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J. H. DELANEY

1,660,745

ACOUSTIC BUILDING MATERIAL

Filed June 30, 1926

Fig. 1

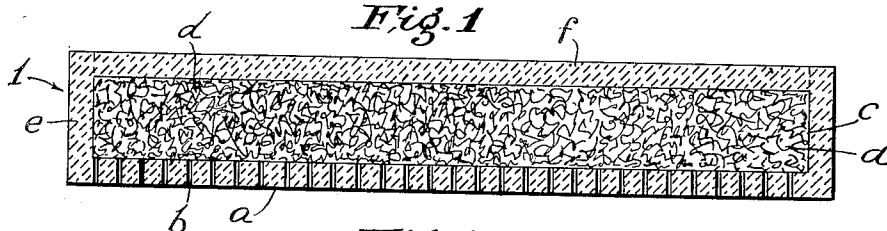


Fig. 2

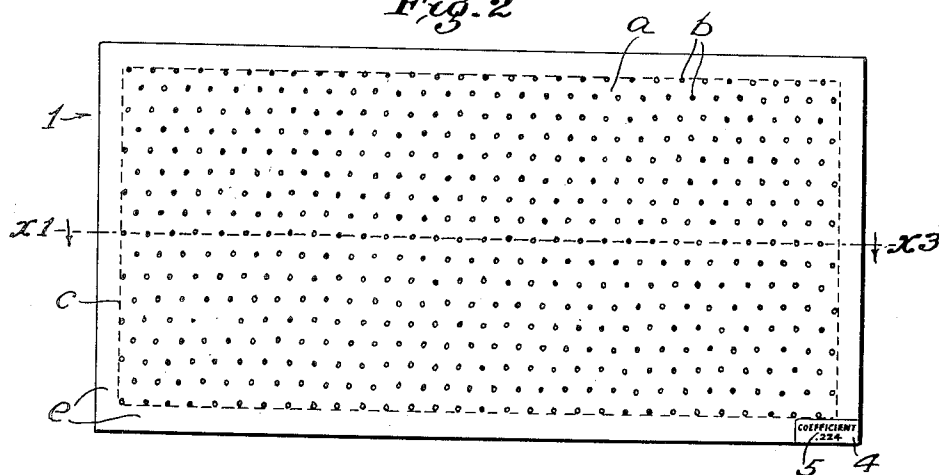
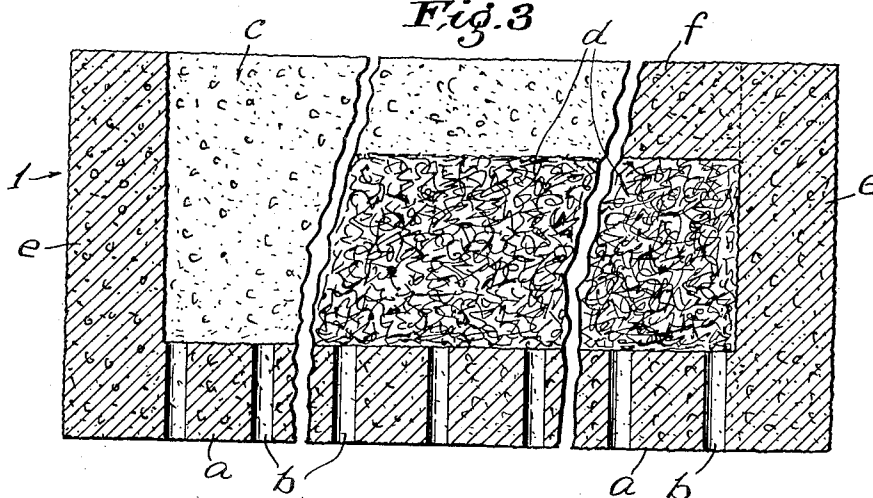


Fig. 3



Witness
C. C. Holly

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UNITED STATES PATENT OFFICE.

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ACOUSTIC BUILDING MATERIAL.

Application filed June 30, 1926. Serial No. 119,588.

This invention relates to the use of building blocks for surfacing the interiors of auditoriums, halls, or any rooms in which it is desired to enhance the acoustical properties by providing walls of a sound absorbing and non-reverberating quality.

In auditoriums at broadcasting stations or any enclosure in which music or speaking is desired to be heard at 100% distinctness, it has been the custom to drape or cover the walls with hangings of felt; velour or like sound absorbing material with a view to overcoming the tendency toward reverberation or echoing, and the object of this invention is to provide in the construction of such auditoriums or rooms an interior surface in the form of blocks or slabs, which may be laid in similar manner to a brick wall, and which will perform every function of the felt or velour hangings before mentioned and at the same time will insulate such rooms from exterior sounds.

An object of the invention is to provide means whereby the builder, workman or architect, may be able to correct poor acoustics of an enclosure by obtaining stock materials suitable for the particular problem in hand.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

The accompanying drawing illustrates the invention in one of the forms in which it may be embodied.

Figure 1 is a longitudinal section on line x^1-x^3 , Fig. 2, of an acoustical block constructed in accordance with this invention.

Fig. 2 is a face view of the exposed or sound absorbing surface of the block shown in Fig. 1.

Fig. 3 is a fragmental section on a larger scale taken on line x^1-x^3 , of Fig. 2, showing three stages of development; the fragment at the left showing the hollow block omitting the filling; the fragment at the middle, showing the filling in place, and the portion at the right showing a fragment of the completed block in section on said line x^1-x^3 .

The acoustic blocks may be of various shapes and sizes and in the form shown in the drawings, comprises a shell 1, which may be made of any suitable material or materials such for instance as plaster, cement, fibrous material, wood, terra cotta or in some instances, metal. The form made of plaster or the like is shown in the drawings and comprises a perforated facing a , the perforations b of which may be of any desired size and shape, and extend from the outside of the block to the inside cavity c , which is filled with sound absorbing material d which may be asbestos wool, loose pumice, hair, cork or substances having like sound absorbing properties.

In practical manufacture an open sided box formed of the facing a and four cavity surrounding walls e , is prepared in any suitable way as by moulding, and the absorbing filling d is then placed in the box loosely, with sufficient compactness to prevent it from settling by gravity and leaving an unoccupied space.

Then the backing f is applied and may be applied in the form of a plastic filling entirely closing the open side of the box, thus completing a block having a perforated facing, a sound absorbing filling, surrounding walls, and a closed back.

The material for forming the shell is preferably of a strong porous nature and the perforations b in the facing give such facing a high sound absorbing value and may yet be made to receive any ornamentation or to be made smooth and yet attractive as a finish.

When the block 1 has been produced in the manner stated and the shell has become set, its sound absorbing character is determined by laboratory tests and a tag 4 may be applied to the shell at any convenient place, and is indexed with markings 5 showing the percentage of sound absorbency.

I claim:—

1. An acoustic block comprising a shell having a perforated facing, and a filling of sound absorbing substance.

2. An acoustic block comprising a porous shell, and a sound absorbing filling.

3. An acoustic block comprising a shell having a perforated facing and an open side; a filling of sound absorbing substance disposed in said shell and the open side of
5 said block being closed by plastic material.
4. An acoustic block comprising a porous shell having a perforated side and an open side; a sound absorbing substance disposed in said shell and a plastic filling entirely closing the open side of the block. 10

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 24th day of June, 1926.

JOHN HENRY DELANEY.