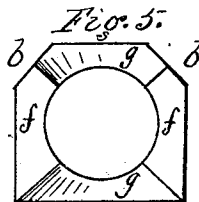
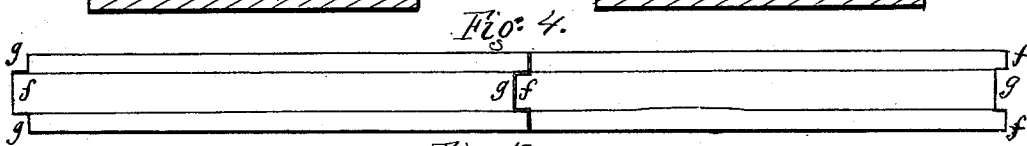
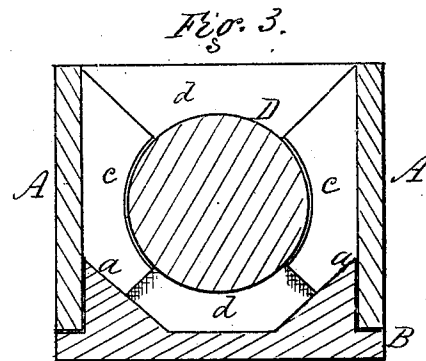
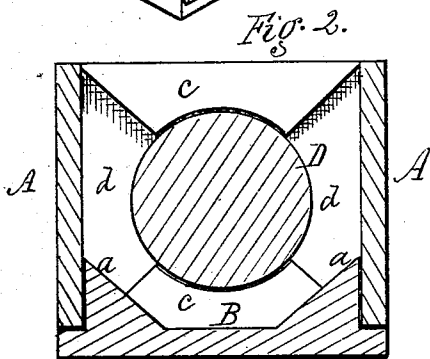
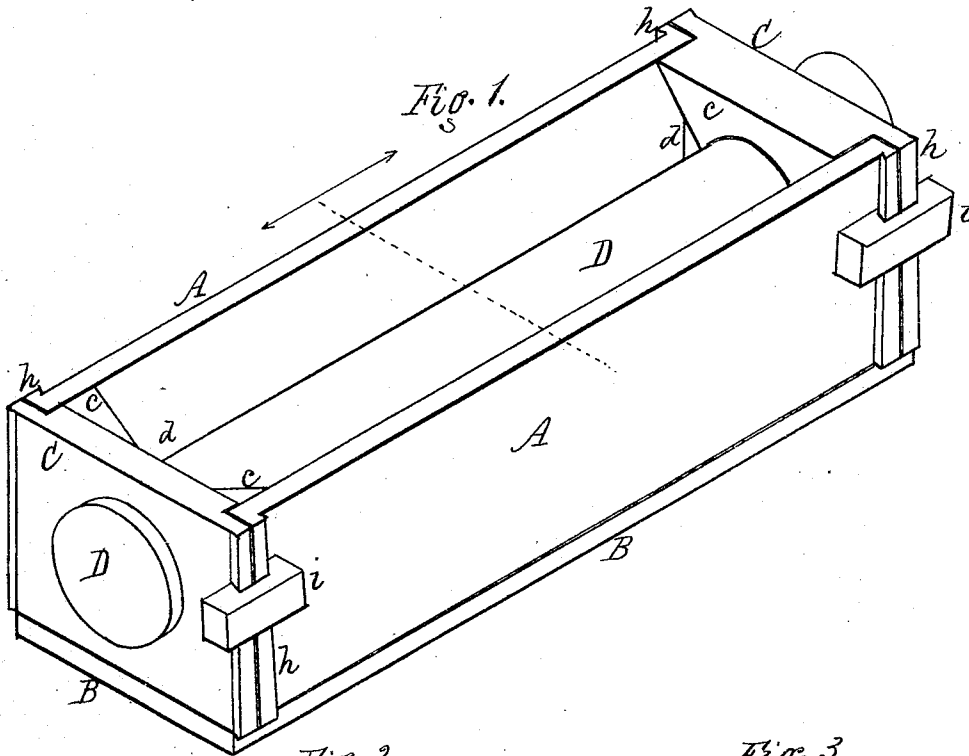


J. LEFFLER.
Drain-Tiles.

No. 144,990.

Patented Nov. 25, 1873.



Witnesses.
James L. Norris.
A. H. Norris

John Leffler,
Inventor.
per R. F. Osgood,
att'y.

UNITED STATES PATENT OFFICE.

JOHN LEFFLER, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN DRAIN-TILES.

Specification forming part of Letters Patent No. **144,990**, dated November 25, 1873; application filed October 17, 1873.

To all whom it may concern:

Be it known that I, JOHN LEFFLER, of the city of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in 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.

My improvement is intended for making sewer-pipe, and belongs to that class of molds in which a central core is used; and the mold itself is made of sectional form, so as to be taken apart in removing the cast. So far as I am aware, these molds have been heretofore made in cylindrical form, and the ends of the pipe with circular coupling ends. My invention consists of a mold of rectangular or square form, and constructed as hereinafter described; also, in a pipe made with square bottom and sides, and with an angular top, and having couplings formed of projections and sockets intermatching, as hereinafter set forth.

In the drawings, Figure 1 is a perspective view. Figs. 2 and 3 are cross-sections, looking in opposite directions. Fig. 4 is a plan of the pipe. Fig. 5 is an end view of the same.

This mold is made square in cross-section, and of any desired length. It consists of two sides, A A, a bottom, B, and two ends, C C. These parts are all separate and distinct from each other, but are locked together to produce the mold, and the top is left entirely open to allow the cement to be filled in. The core D passes through sockets in the ends, and is made removable. The bottom B is provided with two inclined sides, *a a*, which form the corresponding angles *b b* of the pipe. At the ends of the mold are also offsets or projections *c c*, with intermediate sockets *d d*. The offsets at one end of the mold stand at top and bottom, while at the other end they stand at the sides. This is clearly shown in Figs. 2 and 3. These projections and sockets form corresponding projections and sockets *f g* in the ends of the pipe, as shown in Figs. 4 and 5. These projections and sockets are mitered toward the center, so that, when the ends of the pipe are coupled, as shown in Fig. 4, they cannot be displaced. The locking devices for holding the parts together may be of any desired kind. I prefer, however, those shown in the drawings, which consist of dovetailed ribs *h h*, on which slide dovetailed keys *i i*. Con-

nections or angles may be formed on the pipe by simply making the proper connecting side molds and cores.

This mold, as above described, differs from others in being made of rectangular form instead of circular, and also in its construction, by which the several parts may be removed or separated without disturbing the cast. The core is first removed, after which the sides and ends are removed, leaving the cast lying upon the bottom plate.

Another novelty of the mold consists in the offsets and sockets *c d* for forming the coupling ends of the pipe. These ends, when fitted together, form a complete lock, owing to the miters, and can never become separated.

Another advantage consists in the form of the pipe, which has square bottom and sides and an angular top, which approximates the form of an arch. The square bottom furnishes a firm foundation, and keeps the pipe true at all times, which is a great advantage in laying, as the pipe is much firmer and truer than the ordinary round pipe, which rests only at one point on the ground. This pipe is also much stronger than ordinary pipe, since there is an extra quantity of material at the base, where the greatest pressure comes.

Another advantage of this invention is that the mold can be filled much more rapidly than the old form, as the whole top is open, covering the length of the core; whereas, in ordinary molds, the end only is open. The pipe formed in this manner is more solid, as it is better tamped.

The method of making the pipe is to first fill the mold with the cement to the level of the bottom of the core, then to insert the core, and then to fill around the core to the top.

Having thus described my invention, what I claim as new is—

1. The rectangular mold herein described, consisting of the sides A A, bottom B, and ends C C, and provided with the offsets *c c* and *d d*, as and for the purpose specified.

2. The pipe constructed with square bottom and sides and an angular top, and provided with the intermatching coupling projections *f f* and sockets *g g*, as and for the purpose specified.

JOHN LEFFLER.

Witnesses:

R. F. OSGOOD,
E. B. SCOTT.