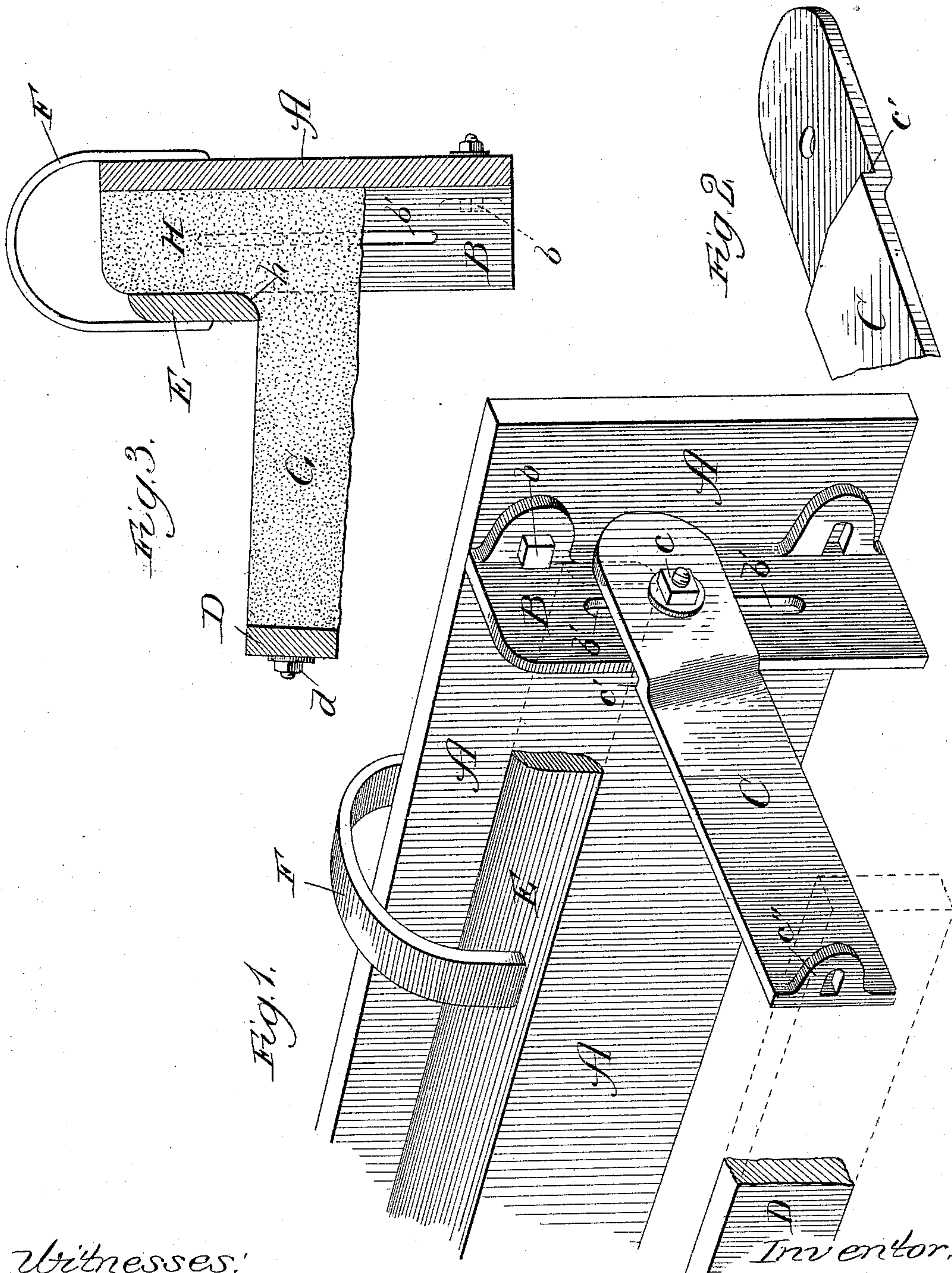


(No Model.)

S. P. McKELVEY.  
MOLD FOR FORMING CASTINGS FROM CEMENT.

No. 474,143.

Patented May 3, 1892.



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# UNITED STATES PATENT OFFICE.

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## MOLD FOR FORMING CASTINGS FROM CEMENT.

SPECIFICATION forming part of Letters Patent No. 474,143, dated May 3, 1892.

Application filed July 14, 1891. Serial No. 399,446. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL P. MCKELVEY, a citizen of the United States, residing at Chicago, Cook county, Illinois, have invented a new and useful Improvement in Molds for Forming Castings from Cement and other Materials, of which the following is a specification.

As is well known the curbing at the side of the street or roadway is frequently formed out of slabs of stone of suitable dimensions set upon edge. These slabs are quite thin in comparison to their breadth and length, and it has been found in using them that there is a tendency for them to sink into the earth and become displaced, so as to present an uneven and ragged appearance instead of having their tops uniform and of the same level. To avoid this it has been customary to construct the curbing and the gutter adjacent thereto in one piece out of cement or any other suitable material. In this way a broad base is given to the combined gutter and curb, affording a sufficient bearing-surface resting upon the earth or foundation used to prevent sinking of the curbing and maintain the uniform and even line thereof. When this combined gutter and curbing is made of cement, it is of course essential that a mold, box, or frame-work should be provided to hold the concrete until it has hardened or set sufficiently to stand alone, after which the mold or box may be removed. It is also customary in laying such gutter and curbing to first form a certain length thereof—as, for instance, six feet—then to pass by a corresponding space of six feet, and then form another portion of the gutter, &c. After these alternating sections have hardened sufficiently to remove the molds similar sections are formed in the spaces originally left unfilled, completing the curbing. These spaces are originally left in order to afford sufficient time for the hardening, which is necessary before the molds can be removed. As the gutter runs down in both directions from its highest point toward the sewer-openings the level and angle of the gutter constantly changes, and molds of different heights and angles would have to be used for each section, making it necessary to use a large number of molds, which is troublesome

and expensive. To avoid this difficulty is one of the objects of my invention, and for that purpose I provide a mold made in several parts adapted to be rapidly joined together as the gutter and curbing are made and so constructed that various of the essential parts can be removed before the cement has entirely hardened to be used in making another cast, and which is capable of adjustment to different heights and angles, as required. In this way I provide a mold which is serviceable and efficient, by the use of which I am enabled to dispense with the large number of molds heretofore necessary, thereby simplifying and cheapening the construction; and my invention consists in the features and combinations hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of the mold with its parts put together in the position which they assume when forming a gutter and curbing; Fig. 2, a perspective detail view of a portion of the mold, and Fig. 3 a transverse vertical section through the mold and a section of the gutter and curbing.

In constructing my improved mold I first make a back A of any desired height and length and of any suitable material, as plank. To this back are secured end pieces B, preferably made of metal, and attached to the back by means of bolts or nuts *b* at any desired distance apart, the distance between these end pieces determining the length of the section of curbing and gutter which shall be formed by the mold. One or more arms C are then provided, and preferably attached to the end piece by means of bolts and nuts *c*, passing through a slot *b'* in the end piece, by which means the arm can be adjusted vertically and angularly relatively to such end piece. The arm is also provided with a double-beveled shoulder *c'*, so constructed that while it prevents the arm from falling below a substantially horizontal position it allows it to rise to a greater or less extent above such position, in order to form the gutter with the necessary inward slant, as hereinafter shown. This double-beveled shoulder is shown in Fig. 2, which represents the inside or inner face of that end of one of the



arms which engages with the end piece. The length and height of these arms depend upon the dimensions which it is desired to give to the gutter, while the breadth and height of the end pieces determine the breadth and height which are given to the curbing, as will be evident when describing the method of using the mold. To the outer ends of these arms is secured a bar D, of wood or other suitable material, which is preferably fastened to the arms C by means of bolts *d*, passing through slots formed in the lug *c''* on the ends of the arms. I next provide a strip E, of wood or other suitable material, the edges of which are beveled, as shown, so as to give the same curve to the concrete whichever side of the strip is placed adjacent thereto. To hold this strip in place I provide any desired number of spring clamps or arms F.

The device is used as follows: The street having been first properly graded and the bed or roadway upon which the curbing and gutter are to be formed having been laid, the back of the mold A is placed in a substantially vertical position at the side of the roadway and the end pieces secured thereto. The arms C are then attached to the end pieces at any desired height and angle and the bar D fastened to the arms. The concrete or other material used is then laid upon the roadway inside of the mold and formed by suitable tools into the shape shown in Fig. 3, where the portion G forming the gutter is held between the back, the arms, and the bar D, while the portion H forming the curbing is formed as shown in Fig. 3, its inward face resting against the back A, its ends restrained by the end pieces B, and its front face supported by means of the strip E, the lower beveled edge of this strip forming the curve *h*. As shown, the strip E is held in place by means of the spring arms or clamps F, which are sprung over the back, the curbing, and the strip. As soon as the concrete is slightly hardened the bar D may be unfastened and removed, then the arms taken off, and the end pieces removed and used with another plank in forming another section of the gutter and curbing. The strip E may also be taken off at this time or may be allowed to remain somewhat longer, as desired, and the plank or back A is preferably allowed to remain until the cement is thoroughly hardened.

In this way it will be seen that the plank or backing is the only part which it is necessary to provide for each section of the mold, and that the end pieces, arms, and other parts can be easily removed from the back without disturbing the cement as soon as the latter is slightly hardened.

The pitch of the gutter or its slope toward the curbing and its height will be determined by the angle and height at which the arms are set relatively to the end pieces, the upper surface of the gutter being formed level with the upper edge of these arms and the bar attached thereto, as will be evident from Fig. 3.

While I have shown and described more or less specific forms, I do not intend to limit myself thereto, but contemplate changes in form and proportion and the substitution of equivalents, as may be necessary or advisable, my invention consisting, first, in providing a vertical end piece or pieces for determining the height of the curbing, and, secondly, in providing a vertically and angularly adjustable arm or arms for determining the height and angle of the gutter, and any means for accomplishing these ends will fall within the spirit of my invention, notwithstanding the fact that the arm may not be formed and connected to the end piece in the precise manner shown herein.

It will be evident that, if desired, the bar D may be omitted and the front face of the concrete formed merely by making a wall of earth or other material at this point without using the bar D.

I claim—

1. A mold for the purpose described, comprising a back, end pieces secured thereto, vertically and angularly adjustable arms connected to the end pieces, and means for forming the front edge of the casting, substantially as described.

2. A mold for the purpose described, comprising a back, vertical end pieces secured thereto, angularly and vertically adjustable arms connected to the end pieces, and a bar attached to the ends of the arms opposite to the end pieces for forming the front edge of the casting, substantially as described.

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