similar to Fig. 5 but of a modified or alternate form of floor cushion in which the flared

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tenons or tongues extend transversely rather than longitudinally of the floor cushion.

Fig. 8 is a fragmentary view in perspective of the end of a sleeper mortised or grooved to receive the flared tenons or tongues of the floor cushion of Fig. 7.

Fig. 9 is a view in perspective of another form of floor cushion.

Fig. 10 is a view in perspective but on a greatly reduced scale of sleeper provided with spaced inwardly flared recesses on its underside with each recess adapted to receive the interlocking tongue or projection of the floor cushion of Fig. 9.

Fig. 11 is a view in perspective of another or alternate form of floor cushion having a single flared tenon or tongue extending diagonally across the floor cushion.

Fig. 12 is a view in perspective but on a greatly reduced scale of a sleeper grooved or mortised on its underside for receiving the flared tenon or tongue of the floor cushion of Fig. 11.

Referring to the disclosure in the drawings and especially to the novel illustrative embodiment of the present invention disclosed in Figs. 1 to 6 inclusive, the novel floor installation is shown mounted on a concrete slab 11 or other suitable rigid base or support, and comprises spaced sleepers 12 resiliently mounted or supported by means of novel elastic floor cushions 13. These elastic floor cushions are shown as spaced apart longitudinally of the sleepers 12 and of such number as to resiliently mount or cushion these sleepers and a floor 14 supported thereon, and thereby accommodate and effectively support the load to be carried and the specific use for which the floor is intended.

The floor being generally of wood boards 15 preferably mounted in interlocking engagement by a tongue 16 and groove 17, may be supported directly on the sleepers or anchored thereto in any suitable manner. To allow for contraction and expansion of the boards, the invention comprehends mounting between any suitable number of adjacent boards an expansion joint filler 18. These expansion joint fillers 18 as well as the elastic floor cushions 13, are of a resilient rubber preferably of natural or compounded synthetic rubber or other suitable elastic rubber-like cushioning material having the desired cushioning effect and capable of absorbing and cushioning the shock of impact upon the floor surface and the prompt recovering from such impact, and giving the desired resiliency or flexibility to the supported floor.

To anchor or interlock the sleepers 12 to the floor cushions 13, the latter are provided on their upper surface with interlocking tongues or flared tenons 19 adapted to be received and anchored in complementary dovetailed grooves or slots 21 arranged in the underside of the sleepers 12. These floor cushions 13 are spaced apart or disposed at suitable intervals and to add to their resiliency and to absorb the shock of impact to which the floor surface is subjected in use provided with internal slots or recesses 22 extending horizontally or longitudinally therethrough (Fig. 3).

Internal slots or recesses are separated by load bearing walls all of which in Figs. 2 and 4 and alternate ones of which in Figs. 7 and 11 are disposed vertically. All of these walls, the vertical ones of course to a greater extent than the inclined ones, serve to yieldably support and carry the load of the superimposed floor structure including the sleepers.

The spaced dove-tailed grooves 21 on the underside of the sleepers 12 may be arranged transverse thereof as in Figs. 1 to 6 inclusive, or they may extend longitudinally thereof as in Fig. 8. To interlock these sleepers to the floor cushions 13, the flared tenons or tongues 19 may likewise extend longitudinally of the floor cushions 13

as in Figs. 1 to 6 inclusive, or transverse thereof as in Fig. 7.

Although it is preferable to form the sleepers 12 as in Figs. 1 to 8 inclusive, Figs. 9 and 10 disclose an alternate interlocking arrangement in which the upper surface of the floor cushions 23 is provided with a circular upstanding projection 24 with the circumference or periphery 25 of the projection upwardly flared and adapted to be received and interlock in an upwardly flared and complementary opening 26 in the underside of a sleeper 27. The openings 26 are shown suitably spaced apart in Fig. 10, although these sleepers may each be provided with a longitudinally extending dove-tailed groove or mortise to receive the projection 24 of a plurality of cushions 23 and with these cushions arranged or disposed at suitably spaced intervals to facilitate their assembly.

The embodiments disclosed in Figs. 11 and 12 is a further alternate assembly in which multiple floor cushions 28 are attached or affixed to the undersurface of a sleeper 29 by means of a flared tongue or tenon 31 extending diagonally across the top of each cushion 28 and adapted to be received and interlock in one of a plurality of angularly arranged, complementary dove-tailed grooves or slots 32 in the underside of the sleepers 29.

The disclosed novel means and manner of installing a floor is far superior to prior floor installations as it provides a free-floating floor devoid of any anchoring means to the sub-floor 11 or to the side walls of the room or enclosure, provides for cross ventilation and effectively prevents the rotting out or damage to the sleepers carrying the floor, and when employed in supporting floors for gymnasiums, roller skating rinks, dance floors and the like, it provides a simple construction for obtaining a spring cushioning or floating effect not obtainable with prior constructions. Anyone having engaged in indoor sports on a gymnasium floor is well aware of the fact that a floor that is rigid or dead so as not to give or spring with the movement on the floor and does not cushion and absorb the shock of impact and prompt recovery, quickly affects the legs and tires an active participant. The same is true of skating rinks, dance floors and the like. Furthermore, the present invention is ideally suited for floors supporting and cushioning machinery and their operation.

The expansion joint fillers 18 may be made of any suitable length and of relatively thin and narrow strips of a resilient material to allow for contraction and expansion of the flooring. These strips are inserted in the manner shown in Figs. 1 and 2 and are preferably retained by means of a bead 33 received in a longitudinally extending and complementary recess provided in suitably spaced boards 15.

From the above description and the disclosure in the drawings, it will be readily apparent that the present in-

vention comprehends a novel floor installation in which the sleepers upon which the floor is mounted are resiliently supported and cushioned upon resilient blocks to give a floating effect to the flooring. By its novel construction, arrangement and assembly, an effective cushioned support having a long and trouble-free life is provided.

Having thus disclosed the invention, I claim:

1. A free-floating wood floor construction supported upon a concrete or rigid base and devoid of any attachment to said base for use in gymnasiums, basket ball courts and the like, consisting of spaced sleepers, floor boards laid upon and arranged transversely of said sleepers and anchored thereto, a plurality of elastic rubber cushion pads anchored to and with the upper face of each pad in surface contact with the under side of a sleeper and the lower face of each pad in surface contact with and unattached to said rigid base with said pads arranged in spaced apart relation along each sleeper, each of said pads provided with a plurality of open-ended and continuous recesses extending horizontally therethrough and separated by load bearing walls, whereby said sleepers and superimposed floor are wholly and yieldably supported on said pads which absorb the shock of the impact to which the floor surface is subjected in use and induce prompt recovery from said shock, the open recesses in said pads providing for the entrance and exit of air therethrough and when the floor is subjected to impact and said pads are thereby compressed and subsequently released, air is circulated beneath the sleepers and floor boards, said pads elevating and supporting the sleepers above the rigid base and providing for substantially unobstructed circulation of air between the base, the sleepers and the overlying floor boards as well as cross ventilation therebetween for preventing the collection of moisture and condensate beneath the floor construction.

2. A free-floating wood floor construction as set forth in claim 19, in which the recess in said pads are of substantially greater width than depth and separated by vertically disposed load bearing walls and with said recesses extending transversely of said sleepers.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 2,862,255

December 2, 1958

Sexton D. Nelson

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 2, line 20, for "Referringg" read -- Referring --; column 3, line 17, for "embodiments" read -- embodiment --; column 4, line 38, for the claim reference numeral "19" read -- 1--; same line 38, for "recess" read -- recesses --; same column 4, list of references cited, under "UNITED STATES PATENTS", add the following:

1,122,350 Wysong - - - Dec. 29, 1914
2,027,292 Rockwell - - Jan. 7, 1936

same column, under "FOREIGN PATENTS" add

399,647 Great Britain - - Oct. 12, 1933

(SEAL) Signed and sealed this 4th day of August 1959.

Attest:

KARL H. AXLINE

Attesting Officer

ROBERT C. WATSON
Commissioner of Patents