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C. CARRILLON

REENFORCED CONCRETE WALL SECTION

Filed August 1, 1924

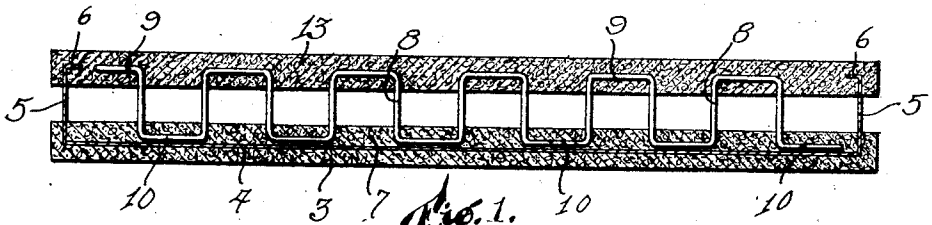


Fig. 1.

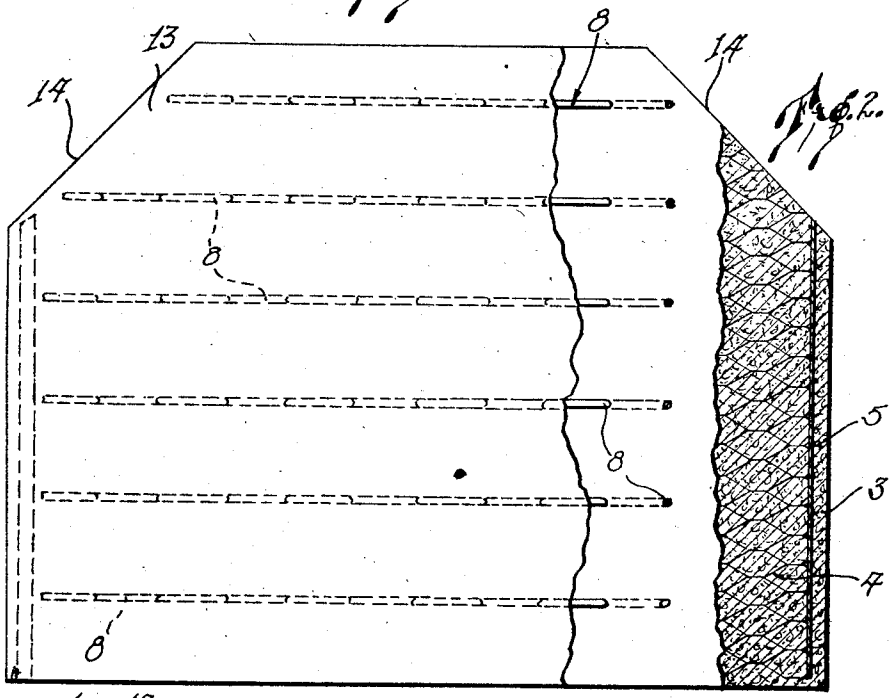


Fig. 2.

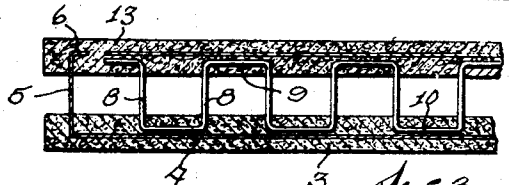


Fig. 3.

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UNITED STATES PATENT OFFICE.

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REENFORCED-CONCRETE WALL SECTION.

Application filed August 1, 1924. Serial No. 729,575.

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 Reenforced-Concrete Wall Sections, of which the following is a full, clear, and exact description.

My invention relates to improvements in reenforced concrete wall sections, and it consists in the combinations, constructions, and arrangements herein described and claimed.

An object of my invention is to provide a concrete wall section by means of which an entire section of the building may be manufactured in one piece. Heretofore blocks 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, which obviates the use of special forms and the various means for holding the reenforcing elements while the sections are constructed.

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.

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

Figure 1 is a sectional view of the wall section with the sand core and the side walls of the supporting form removed,

Figure 2 is a side elevation of one of the sections in a vertical position and partially broken away, and

Figure 3 is a sectional view of a modified form of my invention.

In carrying out my invention I make use of a layer of concrete 3, which in the ordinary case is approximately one inch thick. A metal screen 4 is disposed on this layer of concrete 3. The general appearance of this screen is indicated in Figure 2 and will be recognized as the ordinary type of wire lath in common use. The screen is bent upwardly 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 perpendicular to the major portion of the screen.

A second layer of concrete 7, substantially an inch thick, is laid upon the screen 4, thus thoroughly imbedding the screen 4 in a wall of concrete. This layer 7 is placed upon the screen immediately after the application of the screen to the still wet layer 3.

A plurality of angular convoluted iron rods 8 are provided which are fashioned so that each rod has parallel portions 9 and 10 arranged in staggered relation one with another. The portions 9 are in alignment and the portions 10 are in alignment one with another. The rod 8 is constructed of sufficient diameter to lend the necessary strength to the completed section, and if this section is to be a large one the rod should be of a diameter proportional to the required strength of the screen. The convoluted rods 8 are spaced in parallel relation one with another and are partially imbedded in the concrete layer 7 to a point in close proximity with the screen 4. As will be noted from Figure 1, the parallel portions 10 are imbedded in the layer 7, while the portions 9 are disposed at a distance from the upper surface 11 of the layer 7.

A layer of concrete is then formed in which the portions 9 are imbedded and in which the extremities 6 of the portions 5 of the screen 4 are imbedded.

The layer 13 is at a predetermined spaced distance from the united layers 3 and 7, thus providing an air space between the parallel wall portions of the screen.

From the foregoing description of the various parts of the device the operation thereof may be readily understood. It would be well to explain at this time that the sections formed may be of any desired shape. In Figure 2 I have shown a section which may be used as an end or side wall of a garage or small house. Tapered portions 14 are provided so as to accommodate the roof construction.

A reenforced concrete wall section constructed in accordance with my invention is

exceedingly strong, since the rods 8 engage 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 concrete wall sections have necessarily been constructed for small areas alone. This has been necessary since the construction employed up to the present time has consisted in the use of individual reenforcing members in place of relatively long convoluted rods 8.

The laterally 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 imbedded directly in the portions 5 of the screen 4, thereby insuring the secure and permanent fixture of the screens one to another.

The provision of the dead air space between the walls of the sections 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 may be used in the wall section 13, shown in Figure 1, this screen being disposed adjacent to the parallel portions 9 of the convoluted iron rods 8 in a manner similar to the screen 4 in the companion wall portion, without departing from the spirit of the invention. In fact, when strong construction is desired, it is preferable to use two screen portions, as shown in Figure 3. In this figure the upper portion 13 is provided with a screen 4^a imbedded therein, similar to the screen 4 in the section 3. This screen portion lies adjacent to the parallel portions 9 of the rods 8.

I claim:

1. A reenforced concrete wall section comprising a pair of concrete walls spaced apart from one another, connecting members for securely holding said walls in spaced apart relation, consisting of angular convoluted metal rods having parallel portions in staggered relation to one another, one set of said parallel portions being embedded in one of said walls, and the other set being embedded in the opposite wall, and a metal screen disposed in one of said walls and parallel thereto, said screen having two of its outermost edges bent laterally to extend into the opposite wall adjacent the edges of the section.

2. A reenforced concrete wall section comprising a pair of concrete walls spaced apart from one another, connecting members for securely holding said walls in spaced apart relation, consisting of convoluted metal rods having parallel portions in staggered relation to one another, one set of said parallel portions being embedded in one of said walls and the other set being embedded in the opposite wall, and a metal screen disposed in each of said wall portions adjacent to the metal rods, said screens being parallel with the faces of the wall.

3. A reenforcing concrete wall section comprising a pair of concrete walls spaced apart from one another, connecting members for securely holding said walls in spaced apart relation, consisting of angular convoluted metal rods having parallel portions in staggered relation to one another, said set of parallel portions being imbedded in one of said walls and the other set of parallel portions being imbedded in the opposite wall, and a reenforcing screen disposed in one of said wall sections and being bent at its ends transversely to the plane of said wall section, and extending toward and embedded into the opposite wall section.

CHAS. CARRILLON