Aug. 23, 1927. 1,640,065

J. B. BLAW

INTERIOR WALL

Filed Sept. 24, 1926 2 Sheets-Sheet 1

Fig.1.

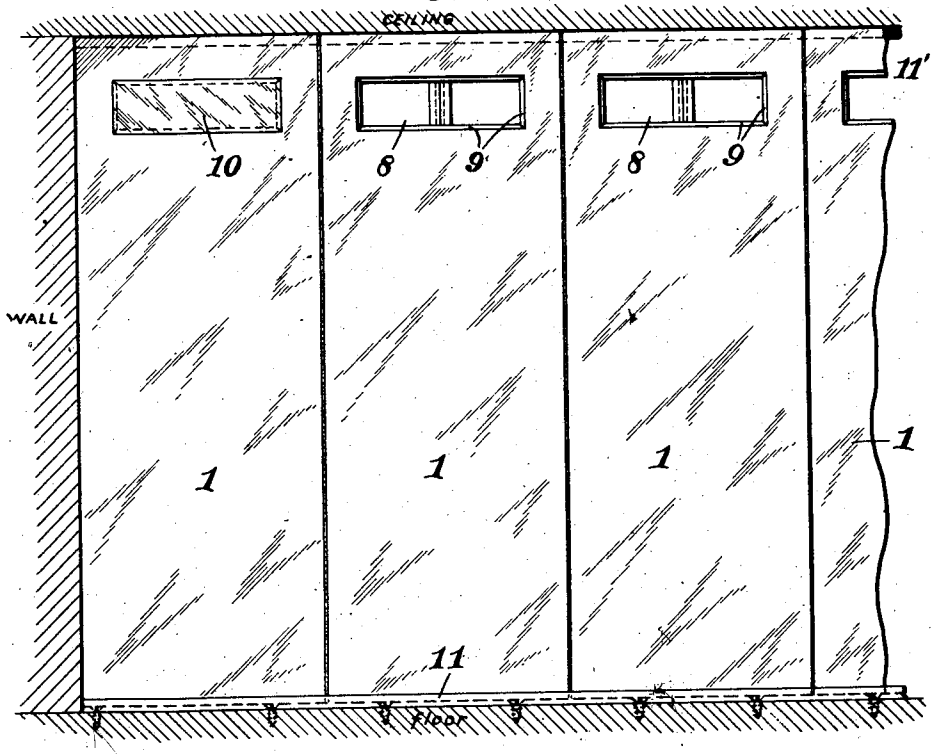


Fig.2.

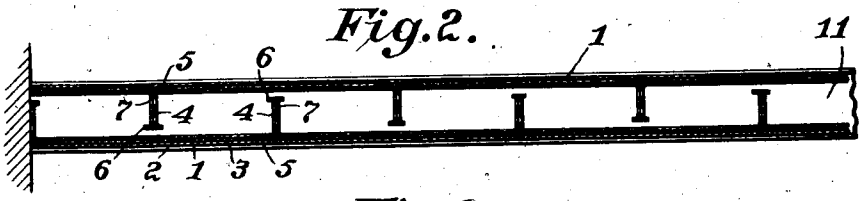
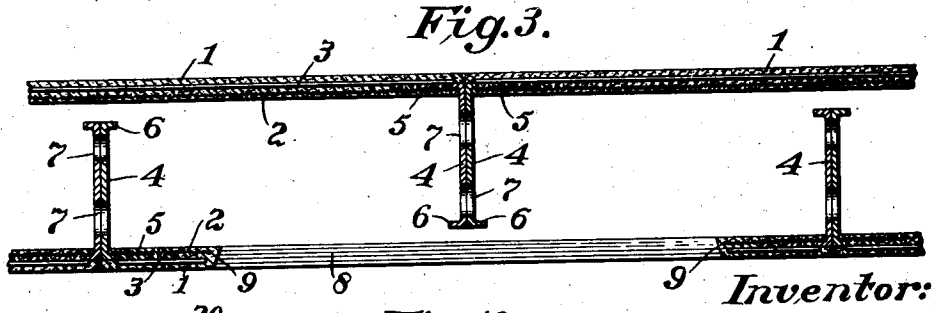


Fig.3.



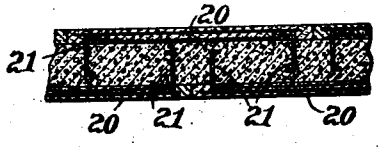


Fig.10.

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Fig.4.

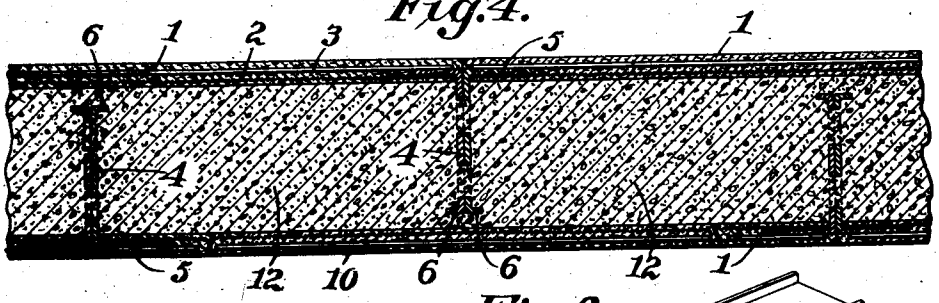


Fig.5.

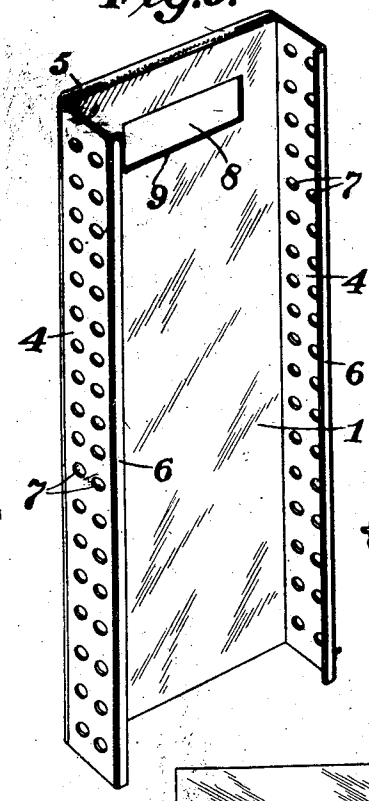


Fig.6.

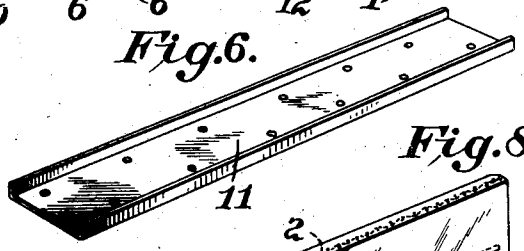


Fig.6a.

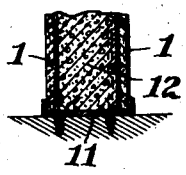


Fig.7.

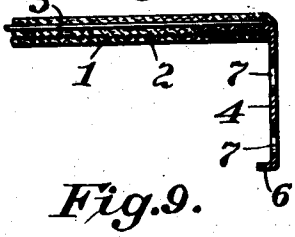


Fig.8.

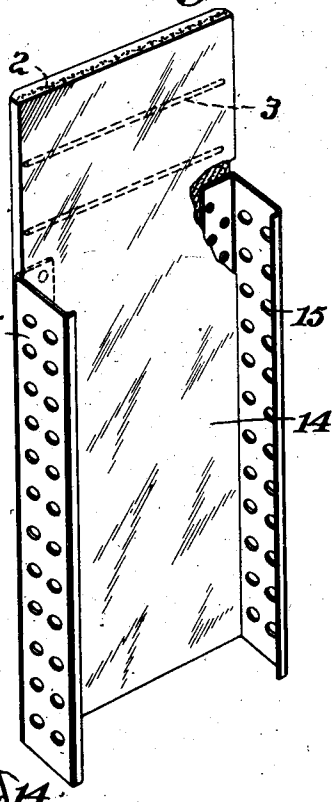
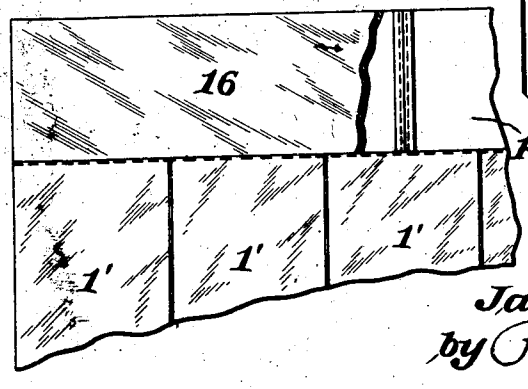


Fig.9.



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Patented Aug. 23, 1927. 1,640,065

UNITED STATES PATENT OFFICE.

JACOB B. BLAW, OF ATLANTIC CITY, NEW JERSEY; SADIE H. BLAW EXECUTRIX OF SAID JACOB B. BLAW, DECEASED.

INTERIOR WALL.

Application filed September 24, 1926. Serial No. 137,460.

My invention relates to new and useful improvements in walls and more particularly to an interior partition wall, and has for an object to provide a wall formed of a plurality of plaster sheets or slabs that may be bodily placed in position after which a small amount of plaster is placed along the line of jointure, to thus present a finished outer surface and also doing away with the use of laths and the ordinary process of applying the plaster to the laths.

Still another object of the invention is to provide a partition wall that is made up of a requisite number of slabs or sheets, each of said sheets having cast therein, along their opposite edges, a metal angle, and the sheets or slabs arranged in two series and set back to back, so that when the separate slabs are placed in position a reinforcing beam construction is present; the angles being preferably arranged so that an I beam construction is formed between the series of slabs.

Still another object of the invention is to provide a wall formed of plaster and made up of a plurality of plaster slabs with metal angles cast along the opposite edges of the slab, so that when the slabs are assembled in series and set back to back, the metal reinforcing beam construction is present and extends between the front and back walls of the plaster slabs. After the slabs are arranged in their proper positions concrete or other mastic material may be poured between the slabs and in the chambers formed by the beam construction, to thus unite the metal beam and to also fill up the spaces between the front and back wall, or between the alternately arranged slabs, so that a solid, sound-proof and fireproof monolith wall of great rigidity and strength is obtained.

Still another object of the invention is to provide a wall formed of a plurality of plaster slabs having certain angles cast along their opposite edges and having certain tying material or strengthening material cast within the slabs so that when the slabs are arranged in their proper position, the outer surface is a finished surface, with the exception of the touching up of the adjacent edges, similar to a plaster white coat, but doing away with the steps of roughening on a second coating. After the slabs are in position a concrete filler may be poured or the wall may be "back filled" so that not only do the slabs in reality form the rigid outer surfaces of the wall, but they act as permanent forms or molds for the concrete filler.

Another object of the invention is to provide the slabs of certain length, some of which may have windows, or in other words an opening formed therein, so that the concrete may be poured within the opening after the slabs are in position, after which these openings may be closed by a piece of plaster of proper size, to thus complete the outer surface of the wall.

Still another object of the invention is to somewhat modify the construction of the plaster slab in that the slabs used for the rear of the wall may have their angles cut at a distance from the top of the slabs and the slabs to be used for the front of the wall are to be shorter in length than the slabs used in the rear of the wall, so that the concrete may be poured in from the front and after which a large horizontal plaster slab may be placed across the shorter slabs to thus finish the outer surface of the wall.

With these and other objects in view, the invention consists in certain new and novel arrangements and combination of parts as will be hereinafter more fully described and pointed out in the claims.

Referring now to the drawings showing a preferred and modified form of the invention;

Fig. 1 is a side elevation showing a number of slabs in position forming an interior partition.

Fig. 2 is a horizontal sectional view showing how the slabs are arranged back to back to form the partition wall.

Fig. 3 is an enlarged fragmentary sectional view showing three slabs arranged back to back and the arrangement of the angles or ribs that are cast in the edges of the slab.

Fig. 4 is a similar view and showing the concrete filling the spaces between the ribs.

Fig. 5 is a perspective of one of the slabs.

Fig. 6 is a perspective of the channel in which the partition slabs may be mounted.

Fig. 6[A] is a detail section of the same, showing the slabs in place and filled with concrete.

Fig. 7 is a sectional view of one of the slabs showing a binding of burlap within

the slab and also showing reinforcing rods cast within the slab of plaster.

Fig. 8 shows a slightly modified form of slab,

Fig. 9 shows a plurality of modified slabs in position and the manner of applying the horizontal slab when the wall has been filled, and

Fig. 10 shows a slightly modified form wherein the angles are placed in the slabs a slight distance from their edges.

Referring now more particularly to the several views, it will be understood that the invention contemplates the forming or pre-casting of a plurality of slabs of plaster of certain size which will be made up either in standard lengths or will be made to fit the required distances between the ceilings and floors of buildings in which the walls are to be used. In Fig. 1 I have shown a plurality of plaster slabs 1 which will have the smooth white outer surface similar to the finished plaster wall in ordinary use. When these slabs or sheets are cast there will be present a burlap sheet 2 extending preferably throughout the length of each slab or sheet to act as a binder which will add greatly to the strength of the slab. Also for the purpose of internally reinforcing this slab, small metal or wood reinforcements 3 may be also cast within the slabs or sheets.

Of course, if it is desired to use a metal mesh or screening rather than burlap, this may be done and comes within the purview of scope of the invention.

One of the principal objects of the invention is to provide metal angles 4 to be cast within each slab along its vertical edge (considering the slab in its set position), which angles will extend the entre length or height of the slab and have their one arm 5 tightly embedded within the slab while their other arm is slightly less than the desired thickness of the wall and extends at right angles to the slab and is then provided with the small flange 6 at its free edge. These angles may be of, say twenty gauge metal or may be lighter or heavier if desired, and their entire surfaces are preferably perforated as at 7, so that the arm of the angle that is cast within the plaster slab will allow the plaster to set within the perforations to thereby more tightly hold the angle in position, while the perforations in the outer leg of each angle will allow the concrete, to be hereafter mentioned, to also seal the perforations and tie or bind two adjacent legs of adjacent angles together as will be afterwards mentioned.

The small flanges 7 do not have to be perforated as when the slabs are in position the concrete flows behind these flanges and between the adjacent slab, and these flanges and angles act as an anchor for the concrete and the slabs.

As may also be seen in the drawing, each slab is provided with the two angles, similar in all respects, but simply arranged in the opposite direction in the opposite edges of the slab. Some of these slabs may be provided with a window or opening 8, which are formed when the slabs are cast. These openings may have the beveled edges 9 so that a small sheet of plaster 10, with corresponding beveled edges may be placed within the opening and then sealed by a small amount of plaster placed around the edges.

A certain number of slabs may be provided with these openings so that the concrete, to be hereafter mentioned, may be poured from either side of the wall, if desired, or all of the slabs may have openings so that the concrete may be poured from both sides at once or, on the other hand, as shown in the modified form, later to be referred to, short and long slabs may be used in setting up the wall, and in that instance it will not be necessary to have a window in the middle of any of the slabs.

In setting up the partition wall there will be a series of the slabs 1 set adjacent to each other and these will be placed within a previously positioned channel iron 11 laid on the floor in the place where the wall is to be situated. These slabs will have their adjacent legs of the angles contacting with each other as may be seen in the enlarged view Fig. 3. After this series of slabs is placed in position, a second series of slabs will be oppositely arranged so that these two series extend back to back and in staggered relation so that the small flanges 6 of each series of slabs appear about centrally opposite a single slab.

I prefer to have these angles and their flanges from each series of slabs stop a short space from its opposite slab, rather than contact therewith, so that the concrete may pass around these small flanges 6 and between the slab adjacent these flanges so that the angles not only act as beams, but also act as anchors when the concrete hardens.

Therefore, as may be seen in Fig. 3, the adjacent legs of the adjacent angles 3, together with the small flanges 6, when the slabs are arranged in position back to back and in a staggered relation, form an I beam construction between the series of slabs to thus brace and strengthen the wall throughout its length and substitute for the ordinary wood studding in partitions. This does away with the ordinary studding and at the same time provides a substantial metal I beam construction throughout the entire length of the wall.

When the slabs are being set in position a small molding 11′ may be placed at their upper edges to properly align the slabs and, if desired, instead of using a channel along

the floor, a small wooden molding may be temporarily used to properly align the partition wall formed of the slabs.

After the slabs are properly arranged as heretofore explained, concrete 12 or any other mastic material may be poured in the spaces or chambers outlined by the slabs, and the metal beam construction, and as heretofore mentioned, will fill up these spaces between the slabs and run through the perforations in the adjacent legs of the angles, thereby tightly holding the angles in position and tightly holding the plaster slabs in position and forming a strong, solid, sound-proof and fire-proof wall of substantially monolithic construction.

After the concrete, or other mastic material, has properly set that has been poured in through the windows, the small plaster closures for the windows will be plastered in place and the adjacent edges of the slabs will be pointed up with plaster so that the wall will be smooth and flat and unbroken throughout its entire surface.

The invention also contemplates a modified form of construction in that two different length series of slabs 1′ are used, the shorter of the slabs being similar in all respects to the slab used in the preferred form only that it is designed to extend within a foot or two feet of the ceiling. The longer slabs 14 may be seen in Figs. 8 and 9 and employ the angles 15 having their one leg embedded respectively in the edges of the slab, but in this instance these angles will be shorter in length than the slabs proper. These slabs will otherwise be similar in all other respects to the other slabs and will have the burlap and other reinforcing means within them, but will not be provided with any windows or openings.

In a like manner these slabs will be arranged in two series back to back and one series staggered with relation to the other. After they are placed in position and the concrete poured within the chambers or pockets between the series of slabs, a large flat slab or sheet of plaster 16 will be placed across the top of a number of these shorter slabs and also resting on the upper edges of the angles of the longer slabs and will then be plastered into their final position to complete the wall.

In other words, two different length series of slabs are necessary in this construction, one having the plaster slab extending from the floor to the ceiling where as the co-operating slabs must stop, one or two feet from the ceiling to form a space for the pouring of the concrete, after which long horizontal sheets will be placed in position and joined with plaster to the vertical slabs to thus finish the wall.

In Fig. 10 I have shown a plurality of slabs 20, having the angles 21 cast therein, but in this instance the angles are placed a slight distance from the respective edges of the slabs so that when the slabs are placed in position concrete may flow between the adjacent but spaced angles.

Although I have not shown in the drawings, return walls from the main wall, it will be readily understood how the return wall would abut the main wall and after the concrete is poured within the spaces the adjacent corner edges would be touched up to complete the wall.

From the foregoing it will be seen that I have provided partition walls made up of a plurality of plaster slabs which act as a permanent form or mold for the concrete or other mastic material, and which also form, in reality, the finished outer plaster wall surfaces, thus materially reducing the labor over the ordinary type of making plaster walls. It also does away with studding and lathing and at the same time produces substantially a monolith structure reinforced with substantial metal I beams.

As heretofore mentioned, by having the angles less in width than the distance between the two series of staggered slabs, the concrete filler passes between the free ends of the angles and their adjacent slabs, and the angles there act not only as beams, but as anchors for the concrete.

If, for any reason, the plaster slabs were cut shorter than desired, a number of short angles will be furnished so that they may be placed adjacent the upper edges of the angles in the slab and will extend to the ceiling. These angles will be placed in the concrete while it is soft and a horizontal sheet or sheets will be then placed in position to complete the surfaces of the wall.

Furthermore, in the more Northern States it is impossible to put up plaster in the cold weather as a freezing of the plaster considerably damages the same, and in building construction it is necessary to either heat the rooms to be plastered, or wait for the warmer season. With my invention the slabs may be made or cast in a warm room and may be inserted in a cold building and will not suffer from the freezing temperature.

Furthermore, when the concrete is set the wall will be a strong and unitary structure and will not crack or part due to expansion or contraction, as is the case with the walls formed of plaster and attached to the laths.

Many slight changes might be made without departing from the spirit and scope of the invention.

Having thus described the same what I claim is new and desire to secure by Letters Patent is—

1. A relatively large sheet of plaster for forming finished surface interior walls, said sheet having metal angular members in its

opposite edges, the said members being perforated and the said perforations adapted to permit a filler to pass therein, said sheet having a non metallic binding means therein and also a plurality of metal members within the sheet to strengthen the relatively thin sheet of plaster.

2. An interior wall construction comprising a permanent form made up of a series of finished plaster sheets, each of said sheets having metal angular members set in its opposite edges and the members provided with perforations, a mastic material filling up the spaces between the angular members and extending through the adjacent perforations of the members, the form provided with openings for the reception of the mastic material and a closure for said openings.

3. An interior wall construction comprising a permanent mold formed of finished plaster sheets, each of said sheets having metal angular members cast therein and the angular member of one sheet adjacent the angular member of another sheet, each of said sheets having binding and reinforcing means therein to strengthen the sheets and openings formed in the sheet for the reception of a mastic material, a mastic material in the form and extending about said angular members and means for closing the receptive openings in the said sheets.

4. An interior wall comprising a plurality of relatively thin plaster sheets, each of said sheets having metal angular members in their opposite edges and provided with perforations the sheets arranged in two series set back to back and spaced from each other, the sheets of one series in staggered relation to the sheets of the other series, the free ends of the angular members being spaced from its respective adjacent sheet, the angular members forming a beam construction, a mastic material between the series of sheets and the angle members and extending about the angle members to form an anchor for the mastic material and the sheets and to make the series of sheets substantially a rigid structure.

5. An interior wall adapted to be formed of thin finished plaster sheets, said plaster sheets having binding means therein to add strength to the relatively thin sheets, the edges of each of the sheets provided with metal angular members to form a beam construction, the sheets provided with openings to receive a mastic material, a mastic material in the mold and tying the sheets and angular members, to form a rigid structure and closures for the openings in the mold.

In testimony whereof I affix my signature.

JACOB B. BLAW.