

J. R. FINCH.
Grain-Drills.

No. 201,341.

Patented March 19, 1878.

Fig. 1.

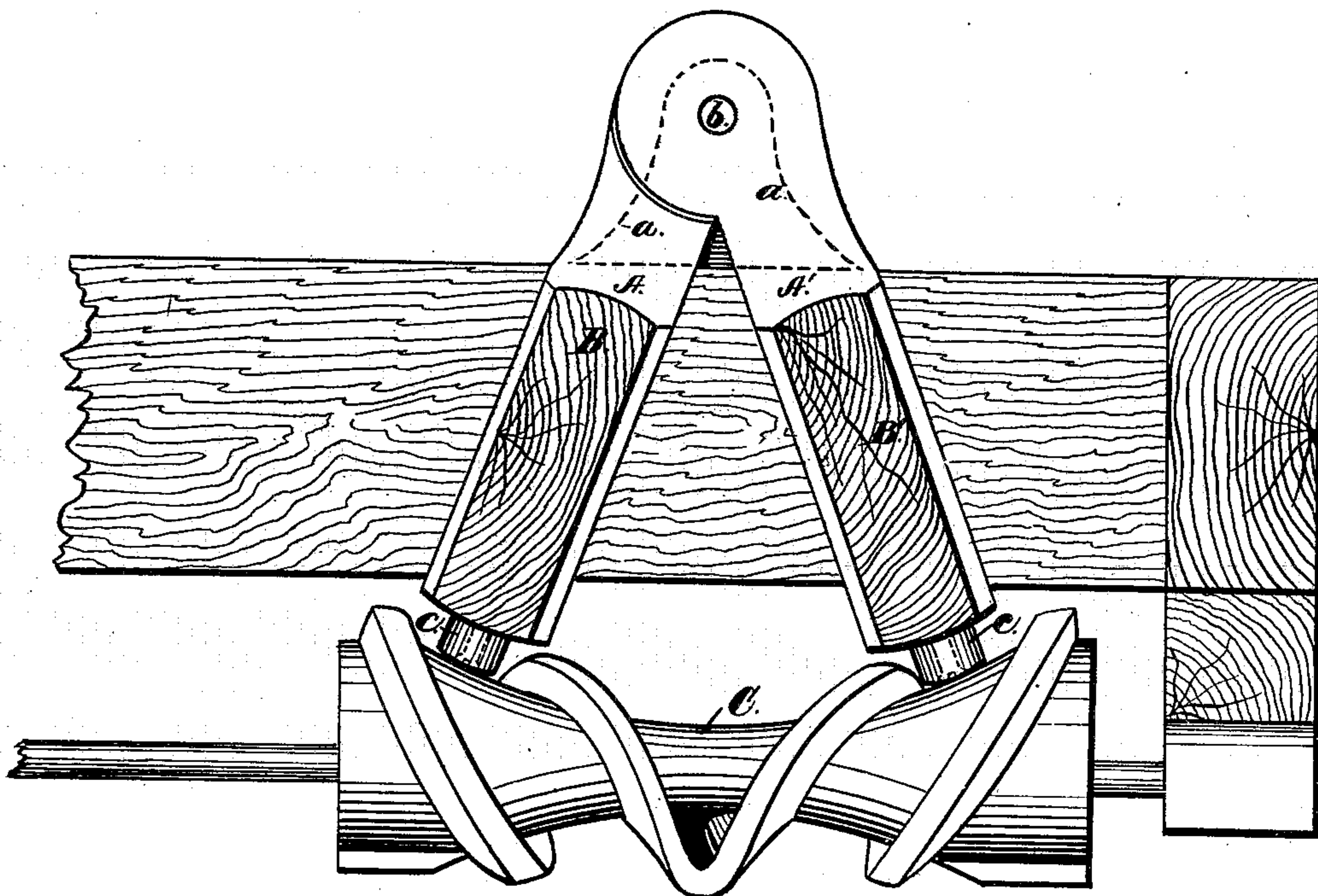
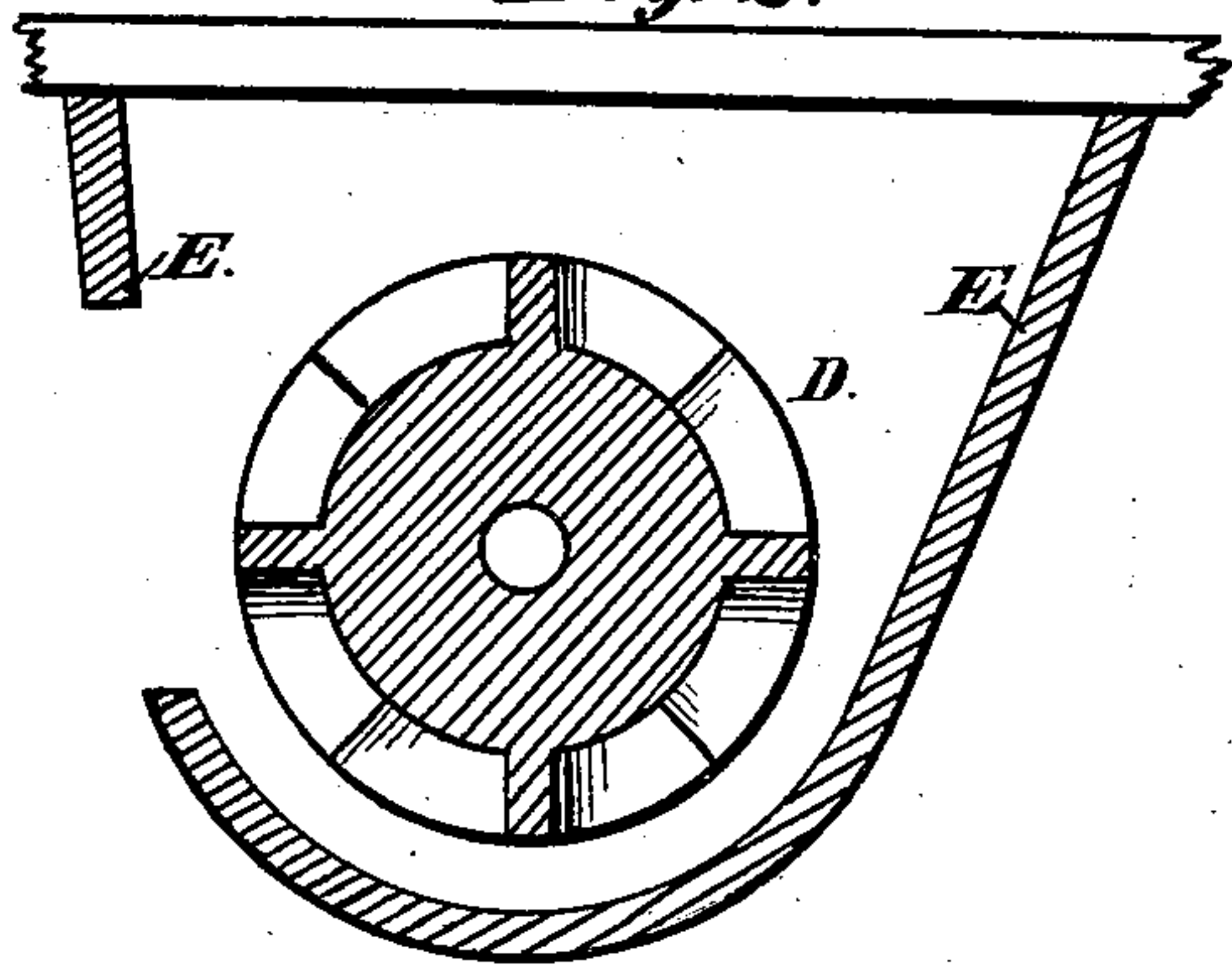
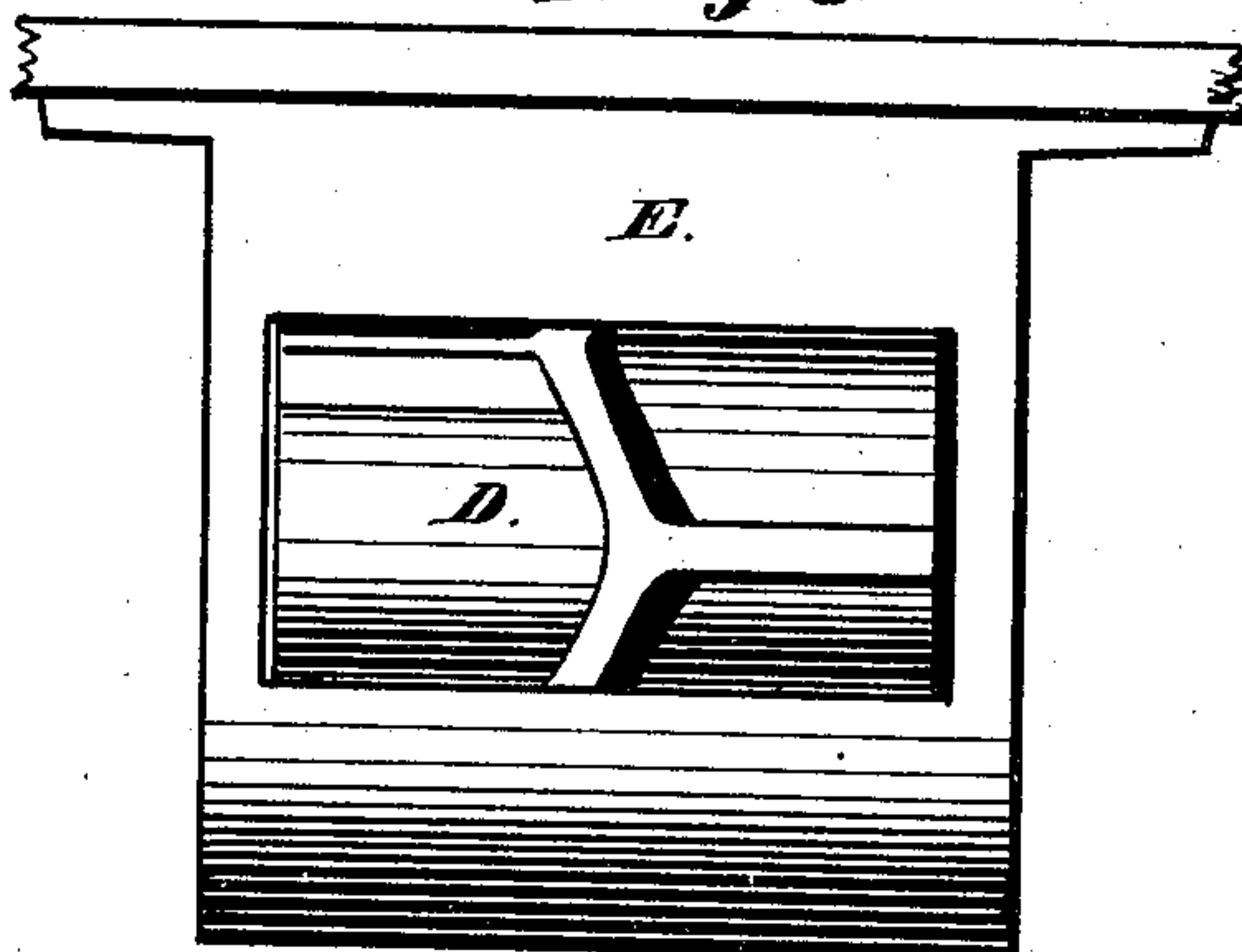


Fig. 2.



Witnesses;
Chas. M. Peck
Wm. Ritchie

Fig. 3.



Inventor;
James R. Finch
by his attys.
Peck & Co.

UNITED STATES PATENT OFFICE.

JAMES R. FINCH, OF DAYTON, OHIO.

IMPROVEMENT IN GRAIN-DRILLS.

Specification forming part of Letters Patent No. **201,341**, dated March 19, 1878; application filed December 1, 1876.

To all whom it may concern:

Be it known that I, JAMES R. FINCH, of the city of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Grain-Drills, of which the following is a specification:

This invention relates to that class of grain-drills in which the drag-bars are alternately attached to sets of shiftable bars, by moving which the hoes are shifted from a straight to a zigzag rank, and vice versa.

My improvements consist in the novel method of hanging the shifting-bars, and in the device for operating them to change the rank of the hoes, as will be herein set forth and claimed.

Figure 1 represents a sectional view, in side elevation, of the shifting-bars and operating mechanism. Fig. 2 is a central sectional view, in side elevation, of my feed-wheel applied to a case on the under side of the hopper. Fig. 3 is a rear elevation of the casing and the contained feed-wheel.

The frame-work of the drill, carriage-wheels, and hopper are of the usual or of any suitable construction. On each side beam, at the forward end, is secured a bearing-block, *a*. (Represented in outline by the dotted lines of Fig. 1.)

A A' are two pendent metallic arms or brackets, of the shape shown. These are united by a common pivot, *b*, to the top of the bearing *a*, as shown, whereby the arms are permitted to vibrate.

Between the opposite sets of arms are secured the beams *B B'*, and to these beams are alternately hung the forward ends of the drag-bars. To the under side of each beam, at a point about half-way between the side beams of the drill-frame, is pivoted a small frictionless roller, *c*, as represented. These rollers may be secured to the beams by countersunk screws, as shown, or by bolts, or by any other suitable means.

C represents a screw or worm, with a concave periphery and right and left threads, convergent at the center, and between which the rollers *c* are confined, as shown. This screw is keyed upon a shaft or rod that is

suitably journaled in the frame, and extends to the rear of the drill, where it is operated by a crank. To adjust the rank of the hoes, it is only necessary to turn the crank in the rear, when the threads, acting upon the rollers, cause the beams *B B'* either to swing together or apart, as in Fig. 1.

It is to be noticed that the pivotal points of the arms *A A'* are some little distance above the frame of the drill, and also that the concavity of the periphery of the screw is concentric with the arc described by the vibration of the beams. By this arrangement I am enabled to shift the hoes with but small expenditure of force.

I am aware that it is not new to hang the drag-bar beams at points above the frame, and to shift them by levers; nor is it new to employ a screw-shaft with nuts pivoted to the beams, or with sliding bars; but by the employment of my peculiarly-shaped screw I am enabled to dispense with swinging or pivoted nuts, and gain the advantages of swinging instead of sliding bars.

D represents the feed-wheel patented to me March 3, 1868, which I employed within the hopper over the discharge-orifice. This wheel has a central zigzag flange, with parallel longitudinal flanges; and to make a force-feed of it I confine it in a case, *E*, attached in the usual way to the under side of the hopper.

I do not claim the case as novel; but the application therein of my patented feed-wheel makes a simple and efficient force-feed mechanism.

I claim as follows:

The double conoidal screw *C*, of the shape shown, having right and left threads, operating, in connection with the rollers *c*, upon the beams *B B'*, whereby the latter, upon a common axle, can be turned to shift the ranks of the hoes, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand this 27th day of November, 1876.

JAMES R. FINCH.

Witnesses:

M. CHAS. NOLAN,
CHARLES W. FINCH.