

**No. 712,509.**

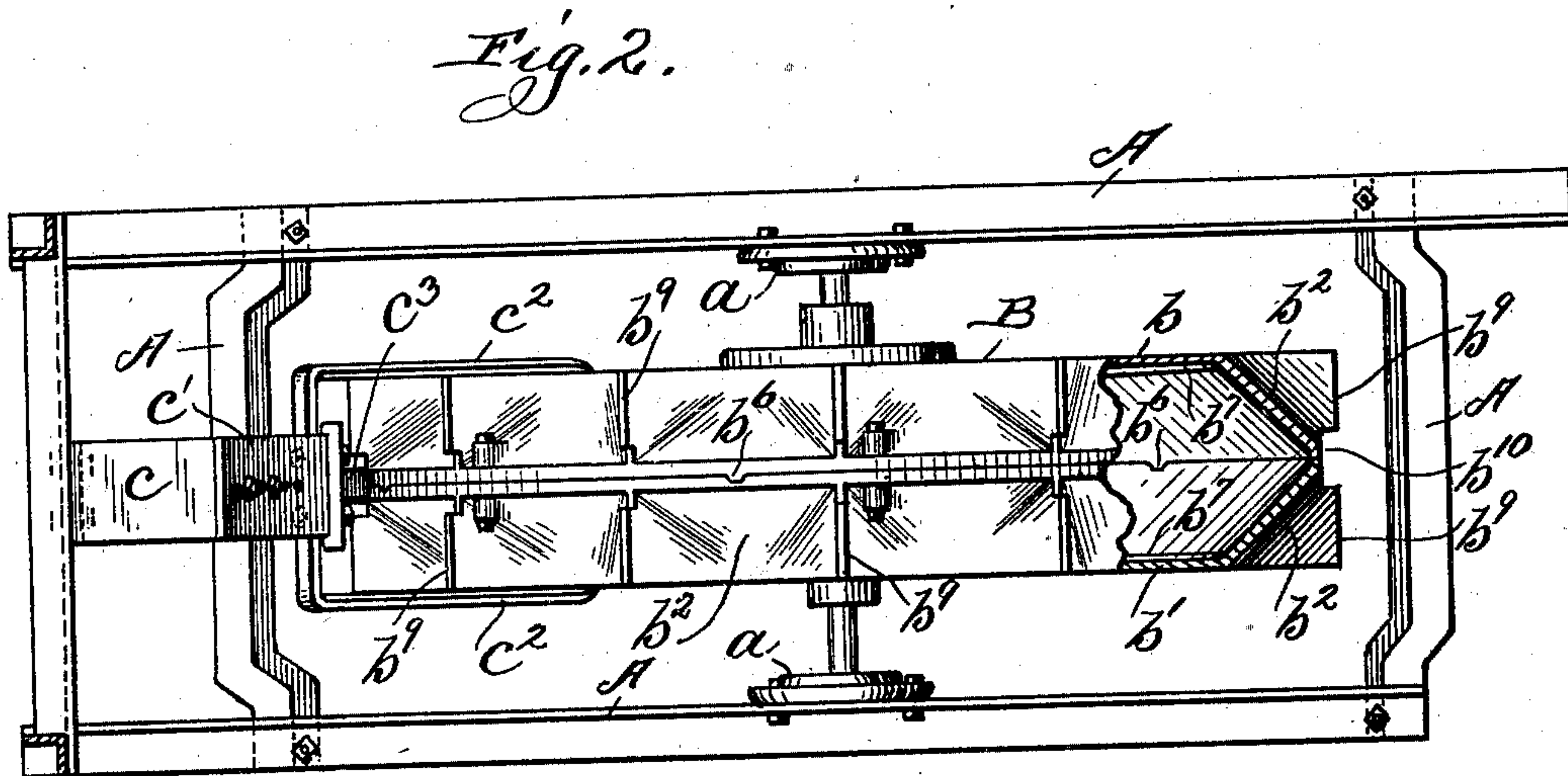
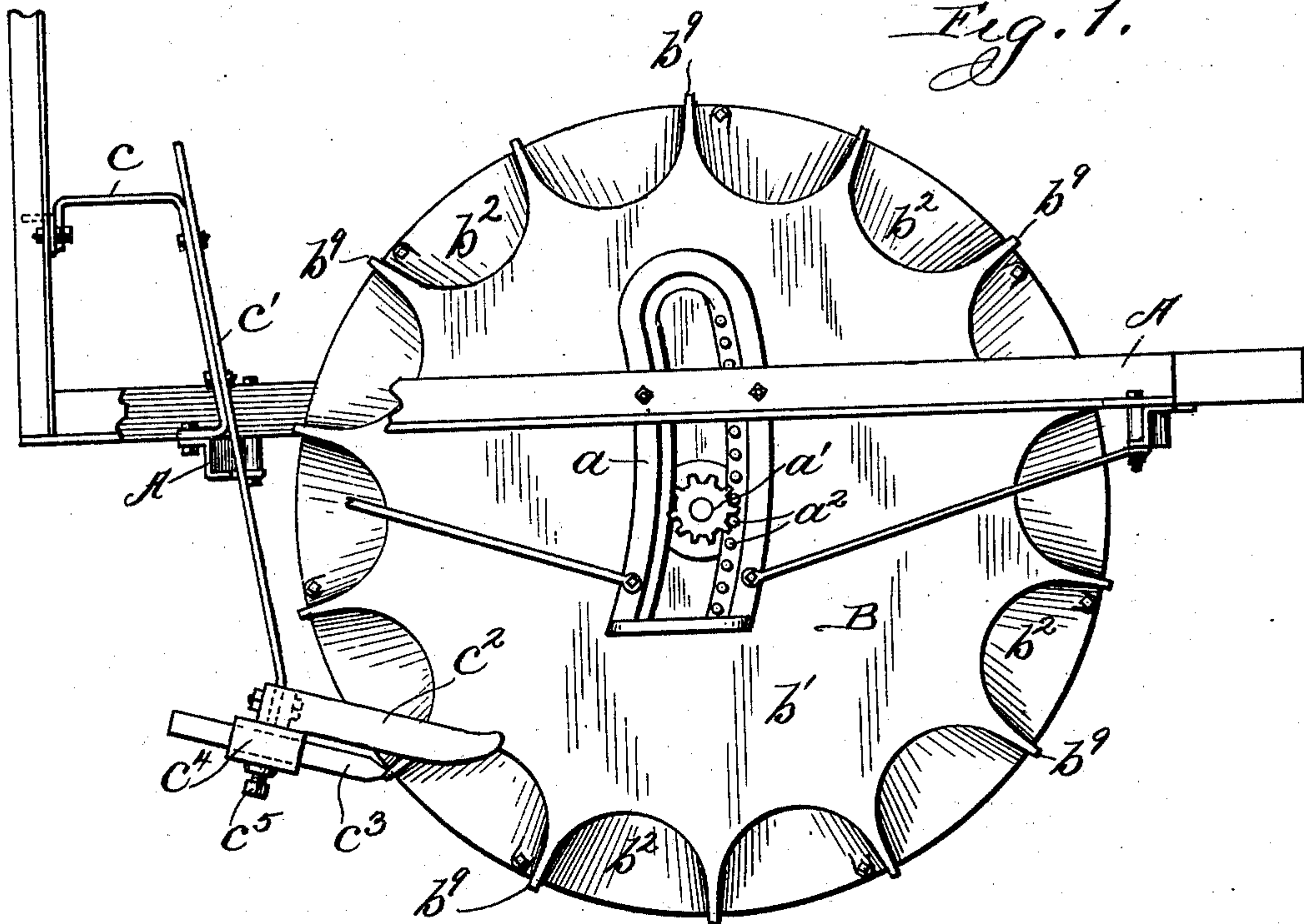
**Patented Nov. 4, 1902.**

**S. K. DENNIS.**  
**HARVESTER.**

(Application filed Apr. 27, 1901.)

**2 Sheets—Sheet 1.**

(No Model.)



Witnesses:

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Lawrence Larsen

Inventor:

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2 Sheets—Sheet 2.

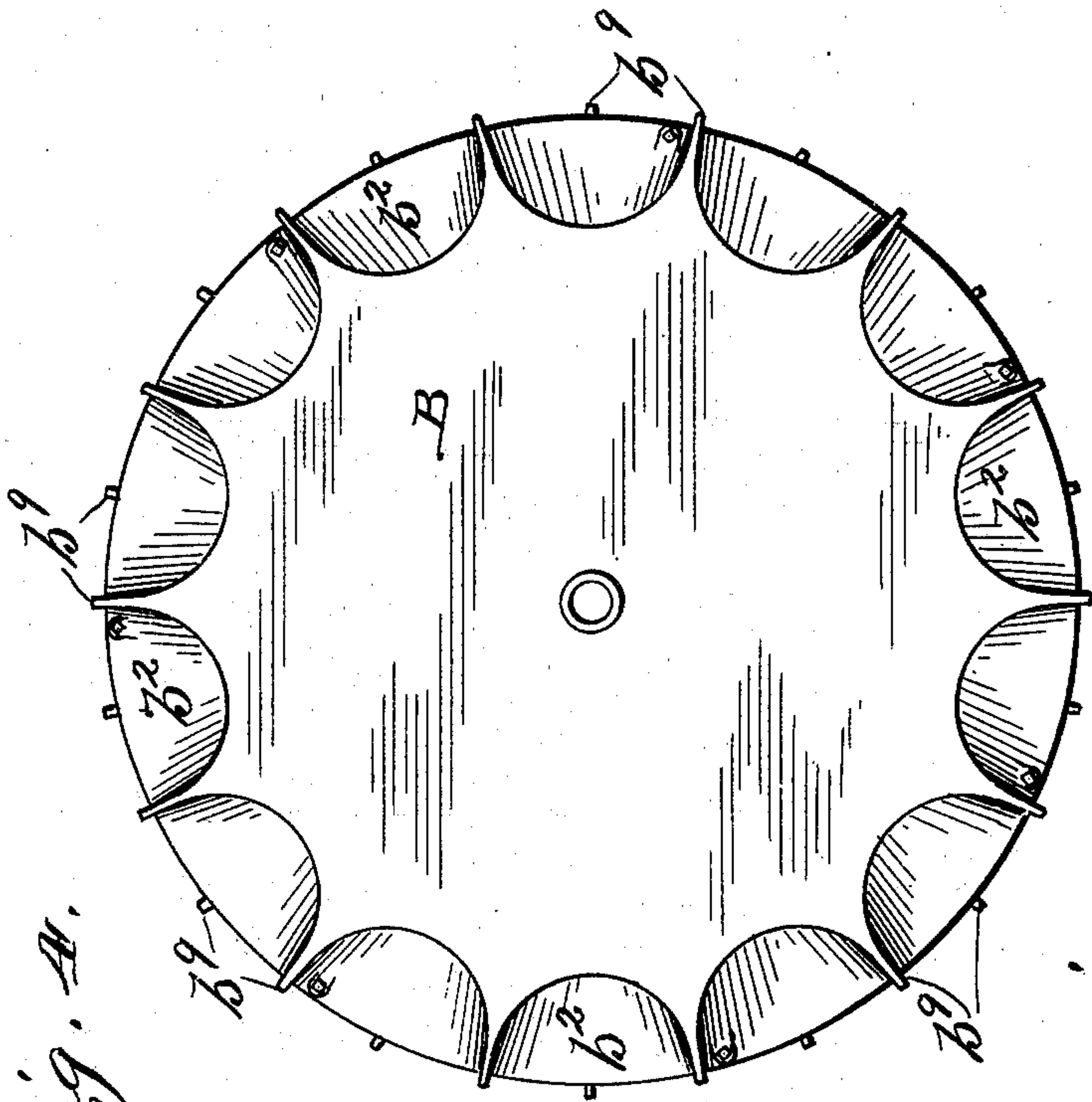


Fig. 4.

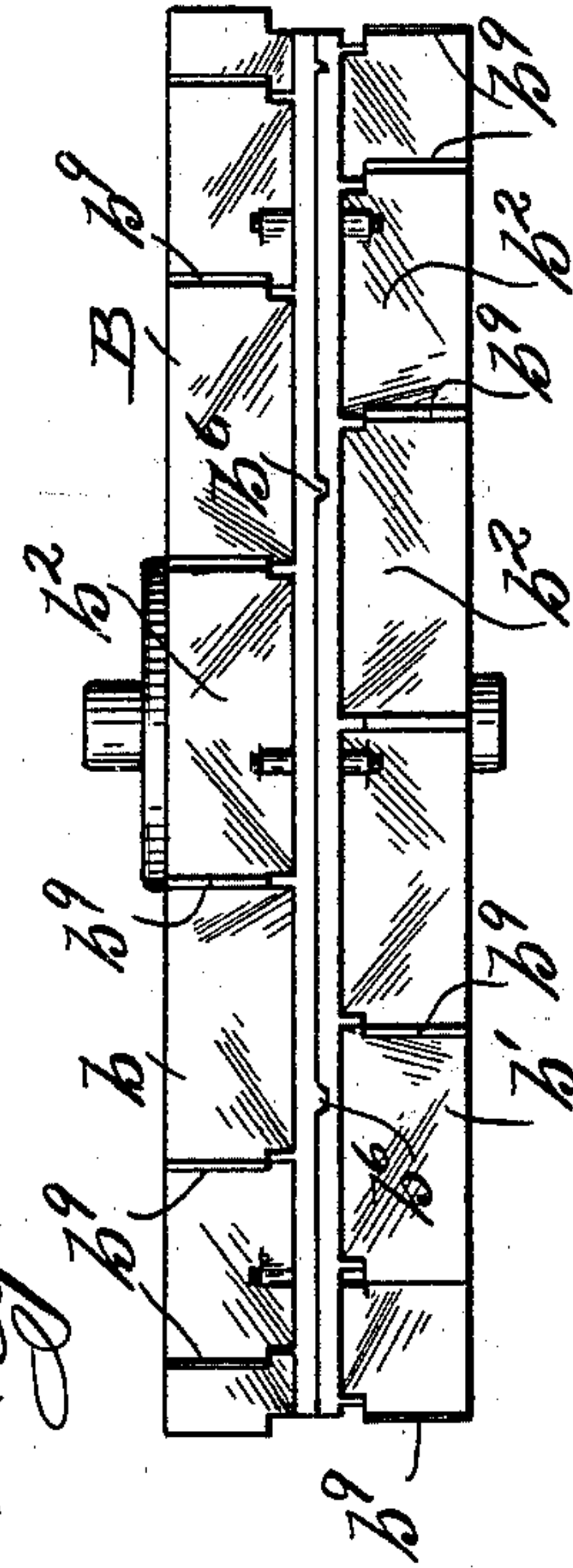


Fig. 5.

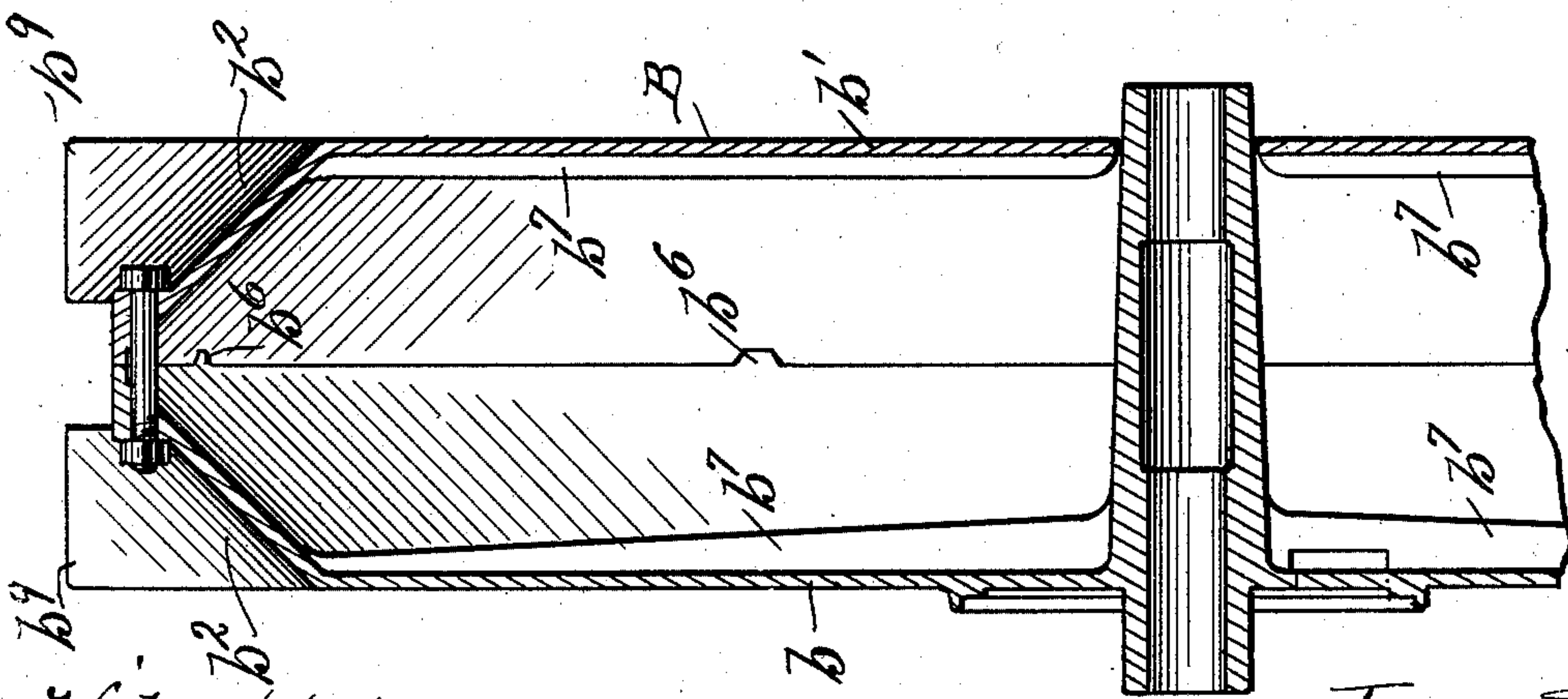


Fig. 3.

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# UNITED STATES PATENT OFFICE.

SAMUEL K. DENNIS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE PLANO MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

## HARVESTER.

SPECIFICATION forming part of Letters Patent No. 712,509, dated November 4, 1902.

Application filed April 27, 1901. Serial No. 57,669. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL K. DENNIS, a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Harvesters, of which the following is a specification.

My invention relates to improvements in harvesters and especially to ground or master wheels for rice-harvesters, which are generally employed where the wheel travels over soft wet earth that readily adheres thereto and coats the same.

The objects of my improvements are, first, to provide a master or ground wheel of such construction and organization as will not take up any soil upon its tread portion, and, second, to provide a simple and efficient arrangement of scrapers whereby such earth and refuse straw as adhere to the wheel will be shedded therefrom.

The invention consists in the construction and organization of parts hereinafter fully described, and pointed out in the appended claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side view of my improved ground-wheel and a scraper mechanism mounted in a part of the main frame of a machine. Fig. 2 is a top plan view of the parts shown in Fig. 1, a portion of the wheel being broken away to illustrate certain features of its construction. Fig. 3 is a transverse central section of a ground-wheel embodying my invention. Figs. 4 and 5 are detailed views of a form of ground-wheel exemplifying the preferred form of my invention in this respect.

Similar letters of reference indicate like parts throughout the various views.

The machine is supported upon a suitable frame (designated in general by the reference-letter A) carried by the ground or traction wheel B, which is suitably mounted upon a main axle in any desired manner, with capacity for adjustment in guideways formed by the sector-arms  $a$ , affixed to the inner faces of the frame. This adjustment may be obtained by any suitable means—such as the pinion  $a'$ , adapted to engage the teeth or pins

$a^2$  of the sector-arms in the usual manner and operated by any suitable mechanism. The wheel B travels upon the surface of the field and serves to carry and transport the machine and to transmit power to drive the mechanism of which the machine is composed, but which is not illustrated in this case, as it forms no part of the present invention.

The wheel B is preferably composed of two cast shells  $b$  and  $b'$ , respectively, each consisting of an approximately dish-shaped structure having a plane-surfaced body terminating in an angular peripheral portion  $b^2$ , whereby the rim or tread portion of the wheel, when the shells are assembled in relative position, is substantially V-shaped. The peripheral portions of the disks are preferably constituted of a series of inwardly-projecting beveled faces  $b^2$  and have suitable bolt-holes  $b^3$  at intervals adapted to receive bolts to securely fasten the shells or disks together. For convenience in making a tight joint between the two shells comprising the wheel it is preferred to provide the edge of each shell with a narrow horizontal web  $b^4$ , these webs corresponding in outline and presenting flush faces to be held in close contact by the securing-bolts. The bolt-holes are preferably provided with housings  $b^5$  for the purpose of adding strength and bearing-surfaces at the points where the bolts are employed. The shells are preferably provided with interlocking means, which may be of any suitable description, such as lugs on one of the shells taking into recesses in the other, as indicated at  $b^6$  in the drawings. The inner faces of the disks may be provided with strengthening-webs  $b^7$ , if desired. The wheel may be provided with a bearing in any suitable manner, and I have shown a convenient arrangement wherein a hub  $b^8$  is cast integral with one of the shells and is adapted to fit a corresponding perforation or central opening in the other, as shown in Fig. 3. The hub is hollow and receives the shaft or main axle by which the wheel is mounted in the main frame, preferably in the manner heretofore described and which is well known. The disks composing the wheel are provided at regular intervals



around their peripheries with suitable ribs  $b^9$ , which extend parallel with the axial line of the wheel and with their outer edges in the same plane as or in extension of the outer face of their respective disks. These ribs are preferably disposed alternately with or intermediate with the beveled faces  $b^2$  of the disks, and therefore are arranged at the angles formed by the meeting of adjacent inclined faces, which are angularly disposed with reference to each other. The beveled faces may be plane surfaces, but preferably they are curved or concaved in cross-section on the peripheral line of the wheel, where their ends curve up to or merge with the ribs  $b^9$ , the curvature toward each rib beginning at any suitable point. Each inclined face has therefore preferably rounded margins, which present no angles or corners to the soil, and as the inner edges of the beveled faces are preferably scalloped, as shown in Fig. 1, the ribs and faces merge into each other throughout the length of the former without forming angles or pockets in which the wet soil may pack. The ribs  $b^9$  of the disks may be disposed to come opposite each other or be arranged so that each pair, in effect, constitutes a single rib of approximately the width of the wheel, as shown in Figs. 2 and 3, or they may be arranged in alternate or staggered relation, as shown in Figs. 4 and 5. The latter arrangement is preferred, in which case each rib on one disk comes approximately opposite the median line of the opposite beveled face on the other disk. In either arrangement it is preferred to terminate the inner ends of the ribs short of the apex of the rim of the wheel, whereby a central or peripheral channel  $b^{10}$  is formed between the inner lines of the ribs to receive a suitable scraping or doctoring edge to remove the accumulated straw and refuse matter taken up by the rim of the wheel as it travels over the soil.

Under certain conditions of use, as where the soil is unusually soft, the wheel will accumulate more or less mud upon its faces or sides, and in such cases it is desirable to provide means to remove it. An efficient and simple arrangement of parts for supporting scrapers, which it is desirable in such instances to employ for the faces of the wheel as well as the straw-scraper for the rim, is shown in Figs. 1 and 2. A suitable frame  $c$  is attached to the main frame of the machine and carries an adjustable rod  $c'$ , which projects to a point preferably below the central line of the wheel, where it is provided with a downwardly-inclined body-scraper  $c^2$  and a channel-scraper  $c^3$ . The scraper  $c^2$  for the body of the wheel is preferably in the form of a yoke bolted to the lower end of the rod and embracing the wheel, as shown in Fig. 2, so as to contact with both of its faces. The scraper for the channel of the wheel is preferably in the form of a pointed or tapered plate and operates within the groove  $b^{10}$  of

the wheel, being adjustable and held in the box  $c^4$  at the lower end of the rod by a set-screw  $c^5$ .

Power is transmitted to the mechanism of the machine from the master-wheel by any suitable arrangement and construction of parts.

In employing harvesters in rice-fields, which have a wet and sticky soil, the operation of the machines has been seriously impeded by the accumulation of mud and refuse straw on the traction or transporting wheel as it travels over the surface of the field. From a consideration of the foregoing disclosure it is apparent that my improved wheel will not take up mud or moist soil, owing to the sloping or angular contour or outline of its tread portion. The curved shape of the beveled faces is especially adapted to prevent the earth from packing against the ribs, and the bevel or V shape of its parts are so shaped in angular disposition as to cause mud to easily drop off. The solid form of the wheel also prevents the mud from filling in about its axle, as is the case with spider-wheels. The scrapers  $c^2$  remove all material adhering to the vertical faces of the wheel. The scraper  $c^3$ , operating in the peripheral groove of the wheel, removes all straw and refuse that may be picked up by it. The ribs on the periphery of the wheel serve to give sufficient purchase on the soil, but do not afford adhering-surfaces for the mud, especially when their sides are of rounded contour constituted by the curved portions of the adjoining faces.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A closed master-wheel for harvesters constructed without spokes and composed of disks each provided with an inwardly-beveled periphery constituted of a series of angularly-disposed faces comprising the tread portion of the wheel.

2. A closed master-wheel for harvesters constructed without spokes and composed of a pair of disks each provided with a series of axial ribs and intermediate inclined faces.

3. A master-wheel for harvesters composed of a pair of disks having angularly-disposed peripheral portions, a hub integral with one of the disks and fitting a perforation in the other, and a series of axial ribs on each disk.

4. A closed master-wheel for harvesters constructed without spokes and composed of a pair of disks, each disk having a series of axial ribs extending beyond its peripheral line and intermediate inclined faces of rounded margins merging with the ribs.

5. A closed master-wheel for harvesters constructed without spokes and composed of a pair of disks provided with axial ribs whose outer edges extend in the plane of the faces of the disks, and intermediate faces angular to the plane of the body of the disk.

6. The combination, with the main frame



and a master-wheel mounted therein and provided with a V-shaped periphery having ribs forming a central groove, of scrapers adapted to the sides of said wheel and a scraper adapted to the groove.

scraper adjustable within the frame and adapted to the groove.

In testimony whereof I affix my signature hereto in the presence of two subscribing witnesses.

SAMUEL K. DENNIS.

Witnesses:

ALEXANDER MOXEY,  
J. McROBERTS.

7. The combination, with a main frame and a scraper-frame mounted thereon, a master-wheel provided with a V-shaped rim having ribs forming a peripheral groove, and a