

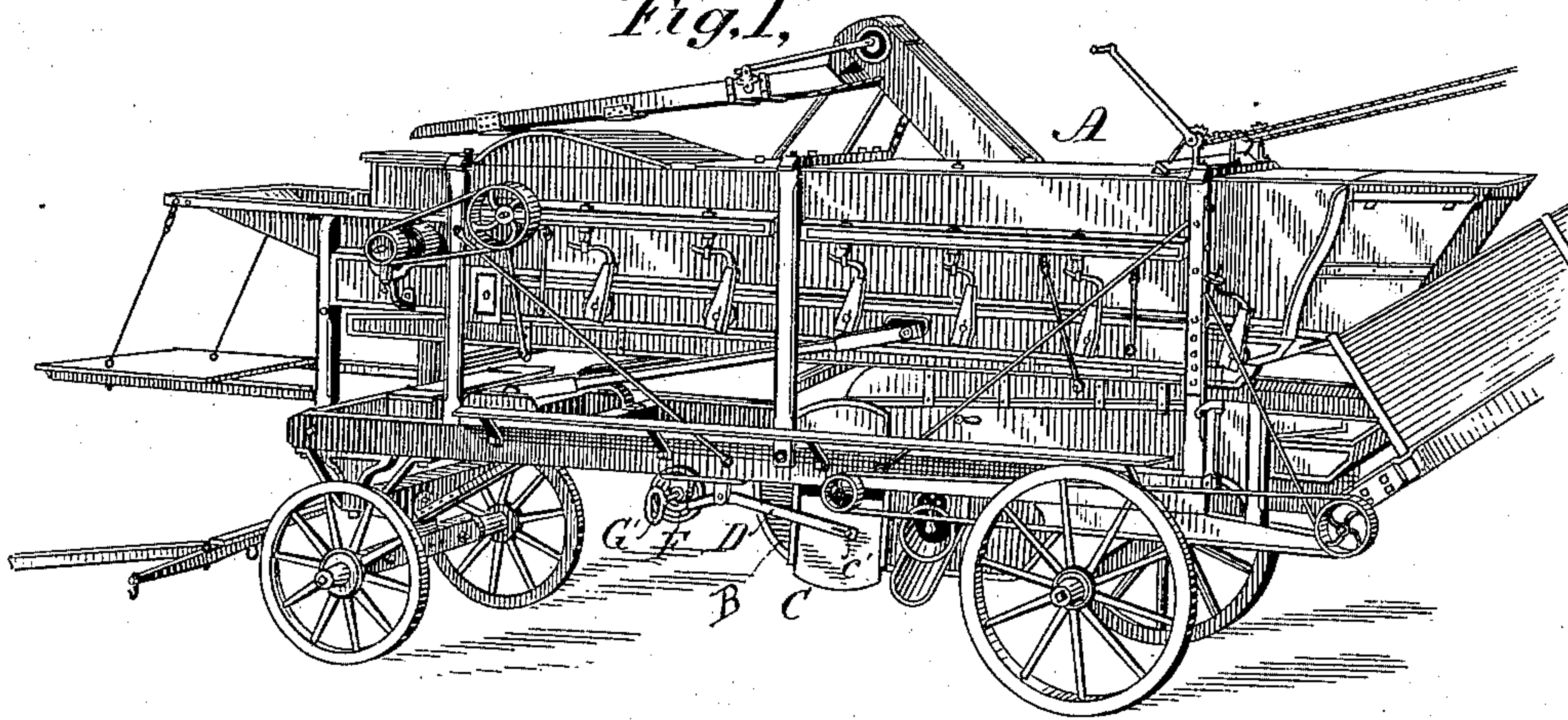
(No Model.)

E. D. BROWN.  
GRAIN SEPARATOR.

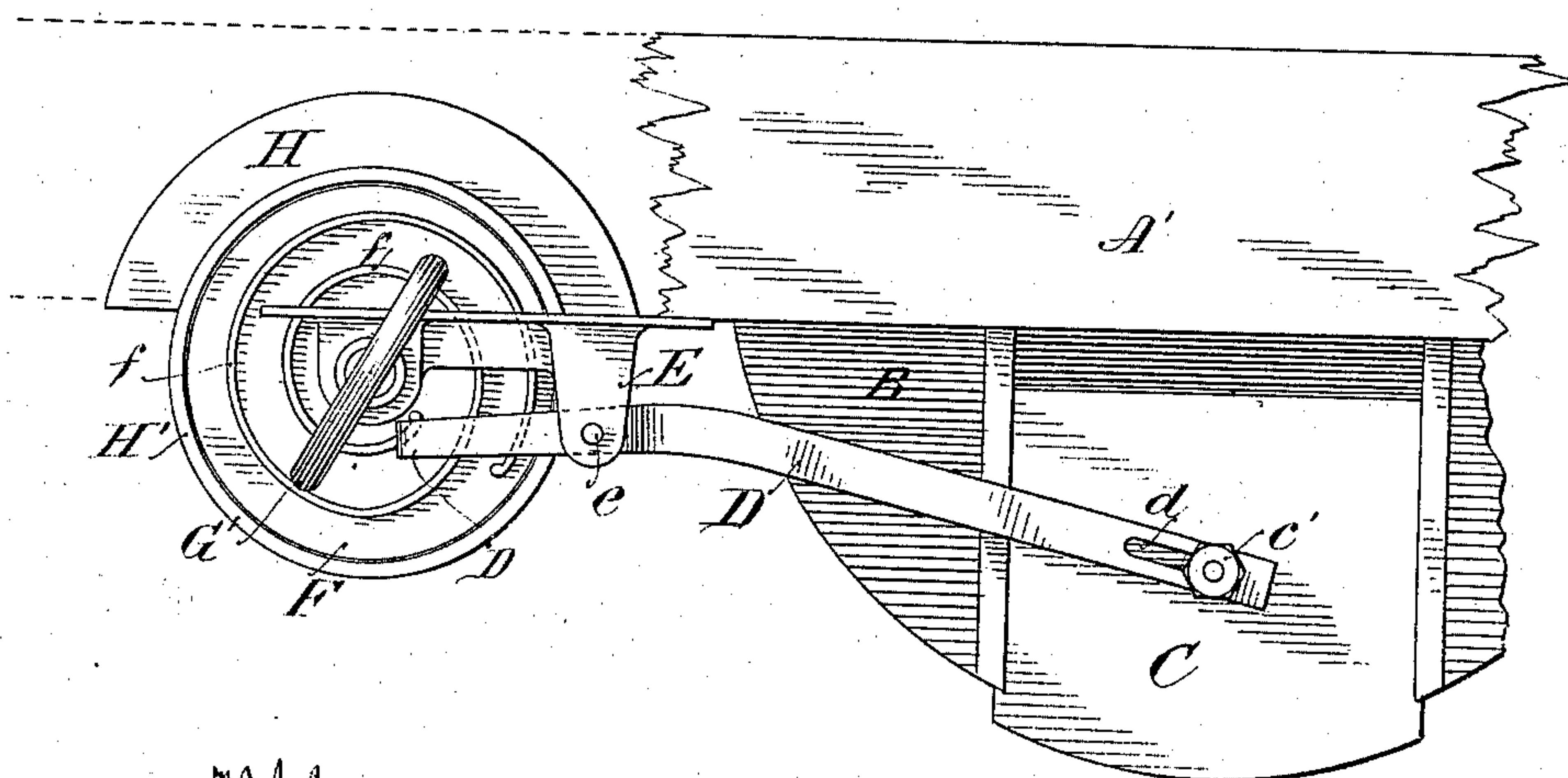
No. 257,435.

Patented May 2, 1882.

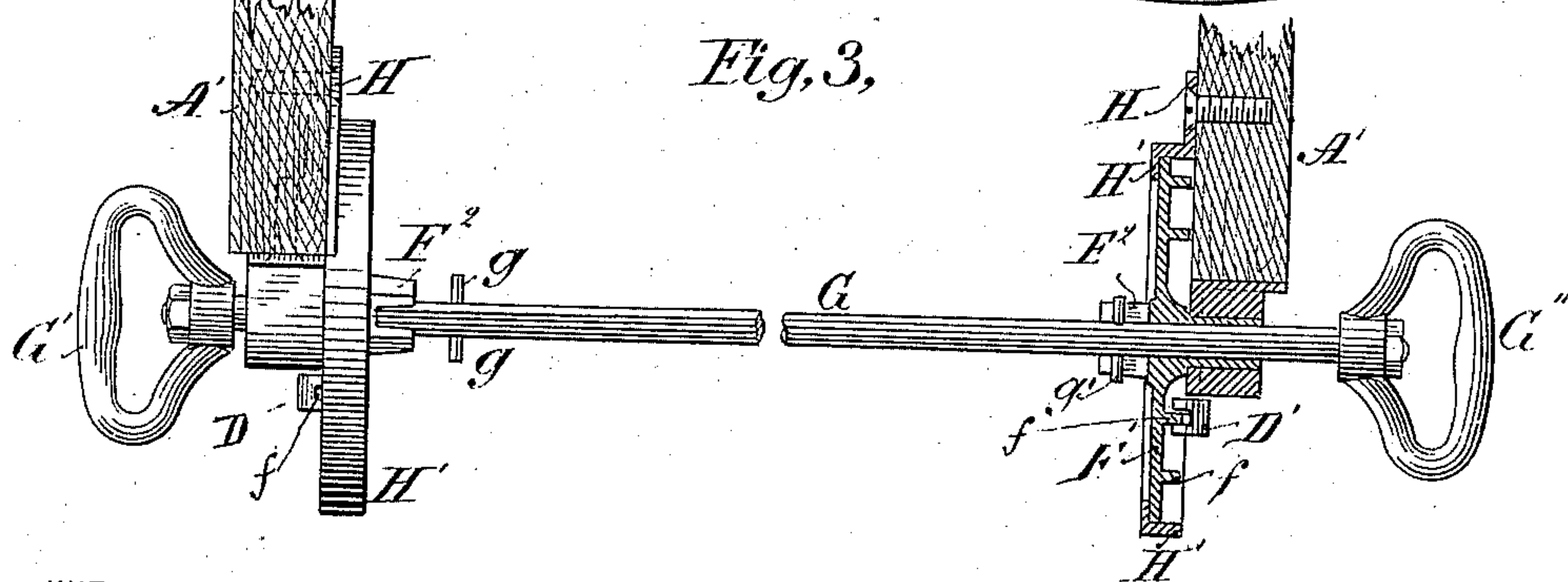
*Fig. 1,*



*Fig. 2,*



*Fig. 3,*



WITNESSES

*Ernest Abshagen,  
R. M. Smith.*

INVENTOR

*Edmund D. Brown,*

By his Attorney

*W. H. Smith.*



# UNITED STATES PATENT OFFICE.

EDMUND D. BROWN, OF BATTLE CREEK, MICHIGAN, ASSIGNOR TO NICHOLS, SHEPARD & COMPANY, OF SAME PLACE.

## GRAIN-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 257,435, dated May 2, 1882.

Application filed February 17, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, EDMUND D. BROWN, of Battle Creek, county of Calhoun, State of Michigan, have invented new and useful Improvements in Grain-Separators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

10 Figure 1 is a perspective view of a thrashing-machine and separator with my improvements applied. Fig. 2 is a partial side elevation, showing a fan-chamber and the means for adjusting the door on one side thereof; and  
15 Fig. 3 is a transverse vertical section through the adjusting devices.

My invention relates to a novel means for adjusting or regulating the fan-blast operating in connection with the screens or carriers for  
20 effecting a separation of the grain from the straw, chaff, &c., and in a novel arrangement of said means, whereby they are made accessible to and can be operated by the attendant from either side of the machine.

25 It consists in the combination, with sliding or adjustable doors to the fan-case, of adjusting-levers operated by means of cams on a sliding shaft provided with means enabling the attendant to operate it from either side of  
30 the machine, for adjusting the sliding doors to the fan-case, for regulating the admission of air to and the consequent blast of the fan, as hereinafter explained.

In the ordinary construction of grain-separating attachments to thrashing-machines, in order to adjust or regulate the fan-blast, it has usually been necessary for the attendant to get under the machine and adjust the doors to the fan-case by hand, and where, as often  
40 happens, the straw to be fed to or that discharged from the machine is banked up against one side of the machine the door or slide to the fan-case upon that side is rendered inaccessible to the attendant, and consequently it  
45 has been found at times impracticable to regulate the fan-blast to exactly suit the varying conditions of the grain acted upon without great inconvenience, such as frequently led to neglect in its adjustment and an imperfect  
50 separation of the chaff, &c., from the grain as a result.

The object of the present improvement is to obviate this difficulty by the provision of a simple arrangement of means by which the doors of the fan-case upon either side can be  
55 readily adjusted by the attendant from either side of the machine, and rendering it unnecessary for him to get under the machine for that purpose, as will be explained.

In the accompanying drawings, A represents the body of the machine; B, the fan-case inclosing the fan, which, being similar in construction and arrangement of parts to such as are now in common use, need not be described.  
65

The fan-case is provided on each side with a sliding or adjustable door, C, for regulating the amount of air admitted to the fan and the consequent current or blast therefrom, and to these doors levers D D' are connected, either  
70 through a slot, *d*, in one end of said lever and a pin, C', passing through said slot into the door, as shown, or by a pivoted link or other suitable means permitting the movement in the arc of a circle of the arm of the lever connected with the door. The levers D D' are  
75 pivoted at *e* in pendent brackets E, secured to the side frame-timbers, A', of the machine, or to any other convenient point of support, and the heel-extensions of said levers beyond said  
80 pivot are bent at their extreme ends at an angle of ninety degrees (more or less) to the body of the lever, said angular ends being forked or bifurcated and striding a worm, *f*, on the vertical face of a disk, F. The disks F and  
85 F' are mounted loosely on a sliding transverse shaft, G, and in flanged annular portions H' of brackets H, rigidly secured to the lower longitudinal frame-timbers, A', said annular portions H' forming bearings for the disks and  
90 permitting their rotation. The disks are provided on their inner faces with notched or radially-slotted hubs F<sup>2</sup>, adapting them to engage with radial pins *g g'*, formed upon or rigidly secured to the sliding or longitudinally-  
95 adjustable shaft G, which is provided with handles G' G<sup>2</sup>, one at each end, adapting it to be operated by the attendant from either side of the machine. By this arrangement it will  
100 be seen that the attendant, standing upon the side of the machine adjacent to the handle G', by drawing said handle toward him causes



the pins *g* to engage with the hub of disk *F*, when, by rotating the shaft, the door *C*, operated by means of the worm *f* on the disk *F* and lever *D*, can be adjusted as desired, or by thrusting the shaft from him he can cause it to engage through the pins *g'* and slotted hub of disk *F'* with the latter, for operating it and through it the lever *D'* and door upon the opposite side of the fan-case.

10 The shaft *G* can be operated in a similar manner through the handle *G''* from the opposite side of the machine, and the attendant is thus enabled to adjust either or both doors to the fan-case from either side of the machine.

15 The worm *f*, being what is termed a "slow worm," serves to give an easy regular movement to the adjusting-lever, and to hold the latter at any desired adjustment, and is therefore preferred; but it may be substituted by a cam-slot in the disk or by an eccentric formed upon or secured thereto for the same purpose, the form of connection of the lever therewith being varied to suit such construction. The end of the lever engaging with the worm may, 25 if desired, be provided with laterally-projecting pins provided with friction-rollers, in lieu of the angular fork described, or with a single pin and roller entering the worm-slot in the disk where such slot is used; but these are obvious modifications of the construction described. 30

Having now described my invention, what I claim as new is—

1. In a grain-separator, the combination, with the adjustable doors of the fan-case, of adjusting-levers and a sliding transverse shaft provided with cams for actuating said doors, whereby they are adapted to be operated from either side of the machine. 35

2. The combination, with the adjustable doors of the fan-case and the adjusting-levers, of worm-wheels or their equivalent and a sliding transverse shaft, said wheels being mounted loosely on said shaft and adapted to be engaged therewith for operating said levers and doors, substantially as described. 45

3. The combination of the sliding shaft *G*, the worm-wheels *F* and *F'*, or their equivalent, adapted to be engaged with said shaft, and the levers *D* and *D'* with the adjustable doors of the fan-case, substantially as described. 50

In testimony whereof I have hereunto set my hand this 14th day of February, A. D. 1882.

EDMUND D. BROWN.

Witnesses:

ALFRED A. ELLSWORTH,  
FRANK W. DUNNING.