

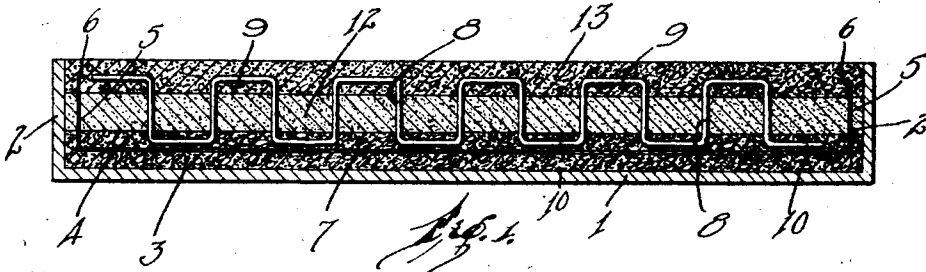
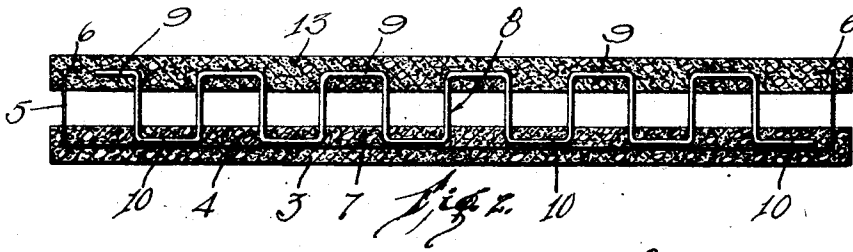
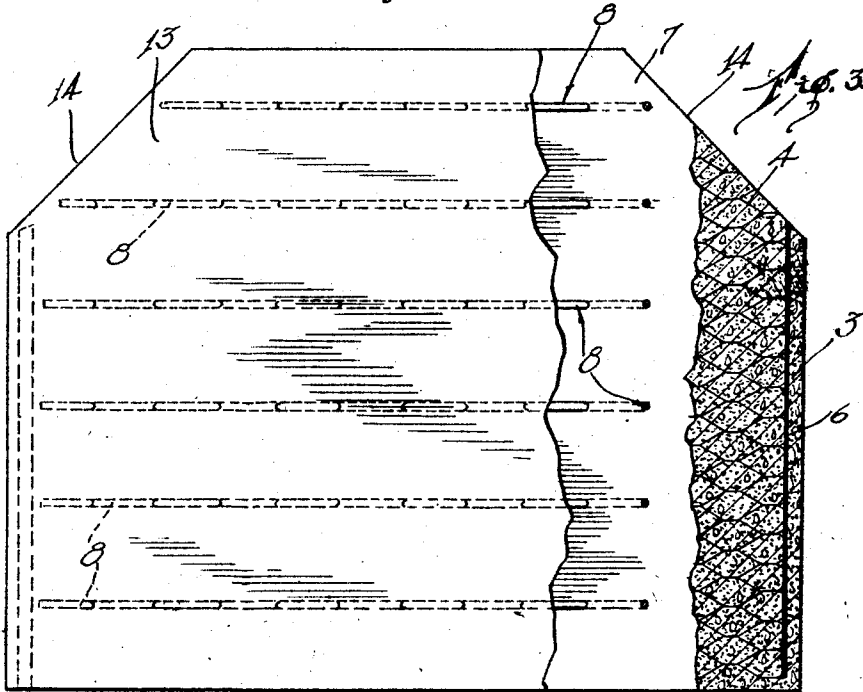
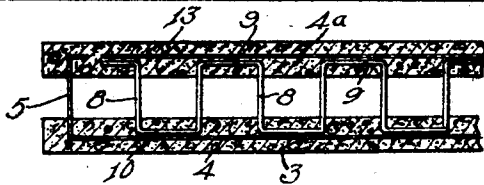
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C. CARRILLON

PROCESS FOR MAKING REINFORCED CONCRETE WALLS

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PROCESS FOR MAKING REENFORCED-CONCRETE WALLS.

Application filed February 9, 1924. Serial No. 691,764.

To all whom it may concern:

Be it known that I, CHARLES CARRILLON, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a new and useful Improvement in Processes for Making Reenforced-Concrete Walls, of which the following is a full, clear, and exact description.

My invention relates to improvements in reinforced concrete wall sections and process for making the same, and it consists in the steps hereinafter disclosed, and in the combinations, constructions, and arrangements herein described and claimed.

15 An object of my invention is to provide a concrete wall section and the process for making the same by means of which an entire section of the building may be manufactured in one piece. Heretofore blocks 20 have been manufactured which are provided with air spaces, but it has not been practical to manufacture such blocks in large sections. My present invention embodies a means for constructing entire sections which are durable enough to permit the manipulation of the entire section, as in erecting the section.

A further object of my invention is to provide a novel means for obtaining an air space between the walls of the section without sacrificing strength.

A further object of my invention is to provide a reenforced concrete wall section, having an air space, by a simple process, obviating the use of special forms and the various means for holding the reinforcing elements while the sections are constructed.

A further object of my invention is to provide a process for manufacturing reenforced concrete wall sections that is economical and thoroughly practical commercially.

Other objects and advantages will appear in the following specification, and the novel features of the invention will be particularly pointed out in the appended claims.

45 My invention is illustrated in the accompanying drawings, forming part of this application, in which

Figure 1 is a sectional view of one of the wall sections while it is still in a supporting surface during the hardening or setting process,

Figure 2 is a sectional view of the wall section with the sand core and the side walls of the supporting form removed,

55 Figure 3 is a side elevation of one of the

sections in a vertical position and partially broken away, and

Figure 4 is a sectional view of a modified form of my invention.

In carrying out my invention, I make use 60 of a platform 1 which may be an ordinary concrete floor. The surface of the platform 1, if the platform be concrete, or any substance to which wet concrete may adhere in setting, is greased. Side walls 2 are constructed and fixed to the platform 1 or may be an integral part of the platform as in the present case. The side walls 2 are provided to prevent the lateral displacement of materials which are placed upon the platform. 70

The first step in constructing my improved reenforced wall section is to place a layer 3 of concrete directly upon the platform 1. This layer in the ordinary case is approximately one inch thick. I next lay 75 a metal screen 4 upon the layer of concrete 3. The general appearance of this screen is indicated in Figure 3 and will be recognized as the ordinary type of wire lath in common use. The screen is bent upwardly 80 at either end, as shown at 5, and has its upper extremities turned inwardly, as shown at 6, at a predetermined distance from the main portion of the screen 4. The upwardly bent portions 5 are substantially parallel with the side walls 2 and adjacent to the side walls. 85

I next place a second layer of concrete 7 substantially one inch thick upon the screen 3. This layer 7 is placed upon the screen 90 immediately after the application of the screen to the wet layer 3.

A plurality of angular convoluted iron rods 8 are fashioned so that each rod has parallel portions 9 and 10 arranged in staggered relation one to another, the portions 9 being in alinement and the portions 10 being in alinement with one another. The rod 8 is constructed of sufficient diameter to lend the necessary strength to the completed section, and if the section be a large section, the rods 8 should be of a diameter proportional to the required strength of the section. The convoluted rods 8 are placed in parallel relation one to another and are 105 pressed downwardly into the soft concrete layer 7 until they are in close proximity with the screen 4. As will be noted from Figures 1 and 2, the parallel portions 10 alone are submerged in the soft concrete, 110

while the portions 9 are at a spaced distance from the upper surface 11 of the concrete layer 7.

The next step in the process, as reference to Figure 1 will show, is to place a layer of sand 12 upon the concrete layer 7 so that the portions 9 will project approximately one inch above the upper surface of the sand layer 12.

I next place a layer of concrete 13 upon the layer of sand 12 so as to entirely cover the portions 9 and rise substantially one inch over the portions 9 of the rod 8.

The material thus placed on the platform 1 is permitted to stand for the necessary time required in the thorough setting and hardening of the concrete. Ordinarily this time is approximately fourteen days.

When the time for removing the completed section from the platform 1 has arrived, the side walls 2 are removed and the sand 12 is washed from between the spaced apart concrete walls 3—7, and 13, and the section has the appearance shown in Figure 2. Figure 2 is a sectional view.

From the foregoing description of the various steps in the process, the application thereof will be readily understood. It will be well to explain at this time that the section formed may be of any desired shape. In Figure 3 I have shown a section which may be used as an end or side wall of a garage or small house, the tapered portions 14 being provided so as to accommodate the roof construction.

The reinforced concrete wall section constructed in my improved process is exceedingly strong, since the reinforcing rods 8 have engagement with each of the spaced apart concrete walls 3—7, and 13, and therefore there is little or no possibility of breakage through manipulation exercised with ordinary care. Heretofore the concrete wall sections have necessarily been constructed for small areas alone. This has been a necessity, since the construction employed up to the present time has consisted in the use of individual reinforcing members in place of relatively long convoluted reinforcing rods 8.

The upwardly bent portions 5 of the screen 4 not only serve to strengthen the sections at their opposite edges, but also greatly facilitate the securing of the wall sections one to another, as in the intersection of two sections to form a corner. The mortar or cement used to secure the two sections may be embedded directly in the walls 5 of the screen 4, and thereby insure a secure and permanent fixing of the sections one to another.

After the cement or concrete in the wall sections has become thoroughly hardened

and the section is removed from the platform, the sand layer 12 is washed from between the adjacent sides of the concrete walls, thus leaving a section which when the edges thereof are closed, has a dead air space in the interior thereof. The provision of this dead air space in wall sections of the character described serves as a most important insulating means for confining heat within the building constructed of the sections and for keeping the building cool in the summer time against the penetration of heat from without.

It is obvious that a metal screen, similar to the screen 4, could be used in the wall portion 13 shown in Figures 1 and 2, this screen being disposed adjacent to the parallel portions 10 of the convoluted iron rods 8 in the manner similar to the screen 4 in the companion wall portion, without departing from the spirit of the invention. In fact, where a strong construction is desired, it is preferable to use two screen portions instead of one, as shown. Such a form is shown in Figure 4. In this figure, the upper portion 13 is provided with a screen 4^a embedded therein similar to the screen 4 in the lower portion 3. This screen portion lies adjacent to the parallel portions 9 of the rods 8.

I claim:

1. The herein described steps in the process of forming a hollow concrete wall section, which consists in depositing a layer of concrete, in placing on said layer a reinforcing screen in embedding said screen with a superposed layer of concrete, having reinforcing means extending upwardly therefrom, in covering said last named layer with a layer of sand to partially cover said reinforcing member, placing a layer of concrete on the layer of sand in contact with the upper end of said reinforcing member, and removing the sand when the concrete has set.

2. The hereindescribed steps in the process of forming a hollow concrete wall section which consists in depositing a layer of concrete and in placing on said layer a reinforcing screen, in embedding said screen with a superposed layer of concrete, having reinforcing means extending upwardly therefrom, in covering said last named layer with a layer of sand to partially cover said reinforcing member, in placing a layer of concrete on the layer of sand in contact with the upper end of said reinforcing member, in placing on said layer a reinforcing screen, in embedding said screen with a superposed layer of concrete, and in removing the sand when the concrete is set.

CHARLES CARRILLON.