M. S. GOLDSMITH.

CONCRETE FLOOR CONSTRUCTION.

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1,168,627. Patented Jan. 18, 1916.

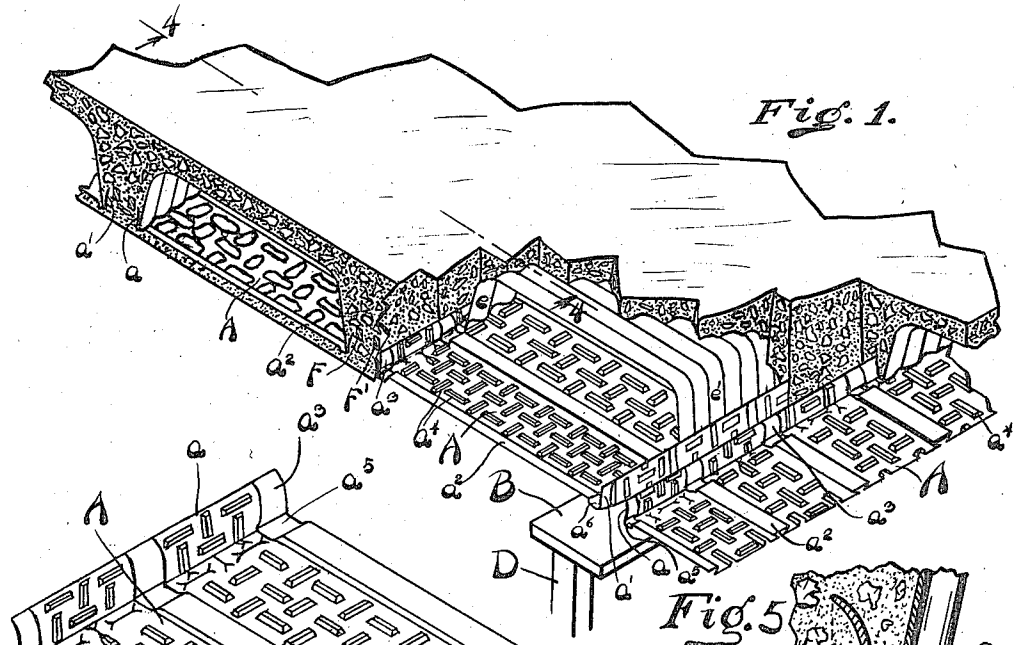

Fig. 1.

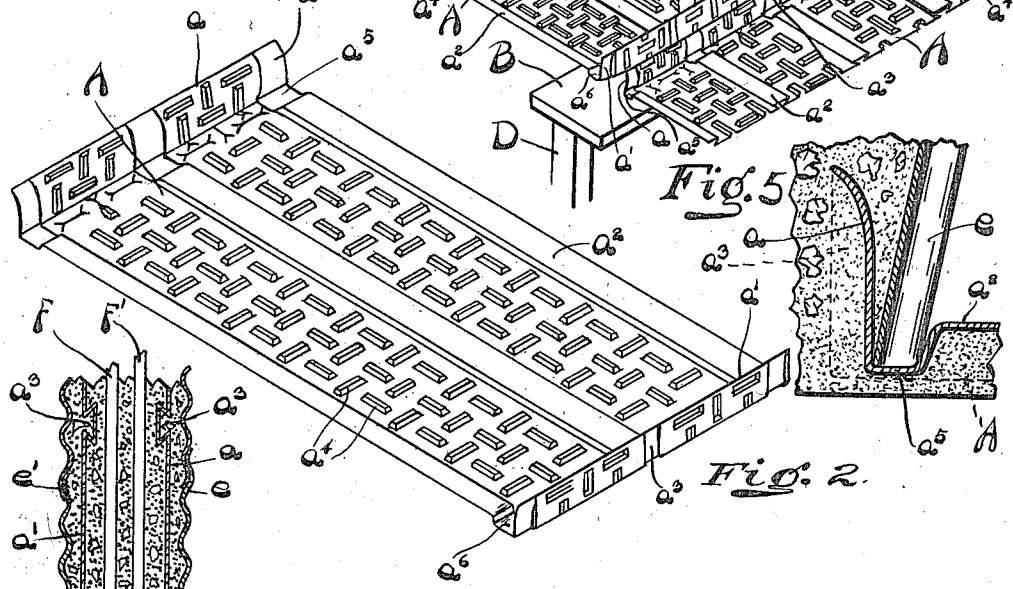

Fig. 2.

Fig. 3.

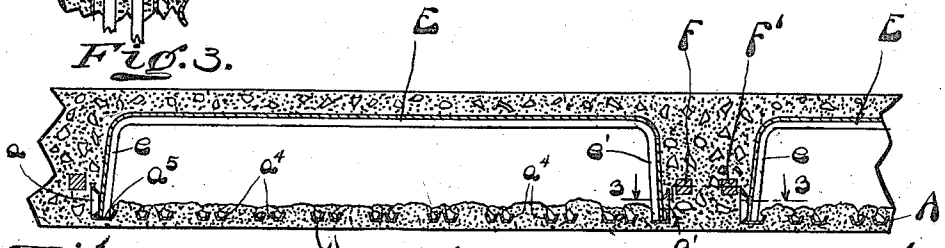

Fig. 4.

Fig. 5

Witnesses

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UNITED STATES PATENT OFFICE.

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CONCRETE FLOOR CONSTRUCTION.

1,168,627. Specification of Letters Patent. Patented Jan. 18, 1916.

Application filed October 31, 1914. Serial No. 869,508.

To all whom it may concern:

Be it known that I, MAX S. GOLDSMITH, a citizen of the United States of America, and resident of Cincinnati, county of Hamilton, and State of Ohio, have invented certain new and useful Improvements in Concrete Floor Constructions, of which the following is a specification.

My invention relates to concrete floor constructions, in assembling which arched metal forms are placed in rows upon centering, leaving between them longitudinal troughs, into which concrete is poured to form concrete beams, and over which concrete is poured to form concrete floor slabs, and on which a ceiling is formed by metal laths suspended from the concrete beams, and covered with plaster.

An object of my invention is to provide a means for preventing the arched forms from flattening or spreading.

Another object of my invention is to provide means for preventing water seeping from the wet concrete.

Another object of my invention is to provide a convenient means for suspending the metal laths between the concrete beams.

Another object of my invention is to provide a convenient means for alining the arched forms.

These and other objects are attained by the means described in the specification, and illustrated in the accompanying drawings, in which,

Figure 1 is a perspective view of a floor embodying my invention, in the course of construction, parts thereof being broken out, more clearly to illustrate the invention. Fig. 2 is a perspective view of a metal lath forming a feature of my invention. Fig. 3 is a sectional view, taken upon irregular the 3—3 of Fig. 4. Fig. 4 is a sectional view taken along line 4—4 of Fig. 1. Fig. 5 is a sectional view upon an enlarged scale, showing a part of a concrete beam, and the ends of a metal lath and an arched form.

In constructing a floor embodying my invention, a series of metal laths A, each lath having its ends a, a' upturned, are supported at their ends upon centering boards B, which are mounted upon struts D. The metal laths are placed in rows, side by side. There is left between the upturned ends of the laths of adjacent rows, a space which is of a width equal to the lower end of the concrete beam which is to be formed. The distance between the ends e, e' of the arched forms E is equal to the distance between the upturned ends a, a' of a lath A. The arched forms E are placed upon the metal laths, so that between the ends of adjacent rows of the arched forms, there is a trough, which molds the concrete into the shape of a beam, the ends e, e' of adjacent rows of the arched forms constituting the sides of the mold for the beam and the centering B, forming the bottom of the mold. Within the troughs reinforcing rods F, F', are placed in the usual manner, before the concrete is poured therein. The tops of the arched forms E form a continuous horizontal support for the concrete of the floor slabs.

I will now describe the construction of the metal laths and of the arched forms in detail: Each metal lath A consists of a rectangular piece of sheet metal, in which longitudinal ribs a^2 are formed, between which metal is a series of perforations, the edges of which are surrounded by flanges a^4, formed from the metal, which is struck up in the formation of the perforations. The ends a a' of the sheet are turned up substantially at a right angle to the body thereof. Each rib a^2 is in the form of an inverted truncate of a triangle, and their ends, occurring in the upturned ends a a', are flattened to close them. This forms in the ends pockets a^3, which are open at the bottom and closed at the top. Adjacent to the ends a a' ribs a^2 and flanges a^4 are flattened to the level of the body of the sheet, thereby forming transverse grooves a^5 a^6, adjacent to said ends. The arched forms E are made preferably from sheet metal, which is longitudinally corrugated. The angle at which the ends e e' stand to the body of the arched form approximates a right angle. When the arched forms are positioned upon the metal laths, the ends of the arched forms rest in the grooves a^5 a^6,

abutting at their lower ends against the ends $a\ a'$. This contact of the ends $e\ e'$ with the ends $a\ a'$ of a lath braces the arched form, so that it will not flatten when weight is brought to bear upon it. The bottom and side walls of the grooves $a^5\ a^6$ form a close contact with the lower edges of the ends $e\ e'$, so that when concrete is poured into the troughs, this close contact prevents seepage of the water from the concrete and hence prevents that honey-comb effect, which is found in concrete from which water has seeped to such an extent as not to leave a sufficient amount of water of crystallization therefor.

The wet concrete is forced by the weight of the superposed concrete into the pockets a^3, and likewise through the perforations in the upturned ends $a\ a'$. Hence when the concrete has set, the concrete in the pockets and these aforesaid perforations, forms a support for the metal laths A, which will maintain them firmly in place when the centering B has been removed. This means of supporting the metal laths saves both material and labor, over those constructions wherein the lath is suspended from the molds by means of wires.

What I claim is:

1. In a concrete floor in the course of construction, the combination of a series of parallel centering boards spaced apart a distance equal to the distance apart of the beams to be formed, a series of metal laths, each lath having upturned ends, each of the series consisting of a row of laths with the upturned ends in alinement, resting upon the centering boards, and with a space between the rows equal to the width of the lower end of the concrete beam which is to be formed, a series of arched forms with downturned ends, each of the series of arched forms being supported upon one of the series of laths, and each form having its ends contacting with the upturned ends of its supporting lath, and concrete supported upon the arched forms, filling in the space between the ends of the laths and embedding the upturned ends of the laths.

2. In a concrete floor, the combination of a series of metal laths laid with a space between each series of a width equal to the lower end of the concrete beam which is to be formed, each lath having in it a series of longitudinal upwardly projecting dove-tailed ribs, its ends upturned and the ribs flattened adjacent to the upturned ends, a series of arched forms with downturned ends, each of the series of arched forms being supported upon one of the series of laths, and each form having its ends contacting with the upturned ends of its supporting lath, and concrete supported upon the arched forms, filling in the space between the ends of the laths and embedding the upturned ends of the laths.

3. In a concrete floor, the combination of a series of metal laths laid with a space between each series of a width equal to the lower end of the concrete beam which is to be formed, each metal lath having longitudinal ribs, upturned ends, the ribs having their ends closed and flattened adjacent to the upturned ends to form transverse grooves in the lath, a series of arched forms with downturned ends, each of the series of arched forms being supported upon one of the series of laths, and each form having its ends contacting with the upturned ends of its supporting lath, and concrete supported upon the arched forms, filling in the space between the ends of the laths and embedding the upturned ends of the laths.

4. In concrete floor in the course of construction, the combination of a series of parallel centering boards spaced apart a distance equal to the distance apart of the beams to be formed, a series of metal laths, each lath having upturned perforated ends, each of the series consisting of a row of laths with the upturned ends in alinement, resting upon the centering boards, and with a space between the rows equal to the width of the lower end of the concrete beam which is to be formed, a series of arched forms with downturned ends, each of the series of arched forms being supported upon one of the series of laths, and each form having its ends contacting with the upturned ends of its supporting lath, and concrete supported upon the arched form, filling in the space between the ends of the laths, embedding the upturned ends of the laths, and projecting through the perforations.

5. As a new article of manufacture, a metal lath having longitudinal ribs, upturned ends, and the ribs flattened adjacent to the upturned ends to form transverse grooves in the lath.

6. As a new article of manufacture, a metal lath having upturned ends, longitudinal ribs which are closed at the ends of the laths and are flattened adjacent to the upturned ends to form transverse grooves.

7. In a concrete floor, the combination of a series of metal laths, each lath having upturned ends adapted to brace a superposed arch form against the weight of concrete supported by the form, each of the series consisting of a row of laths with the upturned ends in alinement and with a space between the rows equal to the width of the lower end of the concrete beam which is to be formed, a series of arched forms with downturned ends, each of the series of arched forms being supported upon one of

the series of laths, and each form having its ends contacting with and braced by the upturned ends of its supporting lath, and concrete supported upon the arched forms, filling in the space between the ends of the laths and embedding the upturned ends of the laths.

In testimony whereof, I have hereunto subscribed my name this 29th day of October, 1914.

MAX S. GOLDSMITH.

Witnesses:
WALTER F. MURRAY,
W. THORNTON BOGERT.