

W. BROWN.  
Grain-Drill.

No. 159,638.

Patented Feb. 9, 1875.

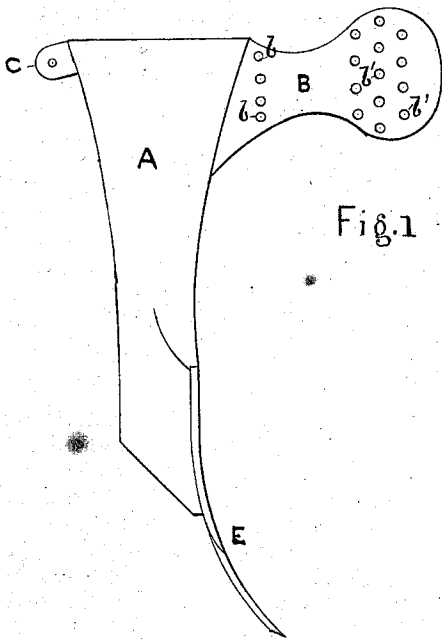


Fig. 1

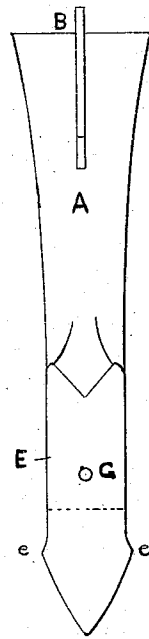


Fig. 2

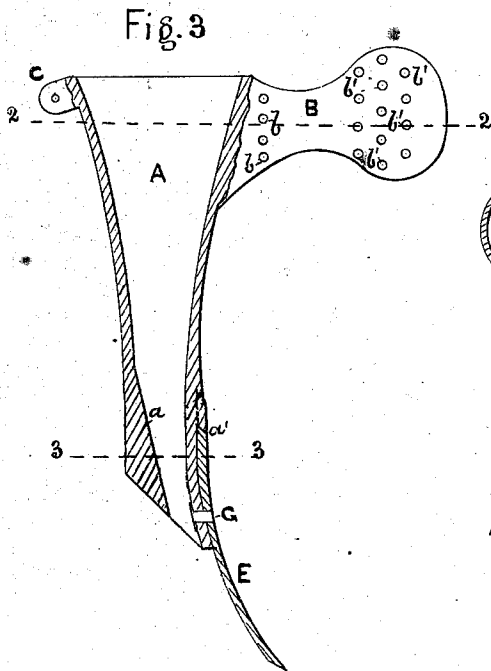


Fig. 3

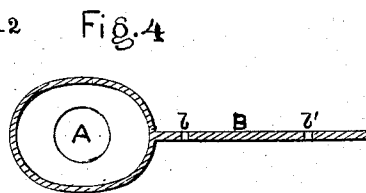


Fig. 4

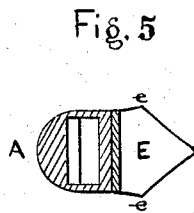


Fig. 5

WITNESSES

*Colborne Brooks*  
*A. McCallum*

INVENTOR

*William Brown,*  
*by W. S. Richards,*  
*att'y.*

# UNITED STATES PATENT OFFICE.

WILLIAM BROWN, OF LA PRAIRIE, ILLINOIS.

## IMPROVEMENT IN GRAIN-DRILLS.

Specification forming part of Letters Patent No. **159,638**, dated February 9, 1875; application filed February 9, 1874.

*To all whom it may concern:*

Be it known that I, WILLIAM BROWN, of La Prairie, county of Adams and State of Illinois, have invented certain new and useful Improvements in Grain-Drills; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawing, making part of this specification, in which—

Figure 1 is a side elevation of my invention. Fig. 2 is a front elevation. Fig. 3 is a vertical sectional view on the line *x x* of Fig. 1. Fig. 4 is a transverse section on the line 2 2 of Fig. 1; and Fig. 5 is a section on the line 3 3, same figure.

The nature of my invention relates to improvements in that class of grain-drills in which tubular hoes or teeth, carried by drag-bars or other means, are arranged to open the furrows for the seed, which is carried to the said hoes by suitable conducting-tubes; and the invention consists in the improved construction of the tubular hoe, and in the method of regulating the penetration of the soil, all as hereinafter fully described.

Referring to the drawings by letters, letter A represents the tubular shoe, enlarged at its upper end exteriorly and interiorly for the reception of the ordinary seed-conducting tube—the lower end of its interior made rectangular, as shown at Fig. 4, and its interior lower end rear side thrown forward, as shown at *a*, Fig. 3. B is a tongue or plate, projecting forward from the upper end of the shoe A, and is pierced with a series of holes, *b*, at its rear end, and *b'* at its forward end, by which it

may be attached to the ordinary drag-bars. The pins by which it is attached to the drag-bar may be changed at the forward holes, *b'*, to change the angularity of the hoe, and both series, *b* and *b'*, changed to raise or lower its position to regulate its depth of penetration of the soil, and control its operations in the various kinds of land. C is a projection from the rear and upper end of the shoe A, to which any suitable device may be attached for raising and lowering the shoe by the operator. E is the tooth or furrow-opener, formed as shown in the drawings—flat in its transverse direction throughout its entire length, also flat and straight in its longitudinal direction some distance downward from its upper end, from which point to its lower end or point it is curved forward, as shown at Fig. 1; its upper portion the same width throughout; but its lower pointed, and made broader at each side at the angles *e e* formed by the sides of the point with the straight sides. It is sharpened at its lower end, and is bolted to the shoe A by a bolt, G, and additional security thereto afforded by being cut out at its upper end and seated beneath a dovetail-projection, *a'*, of the shoe A.

I claim—

A grain-drill shoe, A, having a plate, B, with the two series of holes *b* and *b'*, arranged as described, for vertical and angular adjustment of the shoe, as set forth.

WILLIAM BROWN.

Witnesses:

EDW. L. FIELD,  
M. H. BARRINGER.