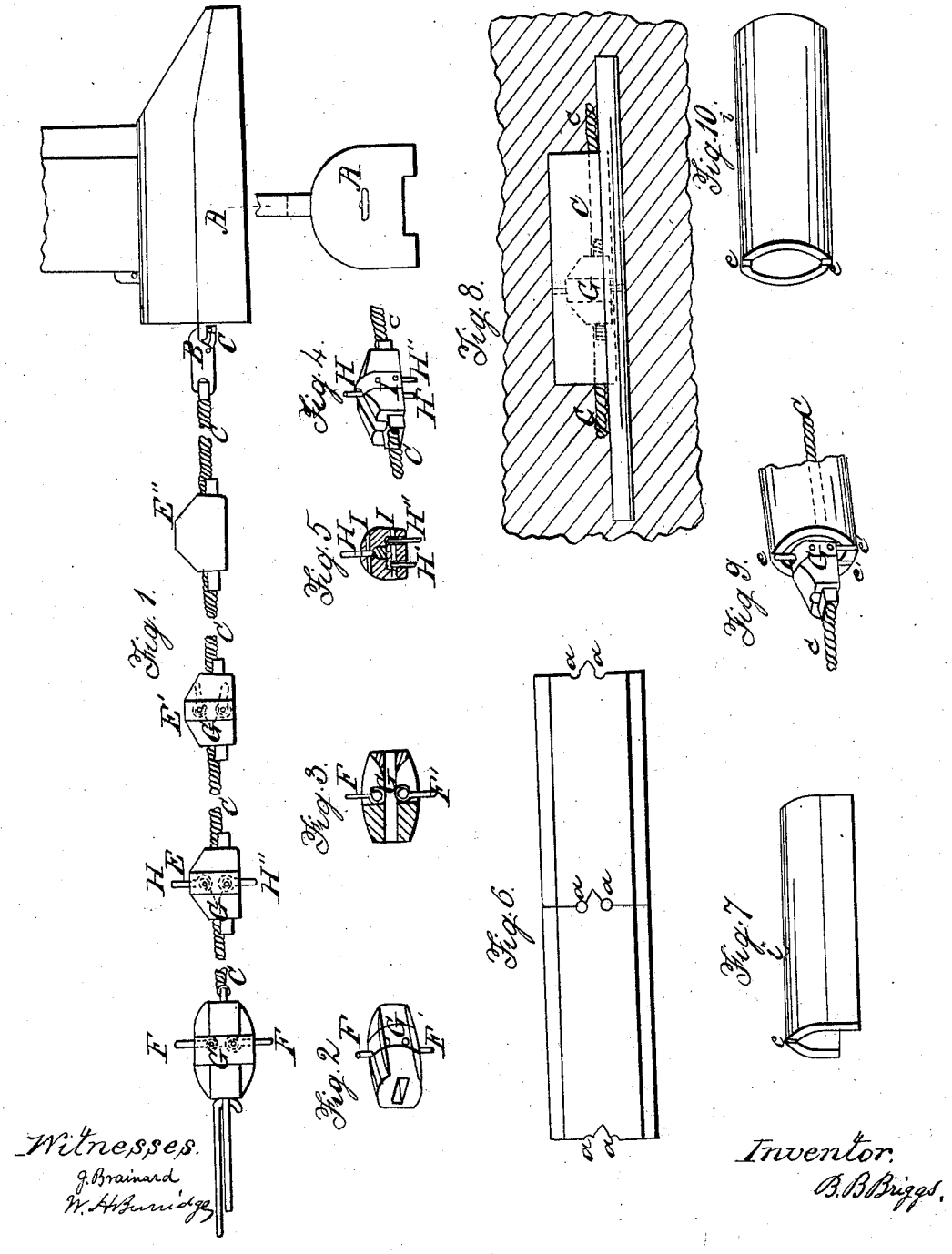
B. B. BRIGGS

Mole-Plow.

No. 25,624. Patented Oct. 4, 1859.



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UNITED STATES PATENT OFFICE.

B. B. BRIGGS, OF SHARON, OHIO.

IMPROVEMENT IN APPARATUS FOR LAYING DRAIN-TILE.

Specification forming part of Letters Patent No. **25,624**, dated October 4, 1859.

To all whom it may concern:

Be it known that I, B. B. BRIGGS, of Sharon, in the county of Medina and State of Ohio, have invented new and useful Improvements in Apparatus for Laying Drain-Tile; and I do hereby declare that the following is a complete description of the construction and operation of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a view of the apparatus for laying the tile. Fig. 2 is a perspective view of the clutch. Fig. 3 is a longitudinal section of the same. Fig. 4 is a perspective view of the clutch. Fig. 5 is a transverse section of the same. The other figures will be referred to and explained hereinafter.

Like letters refer to like parts.

A, Figure 1, is a mole-plow. At the back end of this is secured a staple, to which is attached the hook B. To this hook is attached the cord or chain C, on which are arranged a series of clutch-blocks, D E E′ E″.

Fig. 2 is a perspective view of the clutch D, and Fig. 3 is a longitudinal section of the same, showing the interior structure and the manner in which it differs from the other clutches, E E′ E″. The clutch D has two fingers, F F′, connected to the clutch-block by the pins G, which pass through the clutch-block. In the others—namely, E E′ E″—there are three fingers, H H′ H″, which are secured to the blocks by the pins I, Figs. 4 and 5. The number of these fingers may be increased or diminished, or they may be so arranged as to extend from the sides instead of the top and bottom of the blocks. These blocks are cut away forward of the pins, so that the pins can lie concealed below the surface of the blocks, as seen in Figs. 2, 3, and 4, but having a square shoulder upon the back, so that they can only rise to a position at right angles to the horizontal axis of the clutch. The object of this arrangement is to enable me to move the tile forward in the manner hereinafter described, and then to remove the clutches, with the rope C, after the tile have been carried to their destined position.

In the use of this apparatus the mole-plow is placed in the earth at a suitable depth from the surface and a capstan or windlass secured firmly, say, forty or fifty yards in the direction in which the tile are to be laid, from which a rope extends to the beam of the mole-plow. In case the sole and arch tile, Figs. 6 and 7, are used, a mole having the shape of the tile must be used; but when the round tile are to be laid the round mole must be used. The plow may be drawn forward by the use of the capstan, as above stated, by having the capstan firmly attached to the ground. The progress of the plow through the ground should be firm and slow, thus giving abundant opportunity to place and adjust the tile upon the rope C and clutches D E E′ E″. When the plow has attained its proper depth an excavation is to be made at the rear to the bottom of the furrow, in length about six feet and wide enough for a man to work comfortably. As the rope C is drawn slowly into the hole left in the subsoil by the mole-plow (when the sole and arch tile are used) the soles are placed end to end, as seen in Fig. 6, and the fingers H H″ inserted into the holes *a a* formed by the meeting of the two soles. The arch-tile, Fig. 7, are placed so that the finger H will be in contact with the end *e;* or, if it is desirable that the arch-tile should break joints with the sole, the finger H may be inserted into the hole *i* in the top of the arch-tile, Figs. 7 and 8. As the rope C passes into the hole formed by the mole-plow two or three pairs or joints of tile may be drawn in by one clutch, and the several clutches upon the rope C should be arranged with reference to this object. In this way from twenty-five to thirty yards may be drawn in at one operation. When no more can be conveniently drawn in, the plow must be stopped and an excavation made, as before, at the heel of the plow, and the hook B released from the staple in the heel of the plow or mole. The rope C, with the attached clutches, should then be drawn backward through the tile that have been drawn into the hole, the fingers H H′ H″ and F F′ dropping forward into the cavity formed for them, as seen at E, in Fig. 1, and thus offering no obstruction to the removal of the rope C and the attached clutch-blocks.

The hook B has its upper part made strong enough to sustain the draft in drawing in the tile; but in order that there may be no danger of its unhooking while at work, and also to prevent the point of the hook from catching

against any inequalities in the tile as it is drawn backward, I place a jointed finger, *o*, upon the under side thereof and secure the forward end by a pin, forming a closed link, as seen at *o* in Fig. 1. When this hook B is uncoupled from the staple in the heel of the mole the hook can be again closed, as while at work, and in this manner it can neither become unhooked accidentally nor catch against the ends of the tile in being withdrawn. After being withdrawn it is carried forward and the hook B is again attached to the staple in the heel of the mole, and the same operation repeated as before, and with like results. The space that has been excavated must be laid by hand and the soil returned to the place from whence it came.

In laying round tile the rope C, or chain, (its equivalent,) will need to be made in sections of sufficient length to hold, say, six tile, through which each section will have to be passed and the sections hooked together. The removal of the rope and clutches is effected in the same manner as above described. The position of the fingers in laying round tile is seen in Fig. 9. The size of the hole made by the mole-plow being greater than the tile—whatever kind of tile are used—no difficulty will be experienced in drawing in from twenty-five to fifty yards at a time.

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

The herein-described clutches, consisting of the block or body and the fingers H H′ H″ and F F′, constructed and operating as set forth, in combination with the rope C, or its equivalent, and hook B, when these several parts are arranged and operated substantially as specified.

B. B. BRIGGS.

Witnesses:
J. BRAINERD,
W. H. BURRIDGE.