# B. Kuhns,

## Grain Drill.

No. 111,853. Patented Feb. 14, 1871.

Fig. 1.

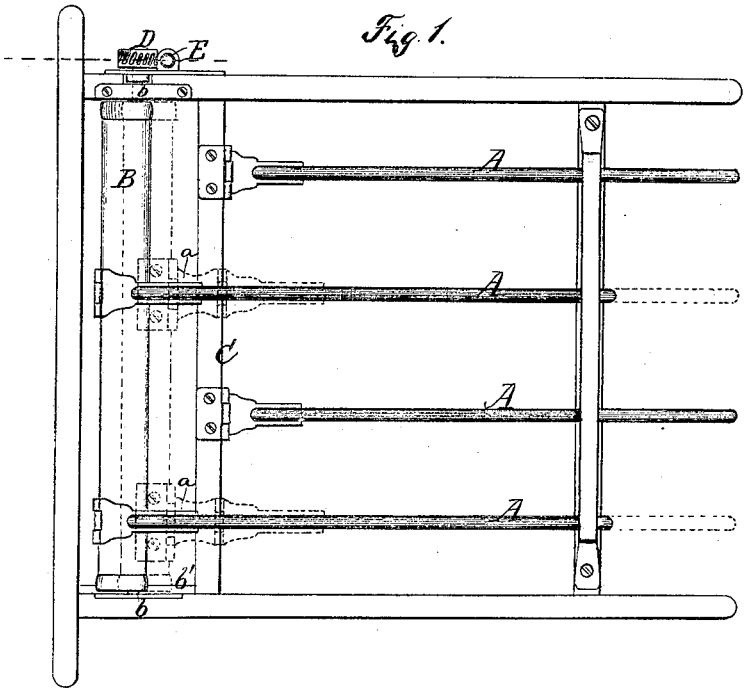
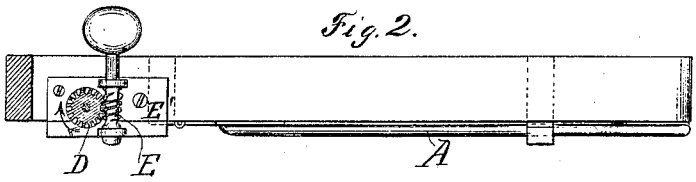



Fig. 2.




Witnesses,
A. Edwd. Bils
A. Ruppert.

B. Kuhns
Inventor.
D. P. Holloway & Co
Attys

# UNITED STATES PATENT OFFICE.

BENJAMIN KUHNS, OF DAYTON, OHIO.

## IMPROVEMENT IN GRAIN-DRILLS.

Specification forming part of Letters Patent No. **111,853**, dated February 14, 1871.

*To all whom it may concern:*

Be it known that I, BENJAMIN KUHNS, of Dayton, in the county of Montgomery, and in the State of Ohio, have invented a new and useful Improvement 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 a part of this specification, in which—

Figure 1 is a bottom view of part of the frame of a grain-drill, together with the drag-bars. Fig. 2 is a side elevation.

The same letters of reference, where employed in the several figures, denote identical parts.

This invention relates to that class of grain-drills in which provision is made for arranging the hoes in single file or double file, as the nature of the soil may require, by attaching every alternate drag-bar (the others being hinged permanently to the frame) to a cross-beam, which may be shifted to accomplish the objects above stated.

My improvement consists in connecting the shifting drag-bars to their beam by means of an intermediate link, which folds down upon said beam on throwing the drag-bars into double file, as will be more specifically pointed out in the following description and claim.

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

Of the drag-bars A, which carry at the rear end the hoes or drills, through which the seed passes from the seed-box into the ground, every alternate one is hinged by a link, *a*, to a beam, B, the rest being pivoted at their forward ends to a permanent cross-bar, C, of the frame.

The beam B is rectangular in cross-section, and is provided with a journal, *b*, at each end, upon which it turns in bearings on the frame forward of the cross-bar C thereof. These journals are arranged eccentrically upon the ends of the beam, as shown, and one of them projects through its bearing to receive on its overhung end a worm-pinion, D, which gears into a worm-shaft, E. The latter has its bearing on a bracket, E′, fastened on the frame of the machine, and is to be provided with a crank or hand-wheel by which to operate it. The pivotal point of these links of the shifting drag-bars is at the edge of the beam B farthest from its journals, and upon what is its under side when the hoes are in single file, as indicated in dotted lines in Fig. 1. As the beam is swung on its journals in the direction of the arrow in Fig. 2, the links fold down on its edge, permitting the drag-bars to maintain their horizontal position.

It will be observed that by the employment of this folding link the required extent of movement can be given to the shifting drag-bars by a beam of limited dimensions in cross-section.

The beam B is prevented from being turned more than a half-revolution or in a wrong direction by a horizontal flange, *b′*, projecting from the frame above it at one end, and the worm-gearing will hold the beam and its drag-bars and hoes in any position desired.

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

The combination of the beam B, links *a*, and shifting drag-bars A, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BENJAMIN KUHNS.

Witnesses:

JOHN SCOTT,

GEO. M. YOUNG.