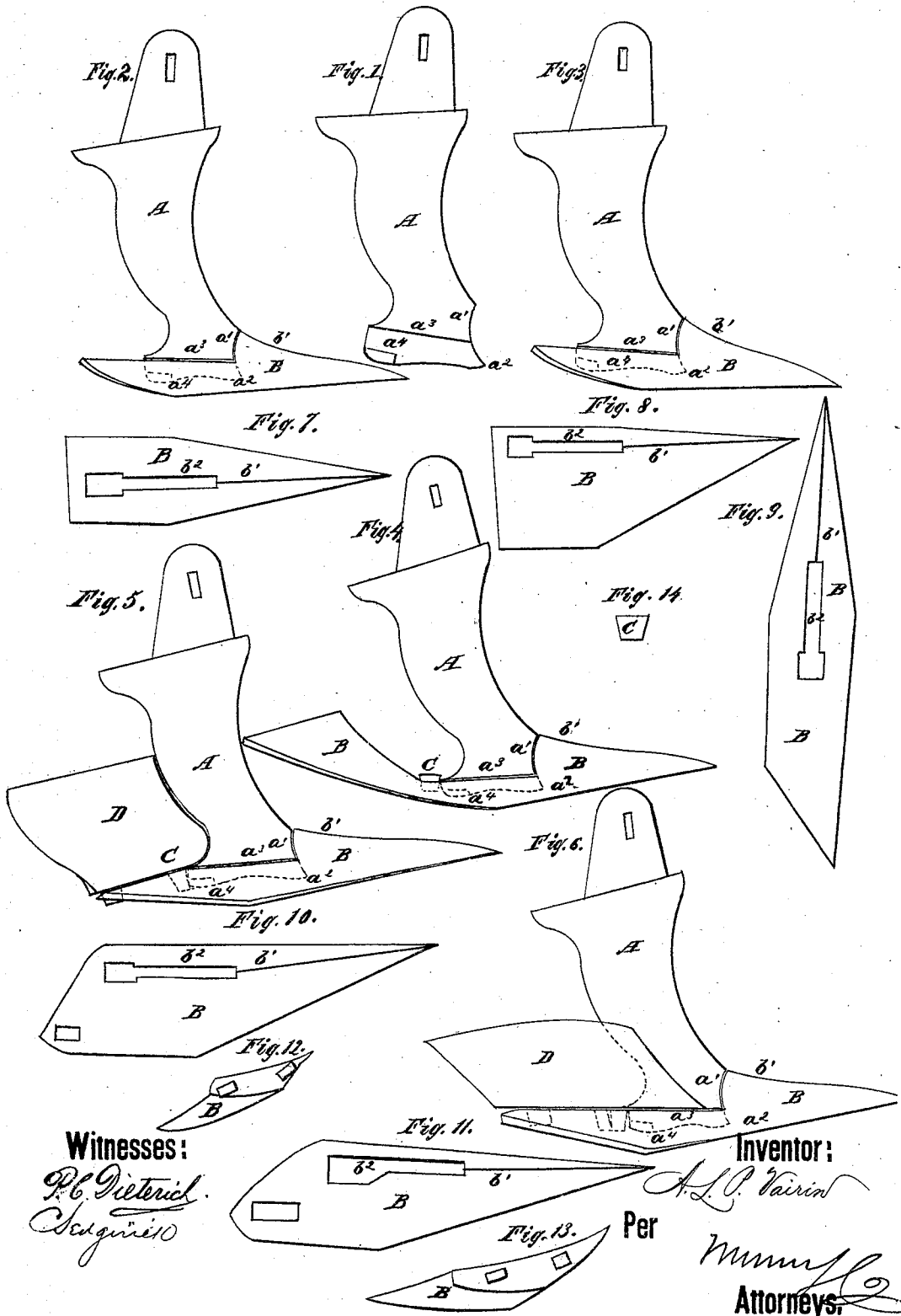


A. L. P. VAIRIN.
Sub-soil Plows.

No. 140,660.

Patented July 8, 1873.



UNITED STATES PATENT OFFICE.

AUGUSTUS L. P. VAIRIN, OF RIPLEY, MISSISSIPPI.

IMPROVEMENT IN SUBSOIL-PLOWS.

Specification forming part of Letters Patent No. **140,660**, dated July 8, 1873; application filed April 19, 1873.

To all whom it may concern:

Be it known that I, AUGUSTUS L. P. VAIRIN, of Ripley, in the county of Tippah and State of Mississippi, have invented a new and useful Improvement in Subsoil-Plow, of which the following is a specification:

Figure 1 is a side view of the standard of my improved plow. Figs. 2, 3, and 4 are side views of my improved plow-standard, shown as having different styles of shares attached to it. Figs. 5 and 6 represent my improved plow-standard as supplied with shares and mold-boards. Figs. 7, 8, 9, 10, and 11 are top views of different styles of plow-shares. Figs. 12 and 13 are bottom views of the mold-boards. Fig. 14 is a detail view of the locking-wedge.

Similar letters of reference indicate corresponding parts.

The invention consists in an improvement of subsoil-plows, as hereinafter described, and pointed out in the claim.

A is the standard, which may be made of cast or wrought iron, and which may be fastened to the plow-beam by a wedge-key or by other convenient means. The front of the standard A is made upon the arc of a circle, and is made sharp from near the beam to its junction with the cutter of the share, forming with the said cutter of the share a continuous colter from the beam to the point.

The back part of the standard should be made of such a form and thickness as to give it the strength necessary for the particular kind of work for which the plow may be intended.

The front part a^1 of the lower end of the standard A is so formed as to fit the rear end of the cutter b^1 of the share B. The lower end of the standard A is passed through a slot, b^2 , in the share B, and has a toe, a^2 , formed upon its forward end to underlap the said share at the forward end of its slot, as shown in Figs. 2, 3, 4, 5, and 6. The lower part of the standard A has ribs or flanges a^3 formed upon its opposite sides to rest upon the upper side of the share B, and prevent the said standard from passing too far through the slot of the said share. The rear part of the lower end or heel of the standard A has lugs or projections, a^4 , formed upon its oppo-

site sides at a distance below the ribs or flanges a^3 equal to the thickness of the share B, to rest against the under side of the share and, in connection with the toe a^2 , prevent said standard from rising out of the said share. The rear end of the slot b^2 is enlarged to allow the lugs a^4 to pass through.

The share B may be made of cast or wrought iron, and of any desired length and breadth.

The forward part of the share B, for about two-thirds of its length, tapers to a point. The cutter b^1 is made straight, and gradually increases in height to its rear end, which fits upon the lower part of the edge of the standard A. The under side of the share is concaved, said concavity gradually increasing in depth toward the rear end, and being so formed that the point and side edges of the share may rest or fit upon a flat surface, or be in the same horizontal plane. The rear third of the share B has its side edges gradually bent upward until its rear end is straight across.

The slot b^2 is made longer than the length of the lower end of the standard A, so that the forward end or toe of said standard may be inserted in said slot, and the standard pushed forward to its place, the lugs a^4 dropping through the enlarged rear end of said slot. The standard A is secured in place in the slot b^2 of the share B by a wedge-plug, C, driven into the enlarged rear end of the slot b^2 at the rear edge or heel of the said standard A.

Different-shaped shares B may be applied to the same standard A, to adapt the plow to different kinds of work. Mold-boards D may also be attached to the share B and standard A, if desired.

With this construction the bottom of the furrow is cut flat, and the slice is gradually raised from its old position and is broken in pieces by its own weight, as it falls over the raised rear edge of the share B, pulverizing the ground as deep and wide as the furrow is cut.

The standard and share, presenting three cutting-edges, go easily through the ground, making the draft light. The concavity of the share, raising the middle part of its bottom from the bottom of the furrow, diminishes the

friction, causes the plow to run steady, and makes it self-sharpening.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The toe a^2 , ribs or flanges, a^3 , lugs a^4 , slot b^2 , enlarged at its rear end, and the wedge-

plug C, for securing the share B to the standard A, substantially as herein shown and described.

AUGUSTUS L. P. VAIRIN.

Witnesses:

W. R. COLE,
A. J. SUGGS.