J. R. CAHILL.

CONCRETE SLAB CONSTRUCTION.

APPLICATION FILED FEB. 2, 1910.

973,165. Patented Oct. 18, 1910.

Fig. 1.

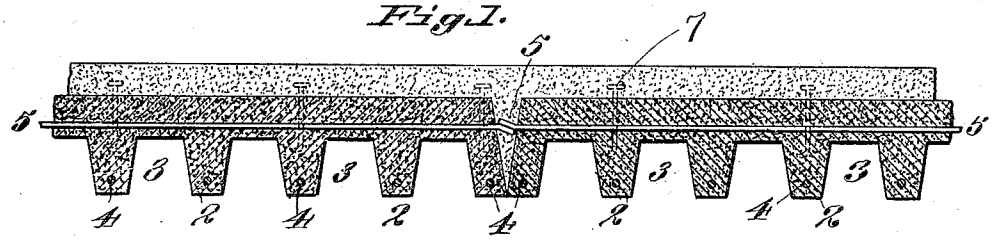


Fig. 2.

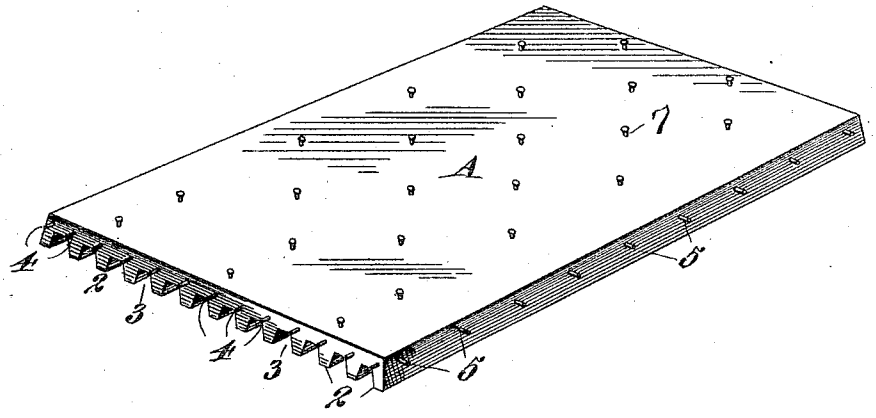
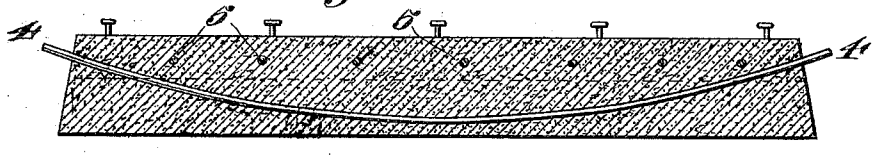


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN R. CAHILL, OF SAN FRANCISCO, CALIFORNIA.

CONCRETE-SLAB CONSTRUCTION.

973,165. Specification of Letters Patent. **Patented Oct. 18, 1910.**

Application filed February 2, 1910. Serial No. 541,579.

To all whom it may concern:

Be it known that I, JOHN R. CAHILL, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Concrete-Slab Construction, of which the following is a specification.

My invention relates to the independent formation of concrete blocks or slabs which are to be afterward employed in structure work.

It consists in the formation of reinforced blocks or slabs in such a manner that, after being set and hardened, they may be removed to a point where they are to enter into the proposed structure and built therein.

The invention consists in the combination of parts, and in details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a transverse section illustrating one form of my improved slab. Fig. 2 is a perspective view of the same. Fig. 3 is a section taken through one of the ribs of the slab, showing the reinforcement.

In the formation of concrete structures it has been customary to mold or form the concrete slabs and beams in the position which they are to permanently occupy, and after the parts are properly hardened and set, to remove the molds, and various forms of reinforcement have been used in such construction.

It is the object of my invention to manufacture slabs of large surface area in such a manner as to produce the necessary strength and sufficient lightness so that such slabs may be easily removed and enter into the construction of buildings and the like. For this purpose I form the blocks with a surface as at A which may be plain, and this portion may have only sufficient thickness to support the actual weight or traffic which may come upon it. Below this plain portion extends a series of ribs 2, between which are intervening channels, as at 3. These ribs may vary in character and may extend in one direction, or transverse to each other, as may be found desirable. These ribs are so proportioned to the upper surface portion that the axis between the upper portion, which is subjected to compressive strains, and the lower portion which is subjected to strains of tension under the beam action when the part is in its final position, will be properly located and proportioned.

In the manufacture of these slabs I employ any suitable form of reinforcing bars. Such a reinforcement is well shown in Fig. 3 where the steel bars 4 extend lengthwise through the ribs, and are curved downwardly so that the central portion is carried to very near the bottom of the rib, the ends extending upwardly as shown, and this construction enables me to make slabs of large surface with a minimum of weight and maximum of strength to resist compressive and tensional strains. Such slabs when set and hardened may be removed to the structure where they are to be used, and set in place, thus doing away with the method of building the slabs *in situ*.

These slabs may have vertical or inclined edges. I have here shown the edges as being beveled so that when the slabs are set together, as illustrated in Fig. 1, the bottom or lower edges may be set out in substantially close contact, leaving V-shaped channels between and around the slabs; these channels may be subsequently filled with concrete which will set and provide a smooth continuous surface upon the top. In order to strengthen this filling, I have shown rods as at 5, which extend outwardly from the beveled edges of the slabs to such a distance that they will substantially cross the channels, and thus provide a strengthening support for the concrete with which the channels are filled.

In order to more perfectly unite and strengthen the slabs in the finished structure, and to form a finishing surface, I may mold into the slabs, in process of construction, pieces 7 of steel, iron, or other metal which project above the top surface. When the slabs have been laid in their permanent position, a surface coating of concrete, mortar, or other plastic material may be spread thereon, embedding the projecting metal pieces and filling the intermediate grooves or channels.

Having thus described my invention, what I claim and desire to secure by Letters-Patent, is:

A floor structure consisting of slabs each having a plurality of parallel ribs extending downwardly therefrom, the upper portion of the slab receiving compressure stress and the lower portion tensional stress when in

position in the floor, rods extending through the slab crosswise of the ribs and having extended ends, the edges of the slabs being beveled to expose said ends of the rods, said slabs each having a plurality of pieces of metal projecting above their top surfaces, and said floor structure having a surface coating embedding the metal projections and filling the channels between the beveled edges of adjacent slabs and embedding the projecting ends of said rods.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN R. CAHILL.

Witnesses:
GEO. H. STRONG,
RAYMOND A. LEONARD.