No. 767,582. PATENTED AUG. 16, 1904.

H. L. LEWMAN.

BINDER FOR CONCRETE CONSTRUCTIONS.

APPLICATION FILED MAR. 4, 1904.

NO MODEL.

Fig. 1.

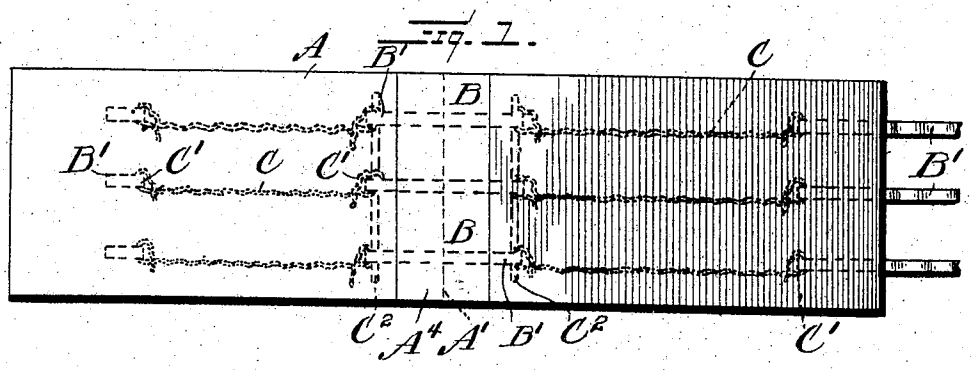
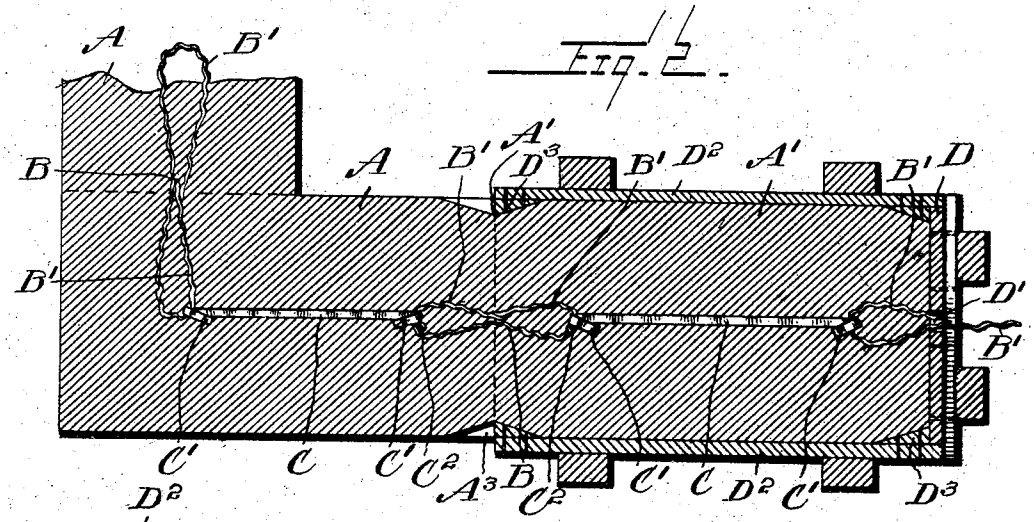


Fig. 2.



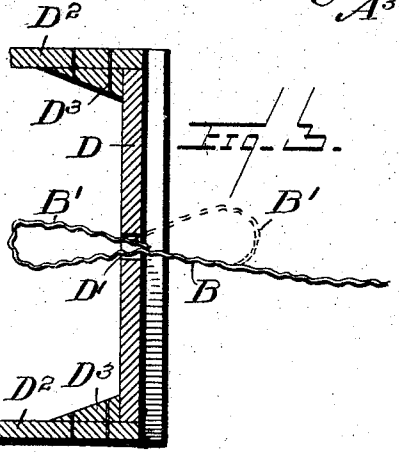


Fig. 3.

Fig. 4.

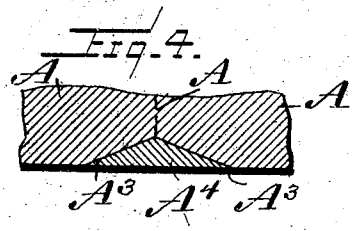
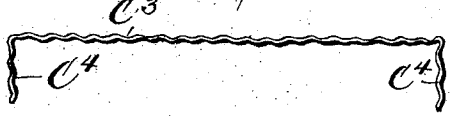


Fig. 5.



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No. 767,582. Patented August 16, 1904.

UNITED STATES PATENT OFFICE.

HARRY L. LEWMAN, OF ATLANTA, GEORGIA.

BINDER FOR CONCRETE CONSTRUCTIONS.

SPECIFICATION forming part of Letters Patent No. 767,582, dated August 16, 1904.

Application filed March 4, 1904. Serial No. 196,578. (No model.)

To all whom it may concern:

Be it known that I, HARRY L. LEWMAN, a citizen of the United States, residing at Atlanta, in the county of Fulton, State of Georgia, have invented certain new and useful Improvements in Binders for Concrete Constructions, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a binder for concrete constructions, and particularly to a tie-piece extending between adjacent sections of a concrete construction.

The invention has for an object to provide such a tie-piece which is formed with looped portions at opposite ends embedded in the adjacent sections of the concrete construction.

A further object of the invention is to provide a connecting-strap extending between the tie-pieces and also a rod disposed at an angle thereto to connect the separate tie-pieces.

Another object of the invention is to provide a mold structure adapted to support the tie-piece during the molding operation and to form a beveled portion at the opposite ends of the molded section.

In the drawings, Figure 1 is a side elevation showing the invention within a concrete structure; Fig. 2, a horizontal section thereof; Fig. 3, a similar enlarged section of one end of the mold; Fig. 4, a similar section of the joint between these sections, and Fig. 5 a detail side elevation of a modified form of connector.

Like letters refer to like parts in the several figures of the drawings.

The letter A designates a concrete structure formed in any desired manner or of any preferred materials and the sections of which are successively molded one upon the other and in contact with each other, so that when set an integral structure is provided. These sections in their setting are liable to become slightly separated, thus forming a crack or seam between the same, and the present invention is for the purpose of effectually tying the sections together and providing a continuous metallic member extending therethrough to prevent any tendency of such separation. The tie-pieces B may be formed of any preferred character or configuration of material and are here shown as of corrugated metal, which produces a very desirable form. These tie-pieces are formed at the opposite ends with looped or enlarged portions B′, which are embedded within the concrete construction, and thus become set therein, effectually resisting any tendency for separation at the joint A′ between the sections of the construction. Extending between the tie-pieces B at the opposite ends of each section is a connecting-strap C, which at its end C′ is passed through the loops B′ in the tie-pieces and has its ends bent at an angle to its body to secure it in position. In order to resist any strain from expansion or otherwise tending to withdraw the ends of the tie from their embedded position, the rods C^2, extending at right angles to the ties, have been provided and are extended through the loops at the opposite ends of each tie, thus affording additional resistance against withdrawal. These tie-pieces may be supported in any desired manner during the molding operation; but a preferred manner of doing so is herein illustrated, where an end wall D of the mold is provided with an aperture D′, through which the tie B is looped to form the portion B′, as shown by full lines in Fig. 3, the opposite end of the tie at such time being left in its straight position. The side walls D^2 of the mold are then placed in position and are provided with angle-blocks D^3 at their opposite ends for the purpose of forming the beveled portions A^3 at the opposite ends of each section. With the mold-sections in this position the extending end from the previously-formed section is looped, as shown in Fig. 2, and the connecting-strip C is placed in position. The concrete or plastic material is then inserted in the mold and properly tamped in position, thus embedding all of the metal parts which are supported in their proper positions within the block or section. When the section is sufficiently set, the mold-walls are removed and the free end of the tie-piece extending beyond the end wall is looped or bent backward, as shown in dotted lines in Fig. 3 after the removal of the end wall therefrom. In this molding operation there appears a seam at the point A′

where the adjacent sections of the construction A abut each other, and for the purpose of concealing the same similar beveled portions A^3 are provided which, after the wall has become thoroughly settled, are filled by a proper plastic filling A^4, of cement or other similar material, thus producing a finished joint and rendering the same practically invisible.

Instead of using the connecting-strip C having bent opposite ends a strip C^3 may be used formed of corrugated material and provided at the opposite ends with portions C^4, extending at an angle thereto, which may be dropped into the looped portions B′ at the opposite ends of the tie-pieces.

It will be obvious that changes may be made in the details of construction and configuration without departing from the spirit of the invention as defined by the appended claims.

Having described my invention and set forth its merits, what I claim, and desire to secure by Letters Patent, is—

1. In a concrete construction, a tie-piece having looped portions at opposite ends terminating with their disconnected free ends meeting at its mid-length, and a mold-piece provided with an aperture to support said tie-piece with a looped portion at one side thereof.

2. In a concrete construction, adjacent independently-molded sections connected by a tie-piece extending across the joint between the sections and having looped portions embedded in each of said sections, and a connecting-strip extending between the looped portions of the tie-pieces at the opposite ends of each section.

3. In a concrete construction, adjacent sections connected by a tie-piece having looped portions embedded in each of said sections, a connecting-strip extending between the tie-pieces at the opposite ends of each section, and a rod extending through the opposite loops of each tie-piece at an angle thereto.

4. In a concrete construction, adjacent sections connected by a bendable tie-piece having looped portions embedded in each section with its free ends meeting at its mid-length, and a connecting-strip extending between said looped portions of the tie-pieces and having its free ends bent to intersect the body thereof.

5. In a concrete construction, a removable mold-piece provided with an aperture therein, and a tie-piece having a looped portion supported from said aperture with its free end at the aperture and a free end extending therethrough to the opposite side from the looped portion.

In testimony whereof I affix my signature in presence of two witnesses.

HARRY L. LEWMAN

Witnesses:
JOHN B. LEWMAN,
WILLIAM MCCARTHY.