Dec. 19, 1933. R. W. STORM 1,940,377

FLOORING

Filed Dec. 9, 1930

Fig. 1.

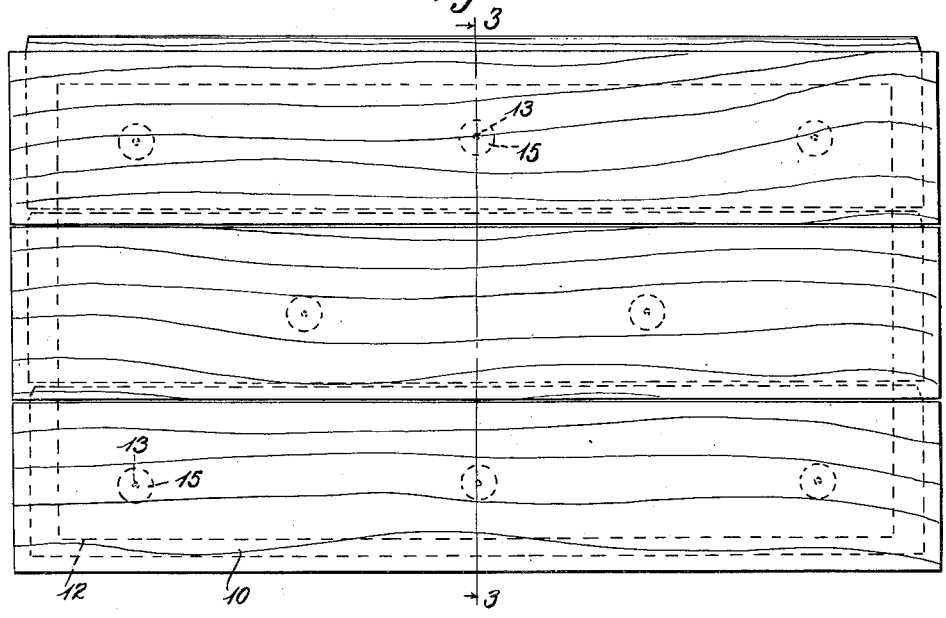


Fig. 2.

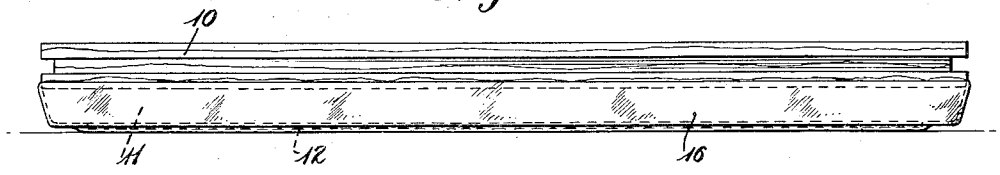


Fig. 3.

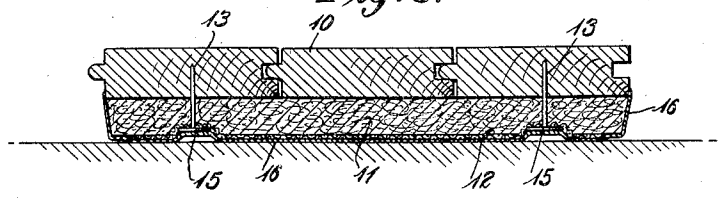
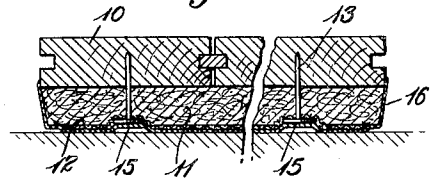


Fig. 4.



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FLOORING

Raymond W. Storm, Pelham Manor, N. Y.

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7 Claims. (Cl. 20—7)

The invention relates to flooring and has as an object the provision of a floor which is sound insulated so as to not transmit sound to rooms below and which may be laid with great facility.

It is a further object of the invention to provide a floor preferably with a wood surface which may be manufactured and finished in the factory ready for laying.

It is a further object of the invention to provide a floor provided with a padded lower surface treated in such manner as to prevent access of moisture to the interior thereof.

Further objects of the invention will appear from the following description showing illustrative embodiments of the invention and wherein:—

Fig. 1 shows a plan view;

Fig. 2 is an edge view;

Fig. 3 is a vertical section on line 3—3 of Fig. 1; and

Fig. 4 is a transverse section of a modification.

As shown the device is embodied in a floor of the parquet or plank types comprising a wooden surface 10 desirably formed of tongued and grooved flooring material and a pad 11 formed of fibrous cellular material. Suitable forms of material for the pad 11 are the wallboards which are marketed under the trade-names "Celotex", and "Masonite".

To add strength to the portion 11, there is shown a sheet of foraminous material 12 such as wire screen which desirably extends over a major portion of the lower surface of the pad to secure the parts together and to hold the wooden surface 10 when the elements indicated in Fig. 1 are laid upon a floor, fastening elements 13 being shown passing through the pad and into the wooden surface. The fastening means 13 are preferably driven after the foraminous material 12 is placed whereby said material acts as a washer under the head of each fastening element. As fastening elements large headed nails are shown in the drawing but it will be obvious that staples, screws, or other driven elements may be substituted therefor. In addition to the fastening elements 13, the wooden surface and backing are preferably glued together. No glue is used between the separate surfacing elements 10 when the surface is made up of more than one piece, thus allowing for independent shrinkage of the surface elements.

Also, instead of using a continuous sheet of foraminous material 12, small pieces may be used at each fastening element 13 to serve as a washer or usual washers may be substituted for the foraminous material about each fastening element.

A defect in former floors of this character has been that the wooden surface has been nailed to the subflooring with the result that each of the nails acts as a column which transmits sound from the wooden surface to the subflooring. Such transmission is avoided in accordance with the present invention and particularly by the fact that the heads 15 of the fastening elements are imbedded or countersunk into the material so as to not come in contact with the subfloor.

In former proposed structures of this character also, the fibrous material utilized as a pad has lost its strength in some instances by becoming saturated with moisture particularly when the floor is laid upon a concrete subfloor. To avoid this difficulty in the present invention, the lower surface and the edges including the lower edges of the wooden surface may be coated with waterproofing material as asphalt, or coal tar, indicated at 16. Moisture will thus be prevented from entering the insulating cellular substance and also prevented from penetrating into the joint between the pad and the wooden surfacing.

To hold the elements illustrated in Fig. 1 in assembly on a subfloor, one edge thereof is shown as formed with a tongue and three edges each formed with a groove. By the arrangement illustrated the blocks may be laid in herringbone or other special patterns. Where grooved edges meet, loose splines will be inserted.

In the modification of Fig. 4 the elements are grooved upon all sides and may be laid with loose splines.

The elements comprising the floor may be made up by a manufacturing process in the factory and the surfaces may be smoothed and polished whereby when assembled upon a subfloor no further operation is necessary to prepare the floor for use.

Because of the nature of the insulating padding the elements will accommodate themselves to irregularities in the subflooring and projecting nailheads, where the subfloor is of wood, will sink into the padding and will not elevate certain of the elements above others thereof.

The flooring will be resilient in use and a non-conductor of heat, cold, and sound, and will be particularly valuable in the absence of conduction of sound through the ceiling to a room beneath.

Minor changes may be made in the physical

embodiment of the invention within the scope of the appended claims without departing from the spirit of the invention.

I claim:

1. A flooring unit comprising a wooden surface, a resilient backing of substantial thickness, and fastenings passing through said backing into said wooden surface to hold the elements in assembly and prevent cleavage of said backing in service on planes parallel with said surface.

2. A flooring unit comprising a plurality of joined wooden elements, an insulating member continuous below said elements and fastening elements passing through said insulating material into the respective wooden elements to hold said elements in assembly and prevent cleavage of said backing in service on planes parallel with said surface.

3. A flooring comprising a wooden surface, a cellular fibrous backing, a foraminous material underlying said backing and fastening elements passing through the said foraminous material, said backing, and into said wooden surface to hold said elements in assembly and prevent cleavage of said backing in service on planes parallel with said surface.

4. A flooring comprising a wooden surface layer, a fibrous cellular backing layer, a sheet of foraminous material underlying said backing layer, fastening elements passing through said foraminous material and backing into said wooden layer, a subfloor, and a layer of waterproofing material impregnating the lower surface of said backing material, imbedding said foraminous material and causing adherence of said wooden and backing layers as a unit to said subfloor.

5. A flooring comprising a wooden surface layer a fibrous cellular backing layer, a sheet of foraminous material underlying said backing layer, fastening elements passing through said foraminous material and backing into said wooden layer, a subfloor, and a layer of waterproofing material impregnating the lower surface and edges of said backing material, imbedding said foraminous material, and covering the joint between said layers and causing adherence of said wooden and backing layers as a unit to said subfloor.

6. A flooring unit comprising, in combination: a wooden surface layer; a resilient cushioning layer of substantial thickness and substantially coextensive with the surface layer; and driven fastening elements passing through the backing into the surface layer; whereby separation of the elements or cleavage of the backing layer is prevented and vibration of the surface layer is dampened.

7. A flooring block comprising, in combination: a wooden surface layer; a resilient backing layer substantially coextensive therewith; driven fastening elements passing through the backing into the surface layer; the ends of the elements at the exposed surface of the backing layer countersunk into said surface whereby no rigid portion of the unit contacts a surface upon which the unit may be laid.

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