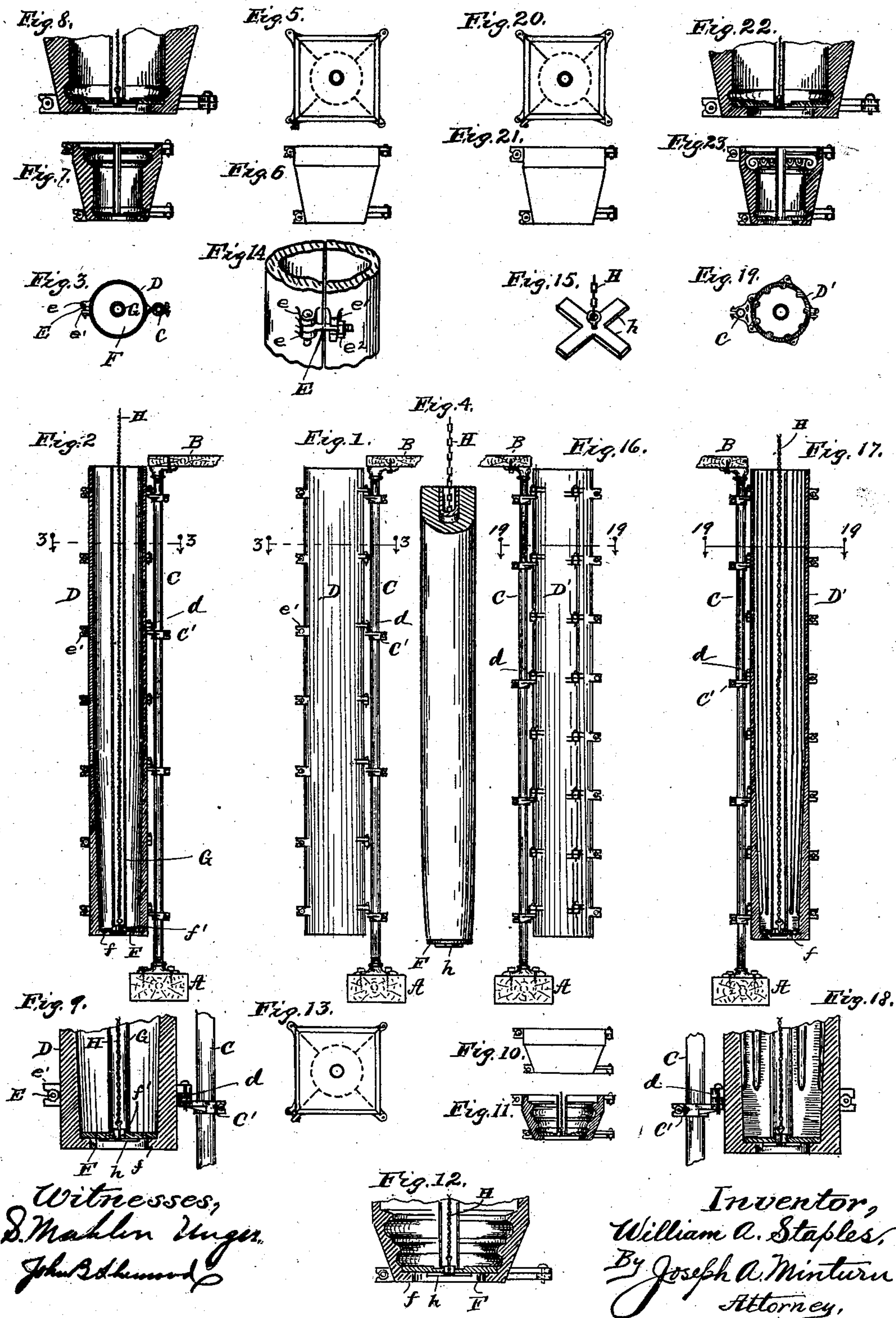


No. 724,754.

PATENTED APR. 7, 1903.

W. A. STAPLES.
CONCRETE COLUMN MOLD.
APPLICATION FILED JAN. 13, 1903.

NO MODEL.



UNITED STATES PATENT OFFICE.

WILLIAM A. STAPLES, OF INDIANAPOLIS, INDIANA.

CONCRETE-COLUMN MOLD.

SPECIFICATION forming part of Letters Patent No. 724,754, dated April 7, 1903.

Application filed January 13, 1903. Serial No. 138,887. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. STAPLES, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Concrete-Column Molds, of which the following is a specification.

This invention relates to improvements in means for the manufacture of concrete columns for verandas, porticos, colonnades, interior, exterior, and all kinds of architectural work; and the object of the invention is to provide a compact and homogeneous column in a convenient and expeditious manner, also to provide a column with interior ventilation, and to provide means for handling the green column, so as to prevent breakage or mutilation in its tender and uncured state.

I accomplish the objects of the invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved mold for forming the shaft of a plain column; Fig. 2, a longitudinal central section of same; Fig. 3, a cross-section on the dotted lines 3 3 of Figs. 1 and 2; Fig. 4, an elevation and partial section of the column made in the molds shown in Figs. 1 and 2, the figure showing the column in inverted position, which is the position during the process of manufacture. Fig. 5 is a plan, and Fig. 6 a side elevation, of the mold for forming the capital of the column; Fig. 7, a vertical section of Fig. 6; and Fig. 8, a detail, on a larger scale, of the lower part of Fig. 7. Fig. 9 is a detail of the lower end of Fig. 2 on a larger scale. Fig. 10 is a side elevation, Fig. 11 a vertical section, and Fig. 13 a plan view, of the mold for forming the base of the column, and Fig. 12 is a detail of the lower part of Fig. 11 on a larger scale. Fig. 14 is a detail in perspective of the mold for forming the shaft, showing the device for locking the separable parts of the mold together. Fig. 15 is a perspective view of the cross-bars for securing the lower end of the chain by which the column is supported during the curing process after being taken out of the mold. Fig. 16 is a side elevation of a mold for forming the shaft of a fluted column; Fig. 17, a longitudinal central section of same; Fig. 18, a detail, on

a larger scale, of the lower end of Fig. 17; and Fig. 19, a cross-section on the line 19 19 of Figs. 16 and 17. Figs. 20, 21, and 23 are plan, side elevation, and vertical central sections, respectively, of the mold for forming the capital of the fluted column, and Fig. 22 is a detail, on a larger scale, of the lower end of Fig. 23 and is substantially the same as Fig. 8.

Like letters of reference indicate like parts throughout the several views of the drawings.

A is a suitable fixed support, B a fixed platform above it, and C a tube rigidly secured between the platform and the said support A. Bolted to this tube are the brackets C', which form the supports for the hinges *d* of the mold D, in which the shaft of the column is formed. The mold for the plain shaft, as shown in Figs. 1, 2, and 3, is in two pieces, which open on said hinges to discharge the finished shaft. The two parts of the mold when closed are locked together by means of the fastenings, comprising an eyebolt E, pivoted between the ears *e e* of one member of the mold and taking into a deep notch in the lug *e'* of the opposite member of said mold, the threaded end of the bolt having the nut *e''*, which contacts with the outside of the lug *e'* and draws the parts of the mold together when screwed up against said lug. This is shown in Fig. 14. The bore of the mold tapers downwardly, so that the shaft occupies an inverted position during its formation. The lower walls of the mold have the inside flange *f* (see Fig. 9) to support the removable plate F, which forms the bottom of the mold. This plate has a central perforation surrounded by the flange *f'* to enter and center the tube G, which extends longitudinally of the mold. The mold thus completed is filled through its open upper end, and concrete filling is well tamped down as it is introduced. When a shaft the maximum length of the mold is required, the latter will be filled to the top with the well-tamped concrete; but where lengths less than the maximum are required the desired length will be obtained by only filling the mold to the point which will give the desired length.

The platform B is for the convenience of the operator, who stands thereon in the performance of his work.

After the operation of molding the mold is

removed by unfastening and opening the two parts of the mold. The newly-formed and green shaft is supported by means of a chain H, the lower end of which is secured to the cross-bars *h*, placed under the plate F, the chain being passed thence up through the tube G and is made fast to any suitable support, which will preferably be a derrick-arm or a traveling block and tackle, (not shown,) whereby the shaft may be removed and supported until dry and hard. The plate and tube will remain until the shaft is cured, when they will be both removed, and to facilitate the removal of the tube it will be tapered.

The molds for the base and for the capital of the column are constructed in the same manner of a plurality of hinged sections, the interior formation being such as to give the desired shape to molded article, and the mold being suitably shortened to correspond with the length of said parts. The base, shaft, and capital will all have central registering openings, which permit interior circulation of air.

Figs. 16 to 19, inclusive, show a mold made in more than two sections or parts in order to enable the same to be removed from the fluted column without marring the flutes of the latter. It will thus be seen that the number of pieces in a given mold will depend on the shape of the article to be produced in it, and I therefore do not wish to limit my invention as to the number of pieces in a mold.

Having thus fully described my invention, what I claim as new, and wish to secure by Letters Patent, is—

1. Molds for the purposes specified in a plurality of parts, said parts being hinged and fastened together to permit of being opened laterally from the article formed therein for removal from said article, said mold having an interior opening with a downward taper

and having an inside flange at the lower end of said opening, and a plate seated on said flange to form a removable bottom or closure, said plate having a central opening and a removable tie secured to the bottom plate and extending thence up through the tube.

2. Molds for the purposes specified in a plurality of parts, said parts hinged and fastened together to permit of opening laterally from the article, said mold having a longitudinal central opening which tapers downwardly and terminates with an inside flange, a plate seated on said flange to form a removable bottom, said plate having a central opening and a tube surrounding the opening of the plate and extending longitudinally and centrally of the mold and a flexible tie, supported at its upper end, extending down through the tube and cross-bars below the bottom plate, to which the lower end of the tie is fastened.

3. Molds for the purpose specified in a plurality of parts, said parts hinged and fastened together to permit of opening laterally from the molded article, said mold having a longitudinal central opening which tapers downwardly and terminates with an inside flange, a plate seated on said flange to form a removable bottom, said plate having a central opening, a tube surrounding the opening of the plate and extending longitudinally and centrally of the mold and a removable tie secured to the bottom plate and extending thence up through the tube.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 31st day of December, A. D. 1902.

WILLIAM A. STAPLES. [L. S.]

Witnesses:

JOSEPH A. MINTURN,
S. MAHLON UNGER.