March 2, 1937. H. S. SMALLWOOD 2,072,386

WALL CONSTRUCTION

Filed Jan. 20, 1936

Fig. 1.

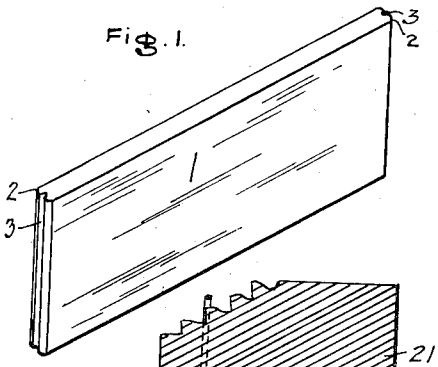
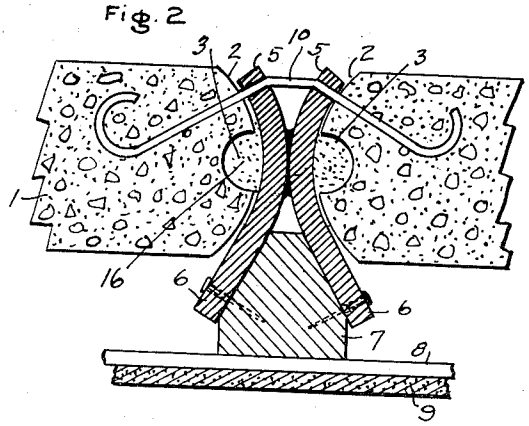


Fig. 2



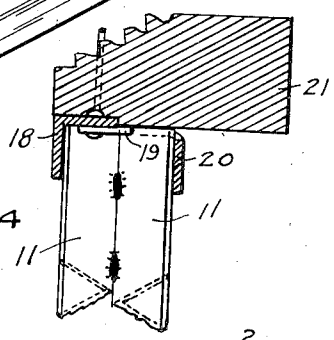
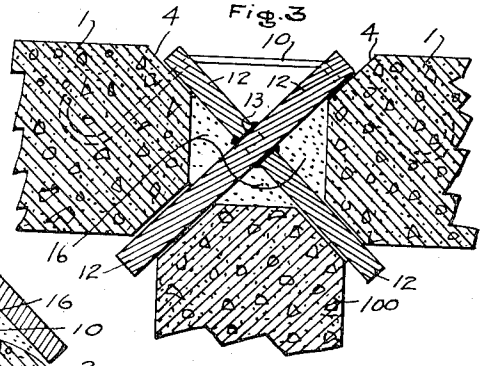


Fig. 4

Fig. 3



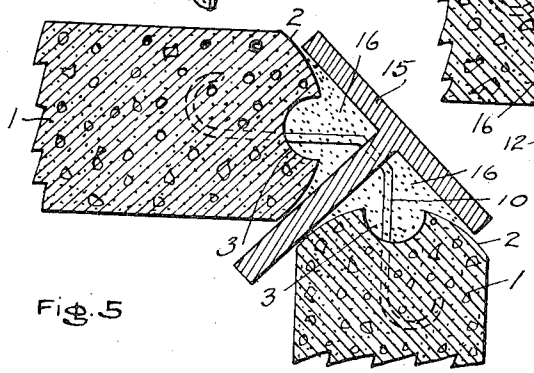
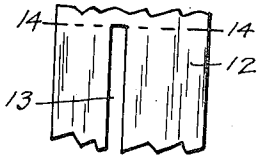


Fig. 5



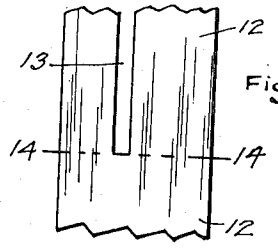


Fig. 6

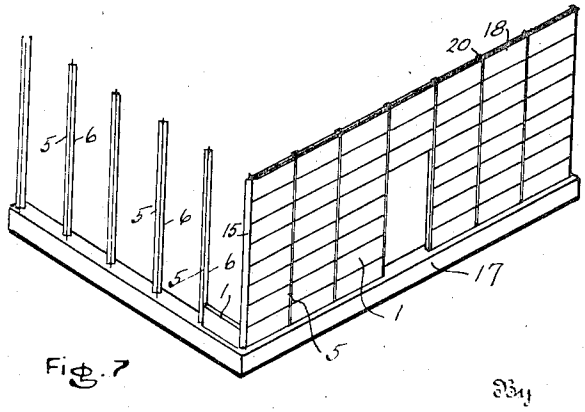


Fig. 7

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WALL CONSTRUCTION

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4 Claims. (Cl. 72—16)

This invention relates to the construction of houses and buildings and has special reference to the construction of the walls and partitions thereof.

The objects of my invention are to provide a form of construction, first, which is cheaper than the usual frame construction; second, which is fireproof; third, which is simple and can be erected with great ease and but little expense; fourth, which is strong and amply able to resist the stresses to which such a structure is liable; fifth, in which the load of the roof and floor is carried by the posts composing a part of the wall and the wall closure itself does not carry any additional weight; sixth, which is permanent and durable; and seventh, which effects a great saving in upkeep of the building.

I attain these and other objects by the devices and arrangements illustrated in the accompanying drawing, in which—

Fig. 1 is a perspective view of one of the concrete slabs used in the construction of my improved wall; Fig. 2 is a horizontal section of one of the improved metal posts, taken on the line between the courses of the slabs, and showing the bonding wire lying between said courses, and showing the furring strip to which the lathing and plaster is secured; Fig. 3 is a similar section of another form of post, the section being taken through the wall slabs, and showing a partition wall slab in place therein; Fig. 4 is a section through the upper end of the wall, the concrete wall slabs being omitted, to show the means of securing the upper ends of all the posts together and in proper alinement with each other; Fig. 5 is a section showing the construction of the wall at a corner; Fig. 6 is an elevation of the two parts which together form the post shown in Fig. 3; and Fig. 7 is a perspective view of an erected wall and a wall being erected.

Similar numerals of reference refer to similar parts throughout the several views.

My improved wall comprises a series of vertical posts, adapted to carry all the superimposed vertical stresses and suitably embedded in a foundation or otherwise properly secured in alinement, between which the wall closure, comprising a series of slabs, is erected. Said vertical posts are equally spaced and each comprises a suitably shaped metal post characterized by four flaring flanges, two on each side, thereby forming a recess or groove into which the suitably shaped concrete slabs are successively lowered from above. In practice I prefer to lay one course of slabs at a time, thereby permitting the posts to have a slight sideways bending to facilitate the insertion of the said slabs.

It will be observed from Fig. 1 that the slab 1 comprises a relatively thin concrete casting, preferably having suitable metal reenforcing therein, not shown. The ends 2 of these slabs 1 are preferably formed as shown in Figs. 2 and 5, being rounded and being provided with a suitable groove 3 centrally therein. Though these slabs 1 may be of any desired dimensions, I have found that the most suitable size is approximately 1½ inches in thickness; 12 inches in depth; and 31½ inches in length. In the variation shown in Fig. 3 the slabs are bevelled at the front and rear vertical edges; this form being especially adapted for posts such as are shown in Figs. 3 and 4.

The post shown in Fig. 2 comprises two similarly bent plates, placed back-to-back and welded together at their points of contact. This form comprises a curved outer part 5, preferably formed on a radius of about one inch, and a straight inner part 6, tangential to the curved part 5. The two plates, thus formed, are placed in complementary positions to contact each other at about the centers of the said curved parts 5, thereby forming an X-shaped structure with four flaring flanges formed with their outer ends and their inner ends. The outer edges of these posts are so arranged that they lie in substantially the same plane as the outer surface of the slabs 1 held thereby, thereby permitting the finishing coat of mortar to completely cover the exposed metal posts, and forming a continuous uniform outer surface for the wall. The inner ends of the flanges 6 extend inward from the inner surface of the slabs 1, and diverge substantially as shown, and are adapted to receive the furring strips 7, which may be nailed thereto through suitable holes provided near the edges of the said legs 6.

The lath 8 and the plaster 9, or other interior finish, are secured to the said furring strips 7 in the usual manner.

Suitable bonding wires 10 are passed through holes provided therefor near the outer edges of the curved portions 5; said wires 10 lying in the mortar between the courses of slabs 1.

An alternate form of post is shown in Fig. 4 in which the post is formed of two angle-irons 11 secured together at their external angles by welding, or otherwise, to form an X bar, as shown.

Another alternate form of post is formed of two flat sheets 12, each provided with a slot 13 extending from one end for one-half its length, each said plate being then inserted in the slot 13 of the other plate until the central lines 14—14

thereof coincide, thereby forming the X-shaped post illustrated in section in Fig. 3. The two plates are preferably welded at their points of contact.

In this form of post I prefer to make the slots 13 somewhat nearer the front of the post, as shown, thereby bringing its front edges substantially in the same plane as the outer surface of the slabs 1. The rear portion of the post, thus formed, is adapted to receive a furring strip, if desired, in the same manner as above described. However, I have shown a slab 100 for a partition wall at right-angles to the outside wall, to illustrate the connection between the two walls.

In Fig. 5 I have illustrated a corner of a building, the post in this case being formed, preferably, of a T-iron, 15, the slabs 1 entering the angles between the head and stem of the T in a manner similar to that above described.

In all the above cases, the space between the slabs 1 and the respective posts is filled with cement grouting, as shown at 16 in the several views, and in the usual manner.

The method of erecting my improved wall may be briefly described as follows:—The row of posts is erected in a suitable concrete base 17, said posts being properly alined and spaced. Then a course of blocks 1 is laid on the said base, each block being inserted between two posts and engaging the outer and inner flaring flanges thereof, and being held from inward or outward motion thereby. The posts being somewhat flexible, it is not necessary to raise each slab to the top of the wall in order to insert it between the posts, as they can be slightly spread apart, a short distance up, to admit the slab. As a course is thus laid the bonding wires 10 are inserted and the spaces filled with the grouting 16 and mortar is applied to the top surface of the slabs. Thus each course is completed until the top of the wall is reached.

The tops of the posts are held by an angle-iron 18, lying with one leg outside of the said posts and having inward-extending straps 19 secured thereto, said straps being formed integral with an inner holding plate 20, bent downward from the said straps. One such plate 20 is provided for each post in the wall. The angle iron 18 is laid on the outer top corners of the line of posts (Fig. 4) and the holding plates 20 then lie in contact with the inner edges of the said posts. Suitable fastening means between the wall and the angle iron 18 may be provided as desired.

The wall plate 21 from which the roof rafters or floor extend in the usual manner, is supported by and attached to the said angle-iron and posts.

It will be understood that the slabs 1 are of greater length than the free space between adjacent edges of adjacent posts, entering the side vertical recesses formed in said posts by the flaring flanges thereof, and that they are therefore held from inward or outward movement in the wall by the said contacting flanges; and that the slabs can only be inserted in the said grooves or recesses from above and are lowered into position on top of the slab previously lowered in the same tier.

It is to be understood that many variations in the above-described wall construction may be made without departing from the spirit of my invention as outlined in the appended claims.

What I claim and desire to secure by Letters Patent, is:—

1. In a wall construction, a series of spaced posts, each post having flaring flanges forming a vertical recess between them; preformed concrete slabs, each slab being longer than the distance between the edges of adjacent posts, and entering the recesses in said posts; an angle-iron engaging the outer edges of all the posts in a wall; and a series of holding plates secured to said angle iron and engaging the inner edges of each said post.

2. In a wall construction, a series of spaced posts, each post having flaring flanges forming a vertical recess between them; preformed concrete slabs, each slab being longer than the distance between the edges of adjacent posts, and entering the recesses in said posts; an ange-iron engaging the outer edges of the upper ends of all the posts in a wall; and means whereby each said post is independently secured to said angle-iron.

3. In a wall construction, a series of spaced posts, each post having flaring flanges forming a vertical recess between them; preformed concrete slabs, each slab being longer than the distance between the edges of adjacent posts, and entering the recesses in said posts, said slabs in a tier being joined together by mortar; and tie wires passing through the posts and extending thereacross said wires being imbedded in the mortar between the courses of said slabs.

4. In wall construction, two series of spaced posts, in two walls forming an angle, each post having flaring flanges forming a vertical recess between them; a T-post in the angle formed by said two walls and set diagonally thereof, whereby corresponding recesses are formed in each wall line; and preformed concrete slabs, each slab being longer than the distance between the edges of adjacent posts and entering the recesses in said posts.

HAROLD S. SMALLWOOD.