B. B. QUINN & O. LONGACRE.

Combined Chaplet and Anchor for Horizontal Core.

No. 217,296. Patented July 8, 1879.

Fig. 1.

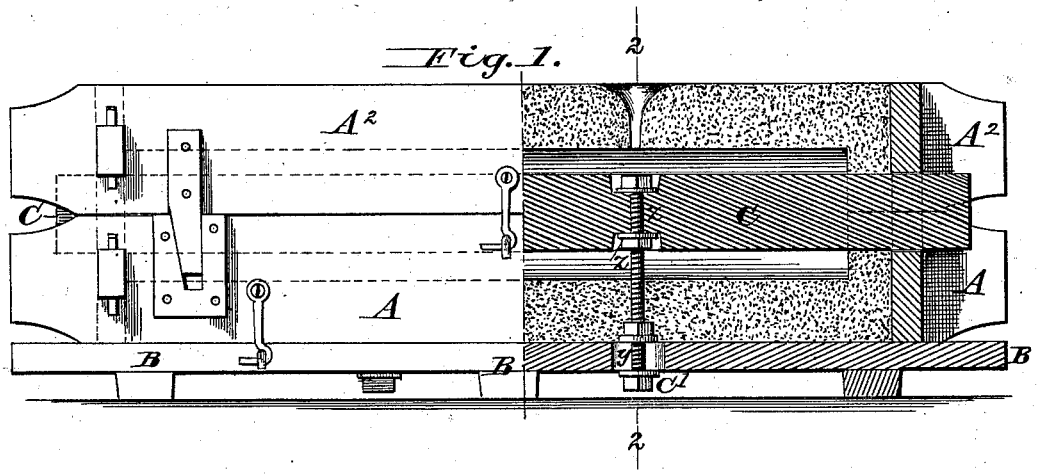


Fig. 2.

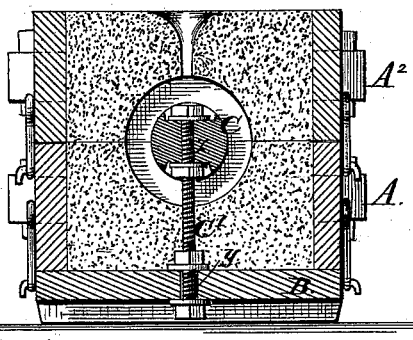


Fig. 3.

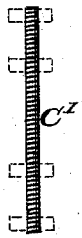


Fig. 4.

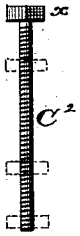


Fig. 5.

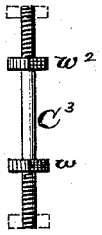


Fig. 6.

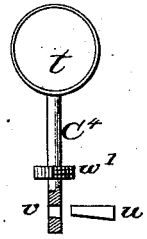


Fig. 7.

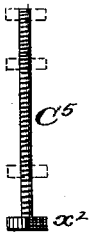


Fig. 8.

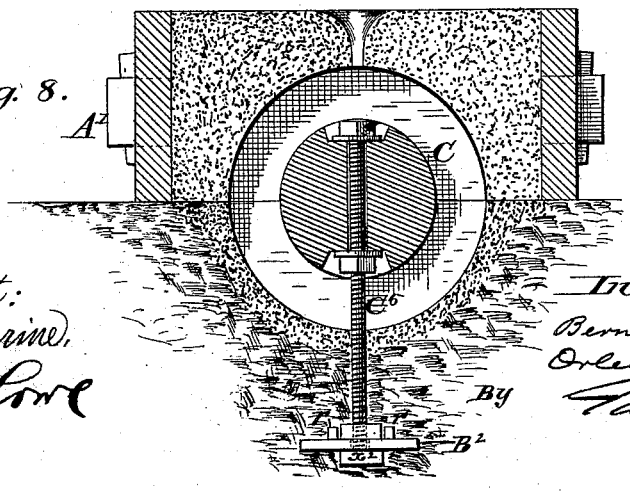
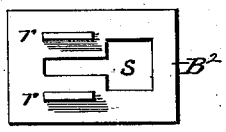


Fig. 9.



Attest:
H. D. Bruine.
D. P. Lowe

Inventors:
Bernard B. Quinn,
Orleans Longacre.
By Jas L. Ewin,
Atty.

UNITED STATES PATENT OFFICE.

BERNARD B. QUINN AND ORLEANS LONGACRE, OF NEW YORK, N. Y.

IMPROVEMENT IN COMBINED CHAPLET AND ANCHOR FOR HORIZONTAL CORES.

Specification forming part of Letters Patent No. **217,296**, dated July 8, 1879; application filed June 2, 1879.

To all whom it may concern:

Be it known that we, BERNARD B. QUINN and ORLEANS LONGACRE, both of the city and county of New York, in the State of New York, have invented a new and useful Improvement in Supporting-Cores; and we do hereby declare the following to be a full, clear, and exact description of the said invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

This invention relates to molding and casting iron columns and other long iron castings of those forms which are produced in horizontal molds by the aid of cores.

Such cores are supported at each end by the flasks, but require intermediate supports to keep them from springing or shifting when the molten iron is poured into the molds. For this purpose chaplets are ordinarily employed at the top and sides of each core as well as at the bottom, together with supplemental anchoring devices in the form of embedded plates, clamps, weights, and other appliances.

Said ordinary devices are always troublesome. Even with great care they will sometimes get displaced, producing a "crooked" casting, and where chaplets pass through the top or side of a casting there is always, or nearly always, a flaw in the iron.

The object of this invention is to securely support the core of a column or the like without the aid of top or side chaplets or of the said supplemental anchoring devices, and so as to insure a perfect and even casting.

Our said invention consists in a combined chaplet and anchor of variable construction, arranged vertically beneath the core, so as to pass through the bottom of the casting, and firmly attached to said core and to the mold-board or its equivalent, as hereinafter more fully set forth.

Figure 1 of the accompanying drawings represents a side view and vertical longitudinal section of the respective ends of a column mold illustrating this invention. Fig. 2 represents a vertical cross-section of the same on the line 2 2, Fig. 1. Fig. 3 is a detached view of one of the combined chaplets and anchors shown in Figs. 1 and 2. Figs. 4 to 7, inclusive, are elevations of other combined chaplets and anchors, illustrating modifications. Fig. 8 represents a vertical cross-section of a floor-mold, illustrating another modification; and Fig. 9, a top view of the anchoring-plate shown in Fig. 8.

Like letters of reference indicate corresponding parts in the several figures.

A A^2 represent the two parts of a simple wooden flask selected for illustration; B, its mold-board, and C its core. C^1 C^1 represent a preferred form of combined chaplet and anchor for securely supporting the said core within the said flask without the aid of other appliances. Each combined chaplet and anchor of said preferred form consists of a straight piece of round rod-iron, Fig. 3, screw-threaded from end to end, and provided with two pairs of screw-nuts. The core is provided for its reception with a hole, *z*, and embedded washers, and the mold-board with a central longitudinal slot, *y*, at corresponding points. After the mold has been rammed up, the cope having been taken off and the pattern removed, a hole is made through the sand of the drag, so as to expose the slot *y* in the mold-board. One end of the chaplet-rod is then put down through said slot, having the nut that rests on top of the mold-board already in position. The lower nut is then screwed on from beneath and tightened up, so as to render the rod erect and rigid, after which the mold is dressed up around the rod in the usual manner. The core is now placed in position, the lower of its washers resting against the lower of the two upper nuts, which had been previously screwed onto the proper place. The top nut is then screwed down against the upper washer of the core, the nuts in the cores are smoothly covered with green sand, and the mold is then ready to be closed up.

The form of the combined chaplet and anchor is not essential as regards details. The chaplet-rod may, for example, have a bead, *x*, at its upper end, and be inserted downward through the core, as illustrated at C^2, Fig. 4; or fixed collars *w* w^2 may take the place of the two inner nuts, as illustrated at C^3, Fig. 5. In the latter case the chaplet-rod would be secured

in position, and the core then clamped as in the first form, C^1.

Another proposed modification consists in providing a slot, *r*, and a key-wedge, *u*, or any of the other well-known equivalents, in lieu of either or both of the fastening-nuts, a fixed inner collar, w^1, being employed in combination therewith, as illustrated at C^4, Fig. 6, and a thin ring, *t*, at the upper end of the chaplet-rod has been used as a substitute for the upper nuts, as illustrated in this figure. The core is slipped through this ring after the chaplet-rod is erected in the mold.

Another modification consists in providing the lower end of the chaplet-rod with a fixed head, x^2, as illustrated at C^5, Fig. 7. The movable nuts are shown in dotted lines in Figs. 3 to 7, inclusive. Said form C^5 of the chaplet-rod has been used in combination with an iron anchoring-plate, B^2, as illustrated by Figs. 8 and 9, in those molds for very large columns and the like, which are formed partly in the foundry-floor. Said anchoring-plate is a flat casting having a key-hole slot, *s*, with a pair of flanges or projections, *r*, parallel to or equidistant from the narrow part of said slot on the top of the plate. This plate is securely embedded beneath the mold, so as to be central and perfectly horizontal. The mold is then formed, and a hole is dug down to the anchoring-plate. A nut having been screwed on the chaplet-rod a short distance from the bead x^2, the latter is inserted through the large end of the slot *s*, and the rod is shifted until the said nut is engaged between the said projections *r*. The chaplet-rod is then turned until the nut tightens down on the plate, and the mold is dressed up around the rod. The lower core-nut is then put in place, and the core applied and secured as in the first illustration. When the rod C^5 cannot be tightened sufficiently by hand the two upper nuts are jammed together, so that a wrench can be used, and they are separated and arranged afterward.

The advantages of our device over the said devices in common use are as follows: first, a more perfect casting is secured; second, a straight casting is invariably produced; third, considerable time is saved in securing the core; fourth, less skill is required to properly adjust the chaplets; fifth, there is less danger of damaging the mold after it is completed; sixth, the appliances necessary to support a given core are of superior simplicity and cheapness.

It will be understood that the construction of flasks and cores forms no part of this invention; and the only feature of these main appliances which is essential to our improvement is capacity to coact with our combined chaplet and anchor.

The following is what we claim as new and of our own invention, and desire to secure by Letters Patent, namely:

A combined chaplet and anchor arranged vertically beneath the core of a column or the like, so as to pass through the bottom of the casting, and firmly attached to said core and to the mold-board or its equivalent, substantially as herein illustrated and described, for the purposes set forth.

BERNARD B. QUINN.
ORLEANS LONGACRE.

Witnesses:
THOS. CROCKER,
R. BEESLEY.