O. G. NICHOLAS.

CONCRETE BUILDING FORM.

APPLICATION FILED OCT. 15, 1919.

1,373,523.

Patented Apr. 5, 1921.

2 SHEETS—SHEET 1.

Fig. 1.

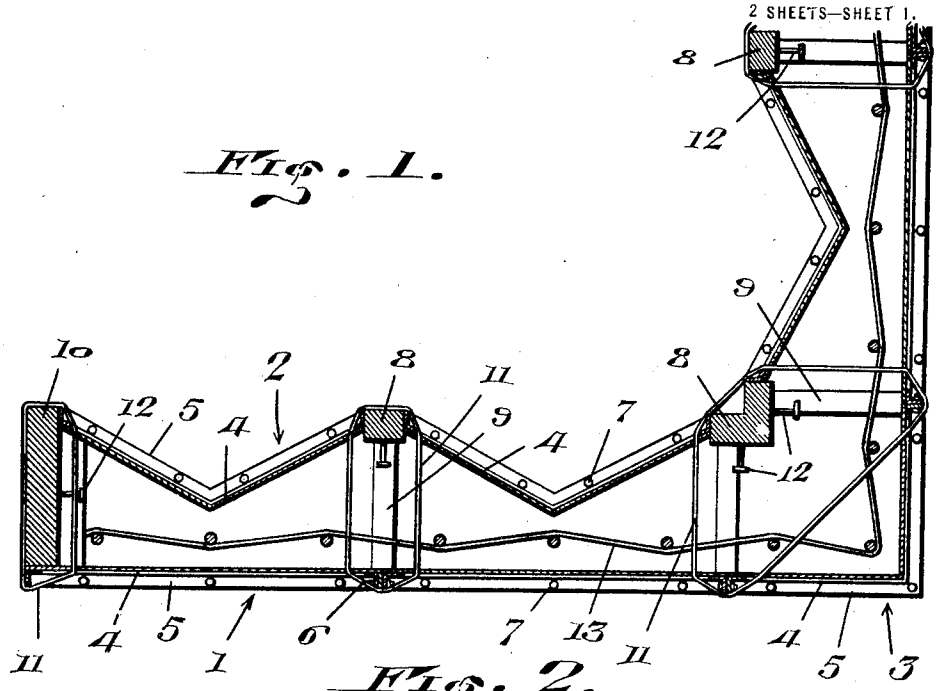
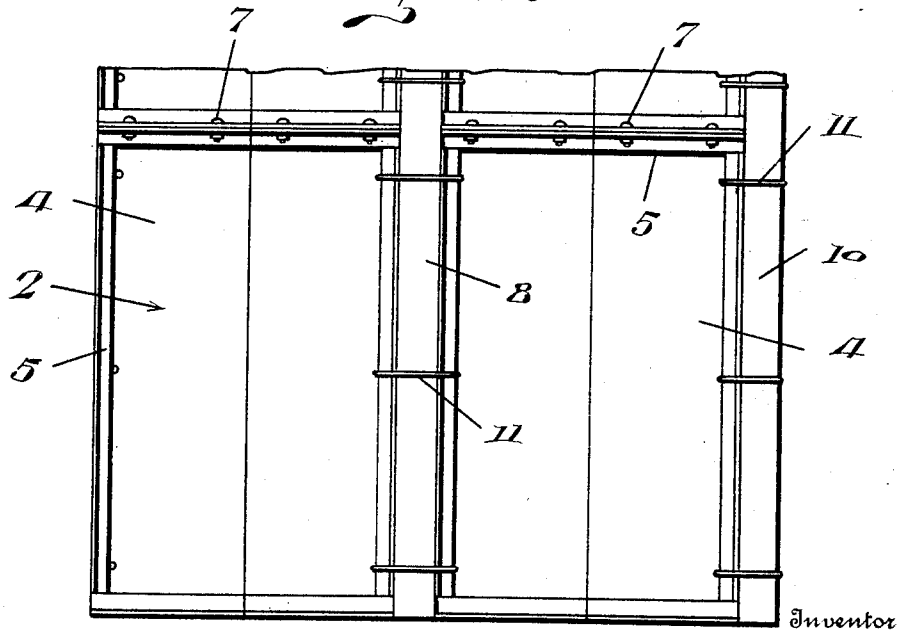


Fig. 2.



Witness

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2 SHEETS—SHEET 2.

Fig. 3.

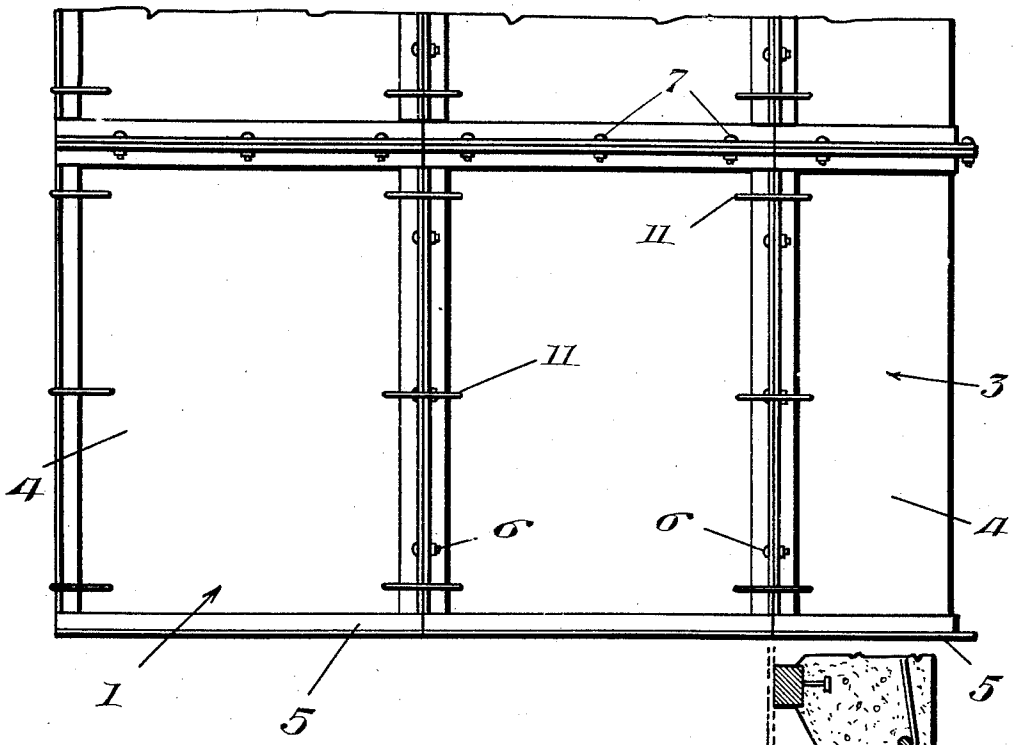
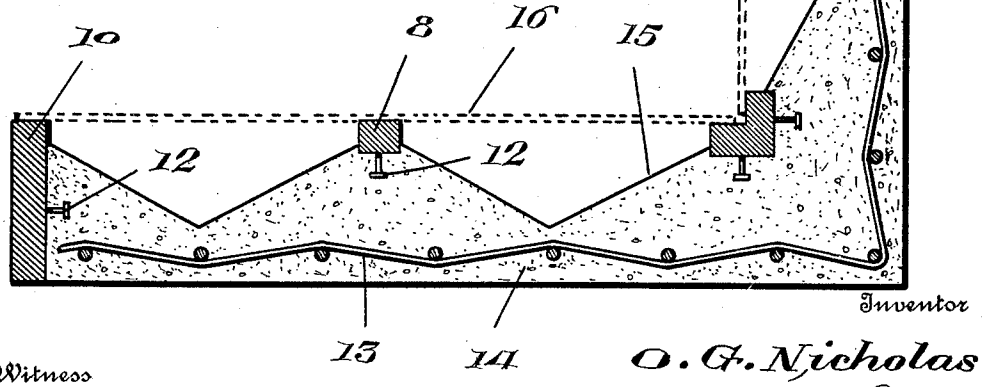


Fig. 4.



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UNITED STATES PATENT OFFICE.

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CONCRETE-BUILDING FORM.

1,373,523. Specification of Letters Patent. Patented Apr. 5, 1921.

Application filed October 15, 1919. Serial No. 330,892.

To all whom it may concern:

Be it known that I, OLEY GLEN NICHOLAS, a citizen of the United States, residing at Sioux City, in the county of Woodbury and State of Iowa, have invented certain new and useful Improvements in Concrete-Building Forms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to forms or molds for use in the construction of concrete buildings, and aims to provide a novel and improved apparatus for pouring concrete walls, floors, ceilings, and the like, with wooden or similar studding or bars embedded in the wall or slab at one side, and channels between said bars forming continuous air passages or chambers in back of the lathing or other finishing secured to said bars.

By constructing the wall or slab with the air channels or chambers between the studding or bars which are provided for the attachment of the lathing, or the like, this will provide dead air spaces or chambers between the lathing or finishing and the concrete, in order to render the structure a good protection against the penetration of heat and cold, inasmuch as the said air chambers serve as insulation.

A further object of the invention is the provision of a concrete building form comprising outer and inner sections assembled in a novel manner for producing a wall or slab as indicated, and using the studding or bars as a part thereof, whereby they will be embedded in the grout or concrete to constitute a part of the structure whereas the form sections can be released and used again and again.

With the foregoing and other objects in view, which will be apparent as the description proceeds, the invention resides in the construction and arrangement of parts hereinafter described and claimed, it being understood that changes can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a horizontal section of the form set up ready to receive the grout.

Fig. 2 is an elevation of the portion of the form looking from the inside.

Fig. 3 is an elevation of the form looking from the outside.

Fig. 4 is a horizontal section of the wall as completed.

The form or mold, which is shown as being used for molding the wall of a building although it can be used for molding floors, ceilings, slabs or the like, comprises the outer sections 1 and inner sections 2, with corner sections 3 at the outside for use at the corners, if necessary. The sections are of rectangular form to be set on end in superposed relation, edge to edge, and the outer sections 1 are flat, while the inner sections 2 are V-shaped section. The corner sections 3 are of angular sections to form the corner of the wall. Each section comprises a plate or panel 4 of sheet metal or other suitable material, and a marginal frame 5 of angle iron which is at that side opposite to the side of the plate or panel facing the interior of the mold. The vertical edges of the outer sections 1 and 3 are adapted to abut, and the upright portions of the frames 5 are secured together by bolts 6 or the like. The inner as well as the outer sections are set one on the other, and the upper and lower ends of the frames 5 thereof are detachably secured together by bolts 7 or similar securing means.

In building up the form, wooden or similar studs or bars 8 are placed between the vertical edges of the inner sections 2, with the edges of said sections abutting said bars, as seen in Fig. 1, and the angles of the sections 2 extend toward the outer sections 1. Suitable stays 9 are preferably disposed between the bars 8 and the outer sections 1 to space the sections apart, and the edge or end of the wall, as at a door or window opening, is formed by a wooden or similar plate or board 10 closing the corresponding end of the form, with the respective sections 1 overlapping said plate 10, and the corresponding sections 2 abutting same. This plate or board 10 can be a part of the window or door casing, and the like bars 8, forms a part of the finished wall.

The sections and bars of the form are bound or tied together by means of wire 11 which is threaded inwardly and outwardly through apertures in the plates 4 adjacent to the frames 5, and said wires pass around the upright portions of said frames and around the bars 8 and 10, thereby tying the inner forms 2 to the bars 8 and also tying

the outer and inner forms together with the stays 9 between them. These wires can be threaded in place as the form is built up, and the bars 8 and 10 are provided with nails or bolts 12 extending therefrom into the mold to be embedded in the concrete, whereby to securely anchor said bars in place, as seen in Fig. 4, in the finished wall. Suitable reinforcing 13 can also be disposed in the mold as it is built up, so as to be located between the inner and outer sections of the form to be embedded in the wall so as to reinforce and strengthen it.

When the grout is poured into the form, it embeds the extensions or anchors 12 of the bars, and also embeds portions of said bars in the concrete, and the reëntrant angles formed by the forms 2 will form channels or recesses 15 between the bars as seen in Fig. 4. After the concrete has set, the form sections 1, 2 and 3 can be readily removed, to be used again by simply cutting the wire 11 where it is exposed, and removing the bolts 6 and 7. The sections can thus be taken from the wall, leaving the bars 8 anchored to the wall at the ridges between the channels 15. These studs or bars 8 can thus be used for nailing or securing the lathing or finishing 15 to the wall, and the channels 15 will provide continuous dead air chambers or spaces in rear of the lathing to serve as heat-insulation, the bars 8 and channels 15 spacing the concrete from the lathing or finishing. The wall thus formed will require less concrete than if it were of equal thickness throughout, and will possess a high degree of insulation to prevent the penetration of heat and cold. Furthermore, the bars 8 provide convenient means for the attachment of the lathing which will be entirely out of contact with the concrete. The wall is solid, in that no openings or passages are provided between the outer and inner surfaces of the concrete which require more or less trouble and complication. The wall, although solid, has the advantages of a hollow wall if not being superior thereto.

Having thus described the invention, what is claimed as new is:—

1. A concrete building form comprising sections at opposite sides, the sections at one side having edges spaced apart, bars between said edges having portions to be embedded in the concrete, and wires threaded through the sections at the opposite sides to tie said sections together and also being close to said edges of the corresponding sections and extending around said bars to hold said edges against said bars.

2. A concrete building form comprising sections at opposite sides having marginal frames, means securing said frames of the adjacent sections together, the sections at one side having edges spaced apart, bars between said edges against which the corresponding frames bear, said bars having portions to be embedded in the concrete, and wires threaded through the sections at the opposite sides adjacent to said frames to tie the sections at the opposite sides together and also extending around said bars to hold the corresponding frames against said bars.

3. A concrete building form comprising sections at opposite sides, the sections at one side having their edges spaced apart, bars between said edges having portions to be embedded in the concrete, stays between said bars and the sections at the other side, and wires threaded inwardly and outwardly through said sections and extending around said bars for tying and clamping said sections, bars and stays together.

4. A concrete building form comprising sections at opposite sides, the sections at one side being V-shaped to form channels in one side of the finished product, and having their edges spaced apart, bars between said edges of said sections and having portions to be embedded in the concrete, stays between said bars and the sections at the other side, and wires threaded inwardly and outwardly through the opposite sections and passing around said bars to tie and clamp said section, bars and stays together.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OLEY GLEN NICHOLAS.

Witnesses:
A. L. Olson,
John Ennis.