

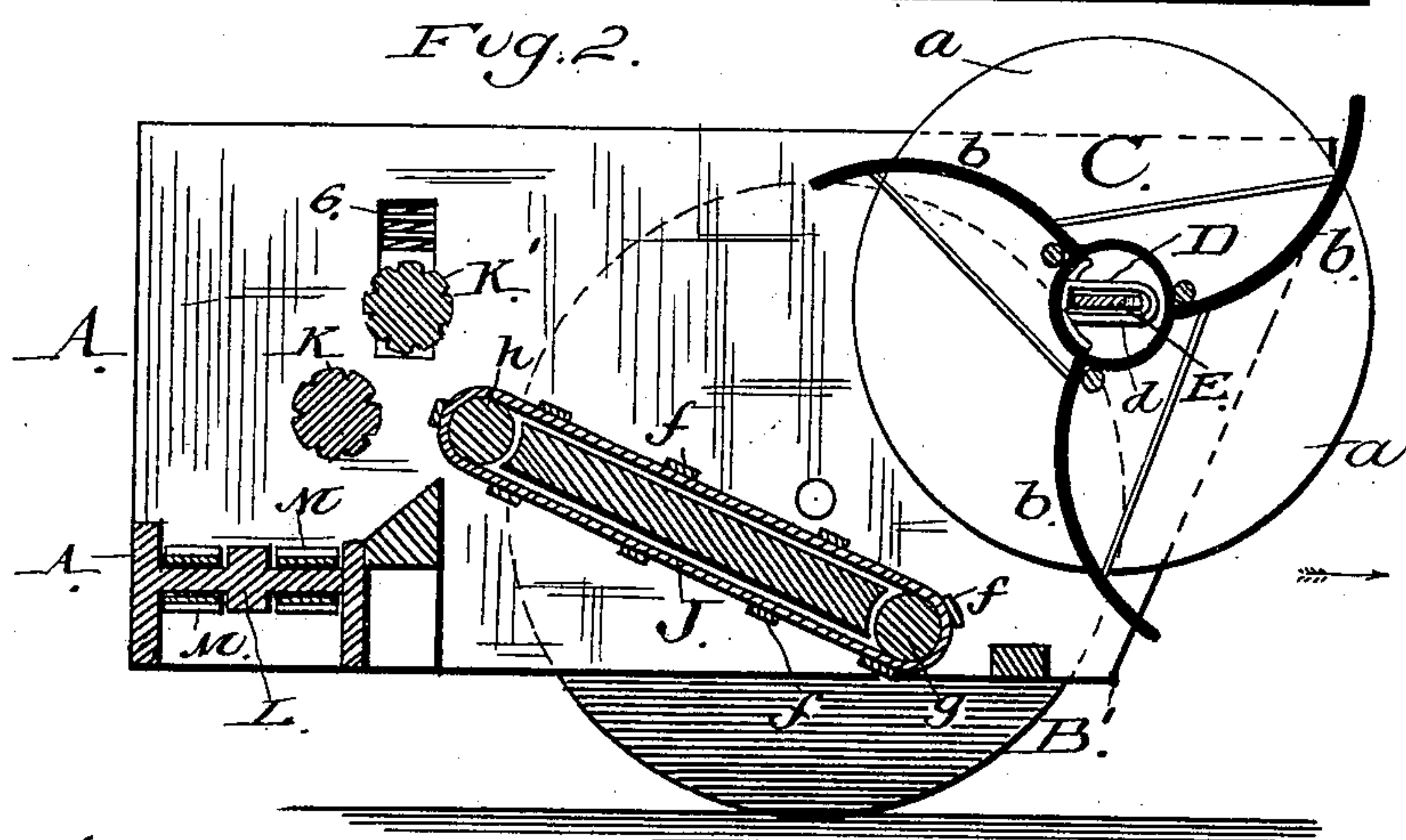
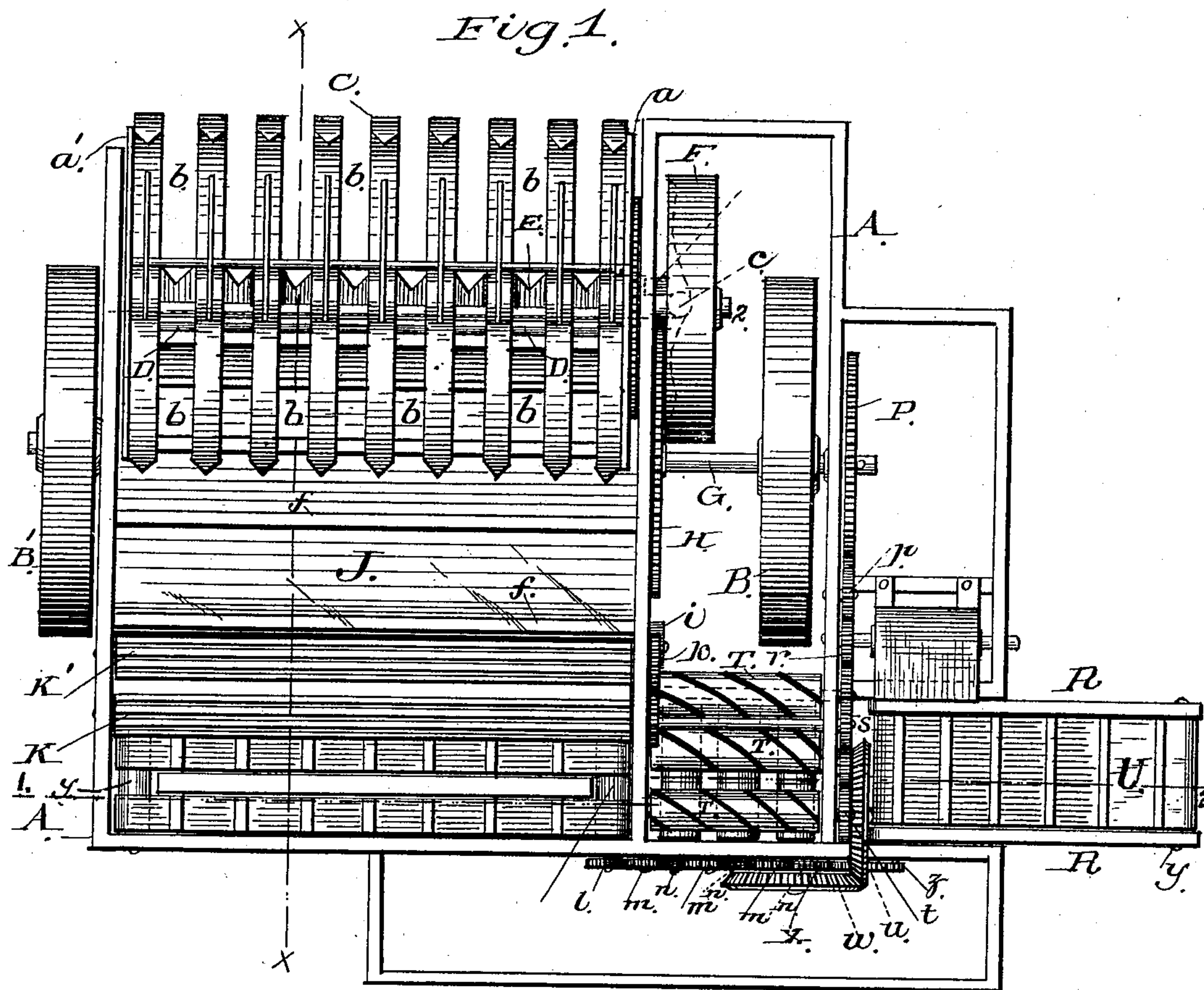
(No Model.)

3 Sheets—Sheet 1.

K. E. LATHROP.  
CORN HARVESTER.

No. 323,046.

Patented July 28, 1885.



Attest;  
T. Walter Fowler  
H. B. Applewhaite,

Inventor;  
Kirke E. Lathrop  
per Atty.  
A. H. Evans & Co.

(No Model.)

3 Sheets—Sheet 2.

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Fig. 3.

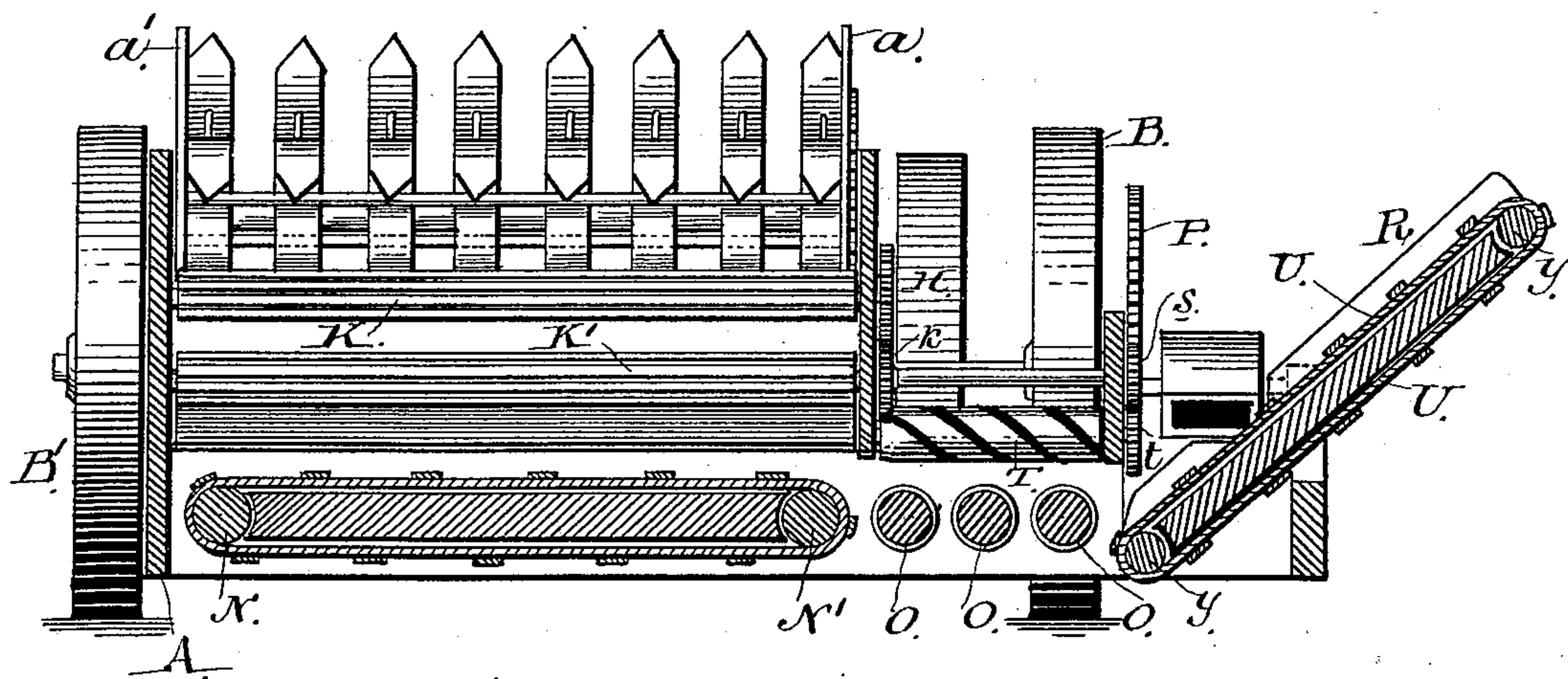


Fig. 4.

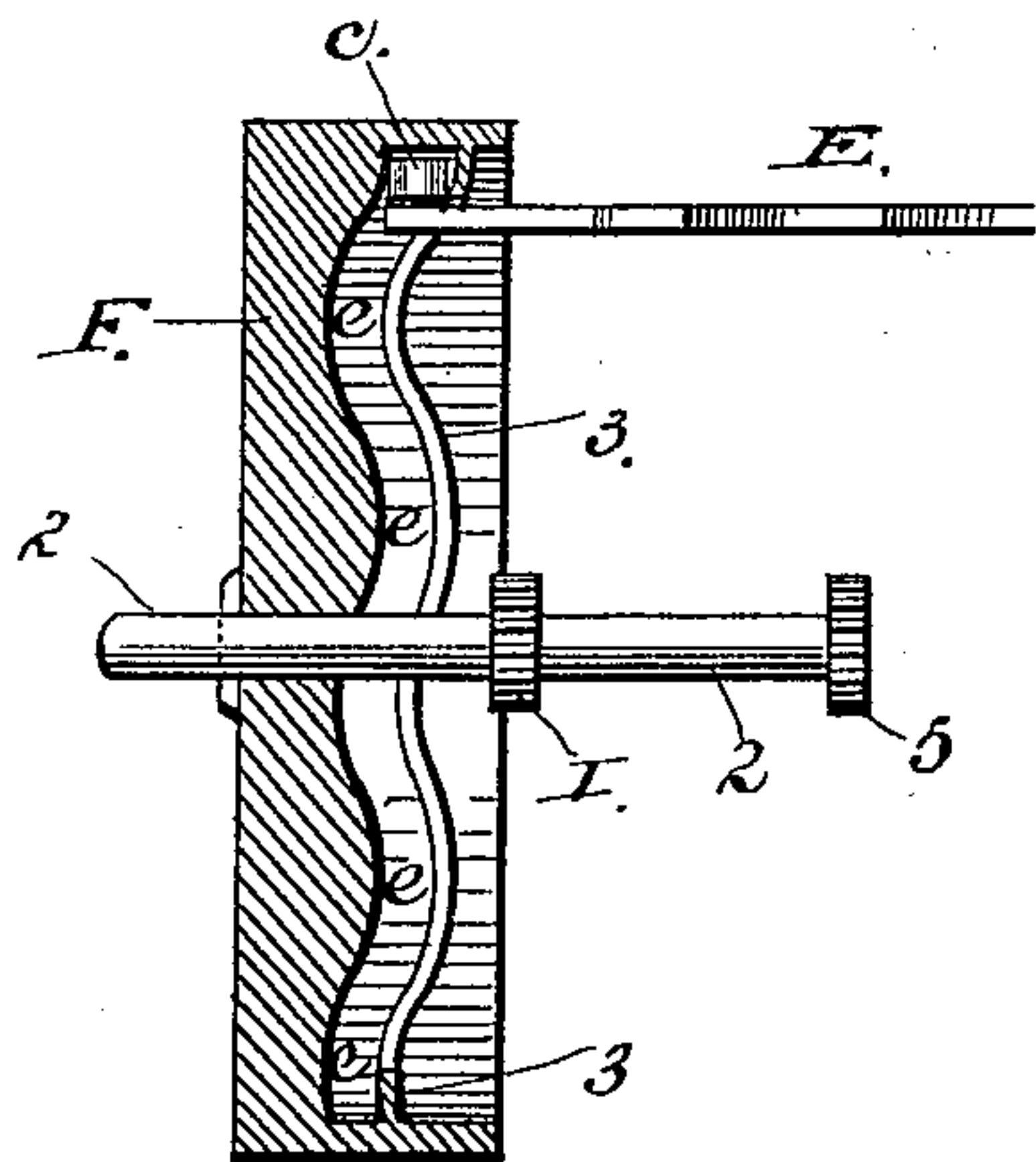
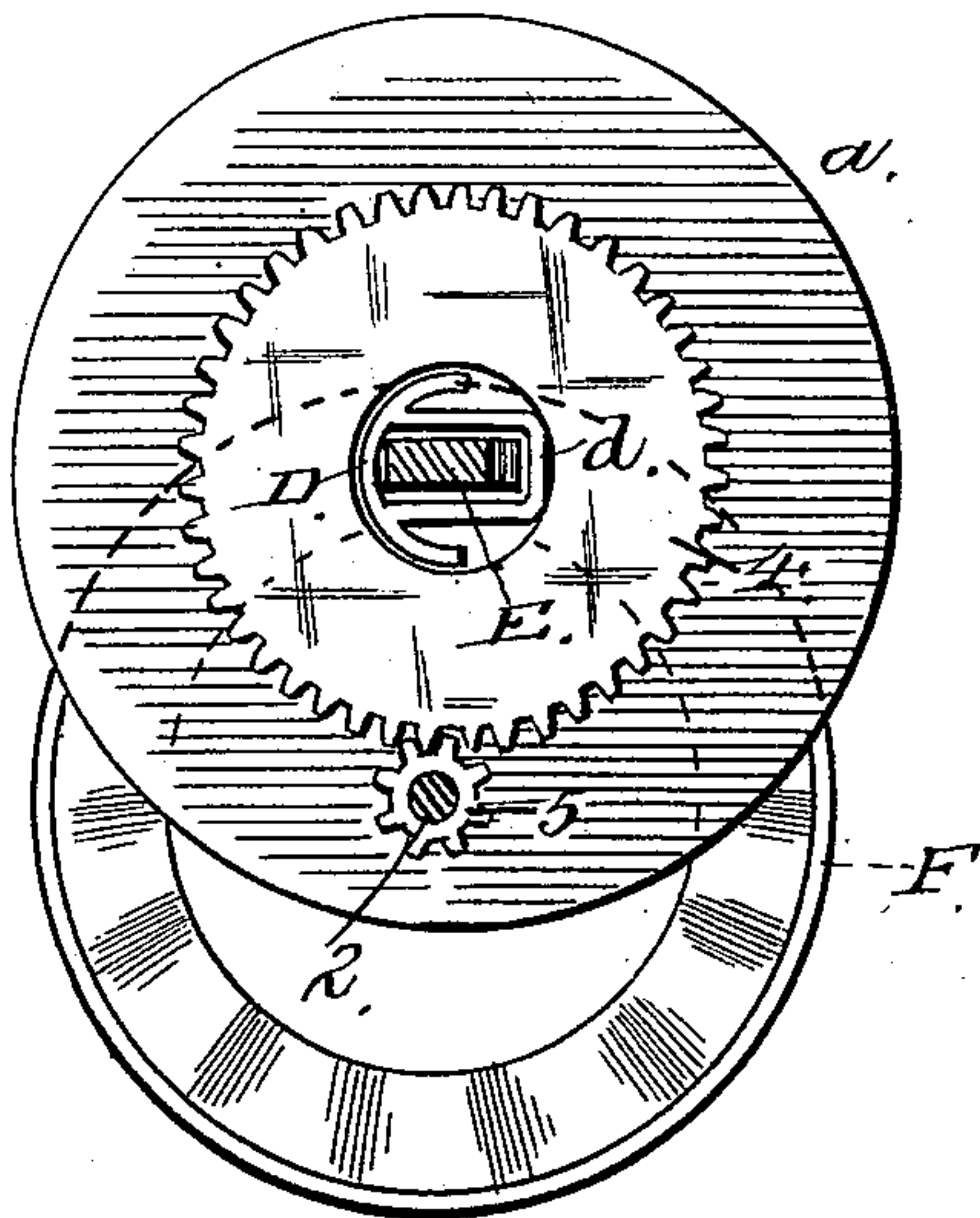


Fig. 5.



Attest;  
J. Walter Fowler,  
H. B. Applewhite,

Inventor;  
Kirke E. Lathrop  
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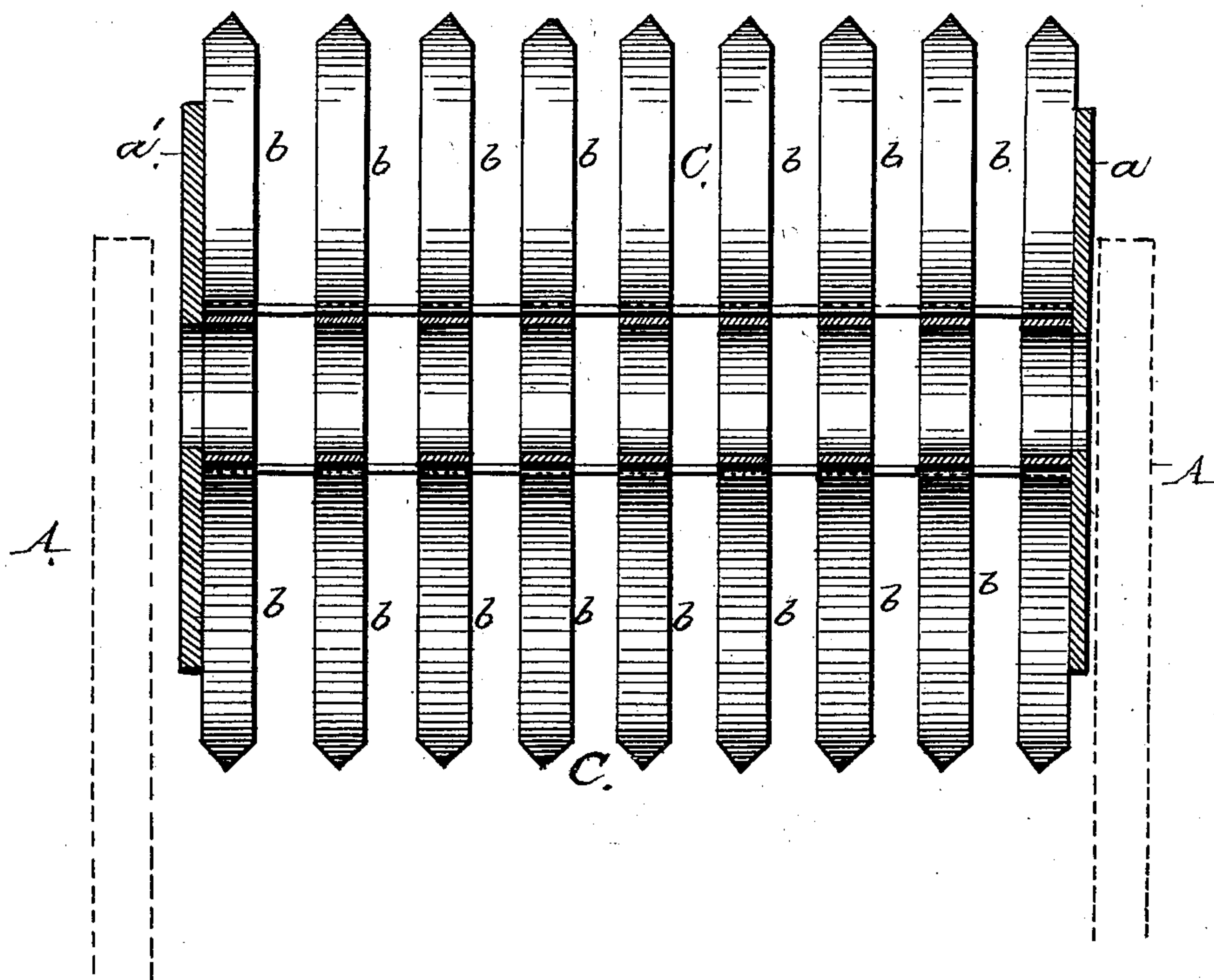
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*Fig. 6.*



WITNESSES

*T. W. Fowler*  
*L. B. Applewhite,*

INVENTOR

*Kirk E. Lathrop*  
*Per A. H. Evans & Co.*

Attorneys

# UNITED STATES PATENT OFFICE.

KIRKE E. LATHROP, OF AFTON, IOWA.

## CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 323,046, dated July 28, 1885.

Application filed October 8, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, KIRKE E. LATHROP, a citizen of the United States, residing at Afton, in the county of Union and State of Iowa, have  
5 invented certain new and useful Improvements in Corn-Harvesters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and to  
10 the letters of reference marked thereon, in which similar letters represent like parts in all the figures.

Figure 1 represents a plan view of a corn-harvester with my improvements attached.  
15 Fig. 2 represents a longitudinal section on line *x x* of Fig. 1. Fig. 3 represents a cross-sectional view on line 1 2 of Fig. 1. Figs. 4 and 5 are details, to be referred to. Fig. 6 is a longitudinal sectional view of the picking-  
20 cylinder detached.

My invention relates to that class of machines which are designed to cut and husk corn, and to deliver said husked corn to a wagon or other suitable receptacle; and my  
25 invention consists in the construction, arrangement, and combination of the parts comprising such machine, all of which I shall hereinafter fully describe and claim.

To enable others skilled in the art to make  
30 and use my invention, I will now proceed to describe the exact manner in which I have carried it out.

In the said drawings, A represents the frame-work of the machine, and it is provided  
35 with the necessary cross-beams for supporting the various parts of the machinery.

B B' represent the main or driving wheels of the machine, each wheel being mounted upon a short independent shaft journaled in  
40 the frame A.

Between the sides of the frame A, and at its front portion, is suitably journaled a revolving cylinder C, which consists, essentially, of the end disks, *a a'*, and a series of curved  
45 outwardly-extending arms, *b*. These arms are placed a sufficient distance apart to allow the stalk to pass between them, and they are preferably formed with hollow independent hubs; but these hubs are connected together by rods  
50 or other suitable means to form a rigid cylinder for stripping the corn as it stands in the field, and delivering the detached ears upon

an inclined apron or endless belt, to be hereinafter referred to.

Within the arbor of the cylinder, and secured to the sides of the frame independently  
55 of the cylinder C, is a frame, D, provided with guides *d*, between which slides a sickle-bar, E, which is very desirable, especially when the corn is green or damp, as in such  
60 conditions the corn on the stalk will pull hard, and by this arrangement of the sickle-bar the stalks and corn are brought in contact with the knives, and are thereby readily detached.

Upon an end of the sickle-bar E is mounted  
65 a small anti-friction wheel, *c*, and upon a shaft, 2, is mounted a wheel, F, provided with a surface which forms a series of cams, *e*, while upon the flange of the wheel F is formed a projection, 3, corresponding in shape to the  
70 cam-surface of said wheel, so that between the series of cams *e* and the projection 3 is formed a groove or guide within which the anti-friction wheel *c* travels to operate the  
75 sickle-bar and to give the same a reciprocating movement.

Upon the main shaft G, which carries the drive-wheel B, is mounted a gear-wheel, H, which meshes with a pinion, I, upon the shaft  
80 2, said shaft 2 being provided with a pinion, 5, which engages with a gear, 4, upon one side of the disk *a* of the cylinder C. By this construction it is evident that the movement of the drive-wheel B and shaft G will communicate motion to gears H and I, to cause  
85 the cylinder to revolve. At the same time motion is communicated by the same mechanism to operate the sickle bar and cause that device to have a reciprocating movement within  
90 the frame D.

The apron or endless belt J, which is located between the sides of the frame A, has upon its outer surface cleats *f*, for the purpose of aiding the movement of the stalks or  
95 of the detached corn. This apron passes over a roller, *g*, and at another point it passes around another roller, *h*, upon the shaft of which is mounted to revolve a gear-wheel, *i*, which communicates motion to the gear-wheels *k k* upon the shafts of the longitudi-  
100 nally-grooved rolls K K', the object of these rollers being to separate the ears of corn from any broken pieces of stalks to which they may adhere. The shaft of the roller K' may have



a bearing in suitable blocks in the frame, and springs, 6, may be interposed above the block to allow the roller K' to yield when the stalks are passing between them.

5 Running crosswise the machine and beneath the rollers K K' is a platform, L, over which travels one or more endless bands or aprons, M M, which pass around rollers N N', journaled in the frame of the machine, as seen in  
10 Fig. 3.

Upon the shaft of the roller N' is a gear-wheel, l, which, through the agency of a series of idle-gears, m, imparts motion to another series of gearing, n, located upon the shafts  
15 of the grooved husking-rolls O, which receive the ears from the endless bands or aprons M, and feed them forward by the continued revolution of the said rollers.

P represents a gear-wheel upon the outer end  
20 of the main shaft, which meshes with a gear-wheel, p, and thence, through idlers r and s, communicates motion to the gears t upon the ends of the spirally-grooved husking-rollers T, which may have a yielding movement by reason of springs (not shown) placed in the  
25 frame A. These rollers are journaled in the frame at right angles to the lower husking-rollers, O.

The gears t may be dispensed with, and a  
30 chain-belt substituted.

One of the upper husking-rollers, T, is also provided with a beveled gear, u, which engages a similar gear, w, which has a pinion, x, attached for engaging with and operating the  
35 gears n of the lower husking-rolls.

R represents an endless apron-frame, in which is mounted to revolve the rollers y, the lower one of which is provided with a gear, Z, which receives its movement from the gear  
40 z, and operates an endless belt or carrier, U, provided with suitable cleats.

If desirable, a fan may be located near the husking-rolls, to separate the silk from the corn, and a suitable frame or platform may be  
45 constructed in the rear of the husking-rollers, to receive the husk portions of the stalk and silk.

The machine is intended to be drawn by two or more horses. It takes two rows, the horses  
50 standing to the right of the rows, as in reaping. The revolving cylinder C strips the ears from the stalks and throws them on the apron immediately back of the cylinder. The apron then carries the ears to the two rollers K K', the office of these rollers being to separate the ears from any broken pieces of stalk. The ears so separated drop into the trough back of and below the said rollers. The ears that have no broken stalks attached drop through the  
60 space between the dropper and the lower roller and onto the aprons M.

In husking, the ears are carried from the trough endwise by the two belts to the husking apparatus, the lower rollers, O, of which  
65 revolve in the forward direction of the ear. The upper rollers, T, as seen, are placed at right angles to the lower ones. The combined

motion of the upper and lower rollers gives to the ears a circular and forward motion, which results in stripping the husk from the ears, 70 the latter being thrown onto the apron or carrier U and carried directly to a wagon drawn by a separate team at the right-hand side of the machine. The husking-rollers must revolve rapidly. As the corn is thrown from these  
75 rollers onto the carrier, the fan blows or separates the husks and silk from the corn.

The sickle and sickle-driver are not absolutely necessary except when the corn is green or damp, when the corn or stalk may pull  
80 hard, and in such case they are pulled back to the sickle and cut off.

The sickle drive-wheel can be removed from the shaft by taking off the wheel F and removing the sickle by drawing it from the frame. 85

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

1. In a corn-harvester, a revolving cylinder composed of outwardly - extending curved  
90 arms, with open circular hubs, in combination with a removable sickle-bar and a mechanism for imparting to the sickle-bar a reciprocating movement, substantially as and for the purpose set forth. 95

2. In a corn-harvester, a revolving cylinder composed of a series of spaced outwardly-extending curved arms with open circular hubs, and provided with disks, as described, in combination with a removable sickle-bar, a wheel with a series of cam-surfaces for reciprocating the sickle-bar, and gears H I, 4  
100 and 5, for imparting a rotary movement to said cylinder, substantially as described. 105

3. In a corn-harvester, a cylinder composed of a series of independent outwardly-extending curved arms, each set of arms having an open hub, disks upon the ends of the cylinder, and cross-bars for connecting the arms so as to leave spaces between the arms for the passage of the stalks to a reciprocating sickle-bar, substantially as described. 110

4. In a corn-harvester, and in combination with a revolving cylinder, C, and a frame, D, a removable sickle-bar carrying an anti-friction roller at one end, a wheel having a series of cam-surfaces, and suitable mechanism connected with the main shaft to operate the sickle-bar and at the same time revolve the cylinder, substantially as described. 115 120

5. In a corn-harvester, the frame A, revolving cylinder C, gears for operating the cylinder, a wheel with cam-surfaces for reciprocating the removable sickle-bar, and an endless band or apron, in combination with yielding roller K' and endless bands or carriers for feeding the corn to the husking-rolls, substantially as described. 125

6. In a corn-harvester and husking apparatus, a revolving cylinder composed of outwardly-extending curved arms, a removable sickle-bar, and mechanism for operating the cylinder and sickle-bar, an apron for carrying the corn to a pair of longitudinally-grooved  
130



yielding rolls K K', and endless bands or carriers M, in combination with the grooved husking-rolls O O T T, the upper husking-rolls T, provided with spirally-grooved faces, and arranged at right angles to the lower rollers, O O, and suitable gearing connecting with the gear-wheels H and P on the main shaft for operating the husking-rolls to give the corn a forward and also a lateral movement, substantially as described.

7. In a corn-harvester and husking apparatus, the mechanism set forth for cutting and feeding the corn to the aprons or carriers M, and the grooved husking-rollers K K', the

spirally-grooved husking-rolls T, arranged to run at right angles to the lower roller, O O, to give the corn a lateral as well as a forward movement, in combination with a frame, R, the roller Y, the belt or carrier U, a fan, and a suitable platform for receiving the husk, silk, &c., and suitable gearing connected with the main shaft to operate the parts, substantially as set forth.

KIRKE E. LATHROP.

Witnesses:

E. F. SULLIVAN,  
W. BURD.