L. H. DE FERNELMONT.

MOLD FOR MAKING BUILDING TILE.

APPLICATION FILED MAY 8, 1918.

1,342,208.

Patented June 1, 1920.

Fig. 1.

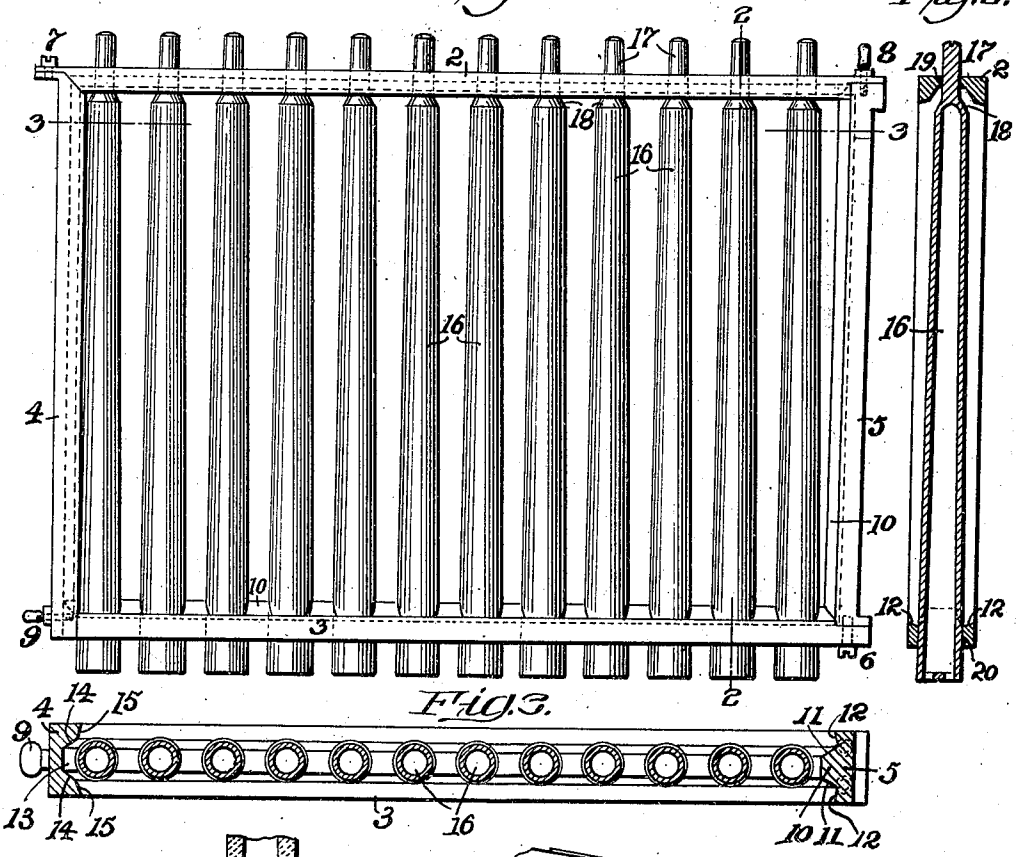


Fig. 2.

Fig. 3.

Fig. 5.

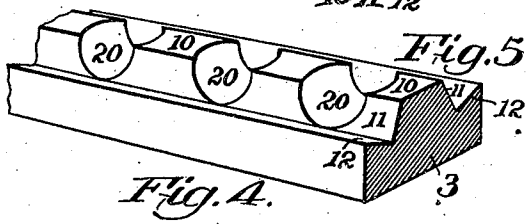


Fig. 6.

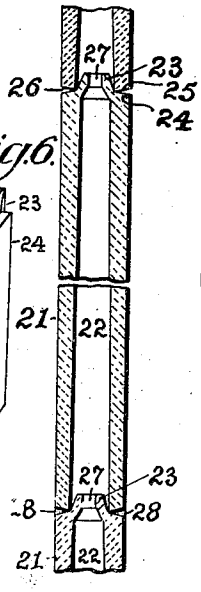


Fig. 7.

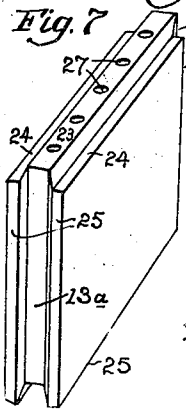
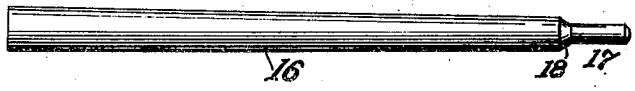


Fig. 4.



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MOLD FOR MAKING BUILDING-TILE.

1,342,208. Specification of Letters Patent. Patented June 1, 1920.

Application filed May 8, 1918. Serial No. 233,218.

To all whom it may concern:

Be it known that I, LEONARD H. DE FERNELMONT, citizen of the United States, and resident of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Molds for Making Building-Tile, of which the following is a specification.

The object of my invention is to provide a special construction of mold for molding hollow building tiles, more especially for the construction of partitions or walls for interior work, the form of the tile being such that it shall provide continuous ventilating apertures extending in parallel relation through the finished wall, and said apertures so formed as to break up the sound waves in such manner that the wall will become substantially sound-proof against the transmission of articulate speech, the said wall requiring only a relatively small thickness and thereby resulting in economy in material.

My invention has for a further object the construction of the mold of parts detachably assembled which enables the cores, which mold the hollow passages through the tile, to be withdrawn freely from the plaster material when set, and thereafter the separation of the rectangular frame on diagonally opposite corners to release the molded plaster.

My invention consists of a rectangular frame formed of two right-angled frames detachably connected on diagonally opposite corners, one of said right-angled frames formed with a deep groove along its inner edges, and the other of said right-angled frames formed with ribs along its inner edges, said rectangular frame combined with a plurality of parallel cores extending through apertures formed in opposed grooved and ribbed walls of the two right-angled frames, said cores adapted to be withdrawn longitudinally without dismantling the rectangular frame.

My invention further consists in having the aforesaid cores tapered and at the smaller end said taper abruptly reduced and continued in an extended portion of greatly less diameter, said reduced portion arranged adjacent to the grooved inner edge of the rectangular frame.

My invention also comprehends details of construction, which, together with the features above specified, are more fully described hereinafter and particularly pointed out in the claims.

My invention will be better understood by references to the drawings, in which:— Figure 1 is a plan view of the mold in completed form ready for use; Fig. 2, is a section thereof taken on line 2—2; Fig. 3 is a section thereof taken on line 3—3; Fig. 4 is an elevation of one of the cores removed; Fig. 5 is a perspective view of a portion of one of the right-angled frames which make up the rectangular frame; Fig. 6 is a vertical section through a portion of a wall composed of the hollow tiles molded by use of my improved mold, and Fig. 7 is a perspective view of one of the tiles which may be molded by my improved molding apparatus.

2 and 3 are opposite bars or sides of the mold, bar 2 being grooved as at 13 and bar 3 being ribbed as at 10. Similarly, 4 and 5 are opposite bars or sides of the mold and are respectively grooved at 13 and ribbed at 10 as in the case of bars 2 and 3. The two grooved bars 2 and 4 are secured together at 7 to form a right-angled frame forming one-half of the mold frame proper; and similarly, the two ribbed bars 3 and 5 are secured together at 6 to form a right-angled frame forming the other half of the mold frame proper. These two right-angled frames are then placed in contact to form a rectangular frame and the diagonally arranged corners are detachably clamped by screws 8 and 9, respectively. The free ends of the two rectangular frames are suitably shaped so that they snugly fit in pairs and when secured together by the screws 8 and 9, the frame is quite rigid.

The general cross section of bars 2 and 4 are the same and similarly the general cross section of bars 3 and 5 are the same; and the rib portions 10 are of a shape which would fit into the grooves 13 so that when they act to mold the plaster the abutting edges of adjacent tiles interengage as indicated in Fig. 6. The side walls 11 of the ribs 10 are oppositely inclined and similarly the side walls 14 of the grooves 13 are oppositely inclined and the flare or taper in the two cases is reversed so as to permit easy withdrawal of the mold parts from the plaster, as will be readily understood by reference to Fig. 3. The thickness of the bars 2, 3, 4 and 5 is uniform so as to provide an even thickness to the molded tile and the

outside faces are smooth so as to lie flat upon the mold table or board and provide an upper guide surface for guiding the wiping tool in the act of molding the tile.

The opposite bars 2 and 3 are respectively provided with holes 19 and 20 for receiving the cores 16 which are employed to mold the parallel apertures 22 (Fig. 6) through the tile 21 formed by use of the mold. These cores 16 are tapered and made hollow for lightness, and at the smaller end of the core it is shouldered as at 18 and provided beyond the shoulder with the slightly tapered extension 17 of relatively small diameter. It will be understood that the grooved wall of the bar 2 is formed with small tapered apertures 19, whereas the ribbed portion of the opposite bar 3 is provided with large tapered apertures 20. The cores fit through these apertures 19 and 20 very snugly, so as to make a clean molded tile. In the case of the large ends of the cores 16 they are preferably of a diameter which just equals the greatest width at the base of the rib 10, as will be understood by reference to Figs. 2, 3 and 5, while in the case of the small ends of the cores 17 thereof are considerably less in diameter than the width of the groove, so as to permit a continuous rib of plaster to be molded as shown in Fig. 7; and furthermore, to provide shouldered apertures 27 in the tile to break up the sound vibrations, as more fully described hereinafter.

An important feature in the shape of the bars 2, 3, 4 and 5, resides in the inclined side flanges 12, which in the assembled mold, provide undercut portions adapted to produce beveled shoulders 24 and 25 in the tile itself (Figs. 6 and 7). These beveled shoulders 24 and 25 in adjacent tiles, when assembled, provide V shaped channels, which are subsequently filled with plaster as at 28, Fig. 6, to form a smooth continuous wall. The tapered ribs 23 of one tile snugly fit the tapered or flaring groove 13^a (Figs. 6 and 7) in the adjacent tile, so that the assembled tiles constituting the wall are firmly positioned and interlocked by reason of the shapes of the grooves and ribs formed by the mold.

It will be observed that while the two right-angled frames of the mold are held together by the clamping screws 8 and 9, the tapered cores 16 may be withdrawn from the molded plaster, the rectangular mold frame holding the plaster against distortion or cracking during this operation. If the cores should bind they may be loosened by slight pressure on the ends 17, or by slight rotation and pulling on the large end. The cores may be slightly greased if so desired to facilitate their removal, but being tapered from one end to the other, they may be readily withdrawn, once they are started. After the withdrawal of the cores and sufficient setting or hardening of the plaster, the clamping screws 8 and 9 may be withdrawn and the right-angled frames released and separated from the edges of the molded tile. These frames being of right-angled construction are each in effect V shaped in their contact with the bounding edges of the tile and hence readily removable without danger of injuring the plaster. It will be noted that every part of the mold which contacts with the plaster is tapered or beveled so as to be freely removable and hence a perfect molded tile is possible. The fact that cores are independently removable from the rectangular frame is most important, and this is further enhanced by reason of the fact that the several cores are also independently removable, all of which facilitates the liberation of the molded tile and hence reduces the danger of breakage thereof.

As before stated, the shape of the tile is such that it is provided with a plurality of parallel apertures 22, choked at one end by the shouldered portions formed in the rib 23 and through which the apertures are continued in small holes 27. The advantage of this resides in providing ventilating apertures which provide dryness and at the same time so shaping the apertures that they are bad conductors of sound by reason of the interrupted continuity of the diameter of the apertures or tubular passages; the result of which insures an excellent light and dry wall and effective non-conductor of sound from one room to the next. Furthermore, the irregular shapes of the tubular passages so break up the sound waves, that clear articulation cannot be transmitted through the wall and hence a wall of the character shown in Figs. 6 and 7 is desirable between apartments and offices.

I do not restrict myself to any particular character of plaster material from which to mold the tiles, as any suitable material heretofore in use may be employed, but the improved tile shall have its edges partly grooved and partly ribbed with flaring or inclined shoulders at each side of the grooves and ribs, and further provided with a plurality of parallel tapered apertures having shouldered and contracted passages at one end where they extend into one of the ribbed edges. In this application I make no claim to the tile as an article of manufacture nor to the wall composed of such tiles, nor to the method of forming the wall with the said tiles, as these form subject matter of a divisional application Serial Number 293,599, filed April 30th, 1919.

It will now be apparent that I have devised a novel and useful construction which embodies the features of advantage enumerated as desirable, and while I have in the present instance shown and described the

preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that I do not restrict myself to the details, as the same are susceptible of modification in various particulars without departing from the spirit or scope of the invention.

Having now described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A mold for molding wall tiles, comprising two right-angled frames one of which has its inner face grooved and the other of which has its inner face ribbed and of the same general cross section as the grooves, and the bounding flanges on each side of the ribs and grooves made flaring in opposite directions, the flare of said flanges at each side of the mold being such that if continued they would intersect at substantially a common point, means for detachably clamping the two frames together to form a rectangular mold frame separable into two parts at diagonally opposite corners, and a plurality of tapered cores extending entirely across the mold frame, the large ends of the cores seated in the ribs of one of the right-angled frames and the small ends of the cores seated in the bottom of the groove of the other right-angled frame, said cores removable longitudinally without separating the mold frame.

2. A mold for molding wall tiles, comprising two right-angled frames one of which has its inner face grooved and the other of which has its inner face ribbed and of the same general cross section as the grooves, and the bounding flanges on each side of the ribs and grooves made flaring in opposite directions, the flare of said flanges at each side of the mold being such that if continued they would intersect at substantially a common point, means for detachably clamping the two frames together to form a rectangular mold frame separable into two parts at diagonally opposite corners, and a plurality of tapered cores extending entirely across the mold frame, the large ends of the cores seated in and extending through the ribs and bar of one of the right-angled frames and the small ends of the cores provided with shoulders and extensions of still smaller diameter seated in and extending through the bottom of the groove and bar of the other right-angled frame, said cores throughout their length being circular in cross section and adapted to be rotatable upon their axes and removable longitudinally without separating the mold frame.

3. A mold comprising a rectangular frame open at its top and bottom and formed of two right-angled frames detachably connected on diagonally opposite corners, one of said right-angled frames formed with a deep groove along its inner edges and the other of said right-angled frames formed with a rib along its inner edges, combined with a plurality of parallel tapered cores having straight axes and extending through apertures formed in opposed grooved and ribbed walls of the two right-angled frames, said cores throughout their length being circular in cross section and adapted to be rotated while being withdrawn longitudinally without dismantling the rectangular frame.

4. A mold comprising a rectangular frame open at its sides and detachably connected on its corners for easy separation and removal from the molded object in two right angled parts, one of said parts having bars formed with a deep groove with flaring walls terminating in flange portions also tapered with greater flare and the other of said parts having bars formed with a rib with inclined walls and flange portions also inclined to flare in opposite directions, combined with a plurality of tapered cores having their large ends extending through the rib of one of the mold parts and its small end extending through the bar having the groove of the other mold part, the said cores removable in the direction of their length without separating the two parts of the rectangular mold frame.

5. A removable core for a mold consisting of a long straight body of tapered form having solid smooth walls and also having its end of smaller diameter abruptly reduced in diameter by a bluntly tapered cone-like portion and continued in a short extension of relatively small diameter beyond the cone-like portion, and in which the core throughout its length is circular in cross section so that it may be rotated within the molded mass when being withdrawn.

In testimony of which invention, I hereunto set my hand.

LEONARD H. DE FERNELMONT.