

(No Model.)

J. STAMSEN & R. S. BLOME.
METHOD OF CONSTRUCTING STEEL AND CONCRETE ARCHES,
SIDEWALKS, &c.

No. 537,866.

Patented Apr. 23, 1895.

Fig. 1.

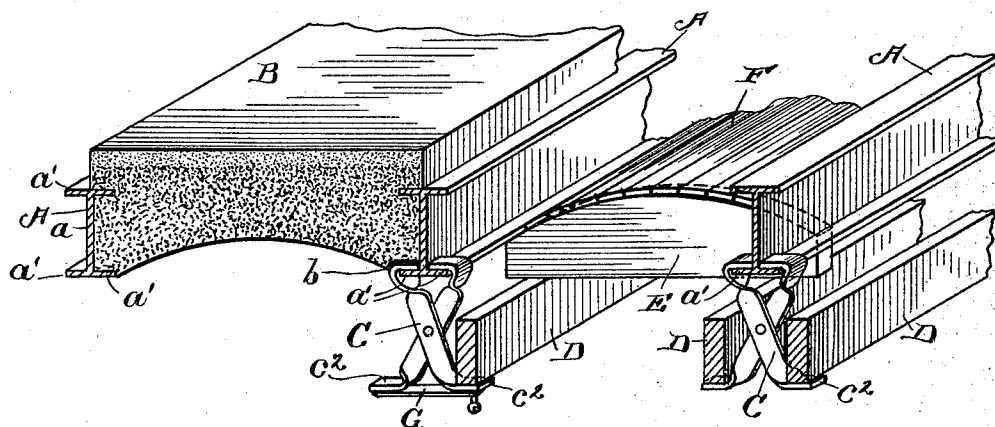


Fig. 2.

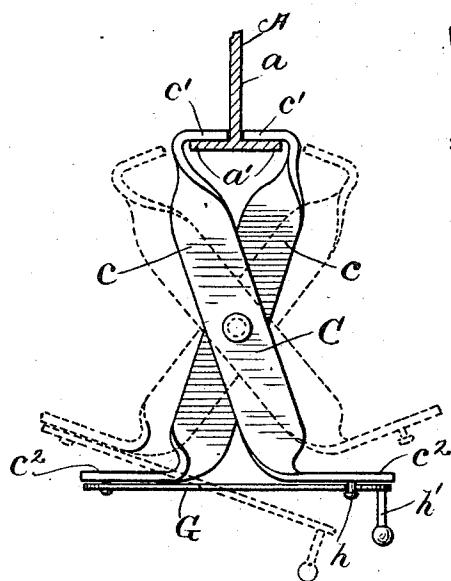
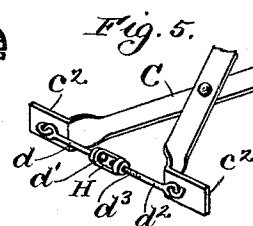
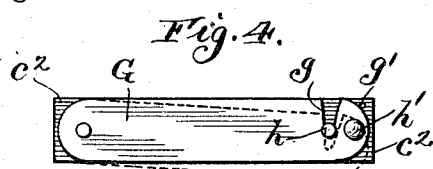
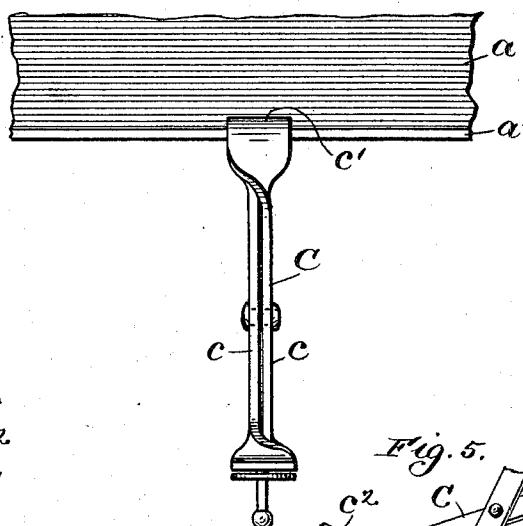


Fig. 3.



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UNITED STATES PATENT OFFICE.

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METHOD OF CONSTRUCTING STEEL AND CONCRETE ARCHES, SIDEWALKS, &c.

SPECIFICATION forming part of Letters Patent No. 537,866, dated April 23, 1895.

Application filed February 23, 1895. Serial No. 539,376. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH STAMSEN and RUDOLPH S. BLOME, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Methods of Constructing Steel and Concrete Arches, Sidewalks, and Analogous Structures, of which the following is a specification.

This invention relates to improvements in the method of constructing what is termed by architects, steel and concrete arch and sidewalk constructions, and while it is more especially adapted to be used in the aforesaid structures, yet it is applicable and may be used in analogous constructions; and it consists in certain peculiarities of the form, operation, application and use of center hangers which are employed in such a manner as to dispose or place the weight of the concrete, so that the same will rest entirely and at once upon the beams.

The object of our invention is to provide a means by which the construction of steel and concrete arches, side-walks and analogous structures can be accomplished with a minimum of cost and labor, and more readily than by the methods ordinarily employed.

In order to enable others skilled in the art to which our invention pertains to make and use the same, we will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a perspective view, partly in section of a portion of a side-walk, showing a part of the same in a completed condition and illustrating another portion thereof with our hangers applied to the supporting beams and ready to receive the concrete. Fig. 2 is a view in elevation of one of the hangers and a portion of the supporting beam, showing by continuous lines the hanger secured thereon, and by dotted lines the position the parts will occupy when being removed from the beam. Fig. 3 is an edge view of one of the hangers, showing it attached to the supporting beam. Fig. 4 is a bottom plan view of the hanger detached; and Fig. 5 is a perspective view of a portion of one of the hangers showing a modification in the manner of adjusting or locking the same on the beams.

Similar letters refer to like parts throughout the different views of the drawings.

A, represents the supporting beams of the structure, which beams may be of any suitable dimensions, but are preferably made of steel and "I"-shaped in cross-section, that is to say, said beams are formed with a vertical rib *a*, having at its top and bottom flanges *a'*, on each side thereof, as is clearly illustrated in the drawings. These beams are placed parallel with one another at suitable distances apart, and when it is desired to fill in the spaces between them with concrete B, the hangers are secured to the lower portions of the beams, as is shown in Fig. 1, of the drawings.

The hangers C, are made of two pieces *c*, which are pivotally connected about their middle and are provided at their upper ends with inwardly turned jaws or flanges *c'*, which are designed to clamp the rib *a*, and to rest on the lower flanges *a'*, thereof. The lower portion of the pieces *c*, constituting the hanger C, is provided with outwardly turned flanges or feet *c''*, upon which may rest the rails or pieces D, which are for the purpose of supporting the centering pieces E, upon which is laid matched flooring or boards F, to receive and uphold the concrete until it becomes thoroughly set and dry. To the lower surface of one of the feet *c''*, of each of the hangers is pivotally connected a locking or adjusting bar G, which bar is provided near its free end with a "V"-shaped or flaring opening *g*, to receive and retain the pin *h*, which is secured to the lower surface of the other foot of the hanger. The locking or adjusting bar G, is also provided near its free end with a handle or knob *h'*, for convenience in fastening the bar on or detaching it from the pin *h*, as is apparent.

In Fig. 5, of the drawings, we have shown a modification in the manner of adjusting or locking the feet of the hanger together, which we may sometimes employ, instead of the locking or adjusting bar G, just above described, and this modification consists in securing to one of the feet *c''*, of the hanger a rod *d*, having on its free end a knob *d'*, and to the other foot *c''*, of the hanger, a rod *d''*, provided at its free end with screw-threads

d^3 , to engage threads in a turn-buckle H, which is swiveled on the rod d , thus allowing the turn-buckle to be revolved and to draw the feet of the hanger together, or to separate them, as may be desired. We prefer to use the locking or adjusting bar G, for the reason that it is simpler and more effective, yet we do not desire to be limited to any locking or adjusting device, as we may vary the same or omit them entirely, but we have found from experience and practice that as the ribs a , of the supporting beams differ in thickness, it is advantageous to supply the hangers with the adjusting or locking bars G, by means of which and through its flaring slot g , and the pin h , the feet of the hangers may be drawn together, and held in a fixed position, thus causing the jaws c' , to firmly clamp the rib of the beams. In order to prevent the locking bar G, becoming displaced one of the feet c^2 , may be provided with a hole or opening g' , through which a wire may be passed to engage the knob or handle h' , of the bar.

From the foregoing and by reference to the drawings, it will be seen and readily understood that by placing our hangers at proper distances on the beams A, they may be there secured by means of the adjusting device G, illustrated in Fig. 2, or that shown in Fig. 5, of the drawings, or if it is desired said devices may be omitted, as is shown on one of the hangers, illustrated in Fig. 1. The rails D, are then placed on the upper surface of the feet c^2 , of the hangers, so as to extend parallel with the beams. The centering pieces E, are then placed on the upper surface of the rails D, and upon said pieces is laid the matched boards or flooring F, on which is placed the concrete B, in which position the parts are allowed to remain until the concrete is hardened or firm, set and dry. When it is desired to remove the center apparatus, the bar G, of each of the hangers is disengaged from the

pin h , when the feet c^2 , as well as the jaws c' , may be separated, and the latter removed from the flanges a' , of the beams, when the flooring rails and pieces E, may be removed.

In order to prevent any material defacement of the arch by the removal of the jaws a' , of the hangers, we place on the upper surface of each jaw a piece of tar paper b , which will allow the jaws to be easily removed and without material injury to the arch or concrete, after the removal of which the small apertures in the arch may be filled by means of a trowel or otherwise.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination with the supporting beams of a series of removable clamping hangers, composed of the pieces c , pivoted together and having at their upper ends the inwardly extending jaws c' , and at their lower ends the outwardly extending feet c^2 , one of said feet being provided with a pin or projection on its lower surface, and the locking bar G, pivoted to the lower surface of the other foot and having the slot g , to engage the said pin or projection, substantially as described.

2. The combination with the supporting beams of a series of removable clamping hangers, composed of the pieces c , pivoted together and having at their upper ends the inwardly extending jaws c' , and at their lower ends the outwardly extending feet c^2 , the pin h , on the lower surface of one of said feet, and the locking bar G, pivoted to the other foot, and having the flaring slot or opening g , to engage said pin, and the handle h' , to operate the bar, substantially as described.

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