Aug. 9, 1932. F. McM. SAWYER 1,870,926

WALL CONSTRUCTION

Filed Jan. 3, 1930

Fig. 1.

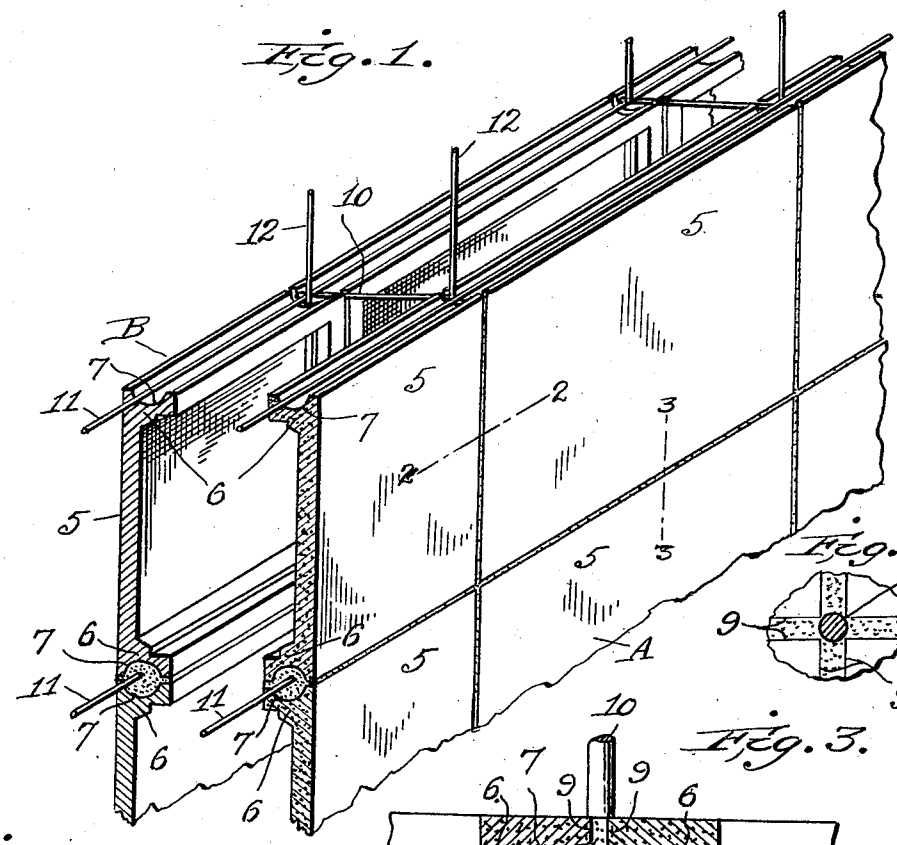


Fig. 5.

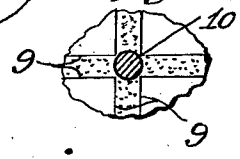


Fig. 3.

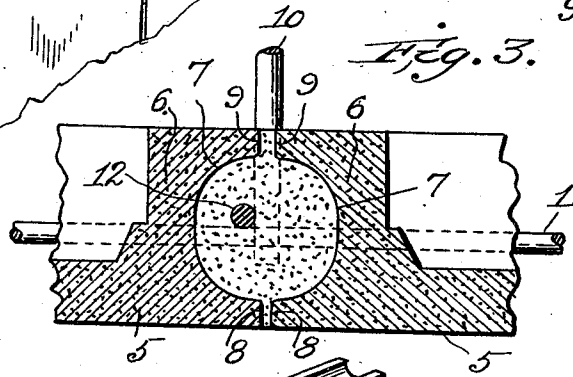


Fig. 2.

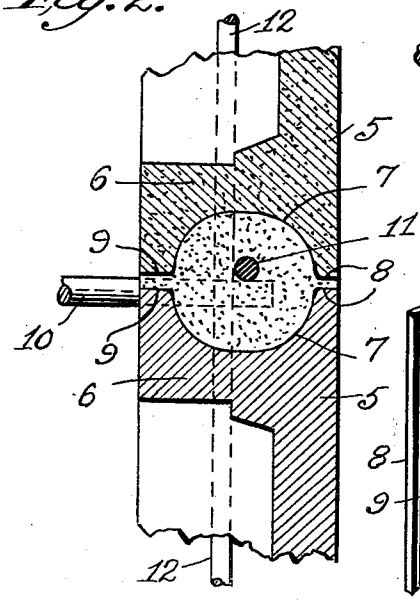
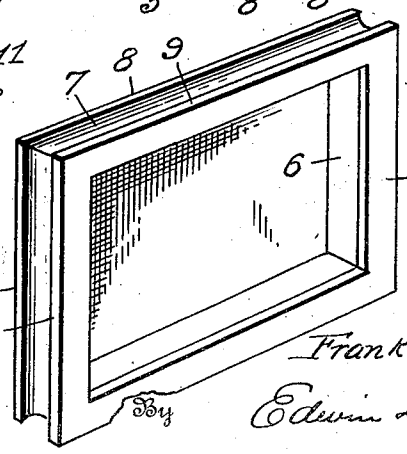


Fig. 4.



Inventor

Frank McM. Sawyer

By Edwin L. Yewell

his Attorney

Patented Aug. 9, 1932 1,870,926

UNITED STATES PATENT OFFICE

FRANK McM. SAWYER, OF RICHMOND, VIRGINIA

WALL CONSTRUCTION

Application filed January 3, 1930. Serial No. 418,221.

This invention relates to improvements in wall constructions, and more particularly to the type known as the double wall construction which consists of inner and outer tiers of slabs spaced apart to form insulating spacts therebetween. One of the particular objects of the invention is to form a wall of pre-cast concrete slabs of the type that can be cast or molded in a plural mold. A further object is to provide a wall slab of comparative lightness and having means for receiving a binder around its edges to maintain its position in the wall without danger of slipping or sliding to form an uneven outer surface.

These and other objects hereinafter set forth are attained by the means illustrated in the accompanying drawing, in which:

Fig. 1 is a perspective view of a portion of a wall showing the invention.

Fig. 2 is a horizontal cross-section taken on the line 2—2 of Fig. 1.

Fig. 3 is a vertical cross-section taken on the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of one of the slabs looking at its rear side; and,

Fig. 5 is a detail view in elevation of one of the intersection joints.

Similar reference numerals in all of the figures of the drawing designate like parts.

Referring to Fig. 1, A designates the outer tier and B the inner tier of a double wall construction, each of said tiers being formed with a plurality of pre-cast concrete slabs 5 arranged in horizontal and vertical rows in a manner that the joint lines between the slabs are continuous both vertically and horizontally from the bottom to the top edge of the tiers and for the entire length of the wall horizontally.

Each slab is formed with a plate portion having round its periphery a projecting flange 6 on one side extending at right angles to the face of the plate portion, thereby providing a flat face on the front of the slab. The flange 6 around the periphery is formed with a groove 7 which is narrower than the outside edges of the slab provide outside and inside abutting edges 8 and 9, respectively. It will be observed from inspection of Fig. 2, that the outside abutting edges 8 are narrower and longer than the inside abutting edges 9, so that in the finished wall, the outside abutting edges 8 of adjacent slabs will lie closer together and form a narrower joint on the front side of the wall, which will dam the flow of mortar or cement and require less time and labor to finish. The inside abutting edges 9 being spaced farther apart than is the abutting edges 9, form at the intersections of the blocks, spaces sufficiently large to permit the insertion of the ends of the tie-rods 10, (see Fig. 5), these rods 10 being preferably greater in diameter than is the horizontal and vertical reinforcing rods 11 and 12, respectively. Thus, the slabs are formed to provide entering spaces for the ends of the tie-rods at the intersecting joints between the slabs, and thereby avoiding the necessity of casting specially formed recesses in the slabs or breaking off the corners to receive the ends of the tie-rods when the slabs are assembled.

In forming the slabs with flanges and thereby recessing the rear sides, a very light weight and strong slab is provided, the flanges being considerably wider than the plate portion, forms substantial self supporting edges for the slabs while in the process of erecting.

Edges 8 and 9 have been described herein, abutting edges, which is meant to imply that they lie opposite to edges of adjacent slabs and would abut, if the cement was omitted.

Reinforcing rods 11 and 12 are positioned within the hollow spaces between the slabs formed by the grooves 7, and are preferably continuous throughout the wall. They cross each other and the ends of the tie-rods at each intersection of the joints between the slabs, thereby forming a substantial and rigid structure wherein every slab is tied in its place by the reinforcing means.

In the operation of assembling the slabs in a wall, a horizontal course of slabs are first positioned and the vertical joints between the slabs are filled with grout substantially up to the bottom of the horizontal grooves in the top sides of the flanges, then the tie-rods and horizontal reinforcing rods

are positioned and the upper horizontal grooves are preferably plastered, similar to the method of lay rows of bricks, that is, overfilled with plaster or cement, and then the slabs of the next horizontal row are placed and pressed in position over the surplus plaster which will maintain the position of the slabs until the vertical joints are filled, it being understood that the vertical reinforcing rods are fixed in the bottom row of slabs and extend upwardly throughout the height of the wall, thus they are always in position after the first or bottom row of slabs are erected.

In my copending application, Serial No. 369,843, is shown a building slab having three of its edges provided with rearwardly extending flanges and while its bottom edge (the edge without a flange,) is provided with a groove, this groove is provided to receive a tongue on the adjacent block or slab and not constructed to form a mortar joint. Furthermore, the groove is formed in slab face-portion.

Having thus fully described the invention, what is claimed is:

A wall construction formed with a plurality of pre-cast concrete slabs arranged in vertical and horizontal rows forming continuous vertical and horizontal joints between the slabs, said joints crossing each other, each of the slabs being formed entirely around its periphery with rearwardly extending flanges which are coextensive in width, the outer sides of said flanges being grooved to form horizontal and vertical cement holding spaces in the completed wall and abutting edges of unequal width, horizontal and vertical reenforcing rods between the grooves in adjacent slabs and crossing each other at the intersections of the joints and cement filling in the grooves.

In testimony whereof I hereunto affix my signature.

FRANK McM. SAWYER.