

(No Model.)

2 Sheets—Sheet 1.

N. C. CAMERON.

METHOD OF AND APPARATUS FOR MAKING CONCRETE MONUMENTS.

No. 521,929.

Patented June 26, 1894.

Fig. 1.

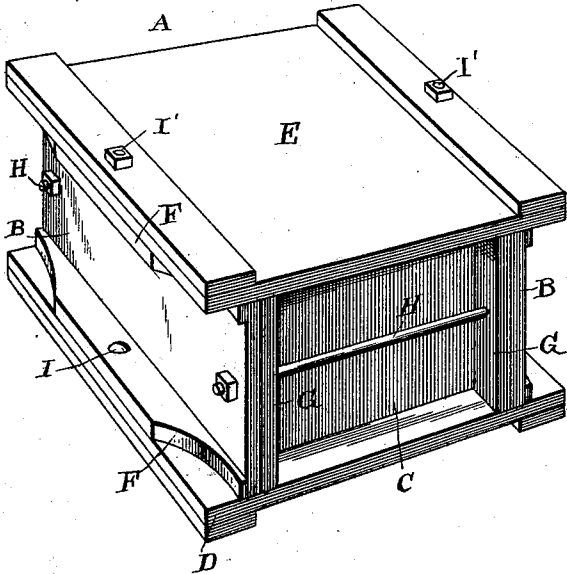


Fig. 2.

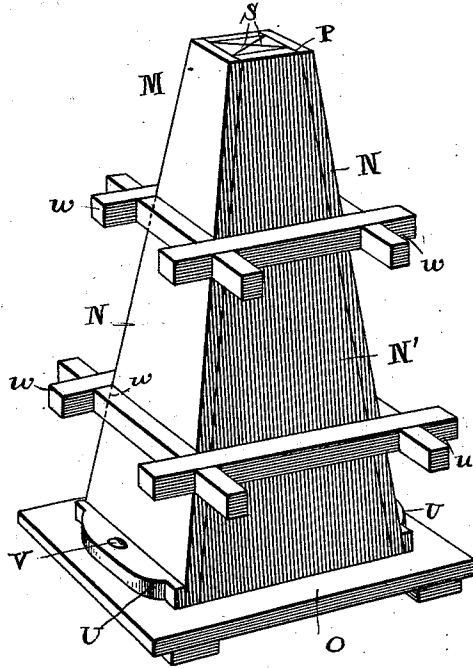


Fig. 4.

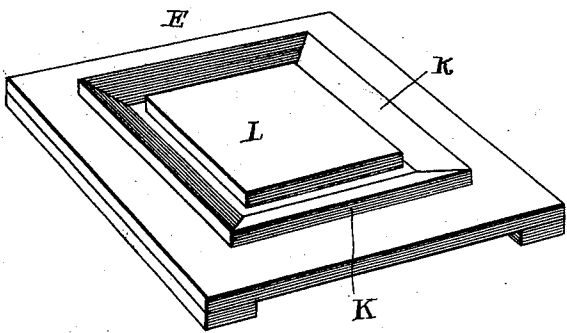
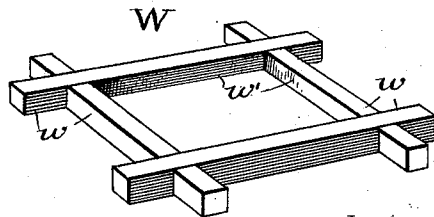


Fig. 7.



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Fig. 3.

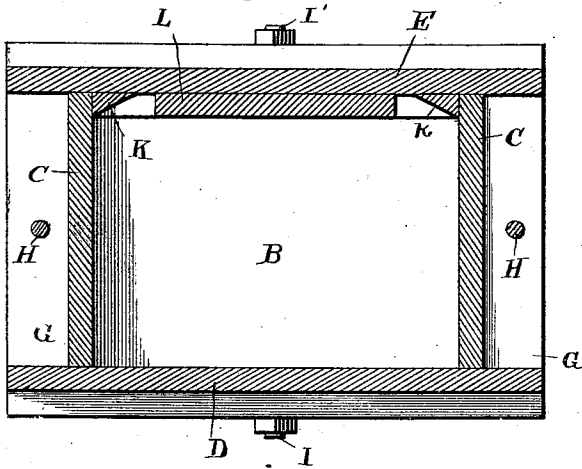


Fig. 5.

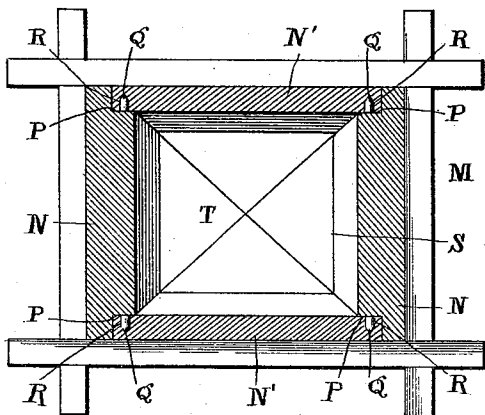


Fig. 6.

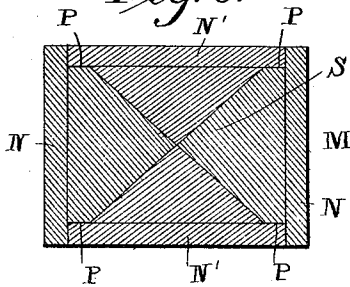
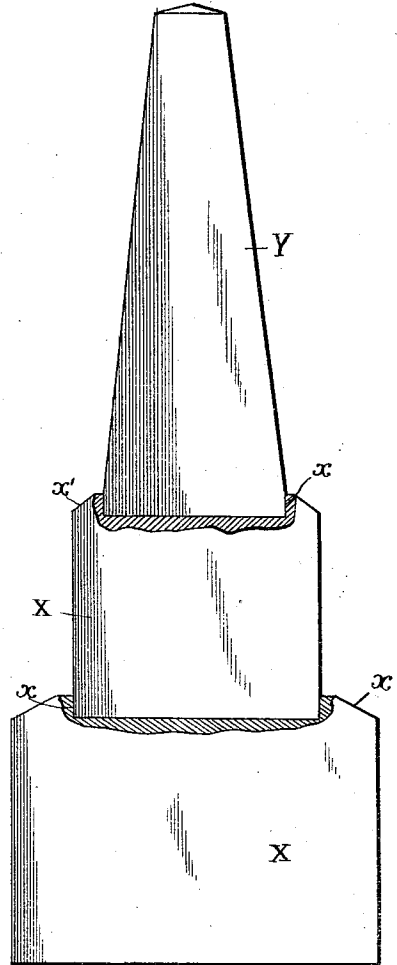


Fig. 8.



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UNITED STATES PATENT OFFICE.

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METHOD OF AND APPARATUS FOR MAKING CONCRETE MONUMENTS.

SPECIFICATION forming part of Letters Patent No. 521,929, dated June 26, 1894.

Application filed January 6, 1894. Serial No. 495,972. (No model.)

To all whom it may concern:

Be it known that I, NEILL C. CAMERON, a citizen of the United States, residing at Ben Wheeler, in the county of Van Zandt and State of Texas, have invented a new and useful Method of and Apparatus for Making Concrete Monuments, of which the following is a specification.

This invention relates to an improved method of and apparatus for making concrete monuments and tombstones; and it has for its object to provide novel and efficient means for molding concrete monuments and tombstones, whereby the same can be made much harder and therefore much more durable than the ordinary manufactured or artificial monuments, which usually are required to set about four or five months before being sufficiently hard for use, while at the same time the present invention provides a method of forming the monument or tombstone whereby the same can be easily polished off, or otherwise finished, before becoming completely hard and therefore in a condition not susceptible to any finishing process. To this end the invention therefore contemplates the manufacture of an artificial monument or tombstone which shall have every appearance of a polished and finished natural stone and at the same time shall be of substantially the same solidity and durability.

With these and other objects in view which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the drawings:—Figure 1 is a perspective view of a mold for forming the base or bases of a monument or tombstone. Fig. 2 is a similar view of the spire mold. Fig. 3 is a vertical central sectional view of the base mold. Fig. 4 is a detail in perspective of the top die plate or board of the base mold. Fig. 5 is a horizontal sectional view of the spire mold near its base or bottom board, the view being toward the contracted closed top. Fig. 6 is a similar view at the top of the spire mold, showing the construction of the closed top portion. Fig. 7 is a detail in perspective of one of the rectangular slip clamps which hold the sides of the spire mold together. Fig. 8

is a detail elevation of a concrete monument manufactured by my improved method and molds.

Referring to the accompanying drawings, A represents a separable base mold in which is formed the base or bases of the monument or tombstone to be manufactured, and said base mold comprises the opposite connected side and end walls B and C, the bottom or base board D, and the top die plate E, which forms the detachable cover or top board for the mold. The opposite side walls or pieces B, are provided at their upper and lower edges with the outer offstanding bolt flanges F, and at their opposite inner ends with the shoulder cleats G, against which are placed the ends of the opposite end walls or pieces C, and these end walls C, are clamped tightly in position between the side walls B, by the opposite end tie rods or bolts H, which connect the opposite projecting ends of the side walls B, outside of the end walls C. The side and end walls thus separably connected together form the body of the mold which is preferably of a rectangular shape, and the bottom or base board D, is somewhat larger than the form completed by the side and end walls, and is removably bolted to the lower bolt flanges F, on the bottom bolts I, while the removable top die plate or board is similarly clamped over the top of the mold by the top bolts I'.

The top plate E, of the base mold A, is provided on its bottom face with a raised rectangular edge form K, having a beveled face *k*, and which registers in the rectangular top opening of the mold formed by the side and end walls, and in the space inclosed by the rectangular edge form K, the said top plate E, is further provided with a raised center panel L, which projects into the mold and serves as a form or die to make a sunken depression in the top of the base being molded, while the rectangular beveled edge form K, gives a beveled shape to the top edges of the base. This may be clearly seen in Fig. 8 of the drawings, in which the rectangular concrete base X, is formed with a sunken recess or pocket *x*, in its top face and with beveled top edges *x'*, surrounding the same to give it a finished appearance.

In molding the base of the monument with the separable base mold just described, the

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several parts of the mold are assembled with the exception of the bottom or base board D. The interior of the mold is then filled up with a concrete material preferably consisting of
 5 a mixture of sand and cement which is in a plastic state allowing it to be packed into the mold. After filling the mold, the bottom or base board D, is bolted to the bottom flanges of the mold on the bolts I, and then the mold
 10 is turned over so as to rest on said bottom or base board. The mold is now set on such benches or supports as may be convenient, and the top die plate E, is first removed, after which the tie rods or bolts H, are taken off,
 15 and the side and end walls can be separated from the sides of the base. The base can then be easily polished before getting too hard, after which it is exposed to a preliminary set for about one and a half days, during
 20 which time it is kept constantly wet with water. After allowing it to set in this manner it is then lifted together with the bottom or base board D, on which it stands and placed in a vat of water which will cause it
 25 to solidify in a hard firm manner, this immersion lasting for about five or six days, after which time the base will be ready for use.

It will of course be understood that while
 30 one base is being allowed to set, other bases may be molded in the same mold, and where monuments or tombstones have two bases such as shown in Fig. 8, the mold for one of
 35 the bases will be larger than the other, so that the second smaller base can have the bottom thereof register in the sunken recess or pocket x , in the top of such larger base.

In molding the spire or top part of the monument the same method of molding, as
 40 observed in molding the base, is carried out with the spire mold M. The spire mold M, is of a rectangular pyramidal shape, corresponding to the configuration of the spire or top parts of monuments and tombstones, and the
 45 same comprises the separable sides N and N', and the removable bottom or base board O. The several sides of the separable spire mold M, converge upwardly to form a flared lower end and a tapered upper end, to complete
 50 the proper pyramidal shape of the spire, and the opposite sides N, are provided with opposite shouldered edges P, from which project the short lock-studs Q, adapted to project into the stud openings R, formed in the other side
 55 pieces N', near their opposite inner edges, which snugly fit or register on the shouldered edges of the sides N, and when the several sides are assembled together the same complete a continuous substantially rectangular
 60 mold of an upwardly tapering or pyramidal shape.

The separably assembled mold sides N and N', are provided at their upper inner ends with the triangularly or V-shaped top blocks
 65 or sections S, which snugly abut or register with each other to complete a closed top for the mold, and the inner ends of these top

blocks are slightly beveled as at T, in order to give a beveled finish to the top of the spire when completed, and at the outer lower
 70 edges of the sides N, are projected the off-standing bolt flanges U, through which pass the bolts V, to removably clamp the bottom or base board O, over the bottom of the mold.

In molding the spire of the monument the
 75 several sides of the spire mold are first assembled, and are separably clamped together by the different sized rectangular slip clamps W. The rectangular slip clamps W, are formed of connected rectangularly arranged strips
 80 w , having inner beveled edges w' , to agree with the taper of the spire mold, and these different sized clamps are slipped over the assembled sides of the mold to hold the same
 85 firmly together. The mold can now be filled up with the concrete material before referred to, and after being filled, the bottom or base board O, is bolted in position and the mold set up in an upright position. By removing
 90 the bolts V, and knocking the slip clamps off of the mold, the sides N and N', may be separated from the concrete mass shaped thereby. The completed spire will then be exposed so that it can be properly polished or finished,
 95 before being subjected to the same setting process as observed for the base of the monument.

The spire, formed as described, of course will complete a monument or tombstone with
 100 the base X, as clearly illustrated in Fig. 8 of the drawings, in which the spire Y, is adapted to have its lower end register in the top recess or pocket of the base, and the inscriptions of whatever character may be finally placed on the monument thus completed in
 105 any suitable manner.

Changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or
 110 sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. The herein-described method for forming
 115 concrete monuments and the like, which consists in separately molding the base and spire of concrete material in its plastic state, finishing the exterior faces of the molded masses by polishing or other treatment before
 120 completely hard, subjecting the same to a preliminary setting for a short period by keeping constantly wet with water, finally completing the setting by allowing the molded masses to remain immersed in water, and
 125 then assembling the base and spire, substantially as set forth.

2. The herein-described base mold consisting of separably assembled side and end walls, the side walls being provided at both
 130 their upper and lower edges with off-standing bolt flanges F, a removable bottom or base board bolted onto the lower of said off-standing bolt flanges, a removable top die

plate removably bolted onto the upper of said off-standing bolt flanges and provided on its inner face with a rectangular beveled edge form agreeing with the space inclosed by the side and end walls and fitting snugly therein, and a raised center panel projecting into the top of the mold and located inside of said edge form, and tie rods or bolts H, arranged outside of the end walls of the mold and connecting the directly opposite projecting extremities of the side walls, substantially as set forth.

3. The herein-described spire mold consisting of a series of convergently arranged sides separably interlocked with each other at their meeting edges and provided at their upper ends with top blocks or sections adapted to register with each other to form a temporary closed top, a bottom or base board removably bolted to the bottom of said sides, and different sized rectangular slip clamps adapted to removably fit exteriorly around the assembled sides and provided with inner

beveled edges agreeing with the taper of the mold, substantially as set forth.

4. In a spire mold of the class described, the convergently arranged sides, certain of which are provided with inner shouldered edges and short lock-studs projecting therefrom, the other sides registering in said shouldered edges and having stud openings receiving said studs, said convergently arranged sides being provided at their upper inner ends with V-shaped inwardly projecting closely registering top blocks or sections forming a sectional and separable closed top for the mold, and removable clamps for the assembled sides, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

NEILL C. CAMERON.

Witnesses:

J. A. S. BERRY,
J. W. CAMERON.