June 5, 1928. 1,672,255

H. A. GORMAN

SOUND DEADENING CONSTRUCTION

Filed April 19, 1926

Fig. 1.

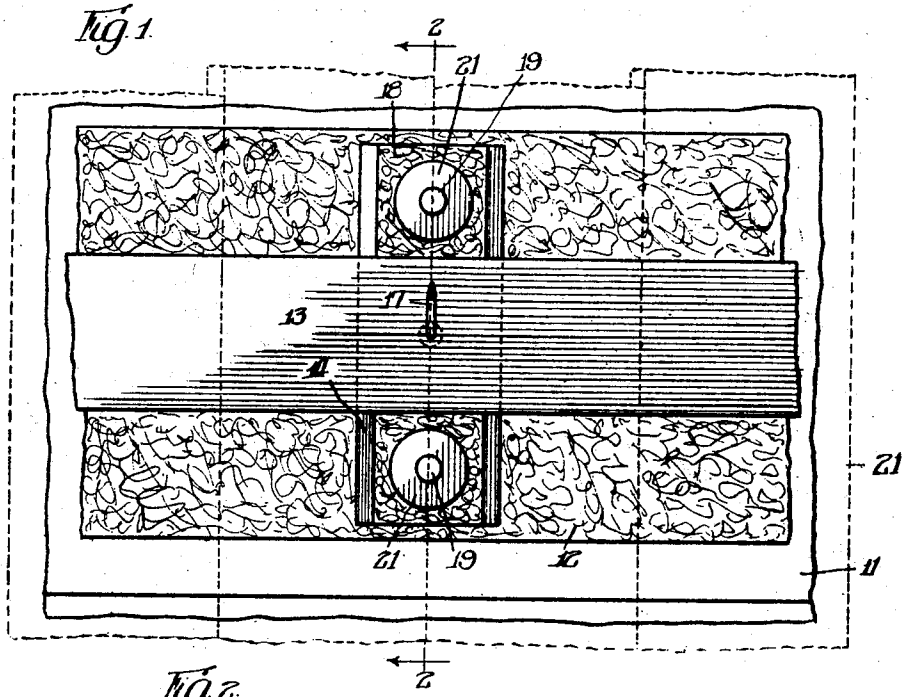


Fig. 2.

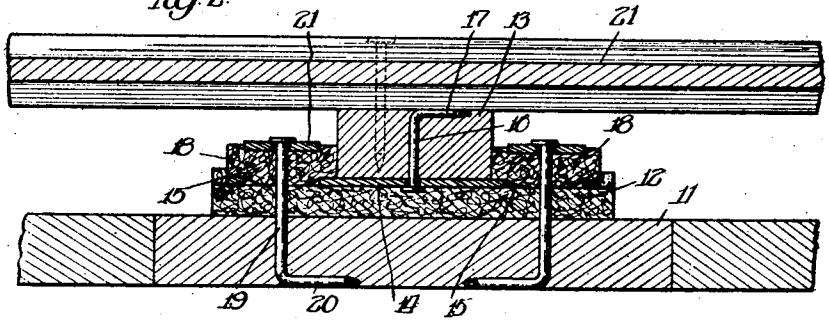
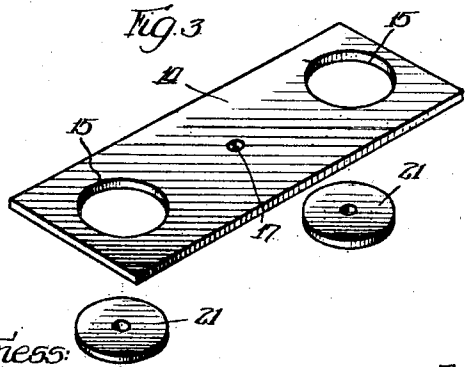


Fig. 3



Witness:
R. Burkhardt.

Inventor:
Henry A. Gorman,
By Wilkinson Huxley Byron & Knight
Attys

Patented June 5, 1928.

1,672,255

UNITED STATES PATENT OFFICE.

HENRY A. GORMAN, OF CHICAGO, ILLINOIS.

SOUND-DEADENING CONSTRUCTION.

Application filed April 19, 1926. Serial No. 102,864.

This invention relates to a new and improved floor construction, and more particularly to a floor construction designed to prevent the transmission of sound.

Certain types of double floor construction have heretofore been developed in the endeavor to prevent the transmission of sound through the floor. Such constructions generally involve a sub-floor and nailing strips supported in some manner upon the floor, and a finished floor nailed to the nailing strips. Various cushioning means have been located under the nailing strips, and it is customary to fill the space between the sub-floor and floor with cinders or some other insulating material, to overcome the drum effect of the empty space. In such constructions, although cushioning means are placed between the nailing strip and sub-floor, nails passing through the nailing strip and into the sub-floor have been found to transmit sound vibrations, and thus the effectiveness of the cushioning material is largely lost.

It is an object of the present invention to provide a new and improved floor construction in which a nailing strip is positively secured to a sub-floor without any direct contact with either the nailing strip or the floor by metallic members engaging the other of the two members.

It is a further object to provide a construction of this character in which the upward as well as the downward movement of the nailing strip is limited by sound deadening, cushioning means.

It is an additional object to provide a construction of this character composed of but few parts and adapted for rapid commercial production, and for installation without special tools or skilled labor.

Other and further objects will appear as the description proceeds.

I have illustrated a preferred embodiment of my invention in the accompanying drawings; in which

Figure 1 is a fragmentary plan view showing a nailing strip secured to a sub-floor by my improved invention;

Figure 2 is a transverse section taken on line 2—2 of Figure 1; and

Figure 3 is a perspective view showing the securing strip and bearing members.

The sub-floor 11 is laid upon any suitable floor supporting construction which may be of any form desired, and has not been shown as it forms no part of the present invention. The sound deadening strip 12 rests upon the floor 11 and may be formed of any desired material, such, for example, as felted vegetable fibers. The nailing strip 13 rests upon the sound deadening material 12 and is provided at intervals with the securing strips 14, best shown in Figure 3. These strips are formed of metal, having enlarged openings 15 formed in the ends of the strip which extend laterally beyond the nailing strip.

The strips 14 are secured to the under side of the nailing strip 13, preferably by means of the nails 16 passing through the holes 17. These nails may be of sufficient length to be clinched by bending down the ends, as shown at 17 in Figure 2. Small cushioning members or pads 18, larger than the openings 15 in the strips 14, are placed above the openings. The nails 19 are driven through these pads 18 and through the cushioning strip 12 into the sub-floor 11. These nails may be clinched, as shown at 20.

In the form of construction shown, the metallic washers 21 are placed under the heads of the nails 19 and give an enlarged bearing to the nails. These washers 21 may be economically formed from the portion struck out of the members 14 in punching the holes 15. The finished floor 21 is nailed to the nailing strips 13 in the usual manner.

In the construction shown it will be observed that there is no through contact between the finished floor and sub-floor, except through a heavy layer of cushioning material. The passage of sound vibrations is thus positively prevented. The openings 15 are of such size that the nails 19 cannot touch the metallic member 14. It will be understood that the member 14 will preferably be formed of metal of sufficient thickness so as to render it substantially rigid in use. The nailing strips 13 cannot rise under warping or other stresses, except by compressing the pads 18. These will already be under considerable compression, as the nails 19 will be driven in sufficiently so as to force the washers 21 solidly down against the pads. Any upward movement will, therefore, be very limited, and will be resisted. Similarly, any downward movement can only take place by compressing the pad 12.

It will be understood that the space between the floor and sub-floor may be filled with cinders or other material to eliminate the drum effect. It will be understood also that

the nailing strips and sound deadening strips may be cut away or notched, as may be necessary for permitting the passage of pipes and conduits.

I have illustrated one preferred form of my invention by way of example, but it is to be understood that I contemplate such changes and modifications to meet varying conditions as may come within the spirit and scope of the appended claims.

I claim:

1. In a floor construction, a sub-floor, a cushioning member, a nailing strip on the cushioning member, a floor secured to the nailing strip, a securing strip fastened to the nailing strip, said securing strip extending laterally beyond the nailing strip, and cushioned means for fastening the securing strip down upon the cushioning member.

2. In a floor construction, a sub-floor, a cushioning member, a nailing strip on the cushioning member, a floor secured to the nailing strip, a securing strip associated with the nailing strip and having lateral extensions resting on the cushioning member and a cushioned connection between the lateral extensions of the securing strip and the sub-floor.

3. In a floor construction, a sub-floor, a cushioning member, a nailing strip on the cushioning member, a floor secured to the nailing strip, a securing strip fastened to the under side of the nailing strip and resting on the cushioning member, an opening in the securing strip, securing means extending through the openings in the securing member into the sub-floor, and cushioning means between the securing means and the securing strip.

4. In a floor construction, a sub-floor, a cushioning member on the sub-floor, a nailing strip on the cushioning member, a floor nailed to the upper side of the nailing strip, a flat securing strip nailed to the under side of the nailing strip and resting on the cushioning member, the securing strip having portions extending laterally beyond the nailing strip, openings in said portions, cushioning members of greater area than said openings on said portions, and nails extending through the latter cushioning members, through the openings in the securing member, out of engagement with the securing member, and into the sub-floor.

5. In a building construction, a structural element, a cushioning member upon said element, a nailing strip on the cushioning member, a structural surface secured to the nailing strip, a securing element serving to fasten down the nailing strip and having portions extending laterally beyond the nailing strip, and cushion fastening means associated with said extensions for fastening the securing element against the cushioning member.

6. In a building construction, a structural element, a cushioning member, a nailing strip on the cushioning member, a structural surface secured to the nailing strip, a securing strip fastened to the under side of the nailing strip and resting on the cushioning member, an opening in the securing strip, securing means extending through the openings in the securing strip into the structural element, and cushioning means between the securing means and the securing strip.

Signed at Chicago, Illinois, this 31st day of March, 1926.

HENRY A. GORMAN.