

446

W. H. KNAPP.  
GRAIN CARRIER AND PACKER.

No. 453,647.

Patented June 9, 1891.

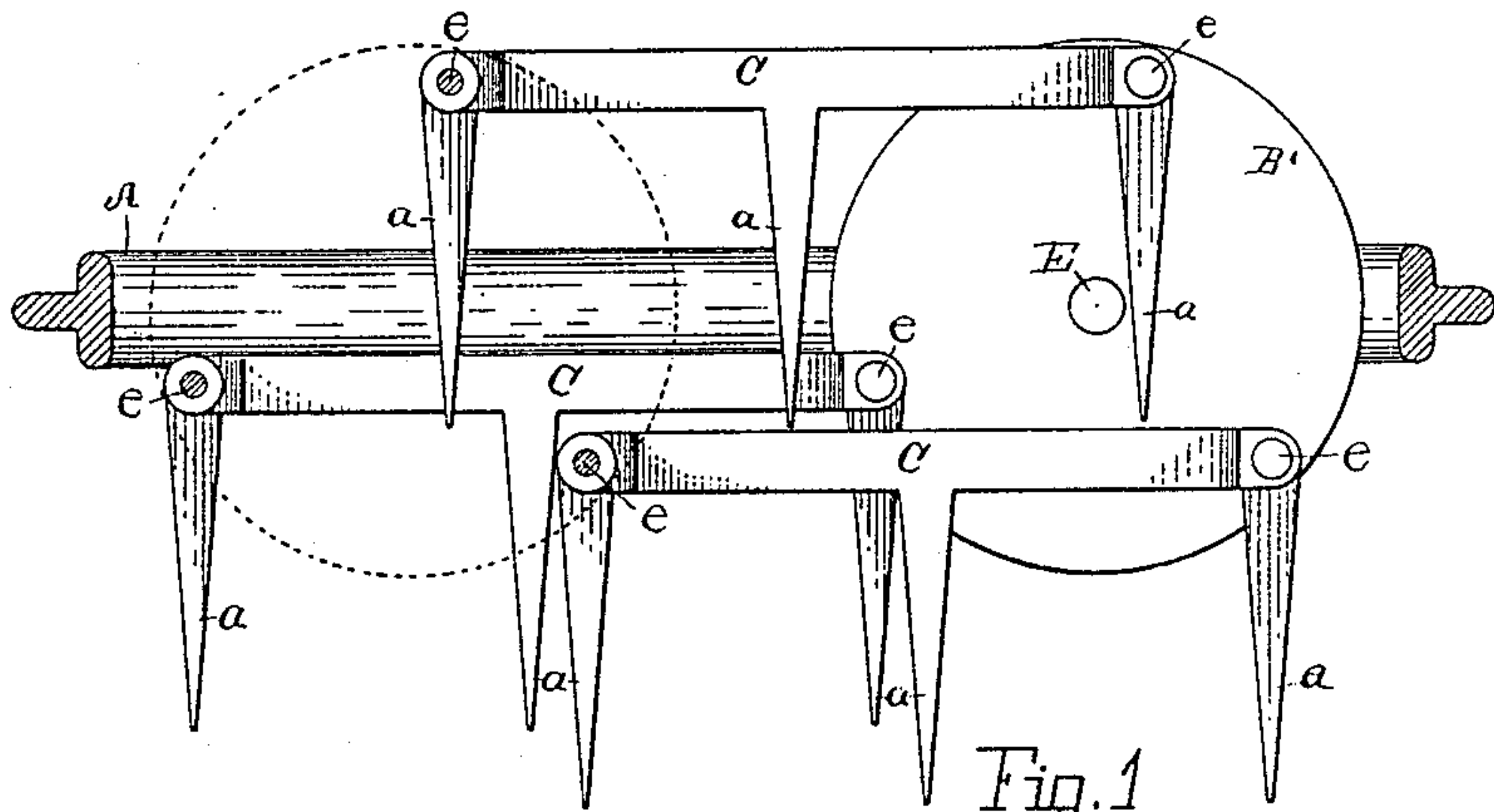


Fig. 1

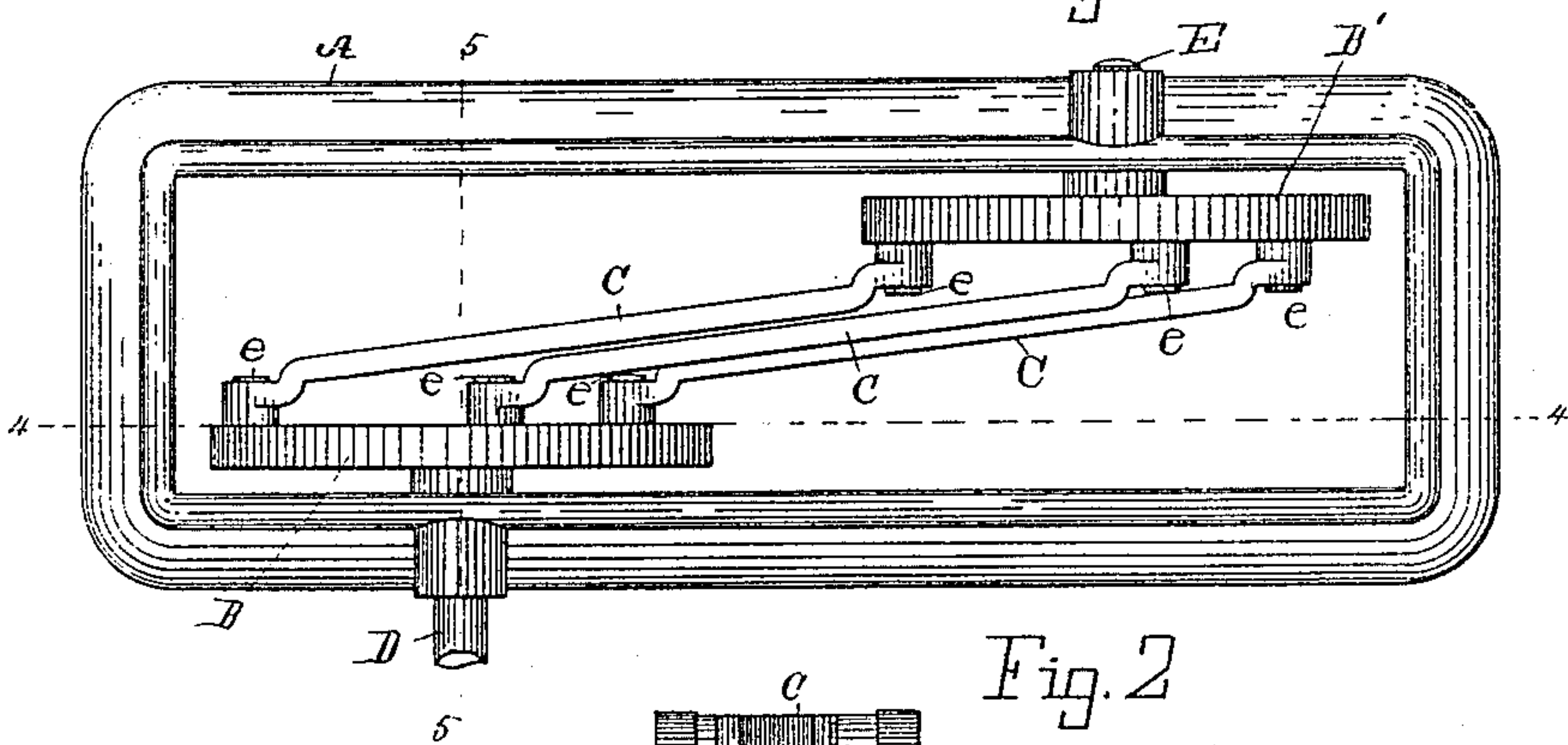


Fig. 2

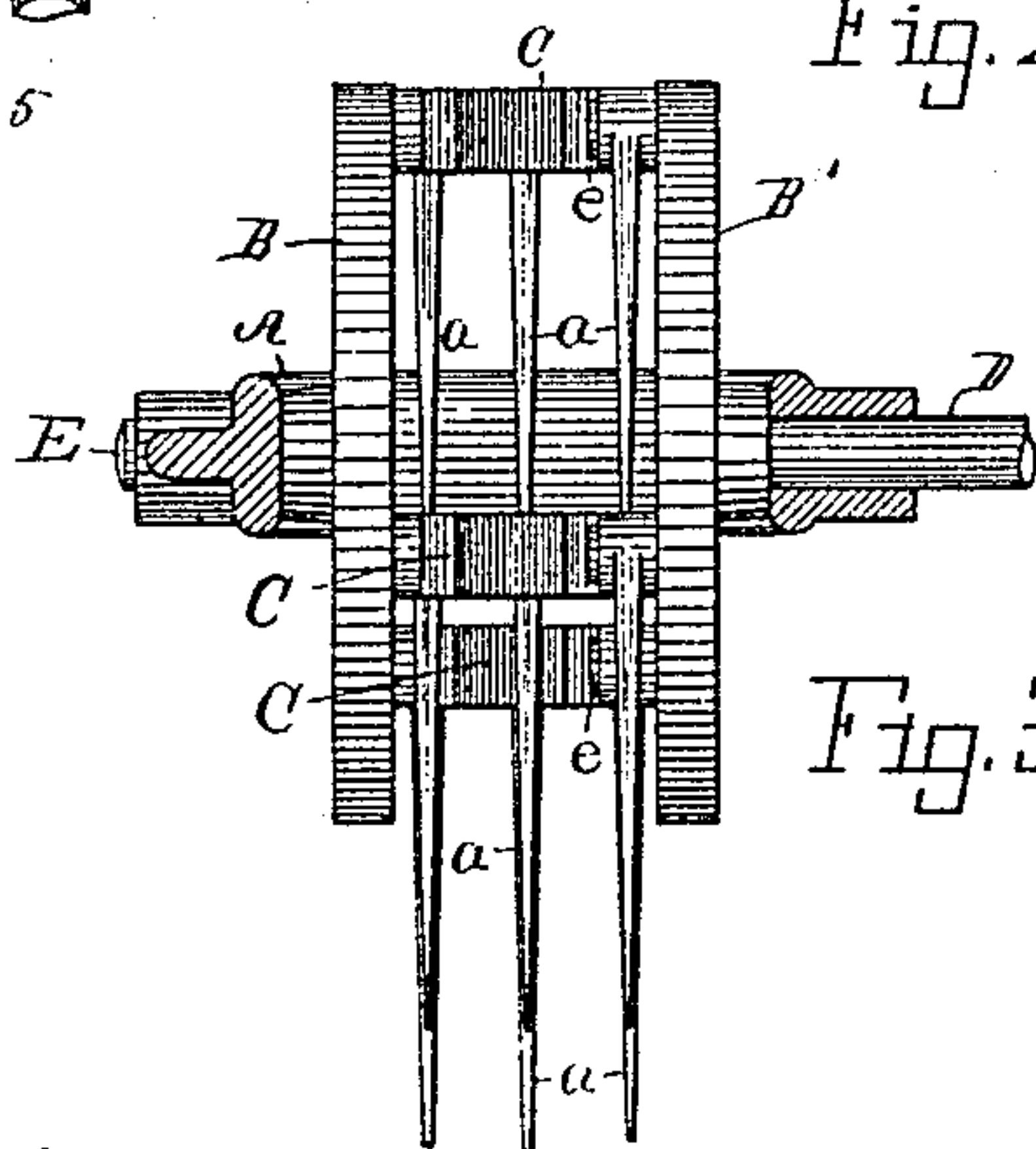


Fig. 3

Witnesses:

*Walter S. Wood*  
*S. H. Dwyer*

Inventor.

*William H. Knapp*  
By *Lucius C. West*  
Att'y.



## GRAIN CARRIER AND PACKER.

SPECIFICATION forming part of Letters Patent No. 453,647, dated June 9, 1891.

Application filed October 16, 1890. Serial No. 368,315. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. KNAPP, a citizen of the United States, residing at Galesburg, county of Kalamazoo, State of Michigan, have invented a new and useful Grain Carrier and Packer, of which the following is a specification.

This invention relates to a former invention of mine granted August 26, 1890, No. 435,143, in which was employed two separated lapping rotary disks and bars bearing teeth or projections, one end of the bars being pivoted to one of the disks and the other end to the other disk, and in which construction these toothed bars constituting rakes were always carried in the same position during their movements downward, horizontally, and upward, causing the teeth to enter the grain and move the same, and then to be freed from the same in the operation of carrying or packing the grain, as the case may be. I have found that by arranging the rakes at an oblique angle in plan view I can place the disks a greater distance from each other, thus obviating a necessity to have said disks lap, and thus for which reason I am enabled to make the rakes longer, so that they will of course contain more teeth and will operate upon a greater surface of grain by the same operating means which appeared in my former patent.

Hence my present invention consists in the below described and claimed construction carrying the above result into effect.

In the drawings forming a part of this specification, Figure 1 is a sectional elevation on line 4 4 in Fig. 2. Fig. 2 is a plan view, and Fig. 3 is a sectional elevation on line 5 5 in Fig. 2, looking from a point at the left.

No harvester is here illustrated, but simply the apparatus for carrying or packing the grain, which may be employed at the proper place or places in the harvester, so as to move the grain horizontally or elevate the same. The frame A here shown is simply introduced to show the relative relation of the axis of both of the disks with each other, in that that the axes have bearings in some support, meaning by that that the invention is not confined to the particular frame here shown, as it will appear obvious that in different con-

structions of harvesters the axial or bearing support of the axes of the disks might be modified.

Referring to the lettered parts of the drawings, A is a frame, in the sides of which at opposite ends the disks B B' are journaled. Power may be applied to the axle E of disks B' or to axle D of disk B, or to both. The design as here shown is to apply power to the axle D, or which would more properly be called a "broken shaft," as here shown. In the present construction at least three rakes C must be used in order to transmit motion to the disk B, in order not to have any dead-centers. If power be applied to both the disks, a less number than three rakes can be used. The rakes consist of horizontal bars provided with right-angled projections or teeth *a*, as clearly shown in Fig. 1. The ends of the rakes are pivoted to the disks at equidistant points, as at *e e e*—that is to say, all the rakes at one end are thus pivoted to the side of one of the disks, and from thence the rakes extend at an oblique angle, their opposite ends being pivoted to the side of the other disk in like manner. (See Figs. 1 and 2.)

A series of these grain-carriers may be employed in a single machine, if desired, side by side or end to end.

While I have described the parts B and B' as disks, it will be understood that these disks in their function are equivalent to crank-arms—that is to say, crank-arms might be employed radiating from the axles and the ends of the rakes be pivoted to the ends of said arms as an equivalent to the disks.

In the operation, rotary motion having been imparted to the disks, each rake in turn will strike into the grain in the position shown by the lower rake in Fig. 1, and will move back, then lift out of the grain, and be carried up and over and back down again, and this describes the action of each rake, one following the other, representing an action which is sometimes termed "trotting." It will be seen that by placing the rakes at an oblique angle in plan view there need be no limit to the length of said rakes, as was the case in my former construction referred to, in which the disks lapped.

100

453,647

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A grain carrier or packer consisting of the separated revoluble crank-disks and a series of rakes obliquely angled in plan view, one end of said rakes being pivoted to one crank-disk and the other end to the other crank-disk, substantially as set forth.

2. The combination, with a grain-harvester, of the grain carrier and packer consisting of separated revoluble crank-disks and a series

of rakes obliquely angled in plan view, one end of the rakes being pivoted to one of the crank-disks and the other end to the other crank-disk, substantially as set forth.

In testimony of the foregoing I have hereunto subscribed my name in presence of two witnesses.

WILLIAM H. KNAPP.

Witnesses:

WALTER S. WOOD,  
GEORGE G. BROWN.