

(No Model.)

C. SCHAFER.

EXTENSION GRATE FOR THRASHING MACHINES.

No. 318,142.

Patented May 19, 1885.

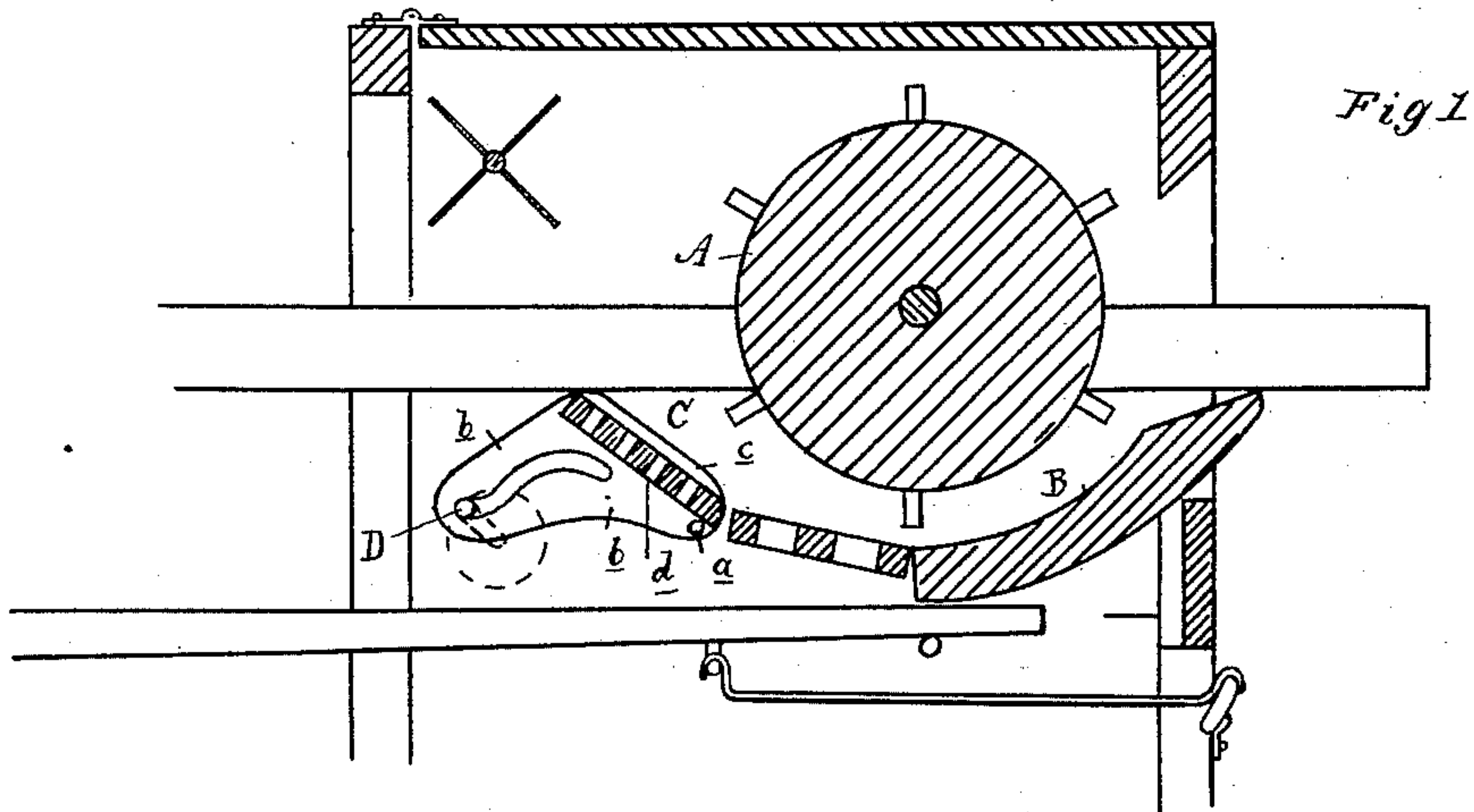


Fig. 2

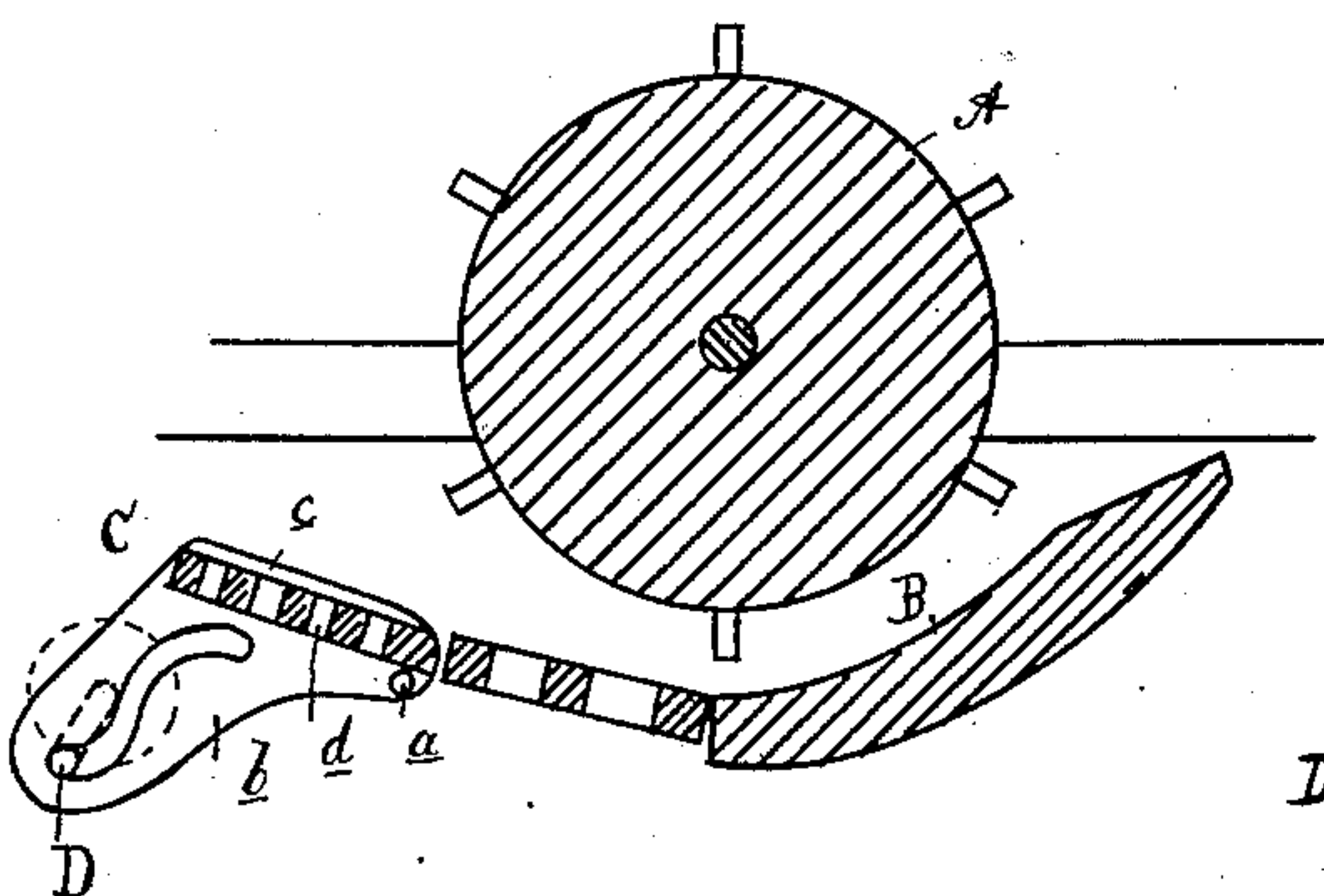


Fig. 3

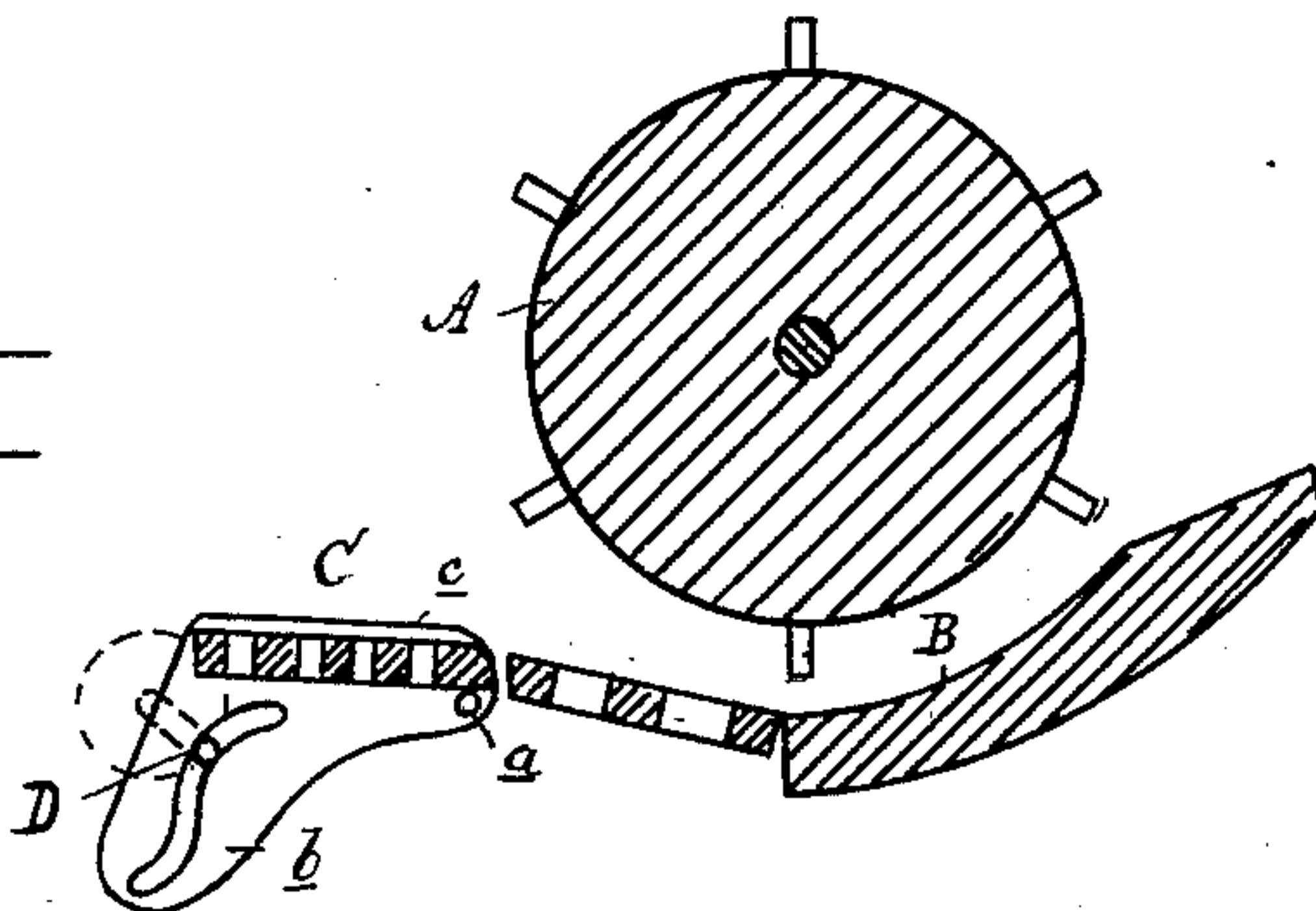
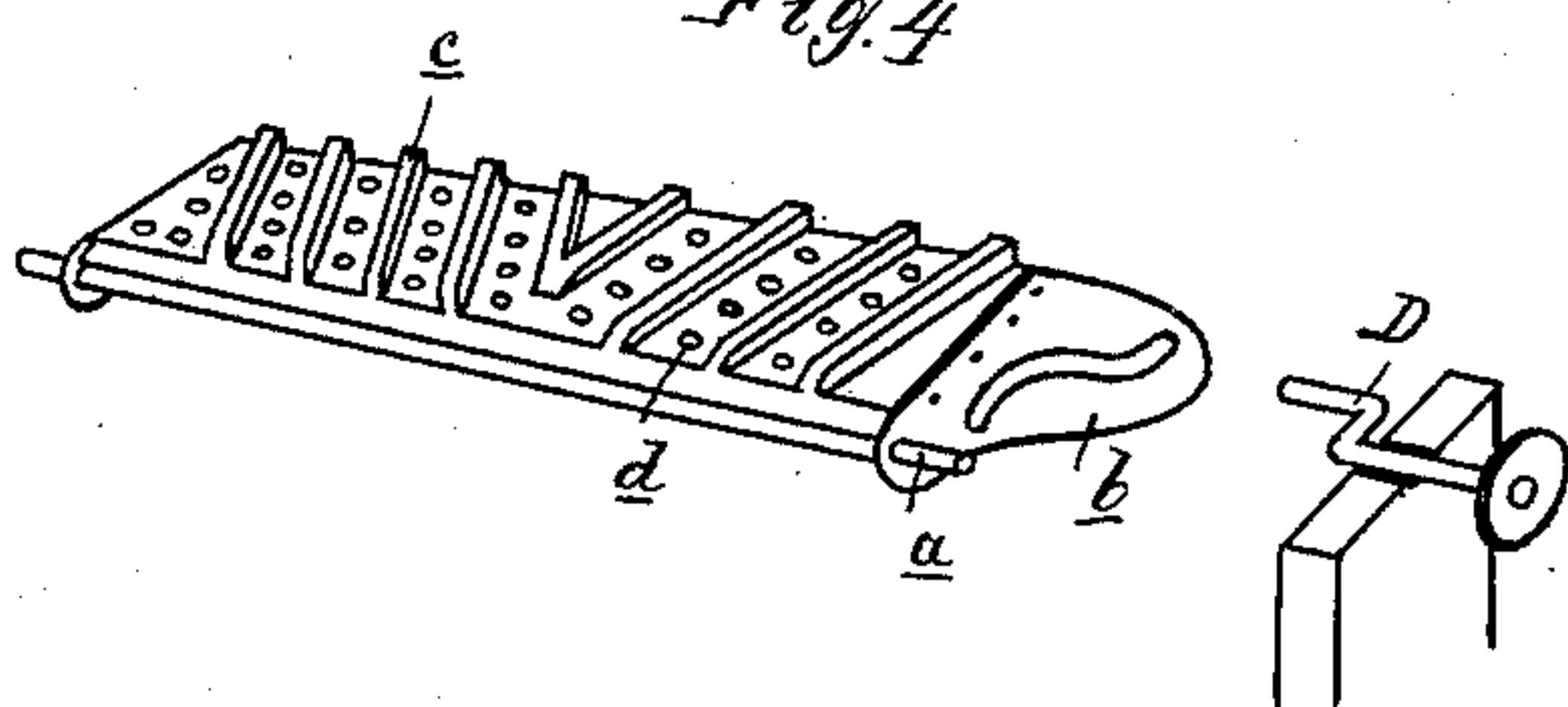


Fig. 4



Attest:  
John Schumann.  
*[Signature]*

Inventor:  
Christian Schafer.  
by his Atty  
Wm. L. Sprague



# UNITED STATES PATENT OFFICE.

CHRISTIAN SCHAFER, OF THREE RIVERS, MICHIGAN, ASSIGNOR TO CYRUS ROBERTS, OF SAME PLACE.

## EXTENSION-GRATE FOR THRASHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 318,142, dated May 19, 1885.

Application filed November 5, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, CHRISTIAN SCHAFER, of Three Rivers, in the county of St. Joseph and State of Michigan, have invented new and useful Improvements in Extension-Grates for Thrashing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in thrashing-machines; and the invention consists in the peculiar construction of parts and their combination, as more fully hereinafter described.

Figure 1 is a vertical longitudinal section through that portion of the thrashing-machine which carries the cylinder and the concave. Fig. 2 is a section showing a different position of the extension-grate in rear of the concave. Fig. 3 is a similar one to Fig. 2, showing still another position of such extension-grate. Fig. 4 is a perspective view of the extension-grate and the attachments thereto, by means of which its position is changed and secured.

In the accompanying drawings, which form a part of this specification, A represents the cylinder, and B the concave, of a thrashing-machine, and these parts may be of any of the known constructions. C is the adjustable extension-grate, pivotally secured between the side walls of the machine, just in rear of the concave, by means of the pintle-bar *a*, which is suitably secured to the front edge of such extension-grate, as shown in Figs. 1 and 4, so that its free edge may oscillate vertically. This extension-grate extends across the whole width of the chamber which contains the cylinder and the concave.

To secure the vertical adjustability of the free end of this extension-grate, and to lock the same in the desired position, as shown in the various figures, any devices may be employed that will accomplish this end; but to do this, and to provide a simple way of locking the guide at any desired angle to the rear end of the concave, I employ a crank-shaft, D, suitably journaled through the side of the chamber and projecting into the same, and

with means on the outside of said chamber to rotate such crank by hand. The inner crank engages with the nearly-S-shaped slot which is formed on a diagonal line in the plate *b*, which is secured to one end of the extension-grate. This slot is so formed that the crank engaging with it will not only change the elevation of the rear edge of said extension-grate, but will also lock the same in the desired angle against any pressure that may be brought to bear upon its upper side.

To change the angle of the extension-grate and hold it in the position shown in Fig. 1, (the crank now engaging with the slot at its highest point toward the concave,) the crank is rotated in one direction, thereby elevating the free edge of the extension-grate until the crank reaches the other end of the slot. Now, pressure upon the upper surface of the extension-grate will not force it out of this position, because of the resistance afforded by the two pivotal points, the crank being one, and the other end of the slot being the other. This is the highest point to which this vibrating edge of the extension-grate can be made to attain, and is as high as will ever be required. Now, if it is desired to lower the rear edge of the extension-grate, as shown in Fig. 2, it is only necessary to rotate the crank in the opposite direction, when it will pass up the whole length of the slot, and return along the same point to the initial point at the lower end of said slot, when it will be readily seen that the two pivotal points have been changed in their relative positions, the grade or angle of the extension-grate has been lowered, and the parts locked in position. Now, to lower this angle or grade to its minimum, as shown in Fig. 3, the crank is continued in the direction given to it in the last-described motion until the crank has nearly reached the opposite end of the slot, when the peculiar shape of the slot arrests it in its further rotation, and the position is retained against downward pressure by this change in the position of the two hereinbefore-mentioned pivotal points with relation to the slot, as is clearly shown in the drawings. In other words, the deflecting-board thus hinged at its lower or inner face or edge, and having



attached to its end and extending to the outer or upper edge the plate pierced diagonally by the elongated and crooked slot and engaged with the crank, the result is that by turning 5 the crank in one direction the crank is caused to follow the course of the slot and under the pressure exerted in its line of travel communicated to the extension-grate, which causes the latter to be forced upward to the 10 desired angle, the crank meanwhile assuming such a position in its line of travel upward through the elongated slot as to securely lock the deflecting extension-grate at the desired angle, by directly acting as a brace 15 under the extension-grate near its outer or upper edge, and thereby furnishing an unyielding resistance to any stress of pressure against the upper surface of such extension-grate. This board C is provided upon its upper flat 20 face with a series of ribs, *c*, which may extend across the face of the board on a line at right angles to its edges, although I should prefer the ribs diverging, as shown in Fig. 4. Between these ribs and through the board are 25 a series of perforations, *d*, which should be large enough to allow the grain separated from the thrashed mass to pass through to the separating-pan below.

By the employment of the ribs, substantially as described, the thrashed mass of straw 30 will pass over the adjustable perforated board, being supported above its face by such ribs,

without sweeping from the face of the adjustable perforated board the kernels of grain which have been discharged from or pass 35 through such mass.

I am aware of the Patents Nos. 68,825 and 235,631, and make no claim to the construction shown therein as forming part of my invention. 40

What I claim as my invention is—

1. In a thrashing-machine, and in combination with the concave and side walls thereof, the extension-grate C, pivotally secured between the side walls of the machine independently of the concave, and provided with a 45 curved slot at each end, as shown, and the crank-shaft D, journaled in the sides of the frame and engaging with said slots in the grate, substantially as and for the purposes specified. 50

2. In a thrashing-machine, and in combination with the concave and side walls thereof, the extension-grate C, provided with the pin- 55 tle-bar *a*, by which it is pivotally secured between the side walls, and the plates *b*, having S-shaped slots formed therein, and the crank-shaft D, journaled in the side of the frame and engaging with said slots, substantially as and for the purposes specified.

CHRISTIAN SCHAFER.

Witnesses:

T. J. FRENCH,  
J. D. SALSIG.