

A. H. EMBLER.

APPARATUS FOR BUILDING CONCRETE STRUCTURES.

No. 175,956.

Patented April 11, 1876.

Fig. 1.

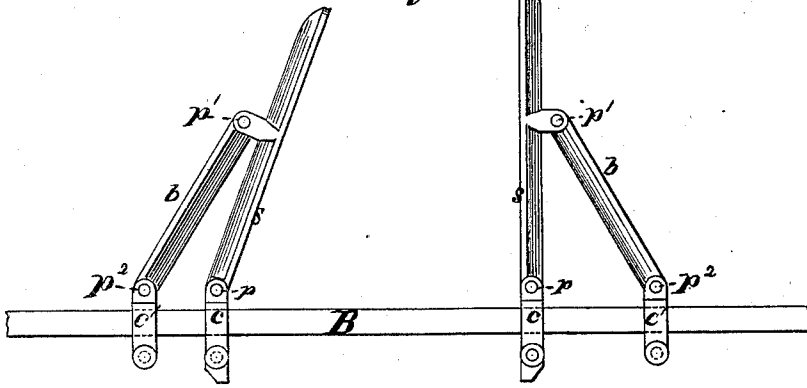


Fig. 2.

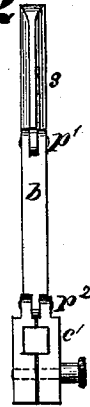


Fig. 3.

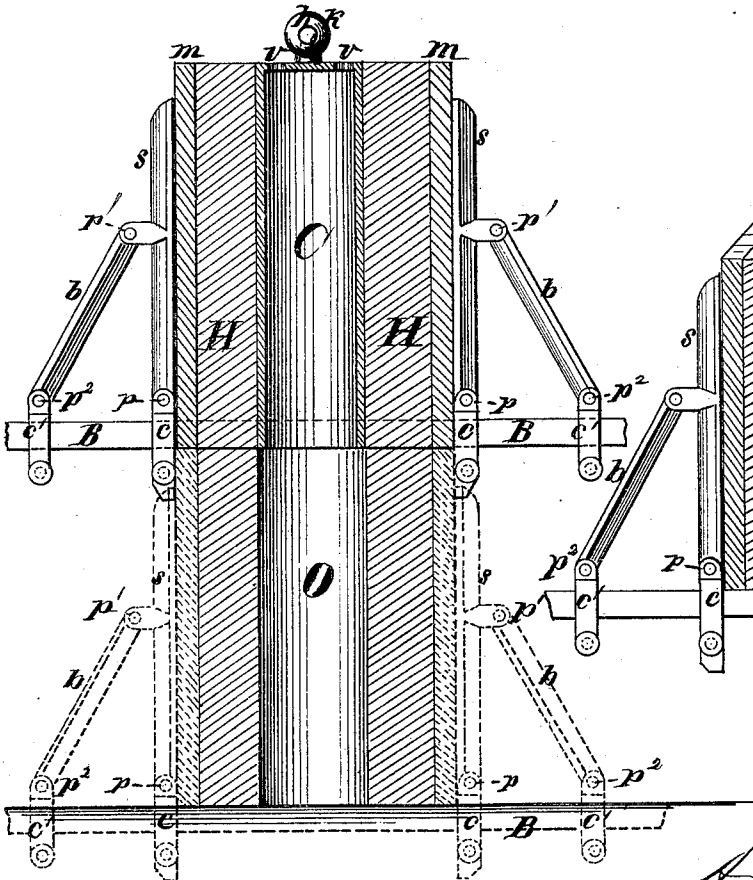
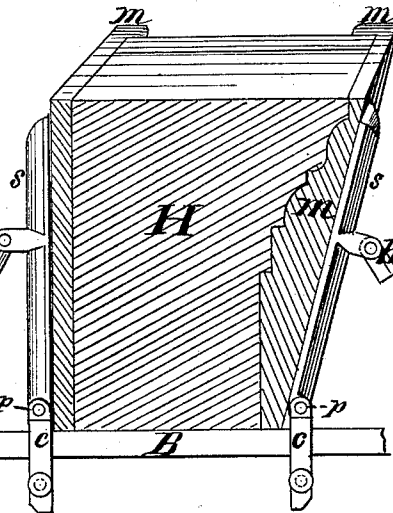


Fig. 4.



Witnesses

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IMPROVEMENT IN APPARATUS FOR BUILDING CONCRETE STRUCTURES.

Specification forming part of Letters Patent No. **175,956**, dated April 11, 1876; application filed March 6, 1876.

To all whom it may concern:

Be it known that I, ADAM H. EMBLER, of Montgomery, in the county Orange and State of New York, have invented a new and useful Improvement in Apparatus for Constructing the Walls of Concrete Monolithic Structures; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

The object of my invention is to facilitate the construction of buildings made of continuous artificial stone; and it consists in means whereby the molds which inclose and give form to the plastic cement or concrete, while hardening in the walls of such buildings, may be conveniently and securely held in any desired position, both to form the plane side walls and the panels, exterior and interior cornices, pilasters, moldings, and other ornamental portions of such buildings. It also consists in an improved core for forming hollow spaces in the body of such a wall.

Figure 1, in the accompanying drawing, represents a side view of an adjustable extension-slide, brace, and support for the molds used in the construction of concrete walls, and the bar upon which said slide, brace, and support are adjusted and held. Fig. 2 represents a rear view of the support, brace, and slide of the brace. Fig. 3 shows the apparatus as applied to the construction of a wall, a section of said wall and section of an improved core which forms a part of my apparatus being shown. Fig. 4 shows a portion of the apparatus applied to the construction of a cornice.

B is a bar upon which the slides *c c'* are fitted. The said slides *c c'* are either rigidly joined respectively to the mold-support *s* and brace *b*, or the said slides may be respectively pivoted by pivots $p^1 p^2$ to the said support *s* and brace *b*, each construction having its special advantages for certain kinds of work. When the support *s* is pivoted to the slide *c* it may be used, as shown in Fig. 4, in forming cornices, moldings, and other shapes which require angular adjustment of the molds, and to which the support rigidly attached to the clamp would not be adapted. At a point near the middle of the pivoted support *s* is pivoted the brace *b* by a pivot, p^1 , and the said

brace is also pivoted to the slide *c'* by a pivot, p^2 . But when the support *s* is rigidly attached to the slide *c*, the brace *b* may also be rigidly attached to the said support *s*, and to the slide *c'*, both the clamps *c* and *c'* sliding simultaneously along the bar B, together with the support *s* and brace *b*, when required so to do for the purpose of adjustment. The slides *c c'* may be split at the bottom, as shown in Fig. 2, and may be made to grasp tightly the bar *b*, when it is desired to hold the brace *b* and the support *s* in place, by the use of screws, keys, wedges, or other approved means, or they may be made without the split at the bottom, and held by pins which engage the bar B.

The parts of my apparatus so far described are used as follows: Beginning at the ground or other foundation, the bars B are laid down transversely to the wall to be erected. The supports *s* are adjusted to and clamped in the proper places on said bars, to hold the molds *m* in the proper position to give the required thickness and contour to the said wall. The concrete H is then put in, and very thoroughly rammed into the molds by sledges till the inclosure formed by the said molds is full of the same. When the cement or concrete has hardened sufficiently, the slides *c c'* are loosened from the bar B, and the supports *s* and the braces *b* are slipped off from the said bar. The molds *m* are then removed, and the bars B are then forced out. The holes left in the wall by the said bars B, after the latter have been pulled out from the wall, are subsequently filled by the same materials as the wall. After the first or any subsequent layer of concrete or cement has hardened sufficiently, the bars B may be placed upon the top of such layer and another layer formed thereon and joined to the said layer, after readjusting the supports *s*, the braces *b*, and the molds *m*. In this way the wall is constructed in successive layers of the plastic material, which cohere to each other and form a continuous structure of artificial stone. To economize material and facilitate the drying of concrete or cement walls of buildings, vertical hollow spaces O, Fig. 3, are commonly formed therein, which spaces are also useful as smoke-flues, flues for ventilation, passages for water and gas pipes, and which subserve other useful purposes.

To facilitate and perfect the formation of such passages, I employ the core C. The said core consists of a hollow tube, preferably of metal, the bottom of which is open. The top of the said core is partly closed, but is provided with vent-holes *v*, which allow air to pass, and permit the core to be withdrawn much more easily than when a solid core is used, and the pressure of the atmosphere has to be overcome in withdrawing the same. A handle or knob, *k*, is provided at the top of the core to facilitate handling. The knob or handle *k* has a hole, *h*, formed in it for the insertion of a lever, which aids in loosening the core. Superior lightness, effectiveness, and ease of manipulation are secured by this construction.

I claim—

1. The combination, with the mold *m*, of the bar B, the adjustable support *s*, slide *c*, and brace *b*, constructed and operating substantially as and for the purpose herein specified.
2. The combination, with the bar B, of the slides *c* and *c'*, and the support *s* and brace *b*, pivoted to the said slides, substantially as herein described.
3. The open-bottomed hollow core C, having vent-holes *v* at the top, substantially as and for the purpose herein specified.

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Witnesses:

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