

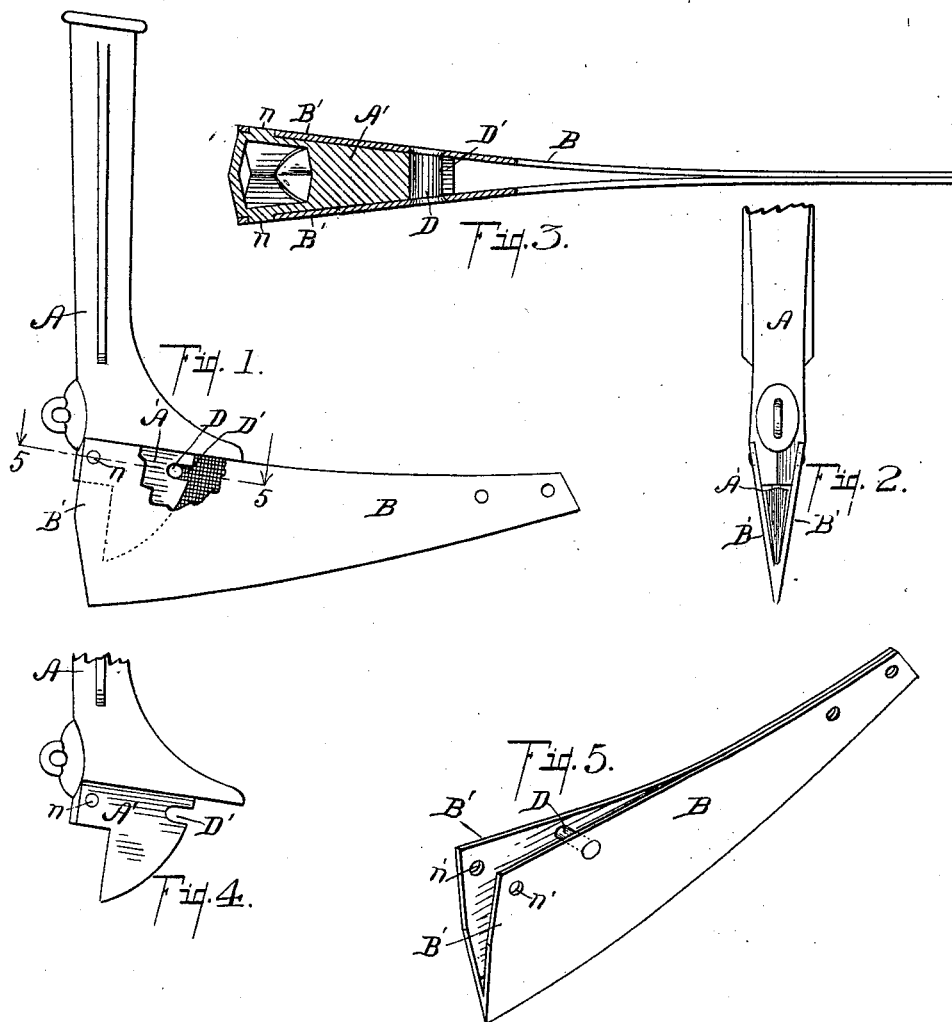
No. 648,959.

Patented May 8, 1900.

W. F. HOYT.  
SHOE GRAIN DRILL.

(Application filed Oct. 21, 1899.)

(No Model.)



Witnesses:

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Att'y.

# UNITED STATES PATENT OFFICE.

WILL F. HOYT, OF DOWAGIAC, MICHIGAN, ASSIGNOR TO THE DOWAGIAC MANUFACTURING COMPANY, OF SAME PLACE.

## SHOE GRAIN-DRILL.

SPECIFICATION forming part of Letters Patent No. 648,959, dated May 8, 1900.

Application filed October 21, 1899. Serial No. 734,409. (No model.)

*To all whom it may concern:*

Be it known that I, WILL F. HOYT, a citizen of the United States, residing at the city of Dowagiac, in the county of Cass and State of Michigan, have invented certain new and useful Improvements in Shoe Grain-Drills, of which the following is a specification.

This invention relates to improvements in shoe grain-drills. The improvement relates more particularly to the shoe and boot.

In the usual construction of shoe grain-drills it is a matter of great difficulty to separate the shoe and the boot from each other in case the shoe needs repairs or it is desired to separate the parts for any reason; and one object of my invention is to provide an improved construction of shoe and boot which can be easily separated or joined together, as desired.

Further objects will definitely appear from the detailed description to follow.

I accomplish these objects of my invention by the devices and means described in this specification.

The invention is clearly defined and pointed out in the claims.

The runner and boot of a grain-drill embracing the features of my invention are clearly illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a detail view of a shoe and boot, showing them united. Fig. 2 is a detail rear elevation of the structure appearing in Fig. 3. Fig. 3 is an enlarged detail horizontal sectional view taken on line 5 5 of Fig. 1 looking down. Fig. 4 is a detail view of the lower portion of the boot with the shoe detached. Fig. 5 is a detail perspective view of the shoe as it appears when detached from the boot.

In the drawings similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, A is the boot, and B is the shoe, which is formed of two parts of spring metal B' B' toward the heel, which are preferably welded together to form a knife or cutter for opening the furrow, though they might be otherwise joined together than by welding; or it

might be possible to construct the shoe in this form of a single piece.

On the boot A is a projecting wedge-shaped portion A', having projecting lugs or pintles *n* to each side corresponding to perforations *n' n'* in each of the leaves or sides B' B' of the shoe. A pin D extends through the shoe toward the front of the opening and is suitably riveted down, as appears in Fig. 5. A notch D' is in the wedge portion A' and is adapted to engage the pin D. The boot and shoe are joined together by wedging or otherwise forcing the sides B' B' apart and then inserting the wedge-shaped portion A' of the boot A, so that the pin D of the shoe engages the notch D' of the boot, and then allowing the sides B' B' of the shoe to close together, so that the studs or pintles *n n* are embraced by the perforations *n' n'*. By this structure it will be seen that all that is necessary to detach the shoe from the boot is to wedge the sides of the shoe apart, when the boot can be easily removed, and by wedging the sides of the shoe apart the wedge-shaped portion A' can be inserted, when on removing the wedge and releasing the shoe the elasticity of the same will cause it to clamp the boot securely.

A shoulder is formed between the wedge-shaped portion A' and the main portion of the boot, which fits against the upper edge of the shoe and assists materially in holding the same in position. However, it is not an absolute essential, as it will be noted that the notch D', engaging the pin D, in connection with the pintles *n*, if carefully constructed, would accomplish the same result. In this connection it is remarked that the shoe is hollow and that the opening extends down to the heel of the shoe. This does not pertain particularly to this invention.

Where it is desired merely to form a narrow groove for the deposit of the grain, the shoe is left in the form appearing in Fig. 3. Where it is desired to open the furrow to a considerable width, I provide the attachment made of sheet-steel appearing in Fig. 2. This is formed of sheet metal or steel folded at C' to form sides C, which embrace over the top of the shoe B in front of the boot. This extends downwardly and rearwardly back of

the heel of the boot, where its sides are curved outwardly at C'', so that they easily engage in the soil something like plowshares and throw the sides of the furrow, which has been cut open by the blade in front, outwardly, thus affording a broad seed-bed for the seed. The soil is closed over the same after the plows have passed by any suitable coverers, as chains, press-wheels, or other devices. (Not here shown.)

I desire to state that the details of this structure can be greatly varied without departing from my invention. It is probable that other forms and arrangement of the connecting parts between boot and shoe might serve the purpose. I believe the exact structure has merit over any other.

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

1. In a grain-drill, the combination of the shoe B formed toward its upper rear portion in two leaves B' of spring metal, which leaves contain perforations *n' n'*; a pin D through the parts; and a boot A with a wedge-shaped portion A' to fit between said leaves and shouldered to fit on the top of said shoe, and having pintles *n* thereon to be embraced by the perforations *n'* of the shoe, and containing a notch D' to engage the pin D, all coacting substantially as described, for the purpose specified.

2. In a grain-drill, the combination of the shoe formed toward its upper rear portion in two leaves of spring metal, which leaves con-

tain perforations; a pin through the spring-leaves to retain them together; and a boot with a wedge-shaped portion to fit between said leaves, and having pintles to be embraced by the perforations of the shoe, and containing a notch to engage the pin, all coacting substantially as described, for the purpose specified.

3. In a grain-drill, the combination of the shoe formed toward its upper rear portion in two leaves of spring metal, which leaves contain perforations, and a boot with a wedge-shaped portion to fit between said leaves, and shouldered to fit on the top of said shoe, and having pintles to be embraced by the perforations of the shoe, all coacting substantially as described for the purpose specified.

4. In a grain-drill, the combination of a shoe formed with leaves of elastic metal, which contain perforations, a boot carrying pintles arranged to fit such perforations and arranged between the elastic leaves to be embraced thereby.

5. In a grain-drill, the combination of a boot bearing one or more lugs or pintles thereon and a shoe with elastic parts to embrace said boot and adapted to receive said lugs or pintles, as specified.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

WILL F. HOYT. [L. S.]

Witnesses:

O. SELMA GRIED,

F. W. JONES.