April 19, 1938. S. H. CAMPBELL ET AL 2,114,556

FLOOR CONSTRUCTION

Filed May 6, 1936

FIG. 1.

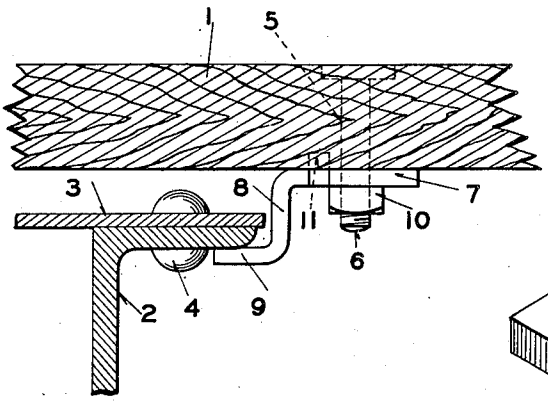


FIG. 2.

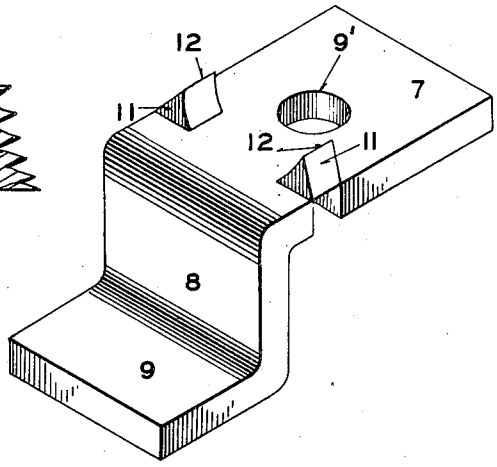


FIG. 3.

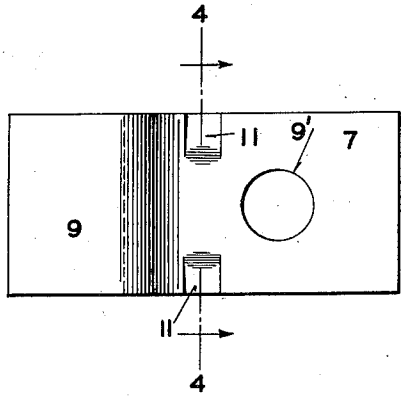
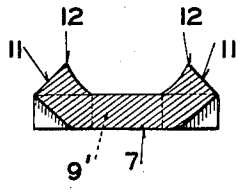


FIG. 4.



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FLOOR CONSTRUCTION

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Application May 6, 1936, Serial No. 78,143

2 Claims. (Cl. 189—35)

Our invention relates to a floor construction and particularly to a floor construction of the type suitable for use in railway cars in which the floor boards are positioned above and connected with metallic floor sills by means of clips each engaging with one of the floor boards on one of the sills.

The object of our invention is to provide improved means for preventing rotation of the clip around the bolt which secures the clip to the board so as to retain the clip in proper operation position in relation to the board and sill.

In the accompanying drawing, which illustrates one form of a floor construction made in accordance with our invention, Figure 1 is a sectional view taken in the direction of the length of one of the floor boards; Figure 2 is a perspective view of one of the clips; Figure 3 is a bottom plan view of one of the clips; and Figure 4 is a section taken on the line 4—4 of Figure 3.

The numeral 1 indicates one of the floor boards of a railway car, which board is positioned above and spaced from a floor sill comprising a channel bar 2 and a plate 3 secured thereto by rivets 4 or any other means. It will be understood that this form of floor sill is shown for the purpose of illustration only and may be replaced by other forms of sill, and that our invention is equally applicable to those parts of the floor construction in which the floor boards rest upon and are supported by the sills instead of being spaced therefrom as shown. Formed in the floor board at some distance from the edge of the sill is an opening 5 through which passes a bolt 6 for securing the clip to the board. The clip, which is formed by punching and bending a rectangular strip of metal, comprises a body portion 7 contacting the lower face of the floor board, a vertical web 8 and a lip 9 carried by the flange and extending under a portion of the sill. A hole 9' is formed in the body of the clip for the passage of the bolt and the clip is held in position by a nut 10 threaded on the bolt and bearing against the lower face of the clip.

If some means is not provided for holding the clip in proper operative position with the board and sill, it may rotate on the bolt under the strains to which it is subjected and thus become disengaged from the sill and, therefore, fail to perform its necessary function. To provide such means, we punch up from the edges of the clip a pair of integral spurs 11. These spurs are approximately triangular in cross-section and are provided with sharp edges 12 extending in the direction of the grain of the floor board. The shape of the spurs, together with the fact that they are positioned between the bolt and the sill,—that is between the two points of resistance when the clip is applied,—enables them to be readily forced into the board by the application of the nut. Their shape is also such as to provide the maximum of resistance to rotation of the clip in proportion to their size. The spurs are punched from the edges rather than from interior portions of the clip because this results in a minimum amount of shearing of the metal and, consequently in reduced resistance to the operation of the punch. The clip may thus be formed by a single combined punching and bending operation, reducing the cost of manufacture to a minimum.

Having fully described our invention, what we claim as new and desire to secure by Letters Patent of the United States is:

1. In a railway car floor construction, the combination with a floor sill, of a floor board positioned above said sill, a clip engaging said board and sill, a bolt securing said clip to the board, and an integral spur punched up from a lateral edge of the clip and engaging the board to limit rotary movement of the clip about the bolt, said spur being approximately triangular in cross section and having a sharp edge extending in the direction of the grain of the board, said spur being situated between the bolt and sill.

2. In a railway car floor construction, the combination with a floor sill, of a floor board positioned above said sill, a clip engaging said board and sill, a bolt securing said clip to the board, and a pair of integral spurs carried by said clip and engaging the board to limit rotary movement of the clip about the bolt, said spurs being punched up from opposite edges of the clip and having sharp edges extending in the direction of the grain of the board, said spurs being positioned between the bolt and sill.

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