W. J. & J. I. METTLER.

TILE-LAYING MACHINE.

No. 193,019. Patented July 10, 1877.

Fig. 1.

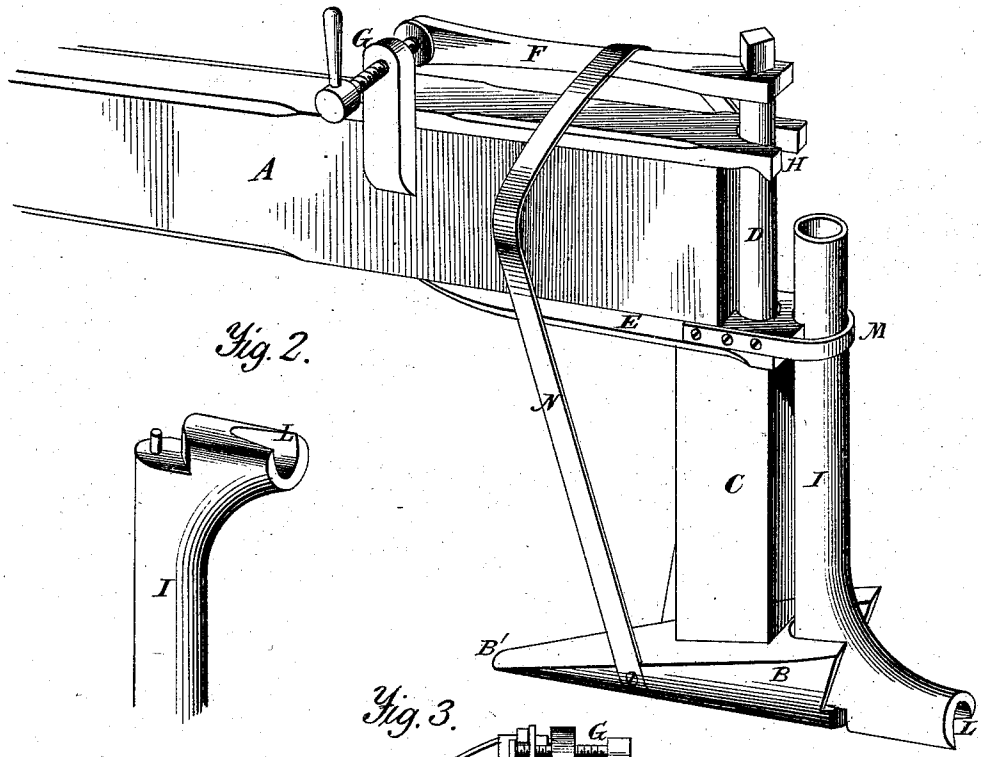
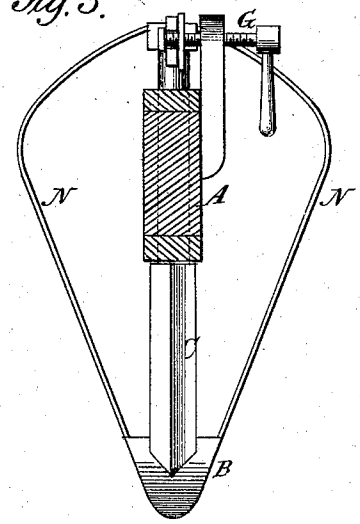


Fig. 2.

Fig. 3.



Witnesses.

A. Ruppert.

J. G. Macomber

W. J. Mettler

J. I. Mettler

Inventor

D. R. Holloway & Co

Atty

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C

UNITED STATES PATENT OFFICE.

WILLIAM J. METTLER AND JAMES I. METTLER, OF MENDOTA, ILLINOIS.

IMPROVEMENT IN TILE-LAYING MACHINES.

Specification forming part of Letters Patent No. **193,019**, dated July 10, 1877; application filed April 16, 1877.

To all whom it may concern:

Be it known that we, WILLIAM J. METTLER and JAMES I. METTLER, of Mendota, in the county of La Salle and State of Illinois, have invented new and useful Improvements in Tile-Laying Machines, of which the following is a specification:

This invention belongs to that class of machines in which a mole-plow opens a channel in the soil, in the bottom of which the tile are deposited. The tile are fed down a hollow tube hinged to and immediately in rear of the mole and wedge-shaped cutter. Side cutters are so fixed that they cut out a V-shaped piece of ground, which is split in half by the wedge-shaped cutter, thus forming a passage for the tile-tube, and also making it easier for the mole to raise the earth. The mole and cutters are so arranged that by moving a lever they may be turned in different directions, thus changing the direction of the ditch without changing the position of the capstan by which the machine is moved.

In the annexed drawing, making a part of this specification, Figure 1 is a perspective view of the machine. Fig. 2 is a perspective view, showing the hollow tile-tube and opening in its lower end. Fig. 3 is a transverse vertical section, showing the form of the side and wedge-shaped cutters.

The same letters are employed in all the figures in the indication of identical parts.

A is the beam, to which the mole B and cutter C are connected by means of a standard, D, which passes through and turns in a bearing, E, that is bolted to the under side of the beam A, the upper end of the standard D being held in position by the lever F and hollow bearing H, which is bolted to the upper side of the beam. The mole B is made of a solid piece of metal, the bottom being round, while the upper part is cut away, forming an inclined face tapering down to a point at B′.

The cutter C is also made of metal in the shape of a wedge.

On the upper side of the beam A a bearing, H, is bolted, which holds the upper end of the standard D in position.

On the upper end of the standard D a lever, F, is fitted, by which the three parts B C D may be turned, so as to form an angle with the line of the beam. The lever F is regulated in position by the set-screw G. By turning this screw the end of the lever may be moved either to the right or left, according as it is desired to change the direction of the mole B and cutter C, the lever being held in position by the screw.

The rear end of this mole B is recessed, so as to form a resting-socket for the tile-tube I, which is placed immediately in rear of the cutter. The tube I is made of two pieces of metal, securely bolted together, and curved, as shown in Fig. 2. This tube has a pin in the lower end, which rests in the socket formed in the heel of the mole, upon which the tube turns. It is supported above by a strap, M, that passes around it and holds it in place, still allowing it to turn.

The hole through the tube I is cylindrical in the vertical part, but below the bend it is made to change in form, so as to become approximately triangular in form, being narrowest at the bottom so as to lay tile of different sizes as the sections will find a bearing and escape at the bottom of the drain where the tube is cut away, as shown at L.

The side cutters N are attached not directly to the beam, but to the lever F, or to arms projecting from lever F, and having proper braces (not shown) to give them sufficient stanchness below the braces to cut through the earth, cutting thus a triangular slice, which is raised by the upper inclination of the face of the mole and split by the cutter C. As the plow advances the tile are passed through the mouth of the tube I, and the earth raised by the mole will settle on the upper surface of the tile deposited in the bottom of the drain.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In combination with the mole B, stand-

ard D, and cutter C, the lateral inclined cutters N, and horizontally-adjustable lever F, with which the cutters N and C are connected, substantially as set forth.

2. The tile-tube I, having the lower end of the tube formed with inclined interior faces, and cut away at L, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WM. J. METTLER.
JAMES I. METTLER.

Witnesses:
J. L. WATKINS,
D. Y. LOWD.