

(No Model.)

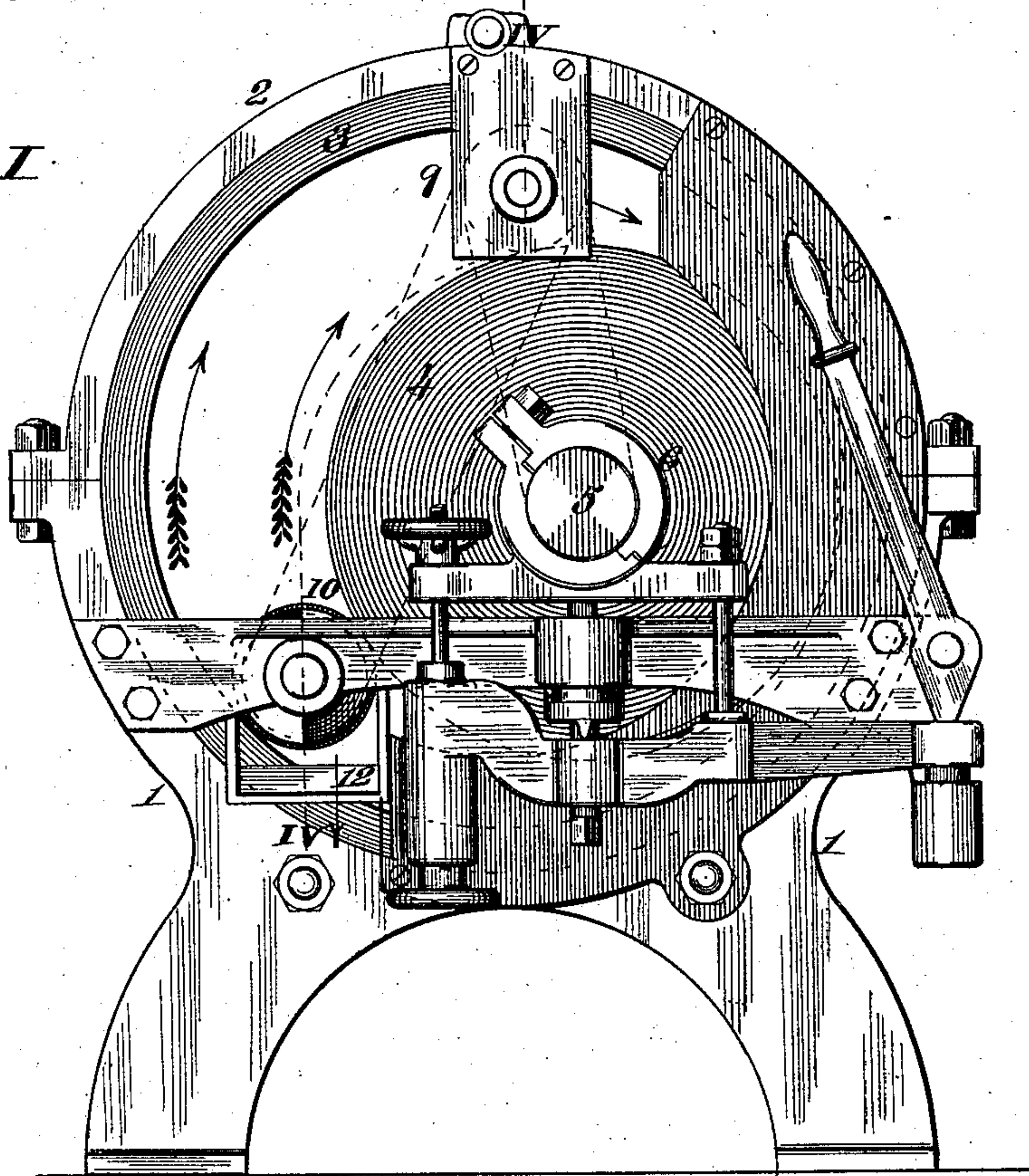
2 Sheets—Sheet. 1.

N. CORNELIUS.  
ROLLER FLOUR MILL.

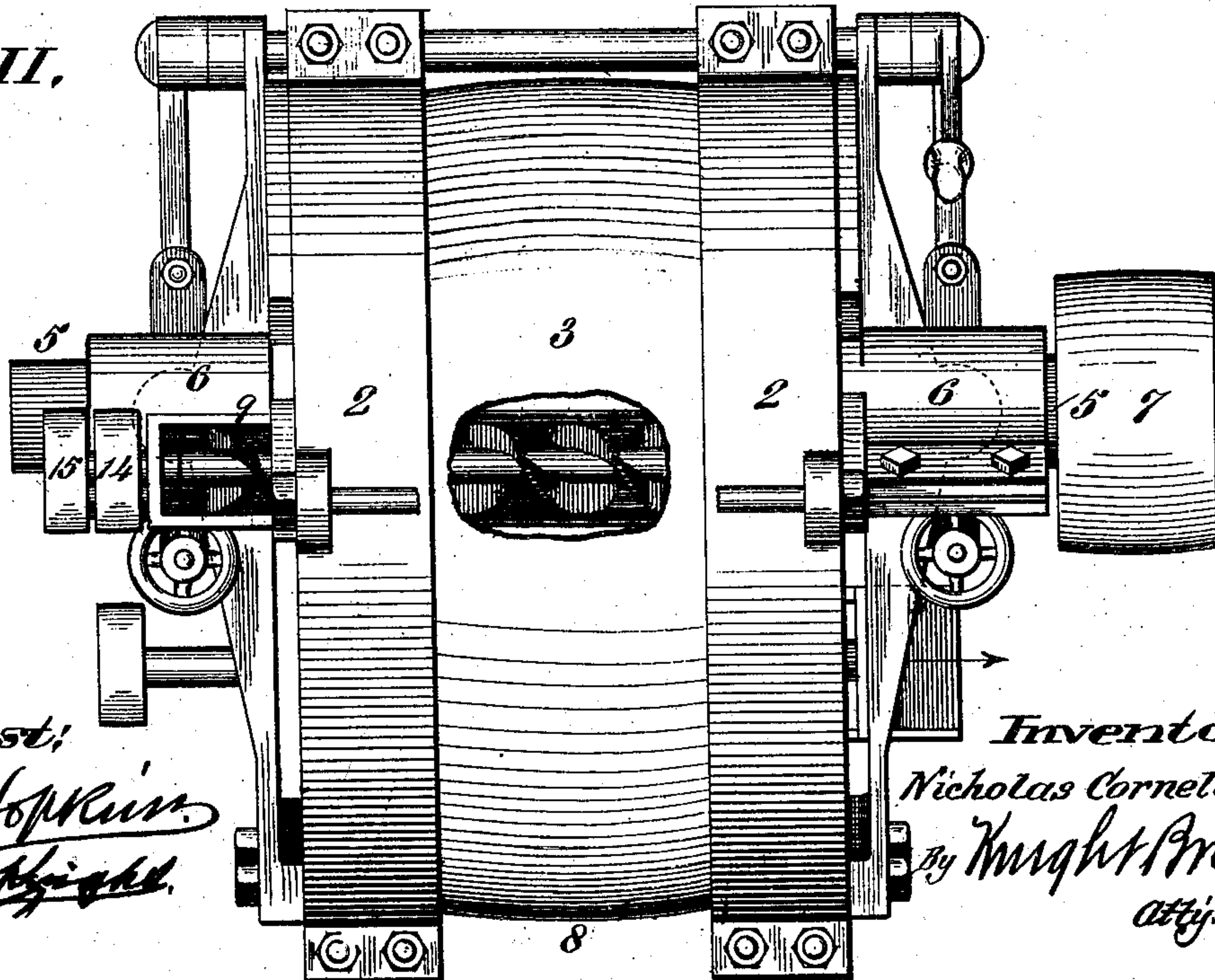
No. 373,342.

Patented Nov. 15, 1887.

*Fig. I.*



*Fig. II.*



Attest:

*F. H. Hopkin.*  
*H. B. Knight.*

Inventor:

*Nicholas Cornelius*  
*By Knight & Pro.*  
*Attys*



(No Model.)

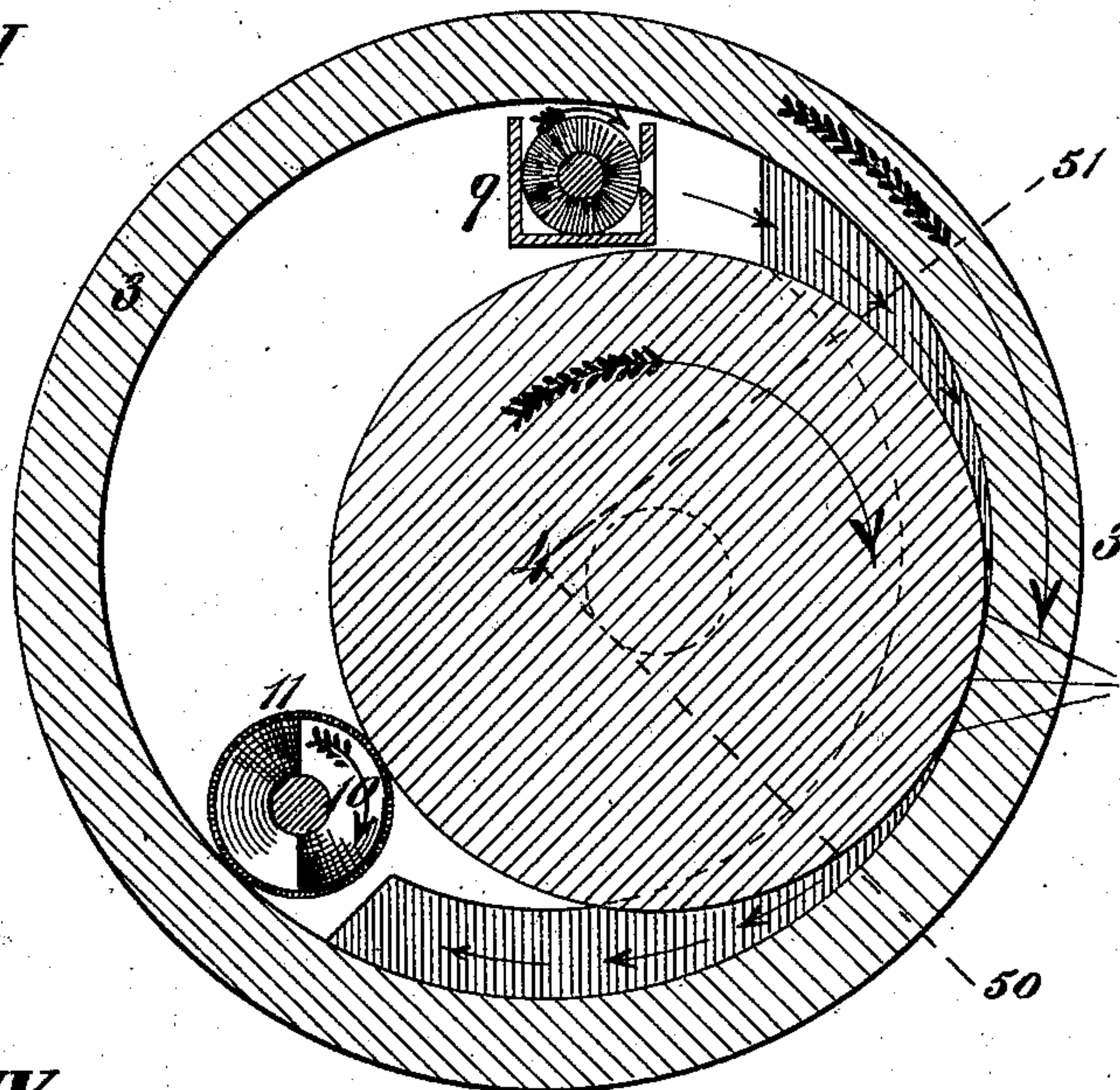
2 Sheets—Sheet 2.

N. CORNELIUS.  
ROLLER FLOUR MILL.

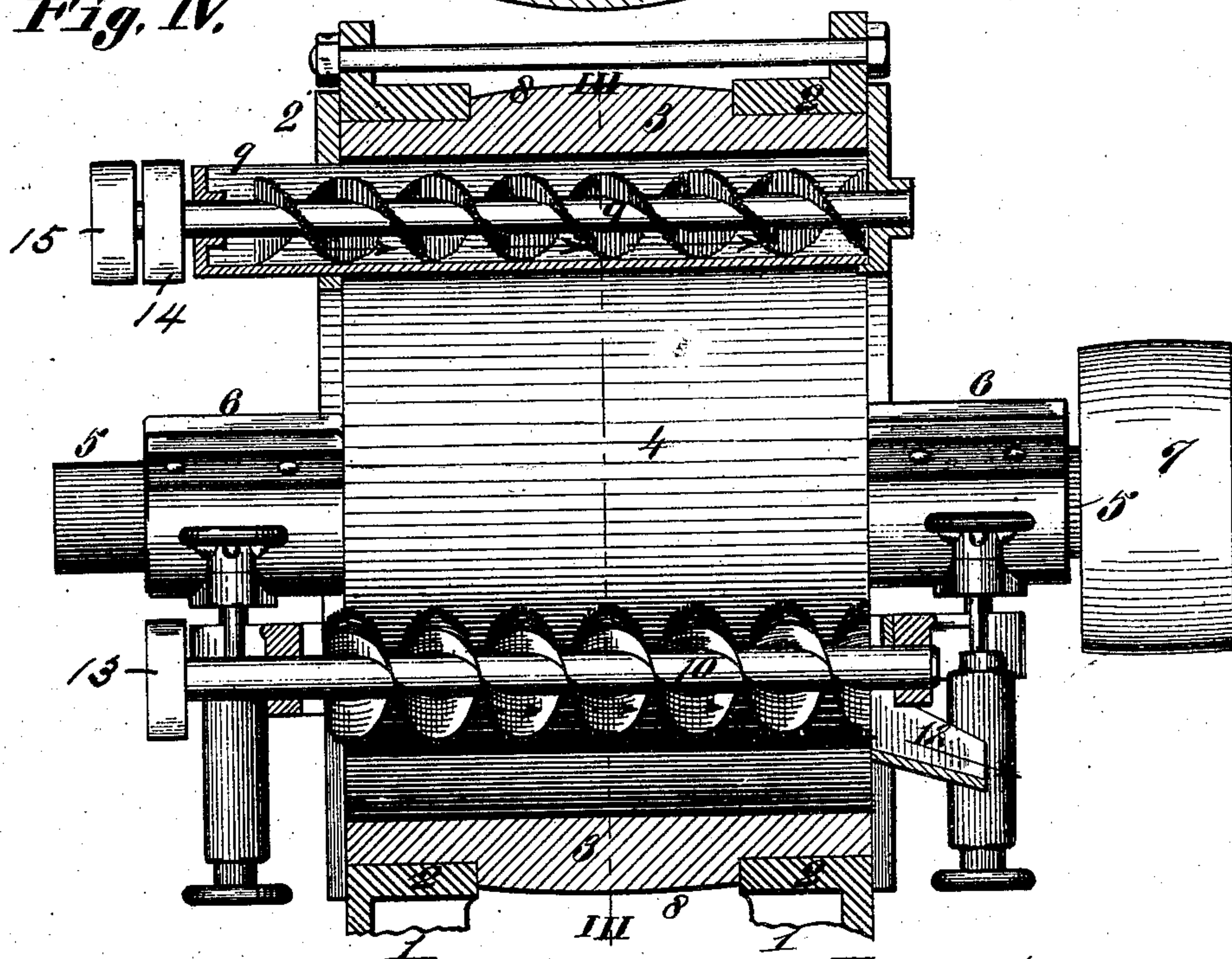
No. 373,342.

Patented Nov. 15, 1887.

*Fig. III*



*Fig. IV*



Attest;

*F. A. Hopkin*  
*H. B. Knight*

Inventor;

*Nicholas Cornelius*  
*by Knight Bro*

*attys*



# UNITED STATES PATENT OFFICE.

NICHOLAS CORNELIUS, OF ST. LOUIS, MISSOURI, ASSIGNOR OF TWO-THIRDS  
TO HENRY STANLEY AND EMIL C. TEUSCHER, BOTH OF SAME PLACE.

## ROLLER FLOUR-MILL.

SPECIFICATION forming part of Letters Patent No. 373,342, dated November 15, 1887.

Application filed November 30, 1886. Serial No. 220,285. (No model.)

*To all whom it may concern:*

Be it known that I, NICHOLAS CORNELIUS, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Roller Flour-Mills, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

10 Figure I is an end view of my improved mill. Fig. II is a top or plan view of the same with a part broken away. Fig. III is a vertical transverse section of the cylinder, roller, feeder, and conveyer, taken on line III III, Fig. IV. 15 Fig. IV is a vertical longitudinal section taken on line IV IV, Fig. I.

My invention relates to certain improvements in that class of roller flour-mills having a cylinder within which is located a roller, a 20 feeder for discharging the material to be ground, and a conveyer for removing the material from the cylinder; and my invention consists in features of novelty, hereinafter fully described, and pointed out in the claims.

25 Referring to the drawings, 1 represents the frame of the mill, supporting in housings 2 a cylinder or hollow roller, 3, within which is a grinding and crushing roller, 4, smaller than the interior of the cylinder, as shown. The 30 interior surface of the cylinder and the exterior surface of the roller are suitably dressed, and the material to be operated upon is discharged within the cylinder above the roller. The roller is placed in such close proximity to 35 one side of the cylinder, as shown in Fig. III, that the material passing downwardly, as indicated by the arrows in Fig. III, will be ground and crushed between the two parts. The roller has gudgeons 5, journaled in boxes 40 6, supported by the frame 1 and housings 2, and one of the gudgeons is preferably provided with a pulley, 7, to receive a driving-belt. (Not shown.) The outer surface of the cylinder is made slightly convex at 8 between 45 the housings to receive a belt (not shown) to retard the movement of the cylinder, which is propelled by the friction between it and the roller. The two parts are thus made to revolve at different speeds, so as to get the grinding as well as the crushing action on the wheat, 50 as with the ordinary rollers.

The boxes of the roller are supported in a suitable mechanism by which the roller may be adjusted to and from the grinding-surface of the cylinder.

I have shown in the drawings one well-known 55 form of device for adjusting one of the rollers of an ordinary mill, and as this form of device is well known and forms no part of my invention in itself, and as any other suitable form 60 of device for this purpose could be used, it will not be necessary to enter into a full description of this mechanism.

9 represents a feeder of any suitable form for discharging the grain above the roller and 65 within the cylinder.

10 represents a conveyer for discharging the ground material from the mill, it having brushes 11 on the edges of its flights that rub 70 both the cylinder and roller, gathering the material therefrom, which falls into the conveyer and is carried out and delivered through a suitable spout, 12. The conveyer may be driven by a belt (see dotted lines, Fig. I) passing over a pulley, 13, thereon, and a pulley, 75 14, on the shaft of the feeder, and the feeder may be driven by a belt passing over a pulley, 15, thereon and around one of the gudgeons of the roller 4. These pulleys are shown in Fig. II.

80 The grain or other material, after passing between the roller and cylinder, is carried forward by the cylinder and roller until it comes in contact with the conveyer or discharge, which is preferably provided with a brush, as 85 stated, that keeps the surfaces of the same clean, and the conveyer-flights carry the ground material to the delivery spout of the machine.

The roll is so situated within the cylinder 90 that the bite or point nearest contact is on or near a line drawn horizontally through the axis of said roll, or, in other words, so that the bite will be between two lines, 50 and 51, drawn radially from the axis of the cylinder 95 and at right angles to each other, one of said lines, 50, being below and the other, 51, above a horizontal line drawn through the axis of said cylinder, with which horizontal line the lines 50 and 51 form equal angles, the object of 100 thus situating the parts being to provide for a location of the feeder above the cylinder and



for a location of the discharge or conveyer so nearly beneath the roller as that there will be no difficulty in the material being discharged into the conveyer and to avoid any danger of clogging the machine.

I am aware that concave stationary shoes adjustable to the periphery of the rolls for the reduction of grain or other material are old; but it has been found that this method was entirely too harsh as a reducing operation, there being a total absence of crushing action, which rendered them unfit for this purpose, as the excessive grinding action pulverizes the hull of the grain.

I am also aware that it is old to locate a crushing and grinding roller within a cylinder, and to locate within such cylinder a feeder and discharge, the nearest point of contact between the roller and cylinder being at the bottom, such a device being shown in the patent to C. S. Wenger, issued October 5, 1880. I, therefore, do not broadly claim a combination of the

hollow cylinder, roller, and discharge when the roller, feeder, and discharge are located within the cylinder; but

What I do claim, and desire to secure by Letters Patent, is—

1. In a roller flour-mill, the combination of the cylinder, roller within the cylinder, and brush-edged conveyer located within the cylinder and brushing both the roller and cylinder, substantially as set forth.

2. In a roller flour-mill, the combination of the cylinder, roller located within the cylinder, feeder located within the cylinder above the roller, and a brush-edged spiral conveyer located within the cylinder beneath the roller and brushing both the roller and cylinder, substantially as and for the purpose set forth.

NICHOLAS CORNELIUS.

In presence of—

GEO. H. KNIGHT,  
EDW. S. KNIGHT.