To all whom it may concern:

Be it known that I, Ross Houston, a citizen of the United States, and a resident of Portland, county of Multnomah and State of Oregon, have invented a new and useful Improvement in Matched Flooring or Boards, of which the following is a specification.

This invention relates to what is commercially termed matched flooring or board. The main beneficial results I attain by my invention are twofold: economy in material and better results in the flooring surface laid. The first result is obtained by utilizing the narrow strips of lumber left over when the boards of standard size have been cut. In other words, standard flooring is laid of boards of standard width, hence only such material can be used as will cut into the required width. I, however, utilize the narrow left-over strips for making a board or flooring of standard dimensions. This work is preferably done at the mill, and the composite boards of standard dimensions so produced are laid as flooring units or boards in the usual manner.

Another important object I have in view is the elimination of inherent weakness in the tongue and groove joint as heretofore made, due to the fact that the lips of the groove, and likewise the tongue, are not properly arranged so as to support each other, and prevent breaking down and "checking." In this connection my improved tongue and groove joint is a very important feature which could be used advantageously for joining ordinary floor boards so as to eliminate the weakness mentioned. But my said improved joint is especially necessary in the construction of boards or flooring, for by reason of the multiplicity of individual pieces composing such boards, said inherent weakness would otherwise be greatly increased.

Another advantage obtained by my invention is that the work of laying the floor is facilitated, for the nailing strips are very accessible. The assemblage of the boards is also facilitated. The flooring surface produced by my improvements are equal to the very best flooring of any type; and in many respects even superior, for it possesses the stability and unity at the joints required to produce a floor surface of uniform finish.

My improved flooring is also very lasting. The details of construction and advantages obtained are more readily ascertainable by now having reference in the first place to the accompanying drawings, in which:

Figure 1 is a sectional perspective showing two adjacent boards or flooring made in accordance with my invention and nailed to a joint; in this figure are illustrated the means of interlocking the individual strips into one unit, and also the locking or connection between the two adjacent boards; the nailing of the composite board to the joint is also detailed; Fig. 2 is a transverse vertical section of another form of matched flooring, in which the interlocking tongue and groove connecting the members of the board or flooring are made slightly different than those shown in Fig. 1; Fig. 3 is a detailed section of two adjacent members of a board or flooring, united by that type of tongue and groove joint which I consider preferable for such purpose; and Fig. 4 is a vertical section of two adjacent members of two boards or flooring, illustrating the 80 tongue and groove joint or lock between two floor-units or boards.

The boards or flooring, a, g, are made up of a plurality of strips, as b, c, d. Their end joints may be staggered as usual. The 85 joined faces e, f, of the adjoining strips, b, c, d, are inclined at acute and obtuse angles, with respect to horizontal, respectively, whereby when laid as a floor one face of each board will underlie and constitute a 90° support for the opposite face of the adjoining board. The angles of said faces are preferably made slightly greater than supplementary, so that the faces are spaced apart at the base, as at t, and the efficient 95 support of the upper portion of the overlying face is provided for. This feature prevents the checking and breaking down of the upper lip, g, of the groove h of the strip a, for example, for said lip is supported by 100 the solid portion j of the underlying face, e, of the strip b, and in consequence there will be no direct strain upon the tongue h; the whole strain being taken up by the bevel-faced portions, j, g, of the joined strips. For interlocking the joined faces of the strips b, c, d, against lateral movement, I prefer to provide interlocking tongues and grooves of the dove-tail type, as shown for instance at h and i. The tongue, i, projects 110
substantially perpendicular to the face e, and the groove h is accordingly formed. The parts are further adapted to facilitate assemblage and provide for the accommodation of the overlying part in such assemblage, as shown in Fig. 3, by allowing for some movement of the tongue in its groove. The same principle of construction applies equally to the plain or ordinary tongue and groove joints, l, m, of the joined exterior faces, o, p, of the adjoining boards or flooring. Ordinary tongue and groove joints may be employed throughout the floor structure, as illustrated in Fig. 2, and the floor built up, on the joist instead, from the strips, as at q, instead of making the strips first into floor boards of ordinary width at the mill, as described.

With regard to the interlocking tongue and groove joint, it is to be noted that the point g' will bear at the point e' of the angle of the tongue i, providing an effective lock, but eliminating any direct strain upon the tongue, tending to break it down. In fact, the peculiar advantage obtained by the described principle of construction of my tongue and groove joint is that they serve solely as a bond or interlocking means between the joined boards, preventing any lateral movement of the latter away from each other. The described principle of construction may also be applied with great benefit in the joining together and interlocking of ordinary floor boards in a flooring.

The flooring is nailed to the joints, e, by the nails, n, driven at intervals in the beveled portions, j, of the face, e, as shown. The acute beveled faces, e, allow easy access for the nailing process, and the nailing line is sufficiently removed from the tongue to eliminate danger of splitting the latter, which is one of the serious objections to the present system. Inasmuch as the pressure is absorbed by the body of the flooring pieces, the tongue and groove can be reduced materially in size, thus allowing a more economic structure.

I claim:
1. A board (or floor) consisting of a plurality of strips made with abutting incline plane faces, the latter inclined at acute and obtuse angles to the horizontal respectively, and so as to space said faces apart at the base, the upper part of the overlying face resting on the underlying face; and means for interlocking said abutting faces.
2. A composite board comprising a plurality of strips the abutting faces of which are inclined at acute and obtuse angles to the horizontal respectively; the acutely inclined face being provided with a perpendicular tongue and the obtusely inclined face with a corresponding groove; and the angles of said supporting and supported faces being slightly greater than supplementary, and said abutting faces being spaced apart at the base and the upper part of the overlying face resting on the underlying face.
3. A composite board comprising a plurality of strips the abutting faces of which are inclined at acute and obtuse angles to the horizontal respectively; the acutely inclined face of said interlocking strips being provided with a perpendicular tongue and the obtusely inclined face with a corresponding groove; the acutely inclined exterior face of the composite board being provided with a perpendicular tongue, and its obtusely inclined exterior face with a corresponding groove; and the angles of said supporting and supported faces being slightly greater than supplementary, and said abutting faces being spaced apart at the base and the upper part of the overlying face resting on the underlying face.

ROSS HOUSTON.

Witnesses:

Cecil Long,
W. C. Schmitt