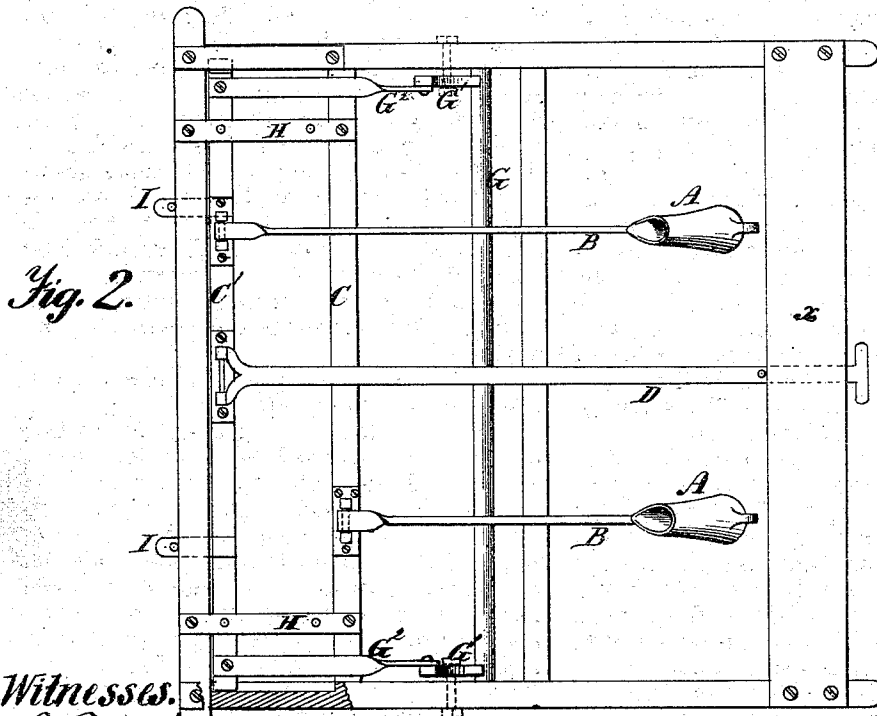
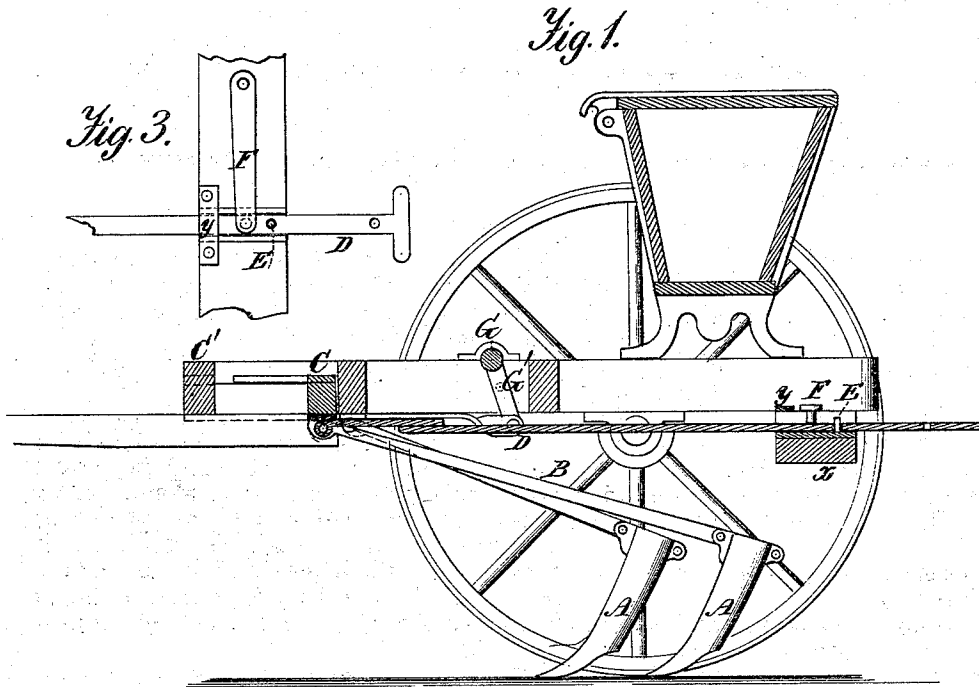


B. KUHN'S.
Grain-Drills.

No. 154,053.

Patented Aug. 11, 1874.



Witnesses.
A. Ruppert.
Carl J. Eile

B. Kuhn, Inventor.
D. P. Holloway & Co
Atty.

UNITED STATES PATENT OFFICE.

BENJAMIN KUHN, OF DAYTON, OHIO, ASSIGNOR TO FARMERS' FRIEND
MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN GRAIN-DRILLS.

Specification forming part of Letters Patent No. **154,053**, dated August 11, 1874; application filed
August 8, 1873.

To all whom it may concern:

Be it known that I, BENJAMIN KUHN, of Dayton, in the county of Montgomery and State of Ohio, have invented new and useful Improvements in Grain-Drills; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings making part of this specification, in which—

Figure 1 is a central vertical and longitudinal section. Fig. 2 is a plan view as seen from below.

The same letters are employed in the designation of identical parts.

This improvement relates to that part of the mechanism of a grain-drill which is employed in shifting the hoes from a single to a double row, or vice versa.

The hoes A are attached to drag-bars B, respectively hinged to the sliding beam C' and the stationary beam C. The sliding beam has its ends secured in guides or ways on the main frame, so as to permit it to be freely moved, either forward, to arrange the hoes in a zig-zag line, or back, to bring them into straight order. This adjustment is effected by means of the rod D, which is secured to the movable beam C', from which it extends rearward to and slightly beyond the rear end of the frame, at which point it is provided with a handle for the operator to grasp in shifting or adjusting the hoes. The outer portion of this rod rests in a recess formed in the upper surface of the cross-beam X of the frame of the machine, and, if necessary, may be prevented from rising out of said recess by a cap, Y, secured to the frame, and made to pass over it, as shown in Fig. 3. From the bottom of the recess in which the rod D moves a short stud or pin projects upward through holes formed in the rod D, said holes being arranged with reference to the holding of the hoes in position when they have been adjusted either in a single or in a double rank.

From the above description, and upon reference to the drawing, it will be seen that the arrangement of the rod and stud or pin is such that, by a longitudinal movement of the rod, the desired adjustment of the hoes is effected, and that, by a slight vertical movement thereof, it is released from the control of the pin or stud which holds it in position, or is placed thereon for locking the hoes in

their readjusted order; and that this is effected without the aid of any additional parts, and without imparting to the rod any other movement than those just described, in which respect it differs from any other shifting device known to me.

While I regard the position of the rod so as to permit it to be operated immediately behind the machine as especially important, other shifting devices may be adopted, either alone or in combination with the one already described. Thus a shaft, G, oscillating in bearings in the side pieces of the frame, may have arms G¹ projecting downward, which are connected to the sliding beam C' by means of the links G².

The arms G¹ may be fixed, so as to secure the sliding beam in position, by bolts passing through said arms, and through the main frame, or in any other suitable manner.

I am aware that it is not a novel feature in grain-drills to so arrange a rod in connection therewith that the adjustment of the hoes can be effected from the rear of the machine, devices for effecting such a result being shown in patents granted to Thomas, Mast, and Gardner, August 3, 1869; to G. S. Ball, November 26, 1872; and to C. E. Patrick, February 25, 1873. I do not, therefore, claim this feature of the invention, but intend to limit myself to the particular devices which I employ.

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

The combination, in a grain-drill the hoes of which are arranged to be shifted from a single to a double rank, and the reverse, of a movable bar, to which a portion of the hoes are attached, a rod extending rearward therefrom, which is made to both move and lock the hoes in position by a longitudinal movement thereof, a locking stud or pin, which holds the rod in its adjusted positions, and a fixed bar for receiving the locking-pin, the parts all being constructed and arranged to operate substantially as and for the purpose set forth.

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

Witnesses: BENJAMIN KUHN,
GEO. M. YOUNG,
WM. MACHIS.