

G. S. GALLAGHER.
 REINFORCING CONCRETE.
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997,493.

Patented July 11, 1911.

Fig. 2.

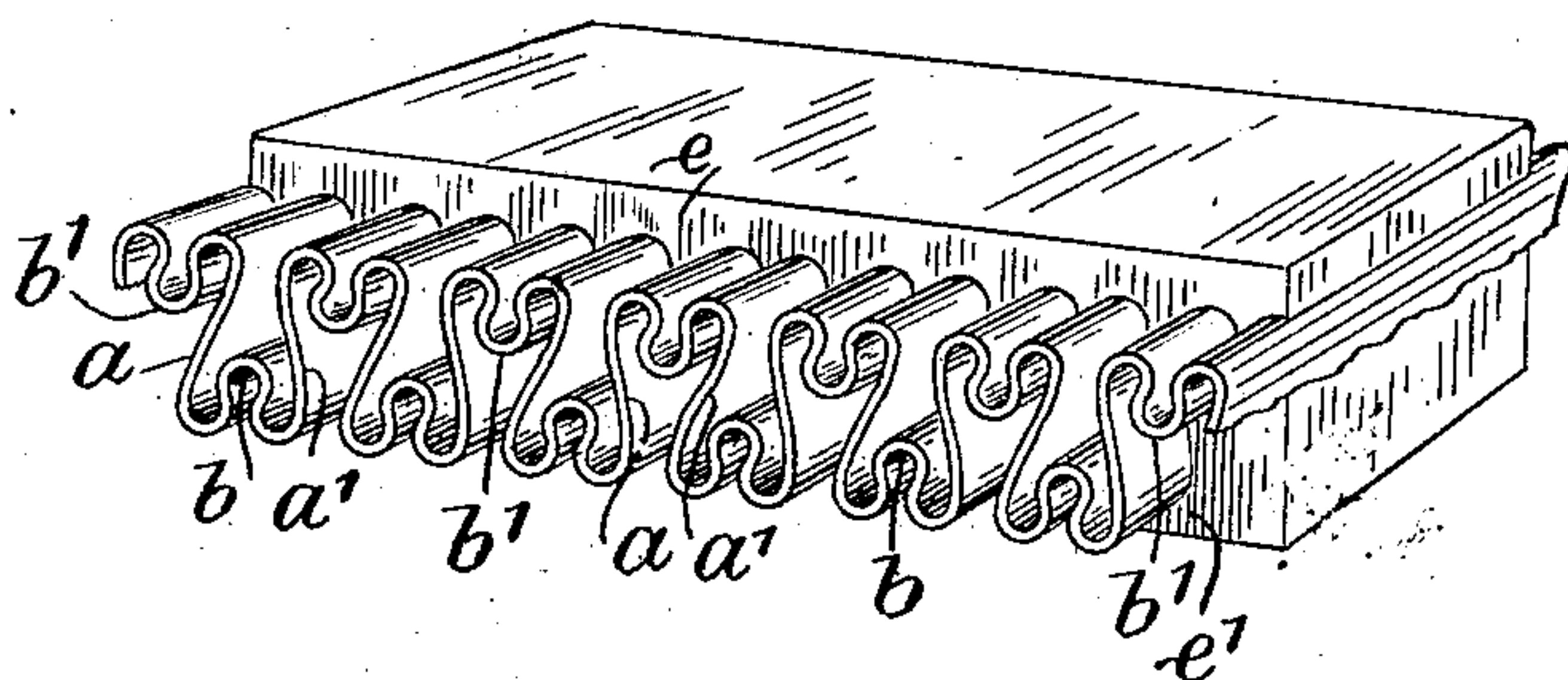
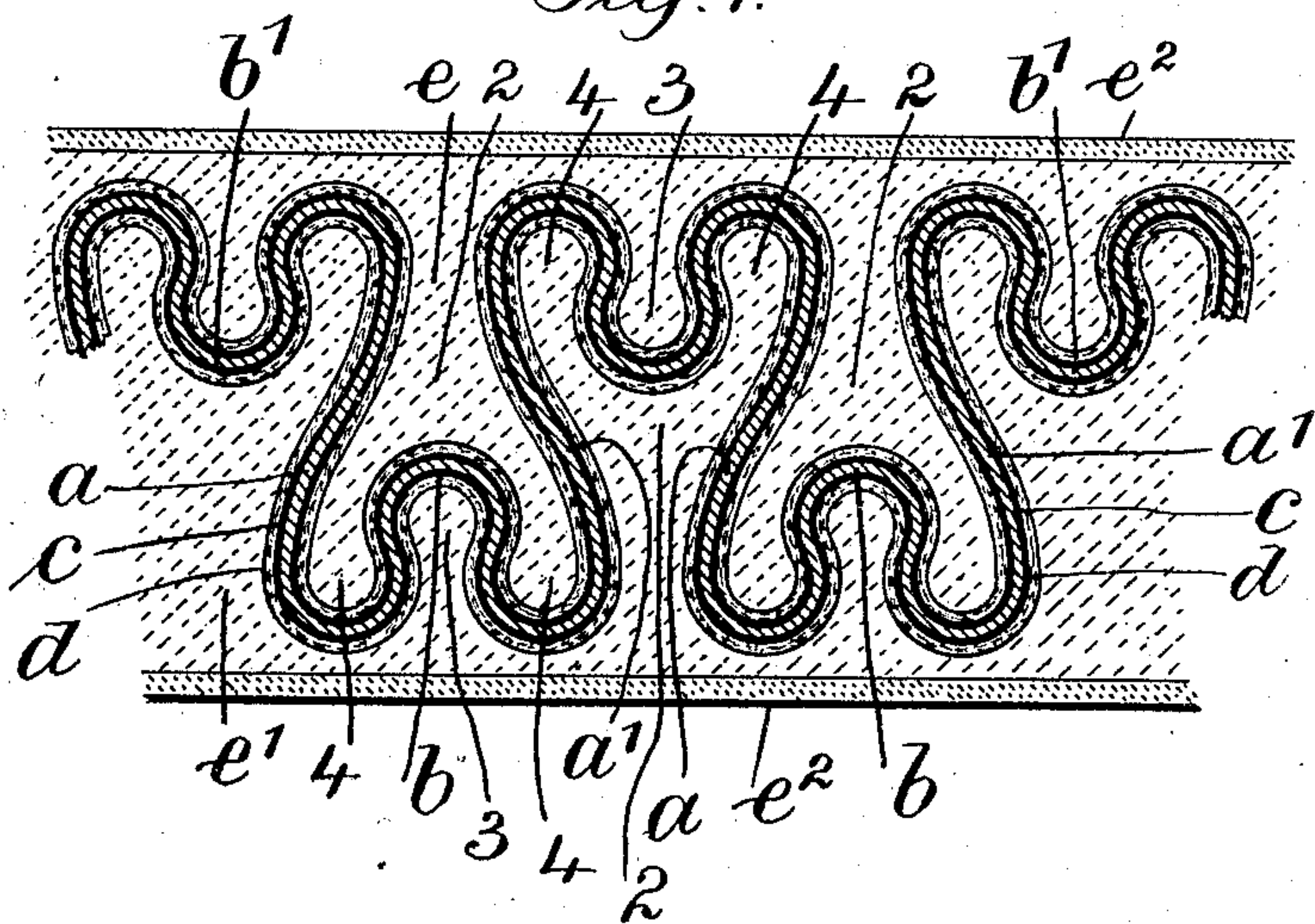


Fig. 1.



Witnesses

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REINFORCING CONCRETE.

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To all whom it may concern:

Be it known that I, GEORGE S. GALLAGHER, a citizen of the United States, residing at the borough of Manhattan, in the city, county, and State of New York, have invented an Improvement in Reinforcing Concrete, of which the following is a specification.

Concrete has been reinforced for various uses in the manufactures and arts not only by rods of various forms, but by plates or sheets of metal of several configurations in cross section, such as alternating dove-tailed grooves and ridges, reversed S configurations or curves, etc. In these latter reinforcing devices the oppositely disposed concrete key members were all alike in their overlapping alternating proportions and there were no yielding provisions in the broader metal parts adapted to accommodate changes of form without affecting the integrity of the structure.

In the device of my invention I increase the elastic limit and provide intermediate yielding members between the broader portions of the metal parts in which the concrete keys are shorter than the oppositely disposed main concrete keys for the purpose of accommodating expansion and contraction and changes of form. I employ oppositely disposed metal parts each intersected by shorter integral metal parts, all receiving concrete filling as keys so that in the finished reinforced concrete block, form or structure, there are oppositely disposed series of main similar concrete keys and similar intermediate and shorter concrete keys all meshing into the concrete block, the parts of which come at opposite sides of the metal strip.

The metal reinforcing strip of my invention comprises in cross section series of reversed ogees with intermediate loops; the ogees crossing imaginary planes at right angles to the plane of the plate or strip.

The metal reinforcing strip or plate is preferably covered with tar, asphaltum, or similar moisture-proof material and treated to a layer or coating of cork or other non-conducting material caused to adhere thereto by the tar or similar moisture-proof material as the same dries. The strip or plate

is thus preferably prepared before being embedded in the concrete, and moisture, heat, and cold are thus kept from passing either way through the concrete, all of which is hereinafter more particularly described.

In the drawing, Figure 1 is a cross section representing the metal reinforcing strip of my invention as embedded in a body or thickness of concrete, and Fig. 2 is an illustration or diagrammatic perspective showing a length of the metal reinforced strip of my invention as embodied in a body of concrete.

My invention consists essentially in the metal reinforcing strip whether the same is given a layer or coating of a moisture-proof material or not.

The longer members of the metal strip or plate constitute reversed ogees a a^1 . These are so placed as to cross imaginary planes at right angles to the side planes of the plate or strip, consequently the opposite ends of the pairs of ogees come near together, and b b^1 represent intermediate oppositely disposed loops which come between the spread or distantly spaced apart ends of the reversed ogees a a^1 and the curved portions of said ogees and the loop members merge into one another as a continuous line or member.

All the spaces between the curved parts of my improved metal strip or plate are to be filled in solid with concrete; the metal strip or plate reinforcing the concrete. It is therefore apparent that there is a concrete body e or part extending outward from one surface of the metal strip or plate and a corresponding concrete part e^1 extending out from the other side of the metal strip or plate and these concrete parts or faces may have placed thereon a finished coat e^2 of specially prepared plaster or other suitable material.

From the illustration and description so far, it will appear that the concrete body at each side of the metal strip or plate is provided with large keys 2 and small keys 3, and the large keys are provided with auxiliary branches 4 extending as arms of the keys e e^1 to the opposite ends or portions of the metal strip or plate. This metal strip

or plate is exceedingly flexible and may be caused to bend with readiness out of a straight line and to assume a circular or elliptical configuration, or a configuration in which the strip is bent with members almost at right angles to one another; the flexibility of the strip permitting the same to bend without opening up sufficiently or even closing up sufficiently to destroy the key feature or function of the device.

I have illustrated in Fig. 1 and prefer to employ upon the opposite faces of the metal strip or plate, a layer or coating of tar, asphaltum, or a similar material at *c* which adheres tenaciously to the metal and may be applied in one or more coats so as to render the metal substantially moisture-proof; and while this tar, asphaltum, or similar material is moist and tacky I prefer to add upon the surface thereof finely ground cork, or other non-conducting material, as a layer of suitable thickness which in the drawing Fig. 1, is shown at *d*. This enhances the efficiency of the non-conducting surfacing as this is applied to the metal strip or plate after applying the tar or other suitable material and is allowed to dry and thoroughly harden before the same is embedded in the concrete. These materials render the concrete moisture-proof on the one side and as against the influences of temperature and moisture on the other.

While I have shown and prefer to employ the layer or coating of tar, asphaltum, or similar suitable material and the cork or other non-conducting material, I do not

limit my invention to the employment of either or both of these materials.

I claim as my invention:

1. A continuous reinforcing strip of metal for concrete of suitable material, comprising series of reversed ogees with intermediate and oppositely disposed integral loops and the ogees extending through planes at right angles to the longitudinal plane of the strip.

2. A reinforcing strip for concrete of suitable material, comprising reversed ogees with intermediate and oppositely disposed integral loops and a layer or coating upon each side of the metal plate or strip of a moisture-proof material.

3. A reinforcing strip for concrete of suitable material, comprising reversed ogees with intermediate and oppositely disposed integral loops and a layer or coating of a moisture-proof material applied to each face of the metal strip or plate, and a further layer or coating of a non-conducting material upon the moisture-proof material.

4. A reinforcing strip for concrete of suitable material, comprising reversed ogees so placed as to extend through and lie at right angles to the longitudinal plane of the plate or strip, with intermediate and oppositely disposed integral loops and a layer or coating of a moisture-proof material upon each side of the metal plate or strip.

Signed by me this 29th day of June 1910.

GEORGE S. GALLAGHER.

Witnesses:

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