

No. 636,025.

Patented Oct. 31, 1899.

J. DONOVAN.  
CORN SHELLER.

(Application filed July 9, 1898.)

(No Model.)

Fig. 1.

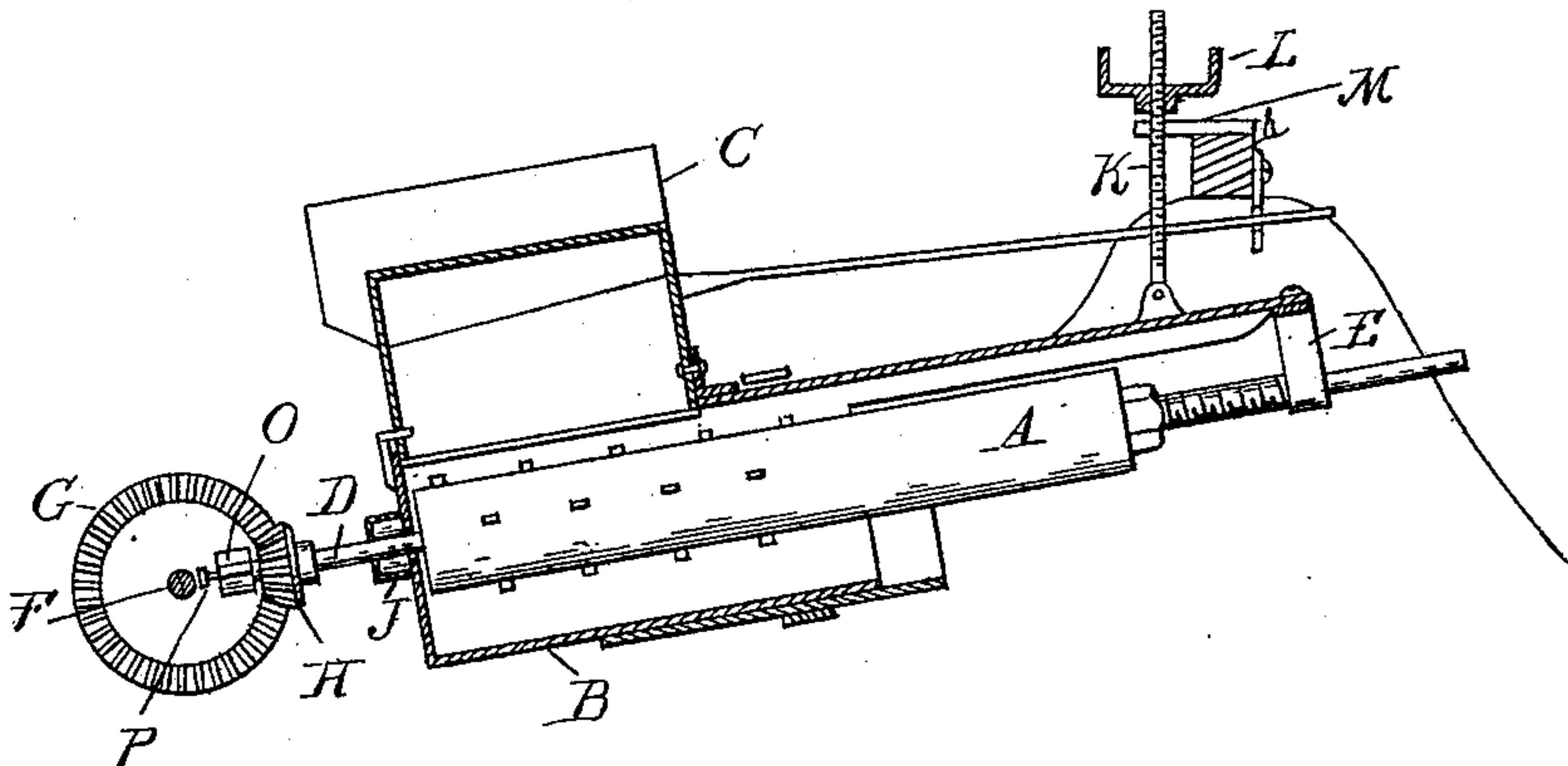


Fig. 2.

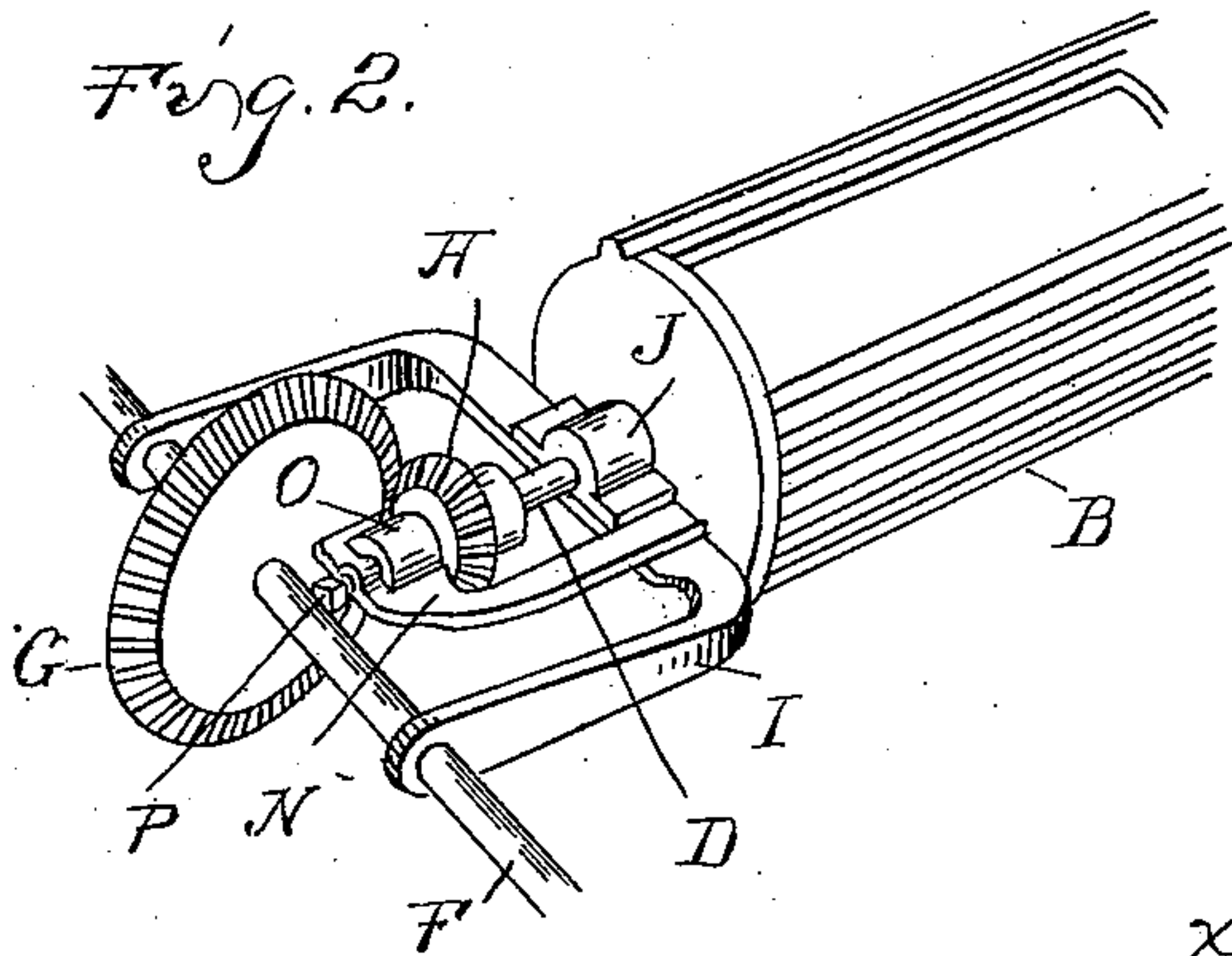


Fig. 3.

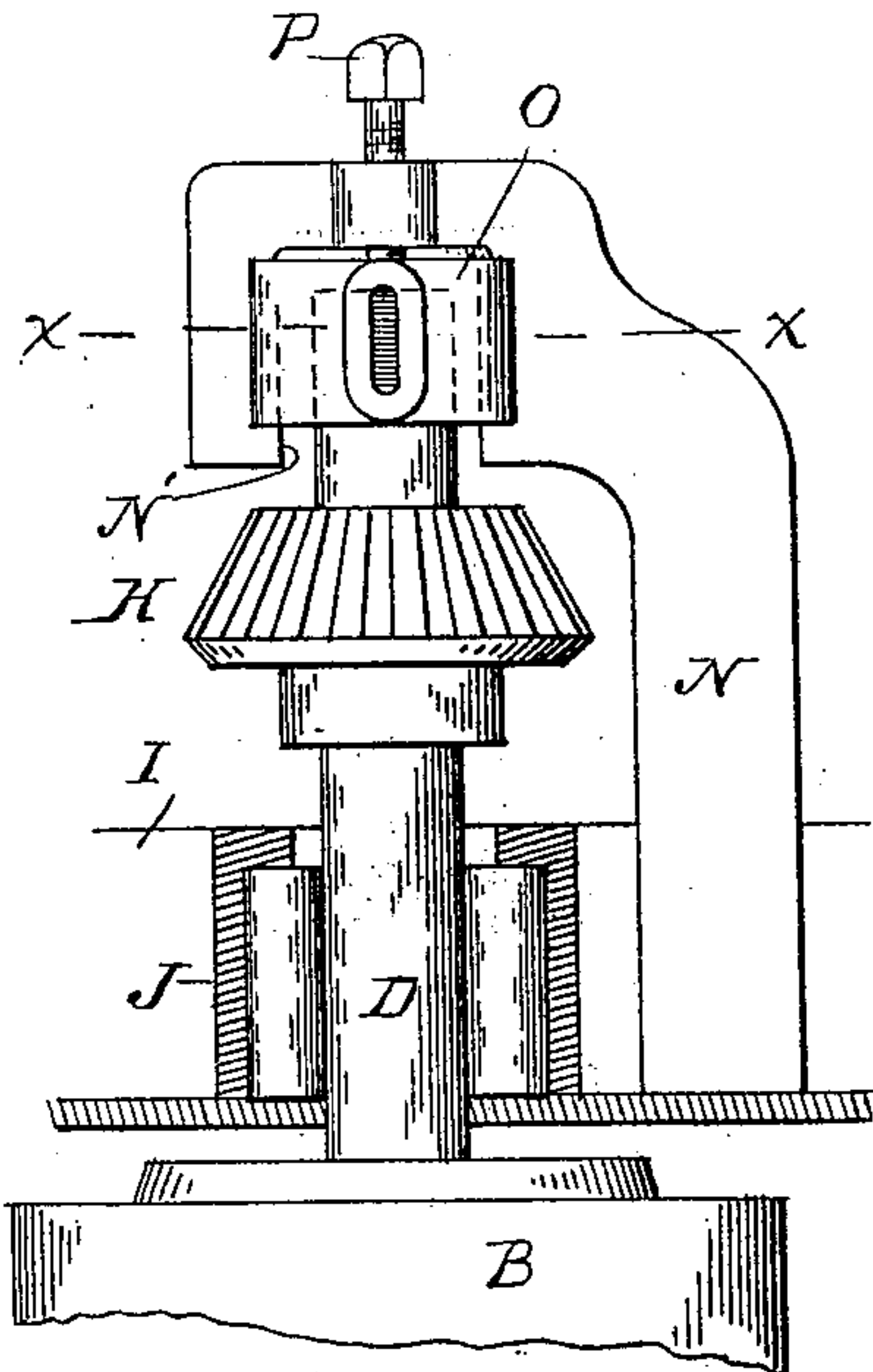
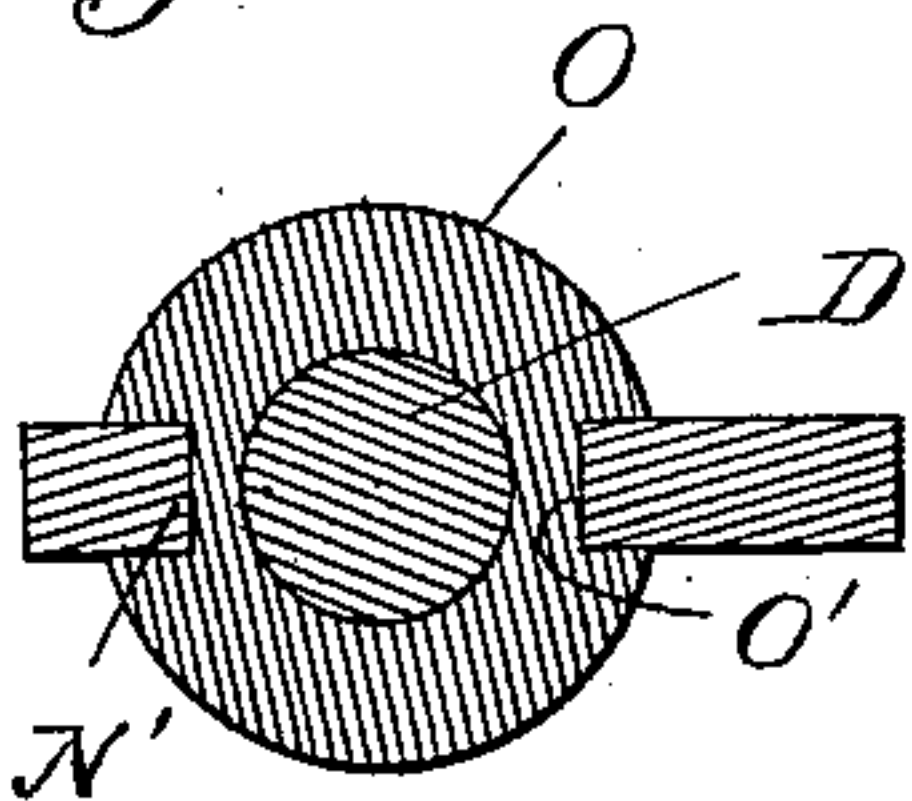


Fig. 4.



Witnesses  
*Otto F. Bunker*  
*Wm. J. O'Connell*

Inventor  
James Donovan  
By *Wm. J. O'Connell*,  
Attys.



# UNITED STATES PATENT OFFICE.

JAMES DONOVAN, OF THREE RIVERS, MICHIGAN, ASSIGNOR TO THE  
ROBERTS, THROP & COMPANY, OF SAME PLACE.

## CORN-SHELLER.

SPECIFICATION forming part of Letters Patent No. 636,025, dated October 31, 1899.

Application filed July 9, 1898. Serial No. 685,469. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES DONOVAN, a citizen of the United States, residing at Three Rivers, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Corn-Shellers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to corn-shellers of that class in which the shelling-cylinders, together with the surrounding casing therefor, are adjustable to different inclinations for the purpose of varying the shelling action.

More particularly, my invention is designed as an improvement in that type of corn-shellers shown in each of the United States patents to Roberts, No. 353,591, dated November 30, 1886, No. 353,885, dated December 7, 1886, and No. 354,239, dated December 14, 1886.

The invention consists in the peculiar construction of the bearings for the shaft of the shelling-cylinder and in the peculiar construction, arrangement, and combination of parts, as more fully hereinafter described and claimed.

In the drawings, Figure 1 is a longitudinal section through the shelling cylinder and casing. Fig. 2 is a perspective view of one end of the casing. Fig. 3 is a sectional plan of one end of the cylinder and the shaft, showing the journal-bearing therefor; and Fig. 4 is a cross-section on line *xx*, Fig. 3.

A is the shelling-cylinder.

B is the surrounding shelling-casing, which is provided with a feed-hopper C, and D is the shaft upon which the cylinder is mounted, which at one end is journaled in the bearing E, secured within the casing, the opposite end passing out through an aperture in the end of said casing.

F is a shaft extending across the end of the shaft D, at right angles thereto. G and H are intermeshing bevel gear-wheels connecting said shafts.

I is a bifurcated bracket secured to the casing B, the two arms of which are pivotally secured upon the shaft F on opposite sides of the gear-wheel G, and J is a bearing for the shaft D on the bracket I. K is a link for adjustably supporting the opposite end of the

casing B, said link being screw-threaded and provided with an adjustable nut L, engaging with a stationary bearing M on the frame.

The machine thus far described is constructed as shown in the prior patents above referred to, and in its operation motion is communicated from the shaft F to the shaft D, which rotates the cylinder within the casing and shells the corn fed into said casing from the hopper C. It has been found, however, in practical operation of this machine that a great deal of power is lost through friction caused by the end thrust of the cylinder against the casing. This end thrust is due to the inclined position of the cylinder within the casing, and as the bearing for resisting it is some distance from the center of the shaft and being inside the casing it is exposed to the dust from the shelling the frictional resistance is considerable. To overcome this difficulty, I have devised the construction shown in the drawings, in which N is an arm secured to the bracket I, which extends out to one side of the bevel gear-wheel H and at its end is provided with a lateral offset portion conveying the thrust-bearing for the end of the shaft D. This thrust-bearing is preferably formed of a cup O, fitting over the end of the shaft and provided with grooves O', slidably engaging with ribs N' on the offset portion of the arm N. P is a set-screw engaging with the arm N and bearing against the end of the cup O. With this arrangement the cup O may be adjusted by the set-screw P so as to relieve all pressure of the cylinder A against the end of the casing, and as the bearing is near the center of the shaft and free from dust the friction is greatly reduced. To further reduce the friction, I preferably employ a roller-bearing for the bearing J instead of the parallel bearings used in the earlier constructions.

What I claim as my invention is—

1. The combination with the shelling-casing, the shelling-cylinder therein, and the shaft for said cylinder passing out through the end of said casing, of the transverse shaft F having a bevel-gear connection to said cylinder-shaft, the bifurcated bracket I on said casing pivoted to said shaft F, the arm N on said bracket extending out between the bifur-

cations thereof and provided with a lateral offset at its free end, and an adjustable thrust-bearing O for the end of the cylinder-shaft carried by said offset portion of the arm N.

- 5 2. The combination with the shelling-casing, the shelling-cylinder thereon and the shaft for said cylinder passing through the end of said casing, the transverse shaft F having a bevel-gear connection to said cylinder-shaft, and the bracket I on said casing  
10 pivotally secured to said shaft F, of the arm

N on said bracket, the thrust-bearing O adjustably secured to the end of said arm, and the roller-bearing J on the bracket for the purpose described. 15

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

JAMES DONOVAN.

Witnesses:

CHARLES LINN,  
S. HORACE ROBERTS.