(Model.)

2 Sheets—Sheet 1.

D. HAM.

FLOORING.

No. 298,300. Patented May 6, 1884.

Fig. 1.

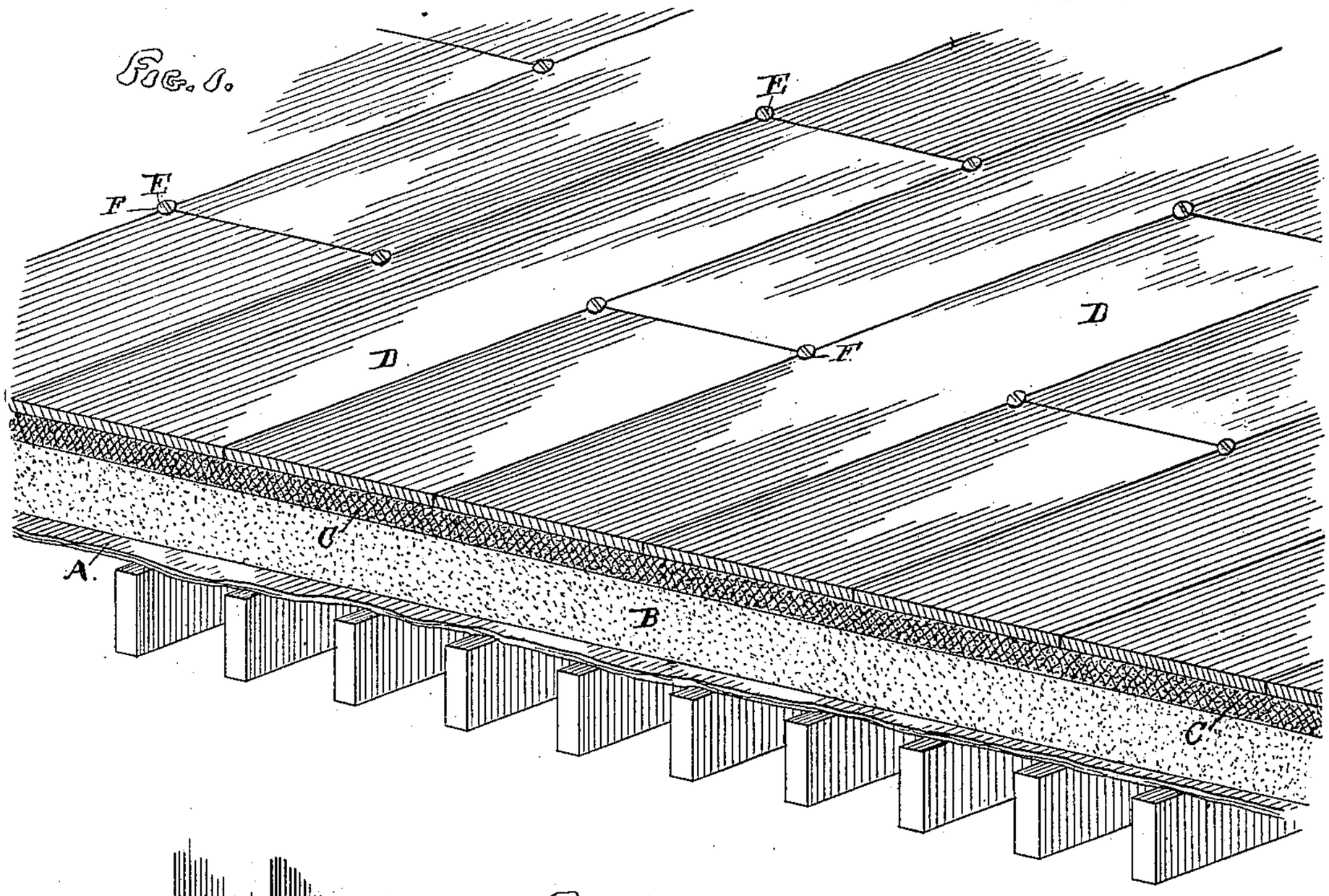
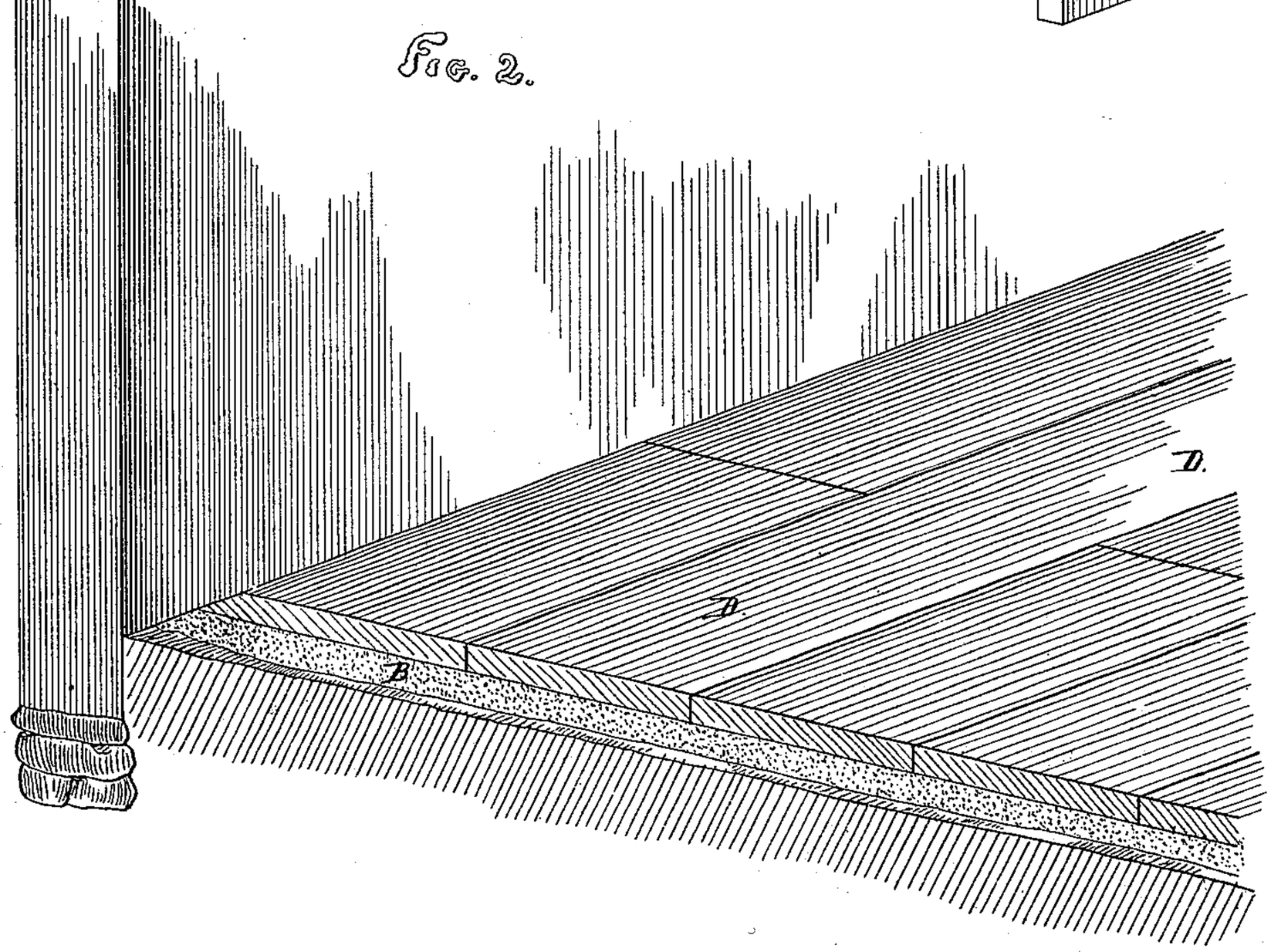


Fig. 2.



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(Model.)

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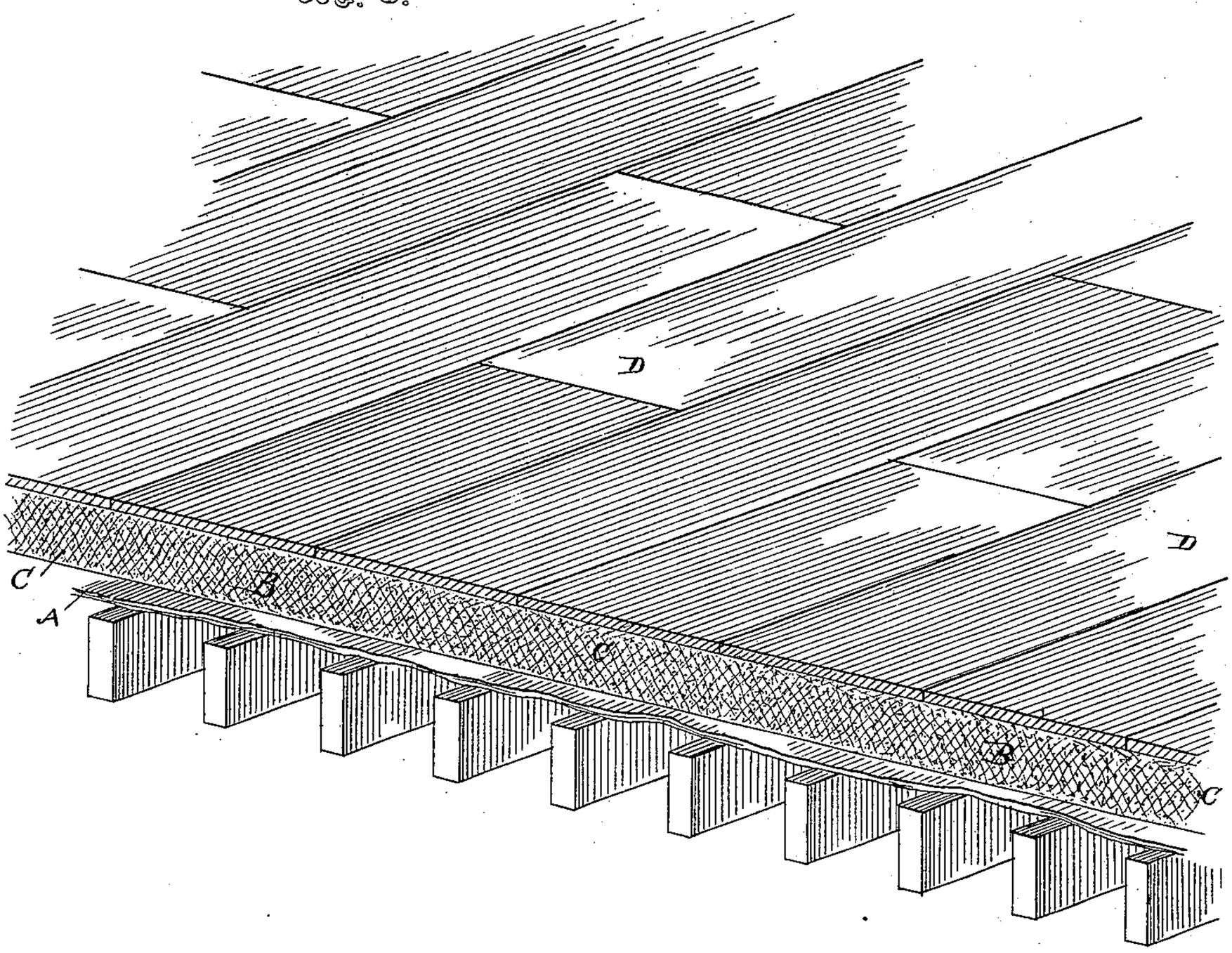
Fig. 3.



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UNITED STATES PATENT OFFICE.

DANIEL HAM, OF IOWA CITY, IOWA.

FLOORING.

SPECIFICATION forming part of Letters Patent No. 298,300, dated May 6, 1884.

Application filed February 13, 1884. (Model.)

To all whom it may concern:

Be it known that I, DANIEL HAM, a citizen of the United States of America, residing at Iowa City, in the county of Johnson and State of Iowa, have invented certain new and useful Improvements in Flooring, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a new and improved flooring for ordinary buildings, skating-rinks, bicycle-schools, dancing-halls, and the like.

The invention consists, essentially, in forming the floor with a sand base, and forming the upper surface of plates of iron or steel.

In the drawings, Figure 1 represents a perspective view, partly in section, of a portion of a floor as constructed according to my invention upon the upper floor of a building. Fig. 2 represents a similar view of a flooring when constructed upon the ground-floor of a building. Fig. 3 represents a similar view of a modified form of flooring.

It is the design of my invention to produce a floor for skating-rinks, dancing-halls, bicycle-schools, and buildings generally which shall be cheap in construction, shall present a smooth surface across which parties can readily and smoothly glide, shall improve the acoustic properties of the hall or room having such a floor, and shall deaden and prevent the transmission of the sound or noise made by parties using said floor to the floor beneath, and form a fire-proof division between the respective floors of a building. To this end, when it is desired to construct a floor for the use of bicycle-schools, dancing-halls, roller-skating rinks, and the like on some upper floor of a building in such a way that the sounds from the use of such hall shall not be transmitted to the room below, I either cover the usual wooden flooring, A, to the desired depth with dry sand B, and place thereon throughout its entire surface strips or pieces of cocoa or other matting or fibrous or porous material, C, and sift through and force within the interstices of said fibrous or porous material more dry sand, until said fibrous or porous material has become matted with the sand or I cover the ordinary flooring over its entire surface with matting or fibrous, or porous material of suitable thickness, and then sift therethrough and fill the interstices thereof with dry sand, as may be found most convenient. I then cover the surface of the matting with plates of iron or steel or other suitable metal, D. Said plates, when used in the construction of flooring above the ground-floor of the building, are thin, and are attached together and to the ordinary flooring of the room or hall by screws E, which pass through countersinks F in the plates, through the matting, and into the wooden flooring. When the flooring is constructed on the ground-floor of a building, the customary wooden flooring may be dispensed with and the sand base spread directly upon the earth floor, and the metal plates D (which in this case might well be thicker than the plates used in constructing an upper floor) placed directly upon the sand or matting base, and connected together either in the manner before described or by cement or other suitable means. As above described, the matting may be entirely dispensed with, if desired, in which case the metal plates would be embedded in the sand and their edges cemented together. The object of the matting is to hold the sand in its place, which is very necessary when thin metal plates are used, as otherwise the sand would, in constant use of the floor, be apt to sift through the joints or outside edges. Where heavy metal plates are used, the sand will not sift, as the plates will hold it in position, and when heavy plates are used the flooring will sustain as rough usage without the under matting support as will the flooring having thinner metal plates and an under support of sand-filled matting. The office of the matting and of the sand is to deaden the sound made by the feet or appliances used by the parties traversing or using the floor, and prevent the sounds therefrom descending to the floor below, which it is found in practice they effectually do. This is very desirable where it is wished to construct a skating-rink, dancing-hall, bicycle-school, a machine-shop, and the like on an upper floor of a building, as then the floor below can be used by parties without disturbance from the use of the floor above, as however much noise is made on the upper floor no intimation thereof can be transmitted through the intervening floor. When the skating-rink, &c., is to be

formed on the ground-floor of a building, the matting may be either employed or dispensed with, as desired, as it is not essential to use matting in such a case, as all that is necessary in such case is to furnish a suitable support for the metal plates, which can be readily done by applying to the floor, whether it be that of mother-earth or an ordinary wooden floor, a coating of dry sand, and placing thereon a sufficient number of metal plates to cover the entire surface, said plates being connected together and to the sides of a room by cement or other suitable means.

It has been found in practice that by constructing the flooring with a surface composed of metal plates not only is it vastly superior to a surface composed of hard wood, in that it is much cheaper, is very easily placed in position, and can be more readily renewed in part or whole when desired, but it will wear longer, affords a smoother surface, requires less attention, can be slid across easier, and the acoustic properties of the room are increased, and musical sounds will be more distinct than where the flooring has a wooden surface. Another advantage of this flooring is that it is perfectly fire-proof, as should a fire occur on the floor above and burning material fall upon the metal plates they would act as a barrier to the further passage downward of the fire.

A building provided with floors constructed in accordance with this invention, besides being fire-proof, could be used for a variety of purposes. For instance, any number of the rooms could be used as machine-shops, or for other manufacturing purposes where much noise is made, without the noise being transmitted from floor to floor. Consequently by this arrangement a building can be used in part for manufacturing purposes and in part for other uses where the transmission of any noise from the floors either above or below would be objectionable, as by reason of the various noises being deadened no interference between the respective floors is possible.

Having thus described my invention, what I claim is—

1. A floor for buildings, skating-rinks, dancing-halls, and other structures, composed of an under layer of sand and a surface of metal plates, substantially as and for the purpose set forth.

2. A floor composed of a base consisting of intermixed sand and matting or fibrous or porous material, and a metallic upper surface, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

DANIEL HAM.

Witnesses:
CHAS. J. GOOCH,
E. P. HOUGH.