

No. 780,332.

PATENTED JAN. 17, 1905.

W. E. FORSHEE.
SOUND DEADENING DEVICE.
APPLICATION FILED MAR. 31, 1904.

Fig. 1.

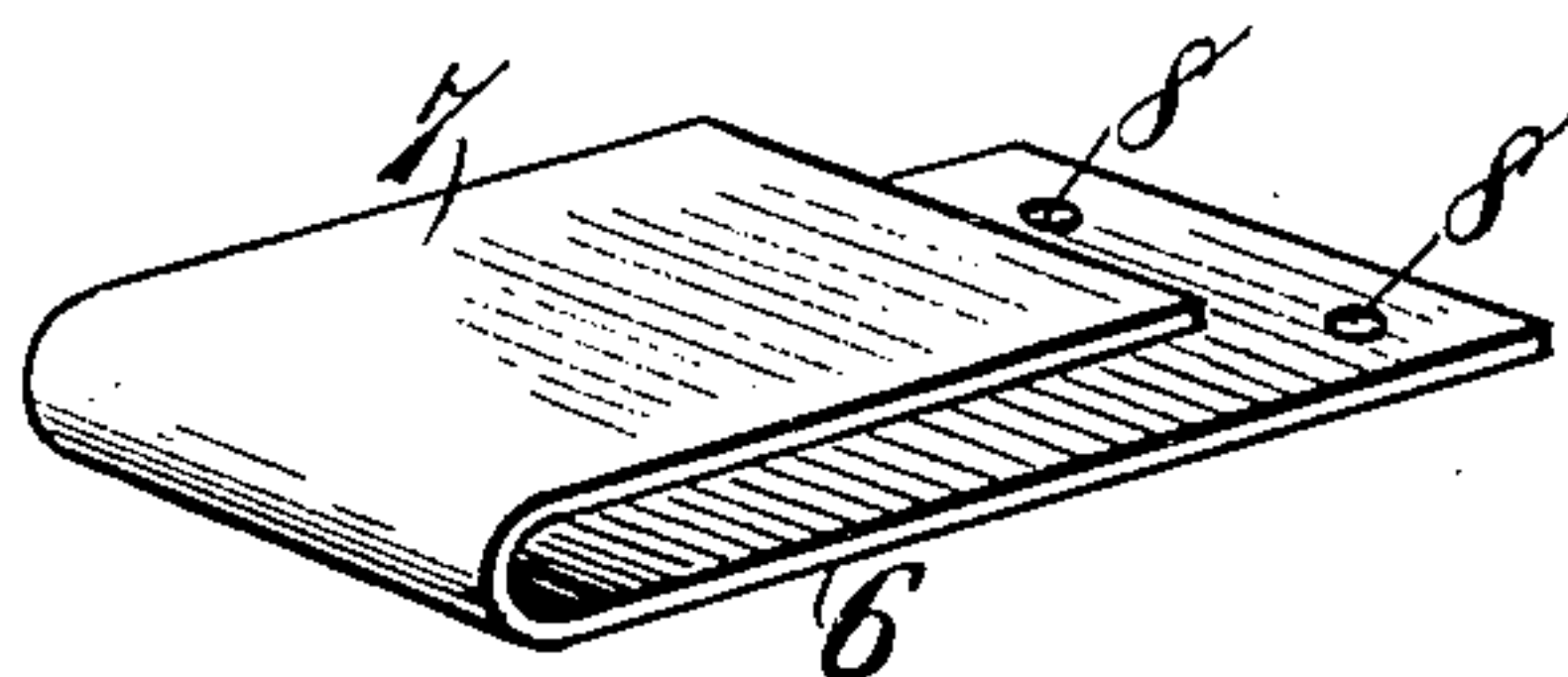
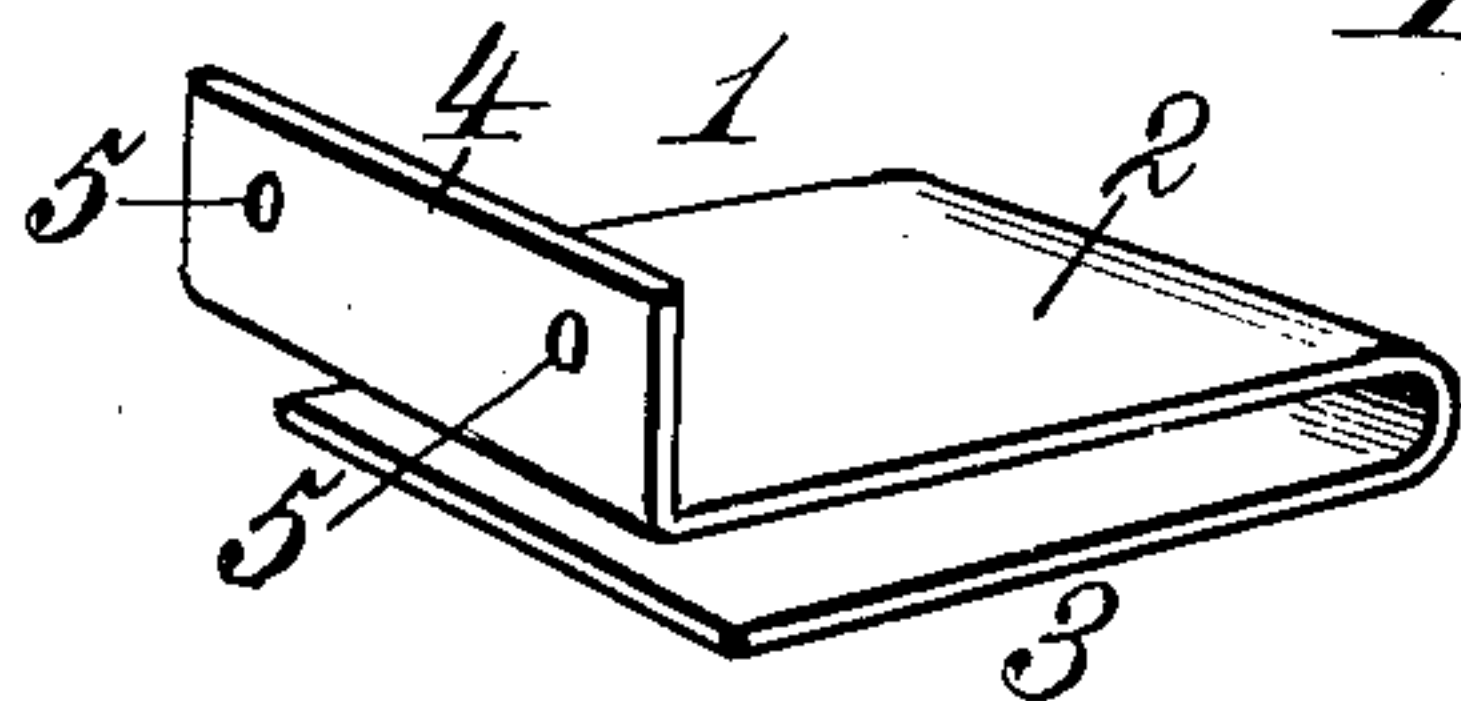


Fig. 2.

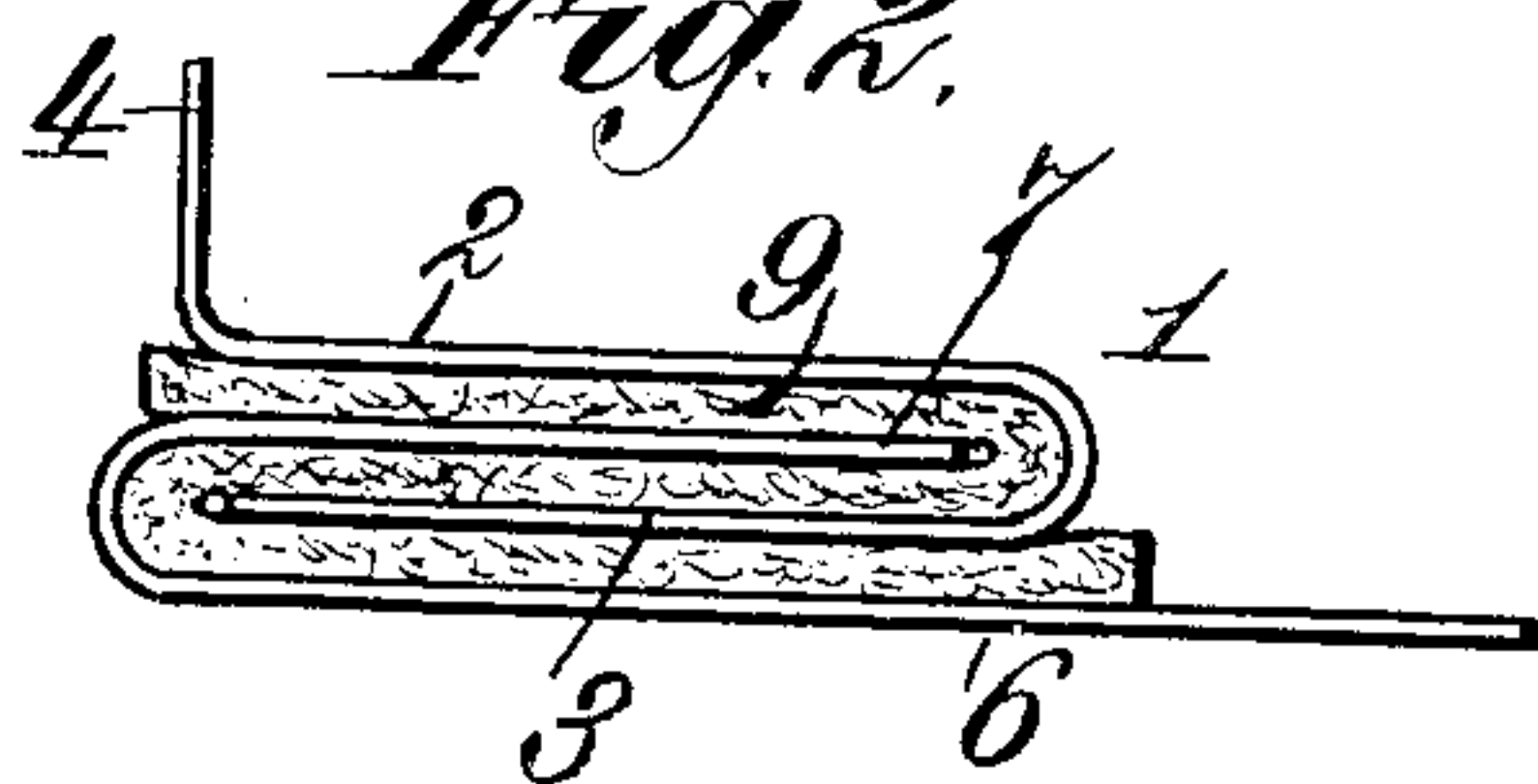


Fig. 4.

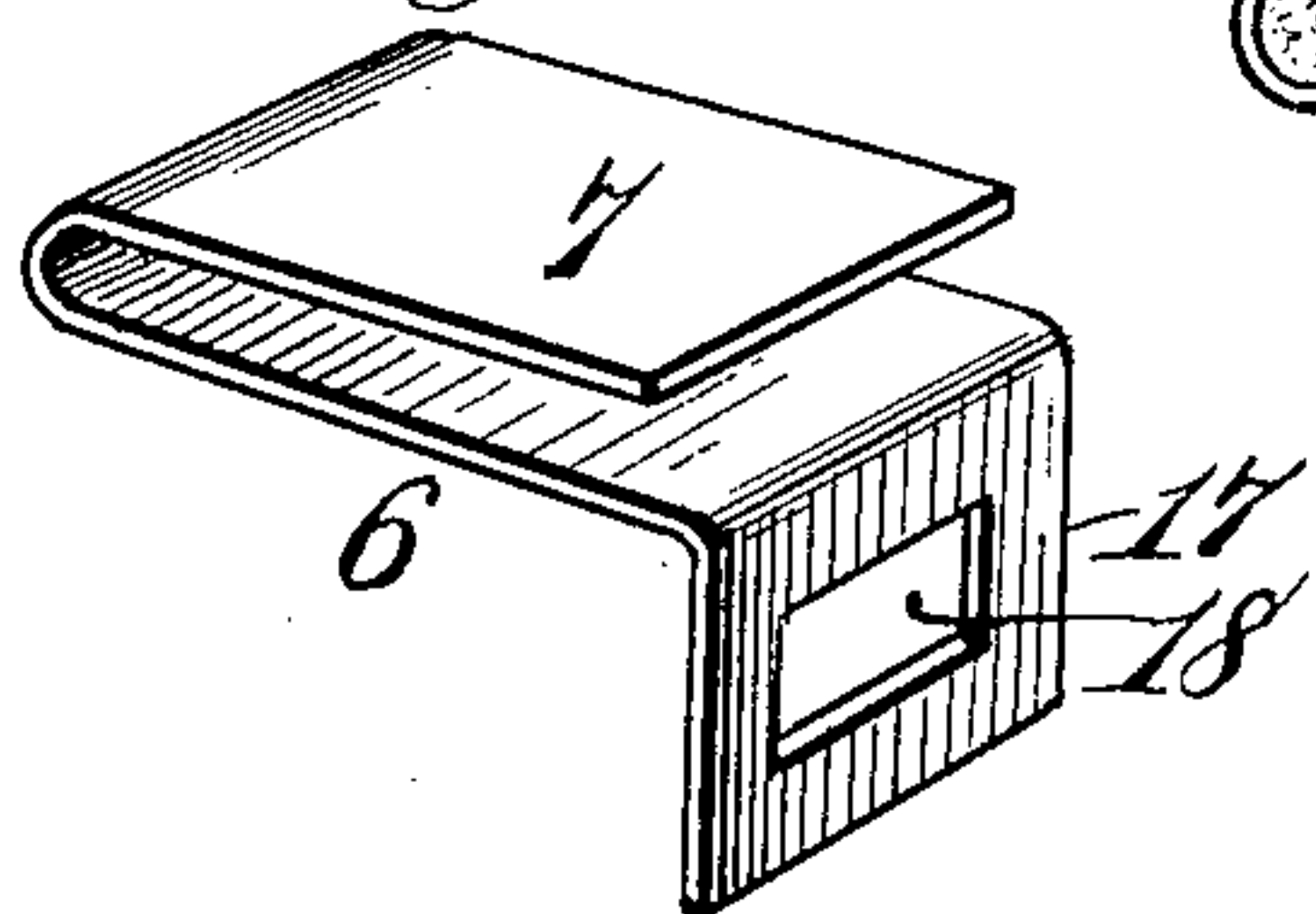
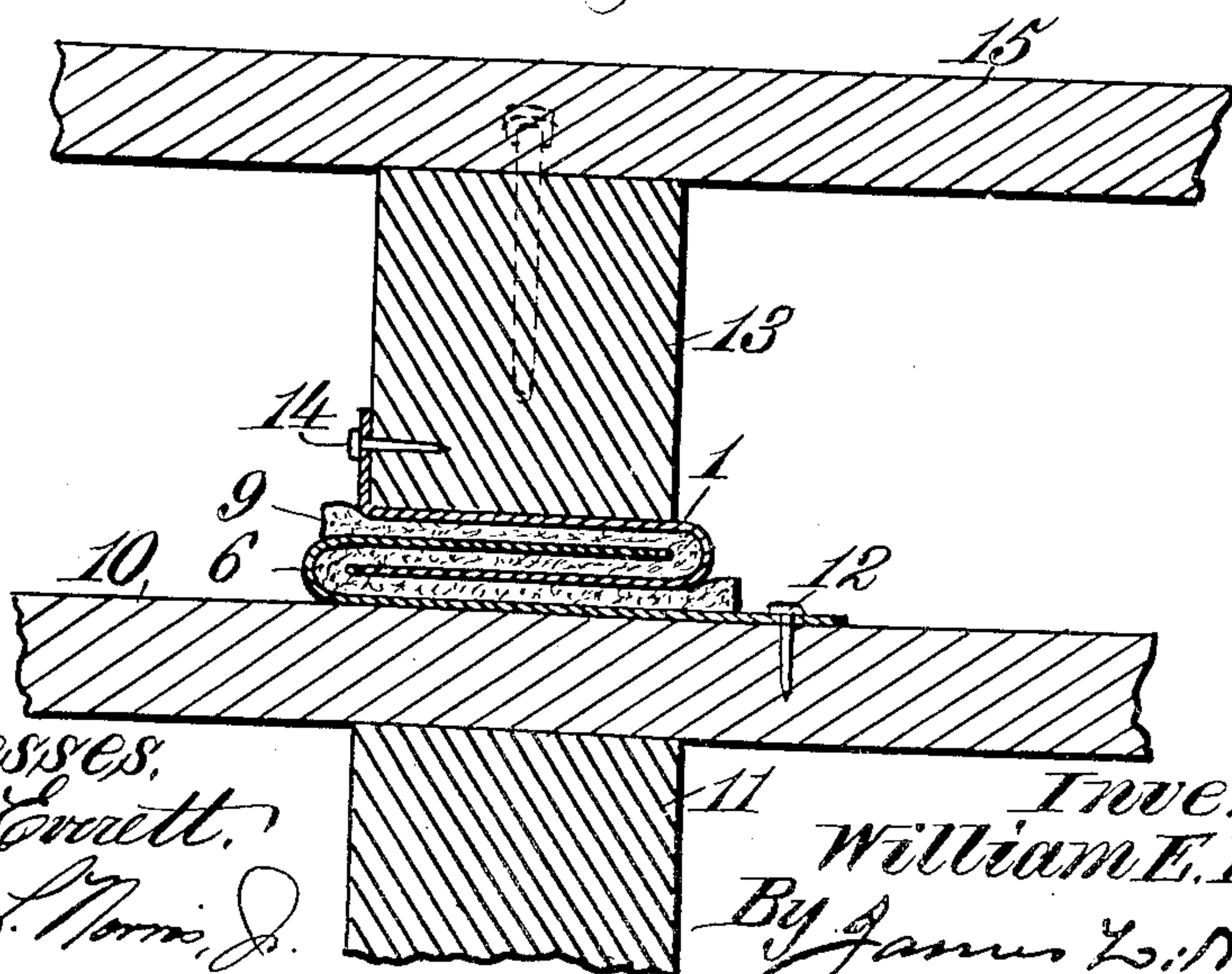


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM E. FORSHEE, OF PLEASANTRIDGE, OHIO.

SOUND-DEADENING DEVICE.

SPECIFICATION forming part of Letters Patent No. 780,332, dated January 17, 1905.

Application filed March 31, 1904. Serial No. 200,984.

To all whom it may concern:

Be it known that I, WILLIAM E. FORSHEE, a citizen of the United States, residing at the village of Pleasantridge, near Cincinnati, in the county of Hamilton and State of Ohio, have invented new and useful Improvements in Sound-Deadening Devices, of which the following is a specification.

This invention relates to improvements in means for deadening sound in the construction of buildings, and has for its object to provide a novel device to be inserted at suitable intervals between the parts of a double floor or under interior partition-walls, or both, whereby to prevent direct contact of one floor or a part thereof with the floor or joists and ceiling construction beneath.

Heretofore in the construction of buildings it has been customary to lay a rough matched flooring on the wooden joists and nail the same to said joists. Over this is placed a layer of ordinary wool felt, mineral-wool blocks, deadening-quilts of different compositions, or common plaster, and over such material intended to deaden sound the matched finishing floor is laid and nailed directly through the insulating or sound-deadening material to the rough floor below. It is thereby intended to provide a floor of three members; but the result is the production of a floor of practically only one member, as the two floors are drawn so tightly together by the nails that even though the material between the floors may in itself have a tendency to deaden sound when the floors have been nailed together in the manner described it is found that the material will have very little effect in this regard. Whether or not the nails themselves actually act as conductors of sound or whether the fact that the two floors are drawn so tightly together as to make practically one floor, and thereby produce a sound-carrying body, has not been definitely determined; but the fact remains that floors constructed by the above method are not looked upon by architects as solving the problem of deadening sound between floors in the construction of buildings. The rough or under

floor may even be omitted by using the device directly on top of joists instead of to the rough or under floor, thus insulating the sound from joists and ceiling construction below the floor. It is also designed for use under interior partition-walls, as well as to carry furring-strips in plastered partition-walls which plastering-lath, expanded metal lath, or other plaster-holding material may be attached, thus obviating the present practice of using a double line of studding to carry the plastered walls on each side of the partition. In case the device were used for carrying plastered walls I would use a corrugated pattern of metal for the two metal members of the device, thus giving strength to same.

It is therefore the purpose of my invention to provide a means whereby the finished floorings, interior partitions, or plastering on walls may be maintained permanently out of direct contact or from being intimately connected, by means of metal—such as nails, bolts, or clamps—to the rough floor, the joists, or ceiling construction below the floor or to the studding carrying plastering in plastered walls.

In order that the invention may be clearly understood, I have illustrated the same in the accompanying drawings, in which—

Figure 1 indicates in separated relation the two members comprising one of my sound-deadening devices. Fig. 2 indicates these two members in their assembled relation and having the parts thereof permanently separated and insulated from each other by means of a piece of felt or other similar fibrous material folded upon itself in a manner to extend between the various parts of the device. Fig. 3 is a sectional view through a portion of a double flooring, illustrating the method of application; and Fig. 4 is a perspective view of one of the members of the device, illustrating a modification.

Referring now to the drawings, 1 indicates one member of the sound-deadening device, which comprises a flat strip of metal 2, bent upon itself to provide a parallel arm 3 and having its end portion turned outward at right

angles to itself, as indicated at 4. The portion 4 is provided with one, two, or more holes 5, through which nails may be driven in securing the device in position between the floors. 6 indicates the other member of the device, which comprises also a flat strip of metal bent upon itself to afford a parallel arm member 7, which is of less length than the member 6, the end portion of the part 6 projecting beyond the member 7 being provided with one, two, or more holes 8, through which nails may be driven to secure the device in position. The parts 1 and 6 are preferably made from galvanized iron, for the reason that such material is but little affected by moisture; but of course any other suitable metal or material may be employed. While I prefer to use in the application of the invention illustrated in the drawings a plain smooth-surfaced material for the parts of the device, I wish it understood that I may employ corrugated, crimped, perforated, or indented material, as the circumstances of the particular application may indicate to be desirable.

9 indicates a sheet of fibrous material, such as wool felt, hair felt, asbestos felt, or other sound-retarding materials. Preferably I employ asbestos felt, for the reason that it is non-decaying and practically indestructible. In assembling the parts of the device together the sheet of material 9 is doubled upon itself and inserted in the space between, say, the two members 2 and 3, a portion of the sheet projecting beyond the device 1, which projecting portion is intended to be doubled in like manner and inserted in the space between the members 6 and 7. The two parts 1 and 6 of the device are assembled by inserting the member 7 between the two layers of material 9 in the space between the members 2 and 3 and simultaneously inserting the member 3 between the members 6 and 7. The fibrous material 9 when in position as just described will have the shape of the letter S and will at all points separate the two metallic members of the device from contact with each other, as will be clearly seen from Fig. 2.

Referring to Fig. 3, 10 indicates the first or rough floor, which is nailed to the joist 11. Along this flooring at intervals of about twelve inches apart I place a number of my sound-deadening devices, alternating them so that they will first be nailed to one side of the wooden sleeper and then to the other to prevent the members of the device from being pulled apart and secure the same to the flooring 10 by driving nails into the flooring 10 through the openings 8 of the member 6, as indicated at 12. I now place a sleeper 13 in position to rest upon the upper sides of the members 2 of the various devices, in which position the projecting portion 4 of each device will bear against the outer side of the

sleeper. Each device is then nailed to the sleeper by means of driving nails through the apertures 5 into the sleeper, as indicated at 14. A series of these sleepers are in this manner placed over the entire flooring 10 at intervals of twelve or eighteen inches apart, and to these sleepers the upper or finishing flooring 15 is nailed, the nails 16 extending into the sleepers 13, but not through the same, as shown. By this construction it will be seen that there is no direct contact between the flooring 10 and the flooring 15, nor does any metal body directly connect these two floorings, the nails 16 terminating, as stated, in the sleepers 13, and the asbestos felt 9 preventing any contact between the two metal parts of my sound-deadening device. It follows, therefore, that the ability of sound-vibrations to be transmitted from the flooring 15 to the flooring 10 or to the joists in case no under or rough floor be used will be reduced to the minimum by reason of the fact of the sound-deadening or insulating material 9 preventing direct contact of any part of the flooring 15 or the sleepers 13 with the flooring 10 or with the joists, if the flooring 10 be dispensed with. Furthermore, it is to be observed that I avoid nailing the sleepers 13 to the flooring 10 or to the joists, which has heretofore been done, the sleepers being retained in position solely by means of the nails 14 and 12, secured, respectively, in the opposite ends of the sound-deadening devices and entering the sleepers 13 and the flooring 10 or said joists, as the case may be. Thus in this way I further lessen the direct connection of the upper with the lower floor or with said joists and the ceiling construction below.

In Fig. 4 I have illustrated the construction employed for use in concrete floors. In this application the member 6 also has its end 17 bent at a right angle and provided with an enlarged aperture 18, round, square, or oval. This bent end is inserted in the soft concrete, which passes through the opening 18, and when the concrete hardens the device will be locked in place ready to receive the wooden sleeper.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A sound-deadening device of the character described comprising two pieces of material bent upon themselves to provide parallel reentrant members and sound-deadening material inserted between the adjacent members of the two pieces.

2. A sound-deadening device of the character described comprising two pieces bent upon themselves to provide parallel reentrant members and provided, respectively, with straight and right-angular projecting portions, and a sound-deadening material inserted between the adjacent members of the two pieces.

3. A sound-deadening device of the charac-

ter described comprising two metallic strips
of material bent upon themselves to afford par-
allel reëntrant members and provided respec-
tively with a straight and a right-angular pro-
5 jecting portion, and a convoluted strip of
fibrous material inserted between the adjacent
parts of the two pieces and preventing at all
points contact of one with the other.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit- 10
nesses.

WILLIAM E. FORSHEE.

Witnesses:

ALEX. B. HAY,
ED H. WILLIAMS.