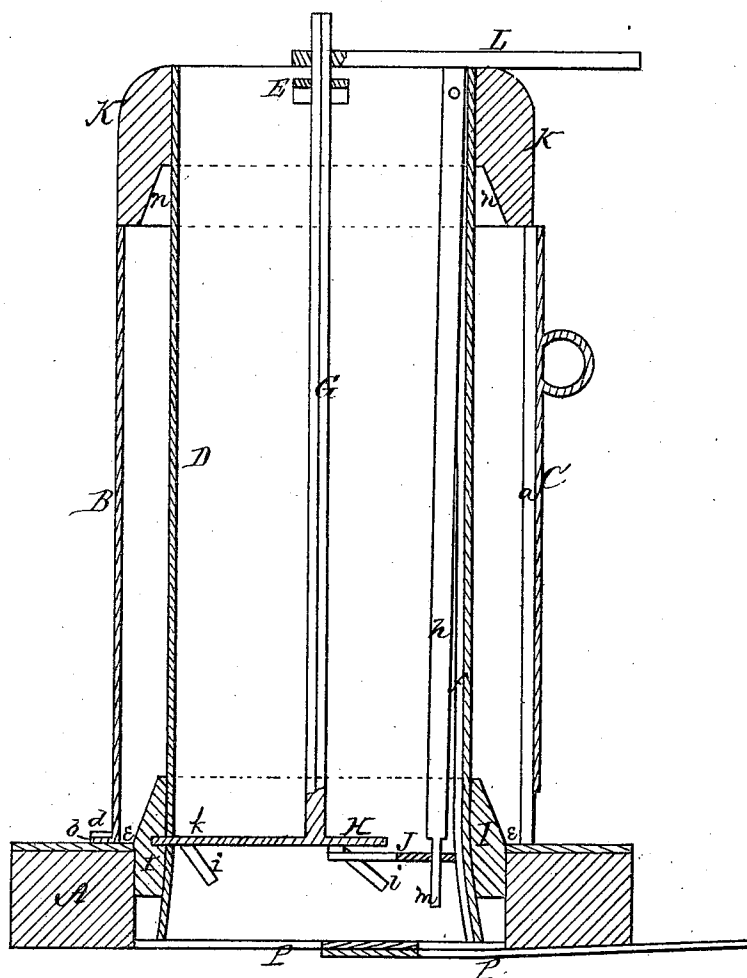


**F. I. SAGE.**  
**Cement Pipe Molds.**

No. 141,388.

Patented July 29, 1873.

*Fig. 1.*



*Witnesses.*  
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Fig. 2.

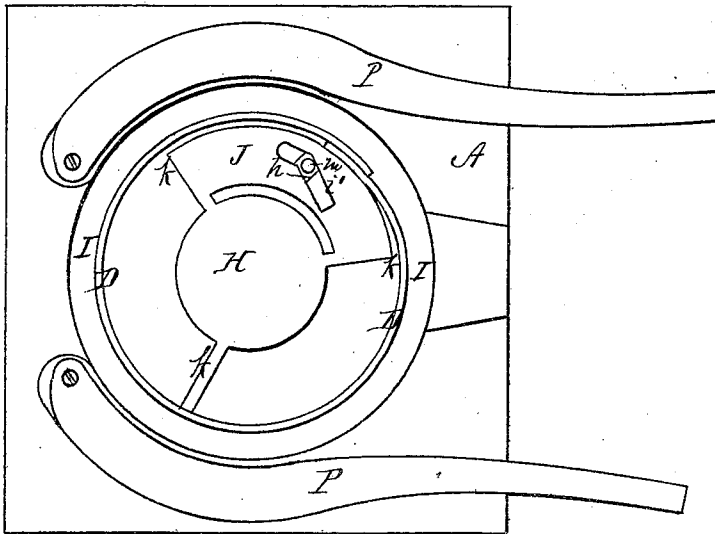
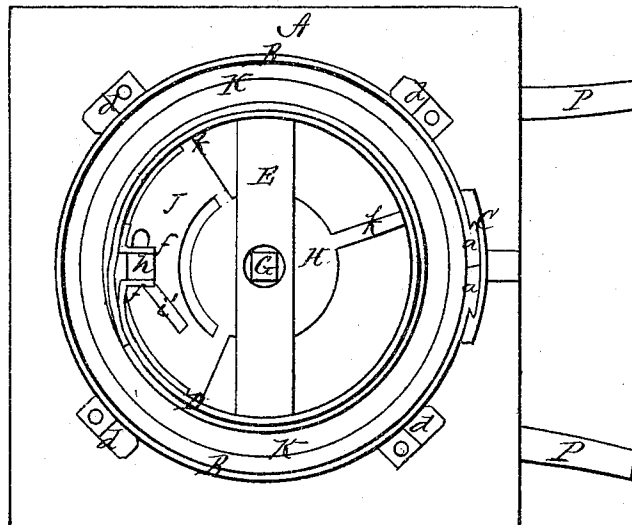


Fig. 3.



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# UNITED STATES PATENT OFFICE.

FRANKLIN I. SAGE, OF SPRINGFIELD, MASSACHUSETTS.

## IMPROVEMENT IN CEMENT-PIPE MOLDS.

Specification forming part of Letters Patent No. **141,388**, dated July 29, 1873; application filed June 7, 1873.

*To all whom it may concern:*

Be it known that I, FRANKLIN I. SAGE, of Springfield, in the county of Hampden and State of Massachusetts, have invented a new and valuable Improvement in Cement-Pipe Molds; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of my cement-pipe mold in longitudinal vertical section. Fig. 2 is a bottom view, and Fig. 3 is a plan view of the same.

The nature of my invention consists in the construction and arrangement of certain improvements in a mold for molding cement pipes, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation.

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

A represents the bed-piece of my mold provided with a circular opening a little smaller than the outside circumference of the pipe to be made. Upon the bed A is placed a sheet-metal cylinder, B, made of one single piece, with dovetailed flanges *a a* formed on or attached to the adjoining edges, and over these flanges is passed a slide, C, confining and holding the cylinder in proper shape. On the lower edge of the cylinder B are outward-projecting ears *bb*, which are placed under catches *d d* on the bed A, thereby holding the cylinder in proper position on the same. The opening in the bed A being smaller than the cylinder B, as above described, a shoulder, *e*, is formed all around the inner side of the cylinder by the bed, as shown in Fig. 1. D represents an inner cylinder, which forms the core of the mold. This cylinder is also made of a single piece of sheet metal, the edges of which overlap each other, and on the inner side they are provided with inward-projecting flanges *ff*, which extend from the upper end downward to near the lower end, and between said flanges

is placed a square bar, *h*, as shown in Figs. 1 and 3. The upper end of this bar is riveted or pivoted between the flanges *ff*, while the lower end is free to be moved inward out from between the same.

It will readily be seen that when the bar *h* is held its entire length between the flanges *ff* the cylinder D cannot contract; but if the bar *h* is swung inward at its lower end the cylinder can be made to contract at its lower end, but retains the same size at the upper end, or, in other words, becomes tapering.

Across the upper end of the cylinder D is a cross-bar, E, through which passes a shaft, G, centrally down through the cylinder. On the lower end of this shaft is a disk, H, which has three radiating arms, *k k*, passing through inclined slots *i i* in the cylinder D, and secured to a ring, I, surrounding the outside of the cylinder. Below this ring the cylinder D is made flaring, as shown in Fig. 1. The lower part of the ring I is made straight, and of such size as to fit snugly in the opening of the bed A, while the upper part is made tapering inward from the shoulder *e*. On two of the arms K K is secured a plate, J, provided with an inclined slot, *i'*, through which projects a pin, *m*, formed on the lower end of the bar *h*. All the slots *i i* and *i'* above mentioned have at one end an offset, so that when the cylinder D is in position within the cylinder B the various movable parts may be locked firmly in place. When the cylinder D is inserted within the cylinder B it occupies the position shown in Fig. 1, and is supported upon two curved bars or levers, P P, pivoted in a recess on the under side of the bed A. The cement is then poured into the space between the two cylinders, and packed in the same, so as to project for a suitable distance above the outer cylinder B. The tapering portion of the ring I forms the mouth at one end of the pipe for the end of an adjoining section to be inserted into. Over the upper end of the inner or core cylinder D is slipped another ring, K, the lower end of which is made flaring on the inside, as shown at *n*, and forms a wedge-shaped or tapering end on the pipe to be inserted in the mouth formed in the adjoining section.

After the cement has settled sufficiently the

shaft G is turned by means of a crank or lever L at its upper end, thereby giving the disk H part of a revolution and unlocking the bar *h* and ring I, causing the former to move inward from between the flanges *f f*, and the latter to move downward on the cylinder D, contracting its lower end and making it tapering, as above described. The downward movement of the ring I is also circular, or, in other words, the ring turns on the cylinder, thereby getting loose from the cement without injuring the same. The contraction of the cylinder D breaks the same also away from the cement, except at the upper end, which retains its original size and shape. The bars or levers P P are now opened, when the inner or core cylinder D is drawn downward out of the cement, the upper end of said cylinder as it moves downward making the interior surface of the cement pipe perfectly smooth and even. The slide C is now raised from off the flanges *a a*, allowing the outer cylinder B to expand, when the pipe can readily be removed from the same.

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

1. The inner or core cylinder D, made of a single piece of sheet metal with the edges overlapping, and provided with vertical flanges *f f* and vertical bar *h*, pivoted at its upper end between said flanges, substantially as and for the purposes herein set forth.

2. The plate J attached to the arms *k k*, and provided with slot *i'*, in combination with the pin *m* on the end of the bar *h*, substantially as and for the purposes herein set forth.

3. The combination of the shaft G, arms *k k* passing through slots *i i* in the cylinder, and disk H for operating the ring I surrounding the cylinder D, substantially as shown, and for the purposes set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

FRANKLIN I. SAGE.

Witnesses:

PHIL. C. MASI,  
GEORGE E. UPHAM.