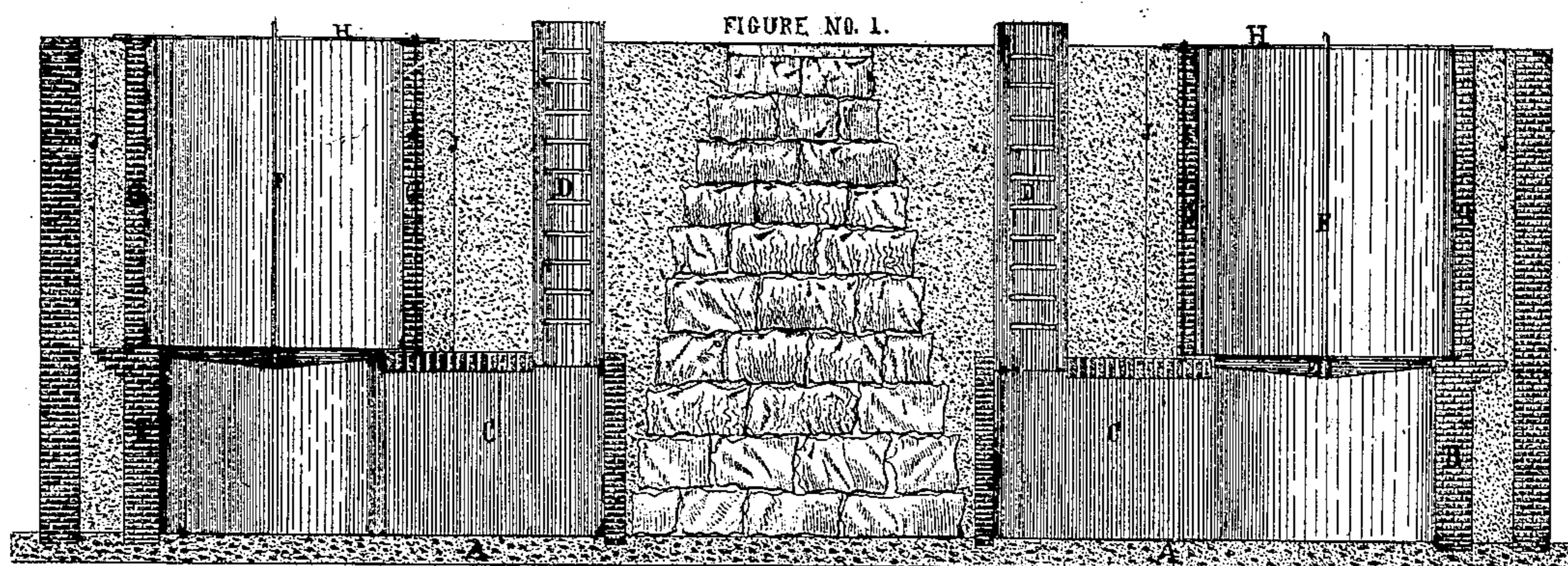
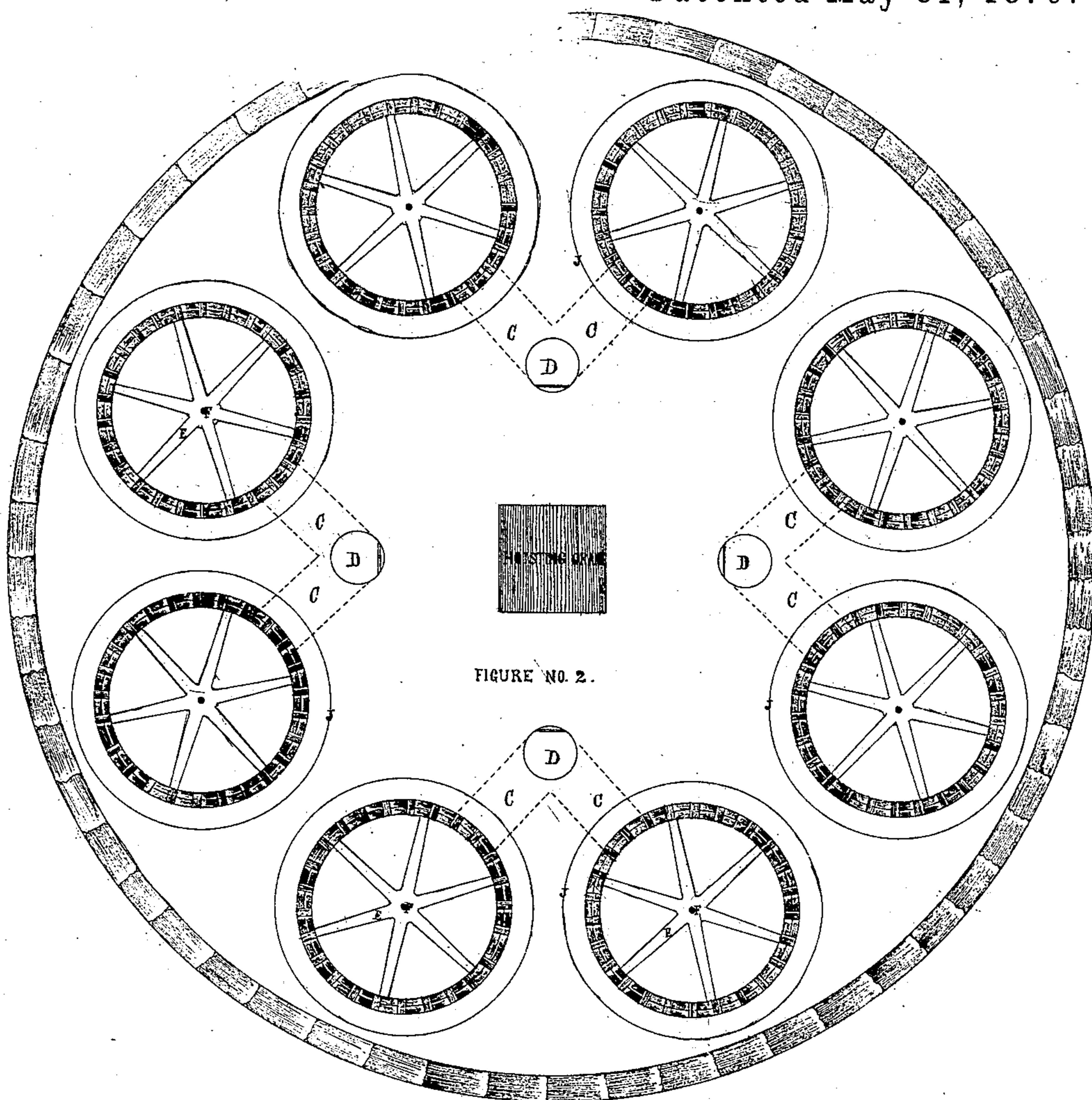


R. CARTWRIGHT.
MOLDING PIT FOR CASTING CYLINDERS AND PIPES.
No. 103,560. Patented May 31, 1870.



WITNESSES.
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United States Patent Office.

ROBERT CARTWRIGHT, OF CHICAGO, ILLINOIS.

Letters Patent No. 103,560, dated May 31, 1870.

IMPROVEMENT IN MOLDING-PITS FOR CASTING CYLINDERS AND PIPES.

The Schedule referred to in these Letters Patent and making part of the same

Be it known that I, ROBERT CARTWRIGHT, of Chicago, in the county of Cook, in the State of Illinois, have invented a new and improved Mode of Constructing Molding-Pits for Casting Cylinders or Pipes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The nature of my invention consists in making a mold or molds, in connection with a shaft or pipe and tunnel, whereby I am enabled to effect a rapid cooling of the casting, and also to supply a draught or current of air, whereby the collection of gas in the mold is entirely avoided; also, by building the brick-work in such a manner that the same work can be used successively, without requiring renewal for each casting; also, by means of the shaft and tunnel, allowing access to the mold, without going down or through it.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 is a transverse section of pit, mold, tunnel, and shaft or pipe.

Figure 2 is plan, showing general arrangement for a number of molds in large circular pit.

I first construct a water-tight pit, of required dimensions, to suit the number of molds necessary, with a crane of suitable capacity to raise required weight on foundation built in the center.

On the bottom of pit, (which I construct of concrete A,) I start a ring or wall of brick-work, B, of suitable thickness and diameter to suit size and weight of cylinder required. This I carry up high enough to allow a man to work comfortably inside.

On one side of this circle I construct an opening, connecting with a tunnel, C, said tunnel being extended to meet with vertical shaft or pipe D, said shaft D being made of iron or other material, with ladder fastened inside, for the convenience of passing either up or down.

Upon this ring of brick-work B I lay a cast-iron spider and rim, E, of suitable size to receive brick-work of mold.

In the center of this spider E is fitted a shaft, F, perpendicular to said spider E.

Of requisite diameter I then commence a ring-wall of fire-brick, G, said fire-brick work being laid in molding-loam or fire-clay, and being pierced every two or three inches through the joints with holes about three-

sixteenths to one-fourth inch diameter, for the purpose of allowing a free escape for the gases consequent upon all casting.

The brick-work G I carry up to the necessary height for the required length of cylinder.

Upon the top of the brick-work G I place a cast-iron ring, H, of suitable dimensions to correspond with brick-work.

This ring H is held in place by bolts I, built in brick-work G, and fastened to spider E. These effectually retain the mold in place, to counteract the fracture in brick-work, due to hot metal in mold.

After mold is thus constructed, I surround it with an iron casing, J, leaving sufficient space between the brick-work and casing to allow said space to be filled in with coarse cinder, well rammed down.

This casing J answers the purpose of retaining the strain upon the mold, due to head of melted iron, and the coarse cinder forms a porous medium, through which the gas is allowed to escape to the top of the floor.

In practice, I generally combine two molds by their respective tunnels C, with one shaft D, for the sake of economizing space in foundry.

When all is completed as described, I fill up the large pit with material well rammed, leaving only openings of the diameter of the molds and pipes or shafts in the floor.

The shaft F I use as a center for striking the loam to the required diameter for the cylinder.

By this arrangement of parts I am enabled to use the brick-work for a successive number of castings, it merely being required to replace the skin-loam, forming the face of the mold for every casting, instead of breaking up the brick-mold, as heretofore.

In practice I have used one mold twenty-seven times successively, for cylinders weighing nine and one-half tons each.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The pipe D and tunnel C, in combination with the brick-work B, substantially as described and for the purposes set forth.

2. The spider E and shaft F, in combination with the mold G, substantially as described and for the purposes set forth.

ROBERT CARTWRIGHT.

Witnesses:

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