(No Model.)

# L. RICHARDSON & F. J. NETTLETON.

## PIPE MOLD.

No. 258,122. Patented May 16, 1882.

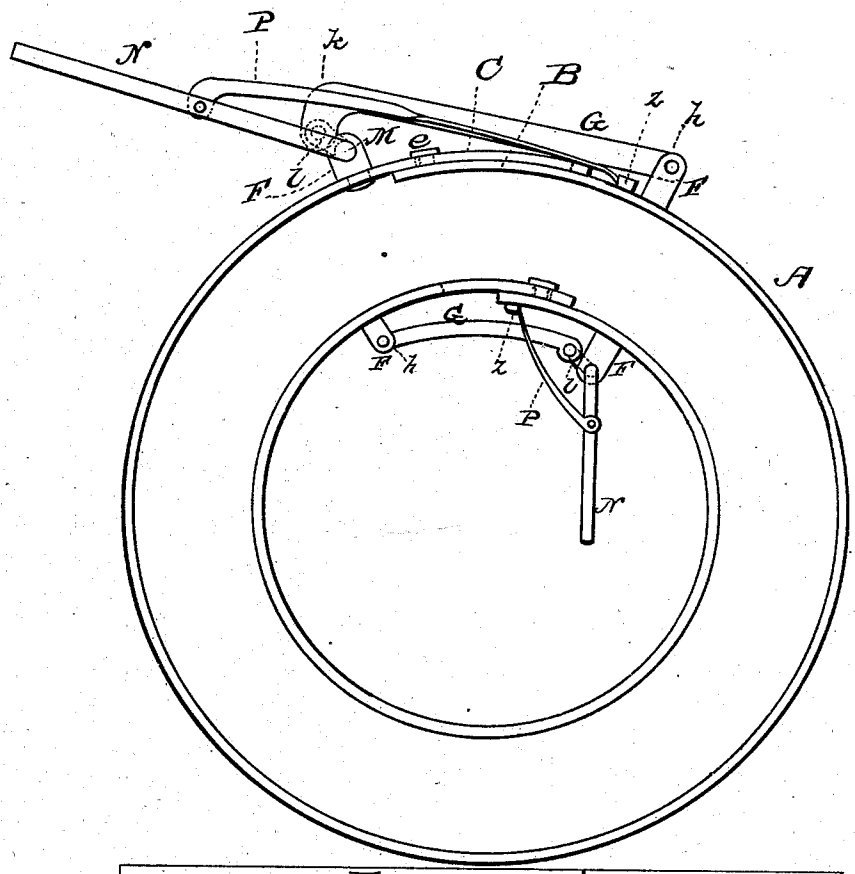


Fig. 1.

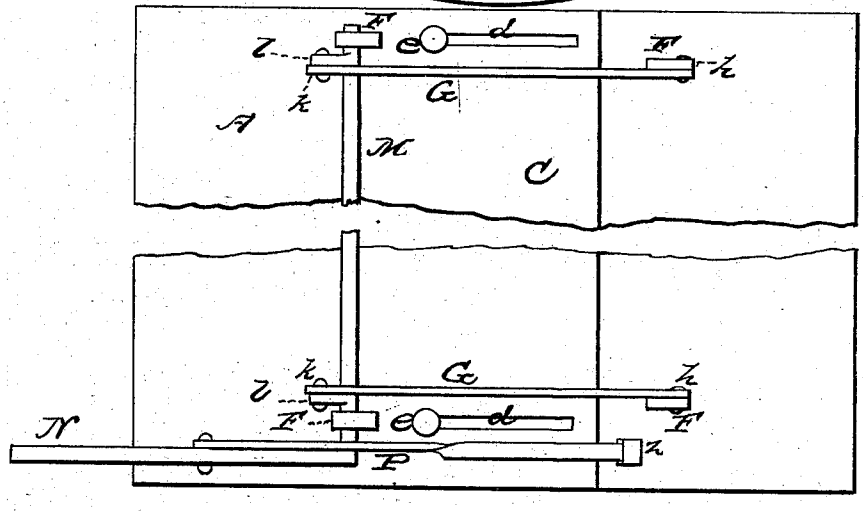


Fig. 2.

WITNESSES

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# UNITED STATES PATENT OFFICE.

LEVI RICHARDSON AND FRANK J. NETTLETON, OF SAN GABRIEL, CAL.

## PIPE-MOLD.

SPECIFICATION forming part of Letters Patent No. 258,122, dated May 16, 1882.

Application filed March 11, 1882. (No model.)

*To all whom it may concern:*

Be it known that we, LEVI RICHARDSON and FRANK J. NETTLETON, of San Gabriel, in the county of Los Angeles and State of California, have invented a new and valuable Improvement in Pipe-Molds; and we 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 an end view of my improved pipe-molds, and Fig. 2 is a top or plan view of the same.

This invention has relation to expanding and contracting pipe-molds used in forming pipes from concrete, mortar, or other plastic material; and it consists in the construction and novel arrangement, in connection with a lapped and elastic cylinder having stud-and-slot connections in the lapped portion, of the bearing-lugs secured to the cylinder at each side of the lap, the rock-shaft pivoted to the lugs at one side of the lap, the hook-shaped connecting-bars spanning the lap, and the stop-fastening connected to the lever-arm of the rock-shaft, all as hereinafter set forth.

In the accompanying drawings, the letter A indicates an external pipe-molding cylinder, made of sheet metal having sufficient elasticity and lapped at the meeting edges B and C, the overlap C being slotted at *d d* to engage the studs *e e*, so that the lap is held in strong connection. At each side of the lap bearing-lugs F are firmly attached to the cylinder, and between each pair of bearing-lugs extends across the lap a connecting-bar, G, one end of which is pivoted to one of the lugs at *h*. The other end, *k*, of the connecting-bar is hook-shaped, and is pivoted to an arm, *l*, of the rock-shaft M, which is journaled in the bearing-lugs of one side of the cylinder, as shown in the drawings. The rock-shaft is provided with a lever arm or handle, N, to which is pivoted a stop-bar, P, the end of which is designed, when the mold-cylinder is fully contracted, to engage a stop-lug, *z*, on the cylinder at the opposite side of the lap, so that it is held securely in this position. The arms of the rock-shaft are arranged to turn outward as the lap is drawn together, and the bends *k* of the connecting-bars G extend over the rock-shaft, so that the latter is axially arranged between the pivotal centers *h* and *h'* of the connecting-bar and automatically secured in position, so that there is little or no strain on the stop-bar P.

Within the cylinder A is located a core-cylinder, which is also expansible and contractible and has its meeting edges lapped in a manner similar to that described with reference to the outer cylinder, except that the studs on which the slots move are placed on the inside wall. So, also, the bearing-lugs, rock-shaft, and connecting-bars are placed within the core-cylinder. These parts are, however, similar to those described hereinbefore, except that, as the core-cylinder is designed to be locked in the expanded position, the connecting-bars are made straight and the arms of the rock-shaft turn toward them. The stop-bar of the lever-arm in the core-cylinder extends in the opposite direction to that which is taken by the stop-bar P of the outer cylinder. When the pipe has been formed in the mold, between the core-cylinder and the exterior cylinder, A, these parts can easily be loosened by turning the lever-handles to contract the core and expand the outer cylinder.

Having described this invention, what we claim, and desire to secure by Letters Patent, is—

1. The lapped pipe-molding cylinder having stud-and-slot connections in the lapped portion, bearing-lugs F, the rock-shaft M, its arms *l*, and the connecting-bars pivoted to the bearing-lugs on one side of the lap and to the arms of the rock-shaft on the other side, substantially as specified.

2. The combination, with a lapped pipe-molding cylinder, of the bearing-lugs F, the rock-shaft M, its arms *l*, the connecting-bars pivoted to the bearing-lugs and to the arms of the rock-shaft on opposite sides of the lap, the lever-arm N, and the stop devices, substantially as specified.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

LEVI RICHARDSON.
FRANK JONAS NETTLETON.

Witnesses:
GEORGE CLINTON GIBBS,
RAMON DAMINGUEZ.