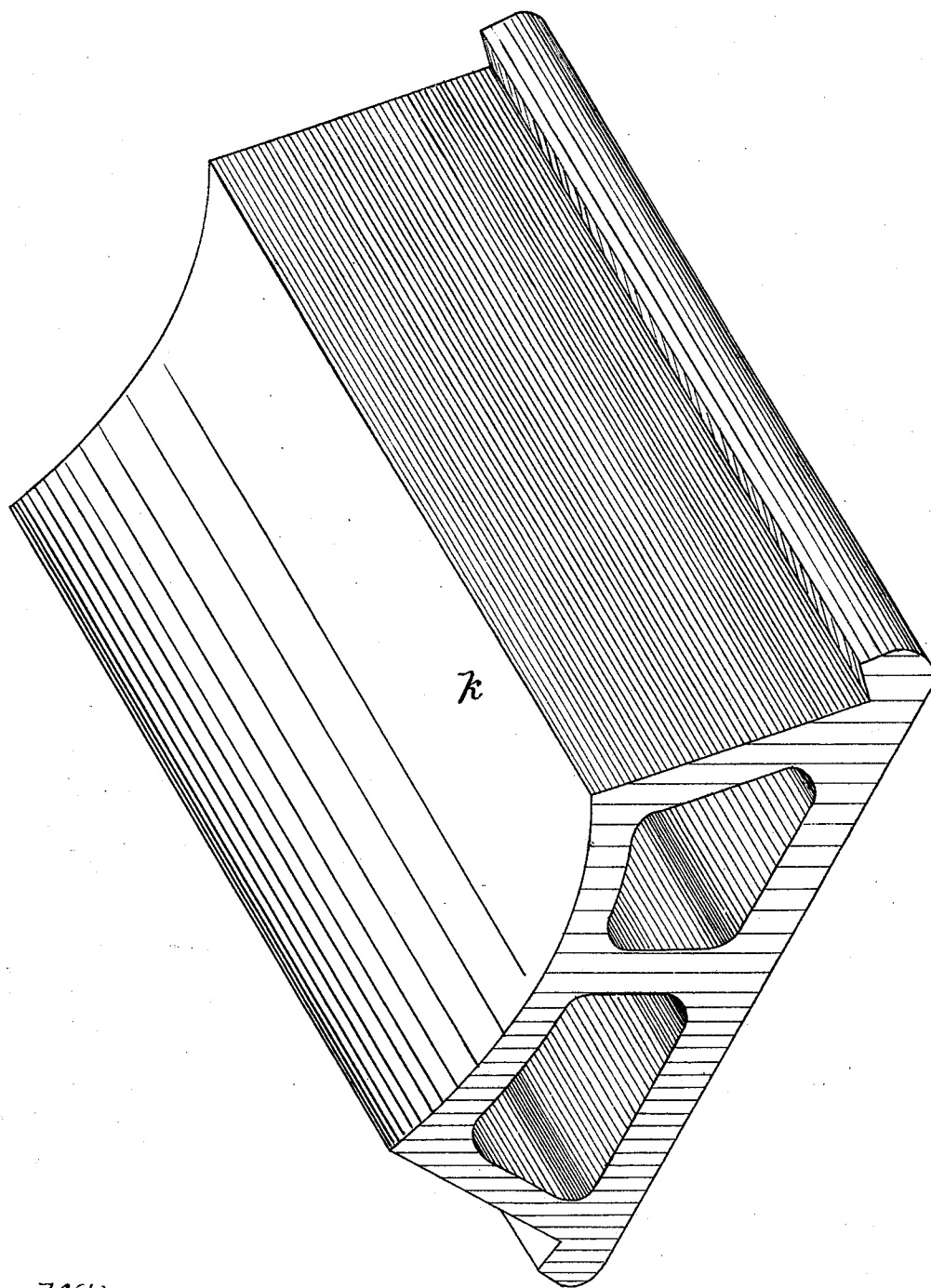


M. DAY.

Cement Sewer-Bottoms.

No. 144,961.

Patented Nov. 25, 1873.



Witnesses.
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UNITED STATES PATENT OFFICE

MARCELLUS DAY, OF CHARLESTOWN, MASSACHUSETTS.

IMPROVEMENT IN CEMENT SEWER-BOTTOMS.

Specification forming part of Letters Patent No. **144,961**, dated November 25, 1873; application filed October 2, 1873.

To all whom it may concern:

Be it known that I, MARCELLUS DAY, of Charlestown, in the county of Middlesex and State of Massachusetts, have invented an Improved Cement Sewer-Bottom; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

The invention relates to an improvement in the manufacture of sewer-bottoms, or sewer-bottom sections, forming tubular foundations for the bottom of the masonry-work of brick or stone sewers, and to carry off the water at the bottom of the trench while the process of constructing the sewer is progressing.

For such manufacture I use a straight mold or a mold of uniform size in cross-section throughout its length, and containing one or more straight cores, (extending through the mold from end to end, and parallel to its sides.) The space between said core or cores and the inner surface formed by the mold-plates, is filled with a mortar, preferably composed of hydraulic cement, sand or gravel, and water, the mortar being put into the mold little by little and tamped. The cores and shell are then removed, and the sewer-bottom formed between them is finished or hardened by drying.

My invention consists in the sewer-bottom thus formed.

The drawing represents the sewer-bottom and mold.

Figure 1 shows the mold-core and production in end view. Fig. 2 is a side view of the mold. Fig. 3 shows the sewer-bottom separate from the mold.

a and *b* denote two cast-iron plates which form the outer shell of the mold, said plates being strengthened by ribs *c*, and having flanges *d*, which abut together at the opposite sides of the mold, and are connected by clamps *e*. The plate *a* is flat or approximately flat,

except at its opposite side edges, to form a correspondingly-shaped face for the bottom surface of the blank, and the other plate, *b*, is made with a center curve to form the top face of the blank, (such face making the bottom-surface of the sewer,) and flaring straight sides *f* and shoulders *g*, from which the brick-arch springs. *h h* denote the two straight cores, preferably made as cast-iron tubes, shaped substantially as shown, or so as to form between them and the plates such a space that the blank or article molded between them will be of about the same thickness throughout.

In molding the mortar the plates and cores are placed in standing position upon a bed-plate, *i*, recessed to receive and sustain them, and then the mortar, mixed and worked to the proper consistency, is poured or dropped into the molding-space, and is driven in by tamping until the mold is filled. After standing a suitable time, the plates are removed and the cores drawn, the sewer-bottom *k*, thus formed between them, being completed by "setting" or drying.

The cores may extend at bottom through the bed-plate *i* and into pits beneath, so that they can be removed by pressing them down into the pits, such movement insuring a smooth finish to the upper end of the sewer-bottom.

The tubular structure thus formed makes a perfect foundation for the arch or brick-work of the sewer, and furnishes an adequate escape for accumulating water, as before described, and its cheapness and effectiveness lead to its extensive use.

The mold is not herein claimed, as it is to form the subject of a future application.

I claim—

The tubular sewer-bottom or section, formed to shape in a mold, of the material and by the process substantially as described.

MARCELLUS DAY.

Witnesses:

FRANCIS GOULD,
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