No. 856,615. PATENTED JUNE 11, 1907.

G. AJELLO.

ARMORED CEMENT OR CONCRETE CONSTRUCTION.

APPLICATION FILED NOV. 19, 1906.

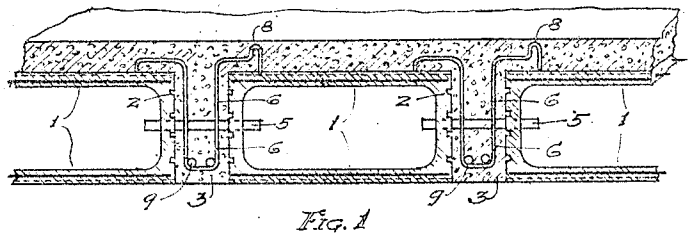


Fig. 1

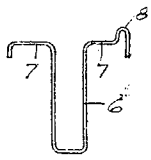


Fig. 3

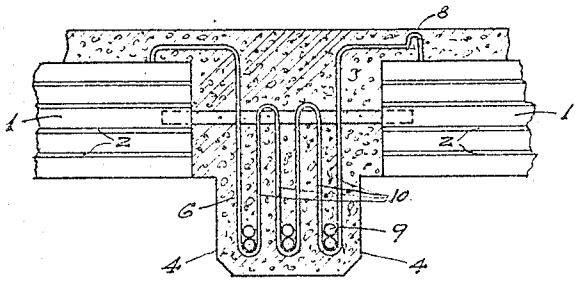


Fig. 2

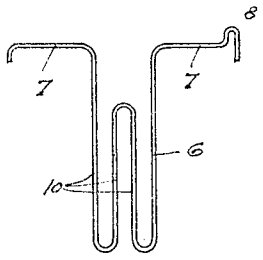


Fig. 4

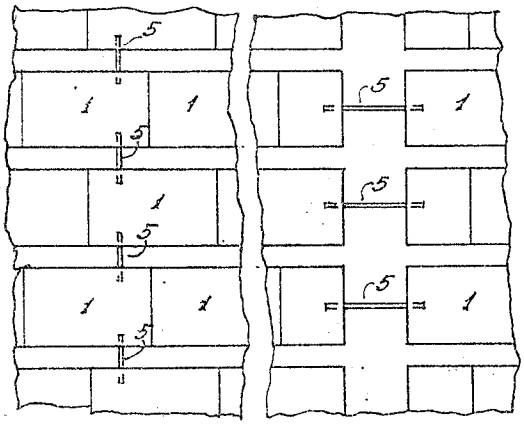


Fig. 5

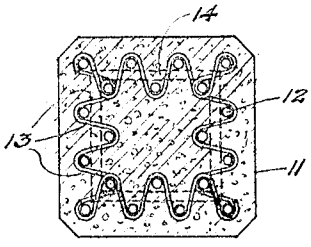


Fig. 6

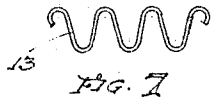


Fig. 7

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UNITED STATES PATENT OFFICE.

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ARMORED CEMENT OR CONCRETE CONSTRUCTION.

No. 856,615. Specification of Letters Patent. Patented June 11, 1907.

Application filed November 19, 1906. Serial No. 344,040.

To all whom it may concern:

Be it known that I, GAETAN AJELLO, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Armored Cement or Concrete Construction, of which the following is a specification.

This invention relates to armored cement or concrete construction.

The object of the invention is the assurance that every reinforcement be absolutely compelled to set in its proper, intended place, in order to prevent, in the execution of a work, the agglomeration or concentration of steel, thus assuring a uniform distribution of reinforcement for any section, as, close to the steel, the two materials will act more in unison, but as the distance increases there will be a tendency for the concrete to act independently, as the reinforcing effect of the steel varies inversely as the square of the distance from the reinforcement to any fiber of the concrete.

With such objects in view, I provide a stirrup the shape of which is such that before filling or concreting it will support the tension bars at the desired distance from the bottom face of the girder or beam, as the case may be, also to support the said tension bars in such a manner that they will be spaced apart at the desired distance, and thereby better distribute the steel so as to provide against tension stress, and allow enough concrete to settle between them to assure a good bond between the said concrete and steel, and at the same time the stirrup on account of having a number of loops inside the section at uniform intervals, produces a uniform distribution of steel against shear too. I also construct the stirrup in such a manner that a portion thereof will act as a guide in the filling or laying of that portion of the flooring known as the slab. The same general arrangement of the stirrup may be applied as a binder in a column, and I consider such use clearly within the scope of my invention. The slight modification or variation is by no means to be considered as a departure, and I wish it to be understood that the details of construction may be varied according to the variations of different structures.

For a clear understanding of the merits of the invention reference is to be had to the accompanying drawing, wherein:—

Figure 1, is a sectional view through a portion of a floor, illustrating the stirrup in position, and the air channels, Fig. 2, is a sectional view through a portion of a floor and a girder, also illustrating the stirrup and air channels, Fig. 3, is a side elevation of one form of the stirrup, Fig. 4, is a side elevation of another form of the stirrup, Fig. 5, is a portion of a floor in plan, illustrating the air channels, Fig. 6, is a sectional view of a column with a modification of the stirrup applied as a binder, and Fig. 7 is a side elevation of the binder.

Referring by numerals to the drawings, 1 represents a hollow concrete or cement block having grooves or channels 2, upon its exterior. Intermediate these blocks are formed beams 3, and at such distances apart as may be desired are formed girders 4. Extending through the said beams and girders are pipe sections 5, which communicate with the interior of the blocks and project through the outer wall of a building so as to provide an exit for dead air and thereby prevent an explosion in case of a hot fire. Embedded in the concrete mass which in connection with the hollow blocks forms the floor beams and girders, is my improved stirrup 6, consisting of a U-shaped bar having outwardly and downwardly diverging ends 7, one or both of which is provided with an upwardly extending loop 8, adapted to act as a guide in the filling or laying of that portion of the floor known as the slab, the length or height of said loop 8, varying according to the thickness it is desired to make the slab. The free ends of the stirrup engage the upper surfaces of the blocks and thereby support the stirrup in the desired position in the concrete mass forming the floor and beam or girder, as the case may be, the said stirrup in its turn supports the tension bars 9, at a suitable and uniform distance from the bottom face of the beam. The U-shaped portion of the stirrup when applied to girders or beams of large dimensions will be formed with a series of loops or elongated corrugations 10, as most clearly shown in Figs. 2 and 4, these loops or corrugations serve to support and space apart the tension bars or rods 9, and strengthen the beam or girder against shear too.

In Figs. 6 and 7, I have shown a modifica-

tion of my invention wherein a column 11, is armored with the usual bars or rods 12, which are held in position by the corrugated bar 13, which is practically the same construction as the portion 10, of the stirrup, the bars being held within such corrugations by horizontal bars 14, lying intermediate the said bars 12, which are staggered with respect to each other.

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

1. A stirrup consisting of a U-shaped bar having outward and downwardly diverging arms, one of the arms being provided with an upwardly extending loop adapted to act as a guide in laying the slab, substantially as specified.

2. A stirrup consisting of a bar having a series of elongated corrugations with outward and downwardly diverging arms, an upwardly projecting loop formed upon one of said arms adapted to act as a guide in laying the slab, substantially as specified.

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