H. H. GARDNER.

MOLD FOR MAKING CEMENT CONCRETE PIPE.

APPLICATION FILED JULY 17, 1907.

920,317. **Patented May 4, 1909.**

FIG. 3.

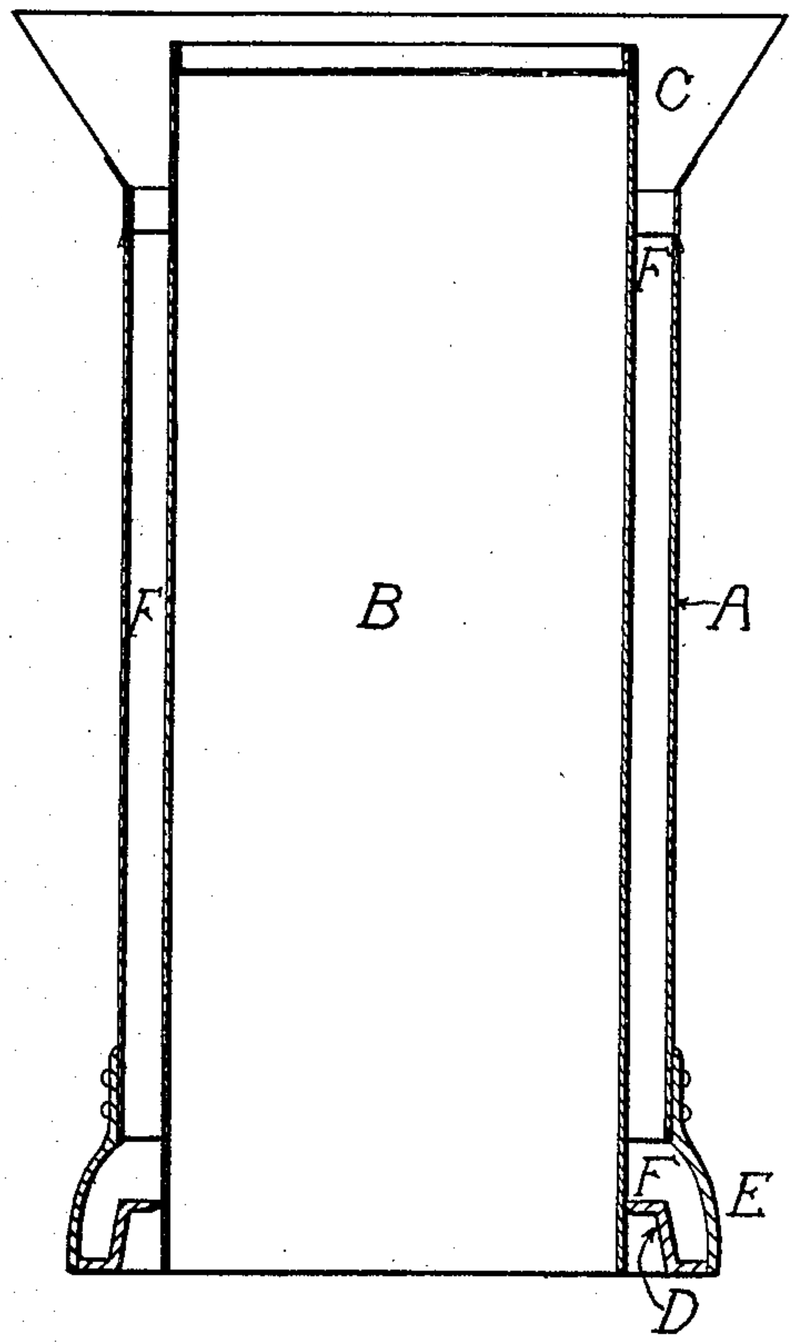
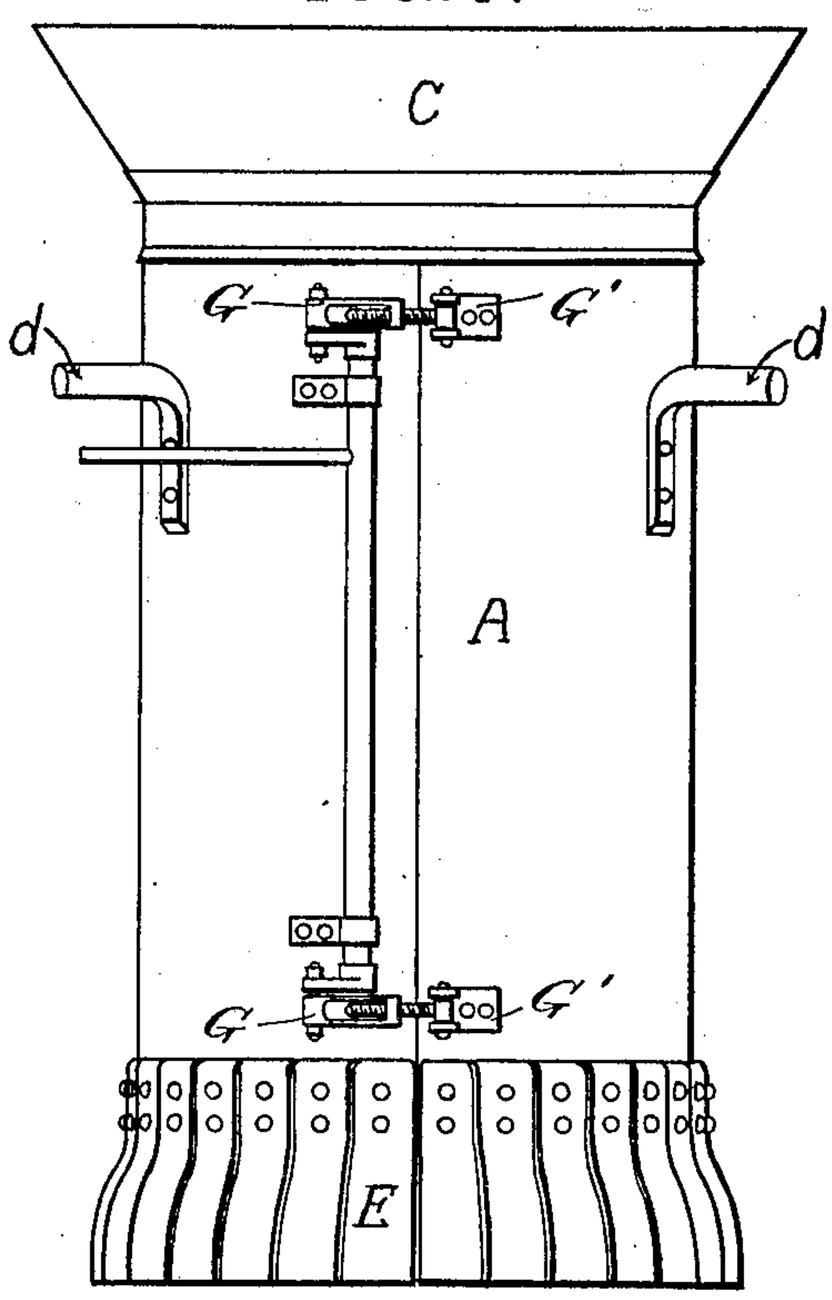


FIG. 1.



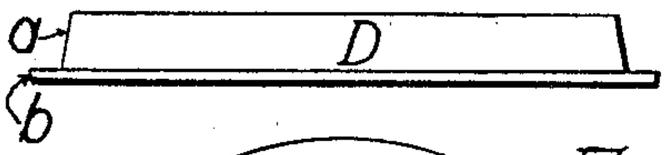


FIG. 5.

FIG. 4.

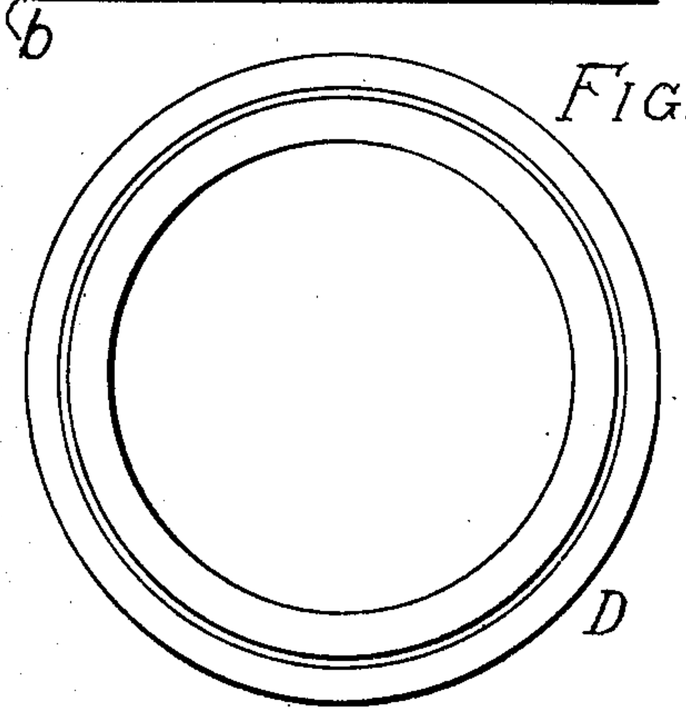
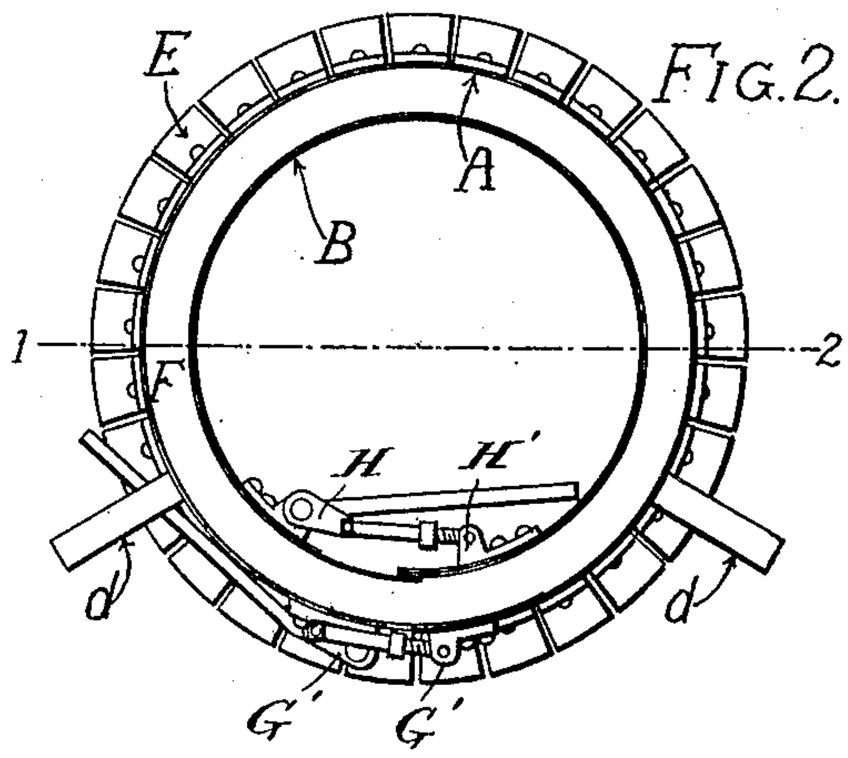


FIG. 2.



Witnesses.

H. F. Gardner

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UNITED STATES PATENT OFFICE.

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MOLD FOR MAKING CEMENT CONCRETE PIPE.

No. 920,317. Specification of Letters Patent. Patented May 4, 1909.

Application filed July 17, 1907. Serial No. 384,262.

To all whom it may concern:

Be it known that I, HENRY H. GARDNER, a citizen of the United States of America, residing at Santa Ana, in the county of Orange and State of California, have invented a new and useful Mold for Making Bell-End Cement Concrete Pipe, of which the following is a specification.

My invention relates to improvements in cement concrete pipe molds in which a flexible contracting core (or solid core) and an off-bearing ring are used in conjunction with a flexible expanding jacket and separable feed hopper; and the objects of my improvement are, first, to provide an enlargement which is attached to and becomes a part of an ordinary cement concrete pipe mold jacket, thus providing a jacket that in conjunction with a specially shaped off-bearing ring will mold bell-end cement concrete pipe without additional labor over what would be required to mold straight pipe; second, to provide for the non buckling expansion and contraction of this enlargement with the jacket; third, to provide an off-bearing ring shaped to mold the inside of the bell of bell-end cement concrete pipe; fourth, to provide for the safe removal of the ring from the pipe after the pipe has hardened; fifth, to provide for the secure clasping of the ring by the jacket. I attain these objects by the mechanism illustrated in the accompanying drawing, in which—

Figure 1 is a front view of my entire mold. Fig. 2 is a top view of the mold as it appears after the removal of the feed hopper. Fig. 3 is a central vertical section of the entire mold taken on the line 1—2 of Fig. 2. Fig. 4 is a top view of the off-bearing ring. Fig. 5 is a front view of the off-bearing ring.

The reference letter A denotes the outer mold or jacket, the letter B designates the inner mold or core, C refers to the hopper, the letter D indicates the off-bearing-ring and the letter F denotes the space between the inner surface of the outer mold or jacket and the inner surface of the core or inner portion of the mold in which the plastic concrete is tamped to form the pipe.

The outer portion or jacket A of the mold and the inner portion or core B I can expand or contract by means of devices G, G′, H and H′ shown upon Figs. 1 and 2 of the drawings. The outer portion or jacket A, I provide with handles *d* for carrying the pipe off after the core B is removed from the mold.

The enlarged portion E of the jacket shown upon Figs. 1 and 2 of the drawings I make flexible so that it will expand and contract with the jacket without buckling. I prefer to carry out this feature of my invention in the manner shown in Fig. 1, where it will be seen that the enlargement is made in sections, preferably twenty-nine in number. The said sections may be made of any number desired.

The off-bearing ring D I make sloping on the outer surface as shown upon Fig. 4 of the drawings, to admit of safe removal of the jacket A of the mold, after the pipe has hardened. The off-bearing ring D is also beveled at the outer edge at *b* to admit of securely clasping the jacket to the ring D while bearing the pipe off, after the core has been removed.

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

1. A bell-end cement pipe mold jacket with the bell mold made sectional to allow of its expansion and contraction without buckling.

2. A jacket with a flaring mold portion at one end, said flaring portion being internally beveled and the lesser diameter of the bevel being at the rim, in combination with an off-bearing ring having a flange beveled reversely to and fitting the bevel of said flaring portion, whereby the flange is positively locked by the internally beveled flaring portion when the off-bearing ring is in position.

3. A jacket with a flaring mold portion at one end, the flaring portion being expansible, in combination with an off-bearing ring, and means operated by the contraction of the flaring portion for positively locking the off-bearing ring in the flaring portion.

4. An expanding jacket formed of flexible material, and a series of segmental rigid sections attached to one end of the jacket, the sections being curved to collectively form a bell shaped enlargement, the adjacent edges of the sections being spaced apart to permit of expanding the bell shaped enlargement to a larger circle.

5. An expanding jacket formed of flexible material, and a series of segmental rigid sections attached to one end of the jacket, the sections being curved to collectively form a bell shaped enlargement, the adjacent edges of the sections being spaced apart to permit of expanding the bell shaped enlargement to

a larger circle, each of said sections being secured substantially along its center line to the jacket.

6. An expanding jacket formed of flexible material, a series of segmental rigid sections attached to one end of the jacket, the sections being curved to collectively form a bell shaped enlargement, the adjacent edges of the sections being spaced apart to permit of expanding the bell shaped enlargement to a larger circle, the lower end of each section being undercut and internally beveled, and an off-bearing ring having a flange beveled to fit the undercut bevels of the sections.

H. H. GARDNER.

Witnesses:
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