



# UNITED STATES PATENT OFFICE.

JNO. HARRIS, OF SHIPPENSBURG, PENNSYLVANIA.

## IMPROVEMENT IN SEED-DRILLS.

Specification forming part of Letters Patent No. 19,924, dated April 13, 1858.

*To all whom it may concern:*

Be it known that I, JOHN HARRIS, of Shippensburg, in the county of Cumberland and State of Pennsylvania, have invented a new and useful Improvement in Seed-Drill Attachments; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side view of my improvement applied to a drill-tooth. Fig. 2 is a plan of the same. Fig. 3 is a longitudinal section of the same.

Similar letters of reference in each of the several figures indicate corresponding parts.

Before stating the nature of my improvement I deem it proper, in view of the fact of no less than five contrivances having been patented for accomplishing the same end which my invention is designed to effect, to refer to those devices which approximate the nearest to my arrangement, in order to illustrate its novelty and superior utility over the same.

In the device patented by J. D. Willoughby, 1848, the drill-tooth is hinged or pivoted directly to the rear end of a long flat relief spring-bar; and in the device patented by Jacob Pierson a spiral spring is placed on top of the bar to which the tooth is hinged. To this spring an elbow-lever is connected, said lever also being connected to the lower part of the tooth.

The object of my improvement is to avoid the necessity of attaching the tooth to the relief-bar by a hinge-joint.

The nature of my invention consists in having the spring-bar, which is attached fast to the upper part of the main relief connecting-bar of the drill-tooth by one end, loosely connected at its other end to the upper end of the drill-tooth by means of a curved hook on the tooth and a slot in itself, as presently described. By this simple arrangement provision is made without the necessity of forming a hinge-joint in the upper connecting-bar for the drill-tooth yielding when it comes in contact with stones and stumps, and thus save itself from being broken, and then of springing forward to its original position.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents the drill-tooth. Its upper end terminates in a curved scroll or hook, *a*, as shown.

B is the main connecting or supporting bar, to which the tooth is pivoted, as shown at C.

D is the spring relief-bar. It is shaped as shown, and attached to the upper forward part of the main connecting or supporting bar at *b* and *c*.

E is an oblong slot cut through the rear end of the relief-bar D. Through this slot the hook end *a* of the tooth passes, as shown. By thus attaching the tooth to the relief-bar by the hook and slot it may be evident that the tooth has a chance to spring back, the slot allowing this, and in springing back the curved or hook portion *a* of the tooth will bear upon the end *e* of the spring and depress the spring sufficiently to bring the elasticity of the same into play, and consequently when the obstruction which was in the way of the tooth is passed the tooth will, by reason of the spring seeking to assume a right line, be thrown forward by the spring to its original position.

This is an exceedingly simple device and is free from all liability of derangement, and in case it should be broken can be replaced by a country blacksmith or even the farmer himself.

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

Having the spring-bar which is attached fast to the upper part of the main relief connecting-bar B of the drill-tooth A by one end loosely connected at its other end to the upper end of the drill-tooth by means of a curved hook on the tooth and a slot in itself, substantially as and for the purposes set forth.

The above specification of my improvement in seed-drill-teeth attachments signed by me this 4th day of March, A. D. 1858.

JOHN HARRIS.

Witnesses:

R. P. MCCLURE,

S. M. STUMBAUGH.