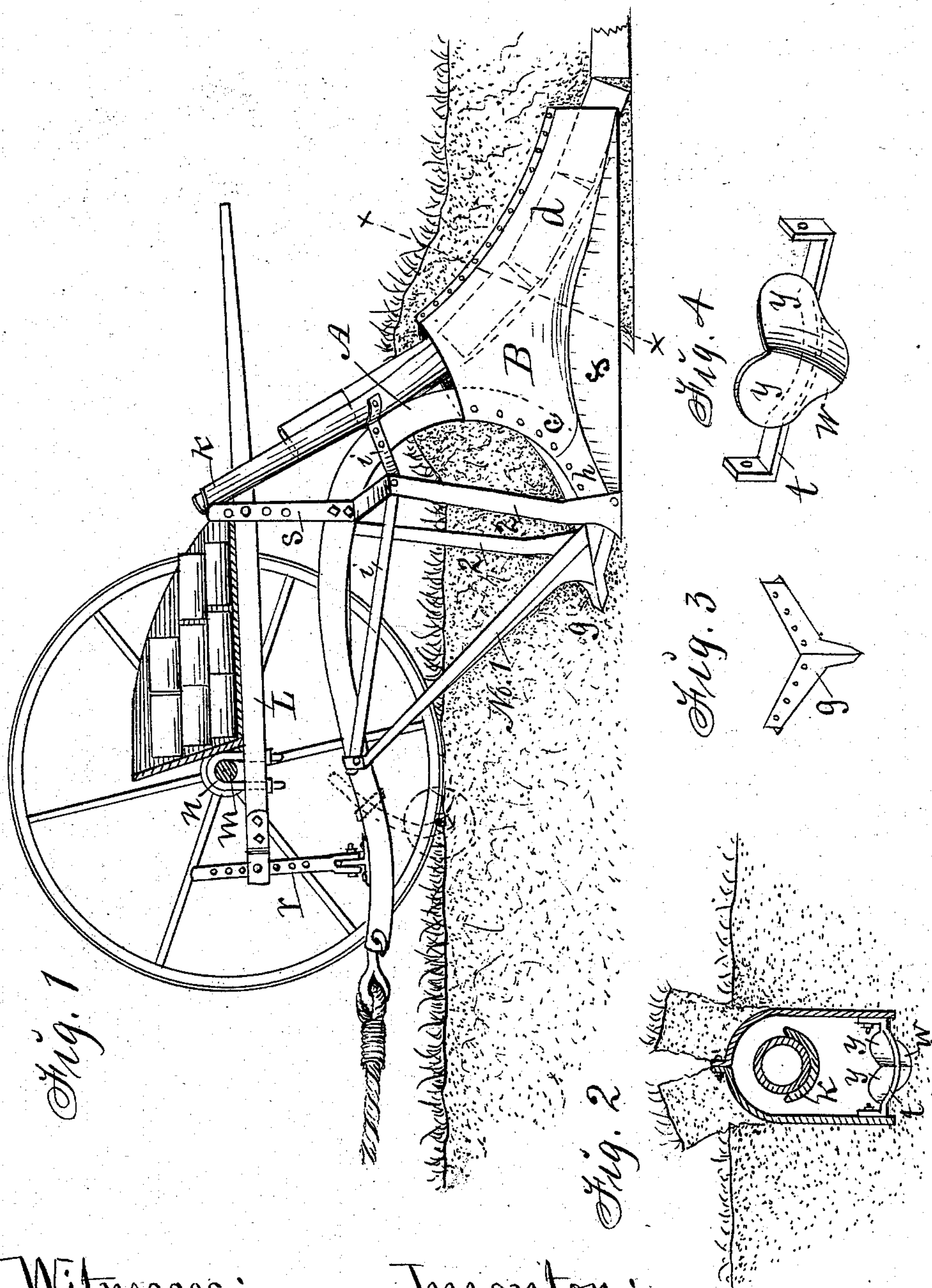


(No Model.)

H. KING.
TILE LAYING PLOW.

No. 288,344.

Patented Nov. 13, 1883.



Witnesses:
James E. Jolliffe,
William E. Dippert.

Inventor:
Herbert King,
By Thomas G. Orwig,
Attorney.

UNITED STATES PATENT OFFICE.

HERBERT KING, OF DES MOINES, IOWA.

TILE-LAYING PLOW.

SPECIFICATION forming part of Letters Patent No. 288,344, dated November 13, 1883.

Application filed October 13, 1881. (No model.)

To all whom it may concern:

Be it known that I, HERBERT KING, of Des Moines, in the county of Polk and State of Iowa, have invented an Improved Tile-Laying Machine, of which the following is a specification.

The object of my invention is to provide a strong, durable, and adjustable machine, that can be readily operated by means of horses, to lay round or flat bottomed tiling under ground, to form continuous drains at various depths as the machine advances, without opening a ditch or removing any soil from the line of the drain thus formed.

It consists, first, in forming a mole-plow with two flat landsides and two curved and tapering duplex mold-boards and three cutters in such a manner that it will cut two distinct furrow-slices and elevate them to admit tiling to be laid underneath, and then replace the soil as the machine advances; second, in a subsoil attachment for making a concave furrow adapted for round tiling; third, in a carriage adapted to support the operator and to carry tiles, and also for governing the plow and regulating the depth of the drain, all as hereinafter fully set forth.

Figure 1 of my accompanying drawings is a perspective view, showing my plow and carriage combined and in position as required for practical use. Fig. 2 is a transverse vertical section through the line *xx* of Fig. 1. Fig. 3 is a top view of a duplex plowshare adapted to form a flat-bottomed furrow. Fig. 4 is a perspective view of my subsoil attachment adapted to form a concave furrow-bottom. Jointly considered, these figures clearly illustrate the construction and operation of my complete invention.

A is the base of my plow in the form of a curved beam that extends downward at its rear end, and then forward to terminate in an incline adapted to form a base and support for the duplex plowshare and my combined mold-boards and landsides B B, each of which has a mold-board, *c*, at its front end to elevate the furrow-slices, and also a mold-board, *d*, at its rear end to lower the same furrow-slices after tiling has been laid in the bottom of the furrow. At the base of the mold-boards *c d*, and cast integral therewith, is a landside, *f*, that tapers downward in opposite directions from its center to

co-operate with the mold-boards in raising and lowering the furrow-slices as the plow advances. The complete castings B may be rigidly fastened together and to the incline at the lower end of the beam and base A by means of rivets or screw-bolts, or in any suitable way.

g is the duplex plowshare that forms the point of the plow, and is rigidly fixed to the front ends of the tapering landsides *f* and the front end of the frame A by means of intermediate inclined plates, *h*, and rivets and bolts.

No. 1 is a cutter fixed to the front portion and center of the plow-point to extend upward and forward at an angle of about forty-five degrees, to be rigidly fixed at its top end to the front portion of the plow-beam.

2 2 are cutters fixed at their lower ends to the front portion of the landsides *f*, to extend upward and incline outward. Their top ends are bent inward and are fixed to the center portion of the beam.

i i represent braces that extend from the beam to the elbows at the top ends of the cutters 2, to aid in retaining the cutters rigidly fixed. By inclining the No. 1 cutter in the center forward, and the cutters 2 2 at the opposite sides of the plow outward, the two furrow-slices that are cut vertically thereby are freed first at the center of the plow, as required, to facilitate their elevation in reversely inclined position, as shown in Fig. 2.

k represents a curved inclined plane adapted to receive and convey and deposit pieces of tile successively to the bottom of the furrow, as required, to produce a continuous drain. Its top end is fixed to the beam A in such a manner that it will extend downward and rearward under the mold-boards *d*, and in combination with said mold-boards form a tubular passage that will protect the descending pieces of tile from coming in contact with the soil elevated by means of the plow, and underneath which the plow advances.

L is a lever combined with the longitudinal center of the axle *m* of a two-wheeled carriage by means of a U-shaped screw-bolt, *n*, or in any suitable way, in such a manner that the axle will perform the function of a fulcrum relative to the lever.

r is a perforated bar flexibly connected with the front end of the plow-beam at its lower

end, and adjustably connected at its top end with the front end and short arm of the lever L.

s represents a rack fixed to the rear portion of the plow-beam in such a manner that the rear end and long arm of the lever L can be locked thereto in various positions relative to the plow as required to raise and lower the plow by means of the lever and traveling carriage for the purpose of regulating the depth of the drain.

t is a detachable frame, designed to be bolted to the landsides f, as shown in Fig. 2. It is bent downward in its center to conform with a concave cutter, w, that is attached thereto in such a manner that it will project into the flat bottom of the furrow and form a continuous concave in the center of the furrow to admit the convex bottom of round tiles.

y y are wings that extend laterally and rearward from the cutter w, to convey the subsoil cut loose by the cutter to the sides of the furrow as the plow advances.

By fixing a suitable box and also a seat upon the carriage, a quantity of tile can be carried in such position relative to the operator on the seat and the plow that pieces of tile can be readily taken from the carriage successively and placed upon the inclined plane k, to be thereby conducted into the underground channel and laid together to form a continuous drain.

I claim as my invention—

1. The improved tile-laying plow composed of the beam and frame A, the castings B B, each having a mold-board, c, a mold-board, d, and a landside, f, the duplex plowshare g, the inclined plates h, the cutters Nos. 1, 2, and 2, the braces i i, and the inclined plate k, substantially as shown and described, to operate in the manner set forth.

2. The subsoil attachment t w y y, in combination with the landsides f f of a tile-laying plow, substantially as shown and described, for the purposes specified.

3. The combination of a lever, L, the axle of a two-wheeled carriage, and the bar r and rack s, carried on the beam of a tile-laying plow, substantially as shown and described, for the purposes specified.

4. In a tile-laying machine, the combination of the following elements, to wit: the plow B, having duplex mold-boards c d, tapering landside f, duplex share and point g, tile-chute k, cutters 1 2 2, plow-beam A, lifting-lever L, and axle m of the wheel-carriage, substantially as shown and described.

HERBERT KING.

Witnesses:

R. G. ORWIG,

A. C. GUTHRIE.