

No. 748,536.

PATENTED DEC. 29, 1903.

A. SCHOELLHORN & H. S. ALBRECHT.
PULVERIZER.

APPLICATION FILED DEC. 17, 1900.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. I.

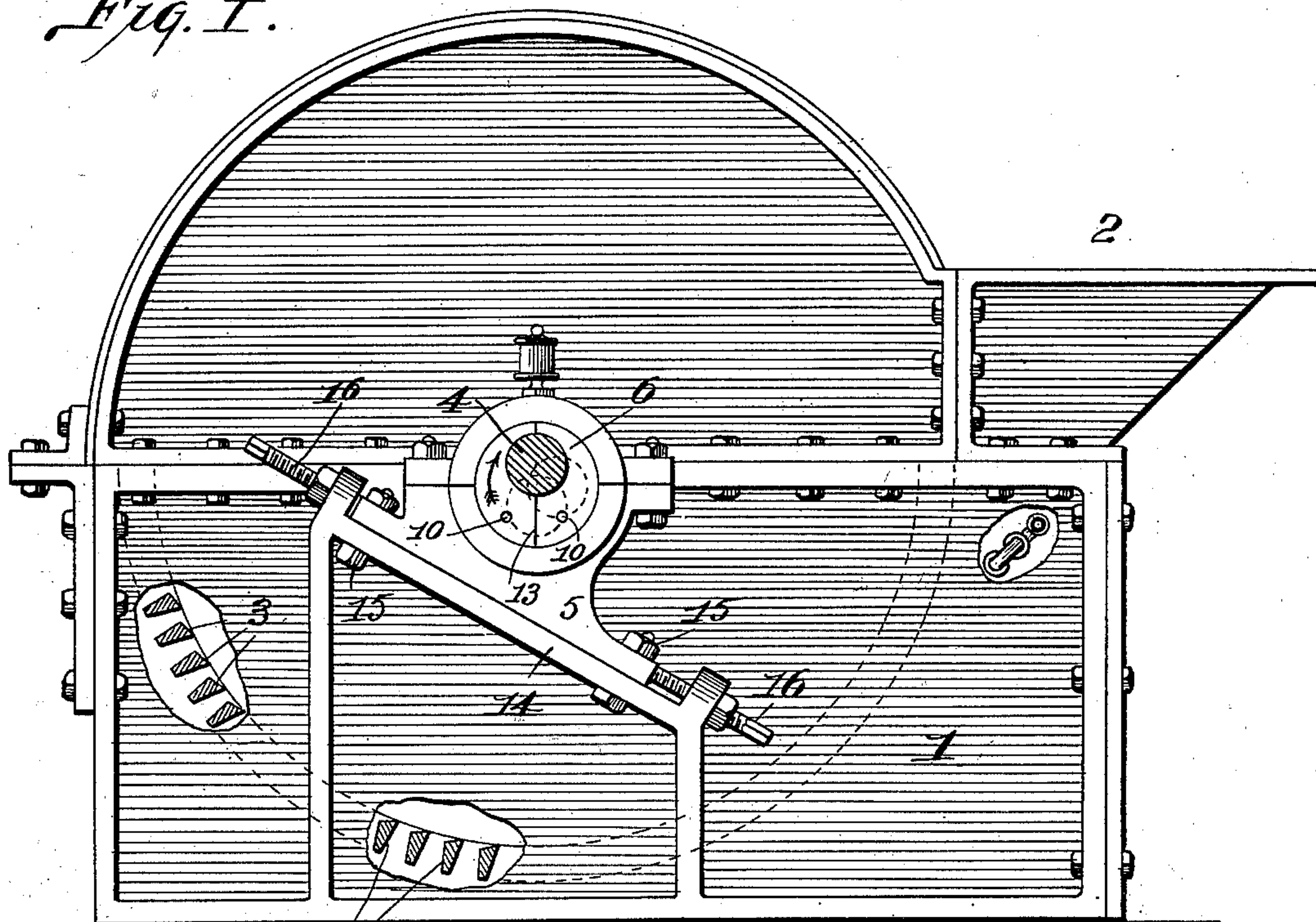
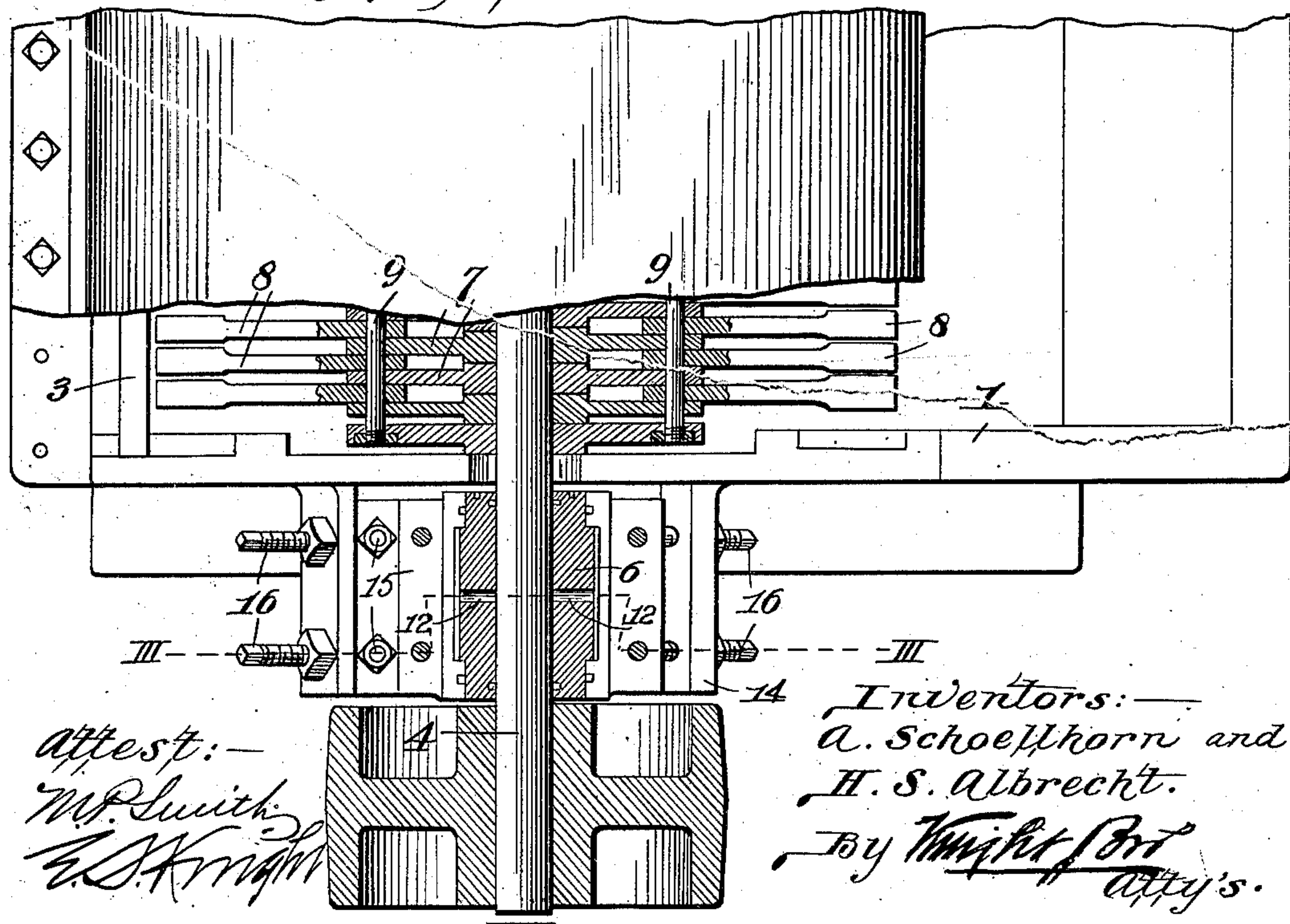


Fig. II.



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No. 748,536.

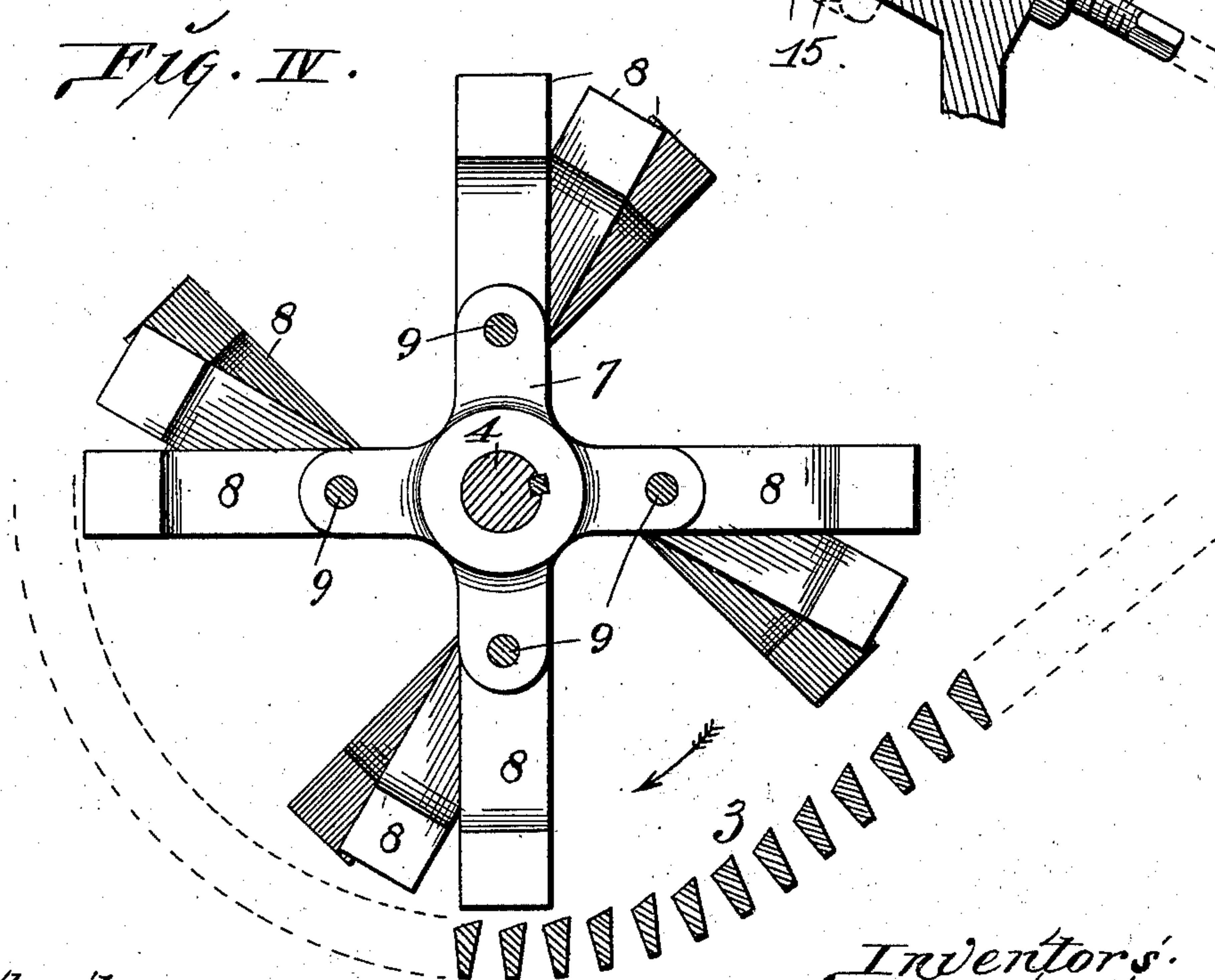
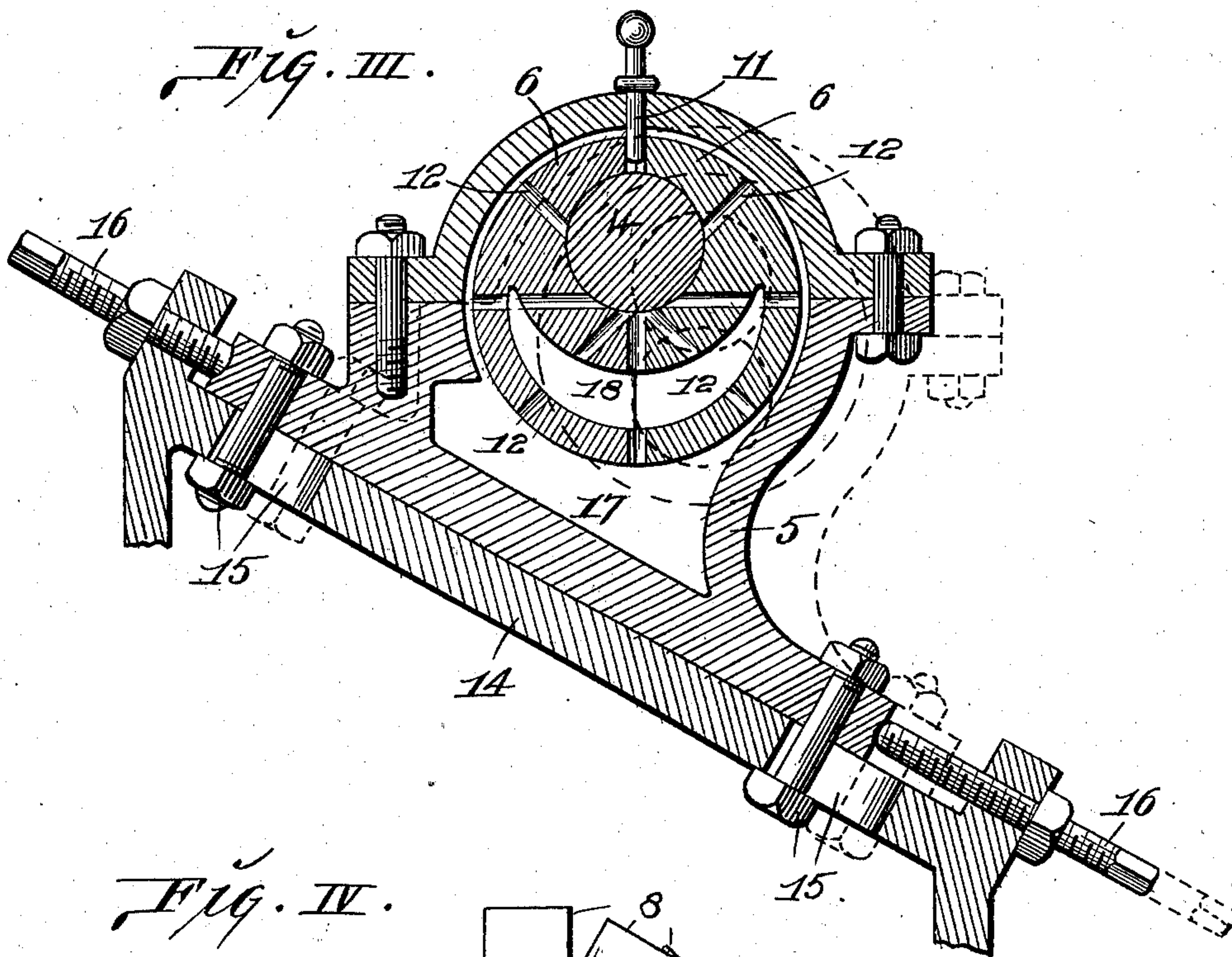
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. VI.

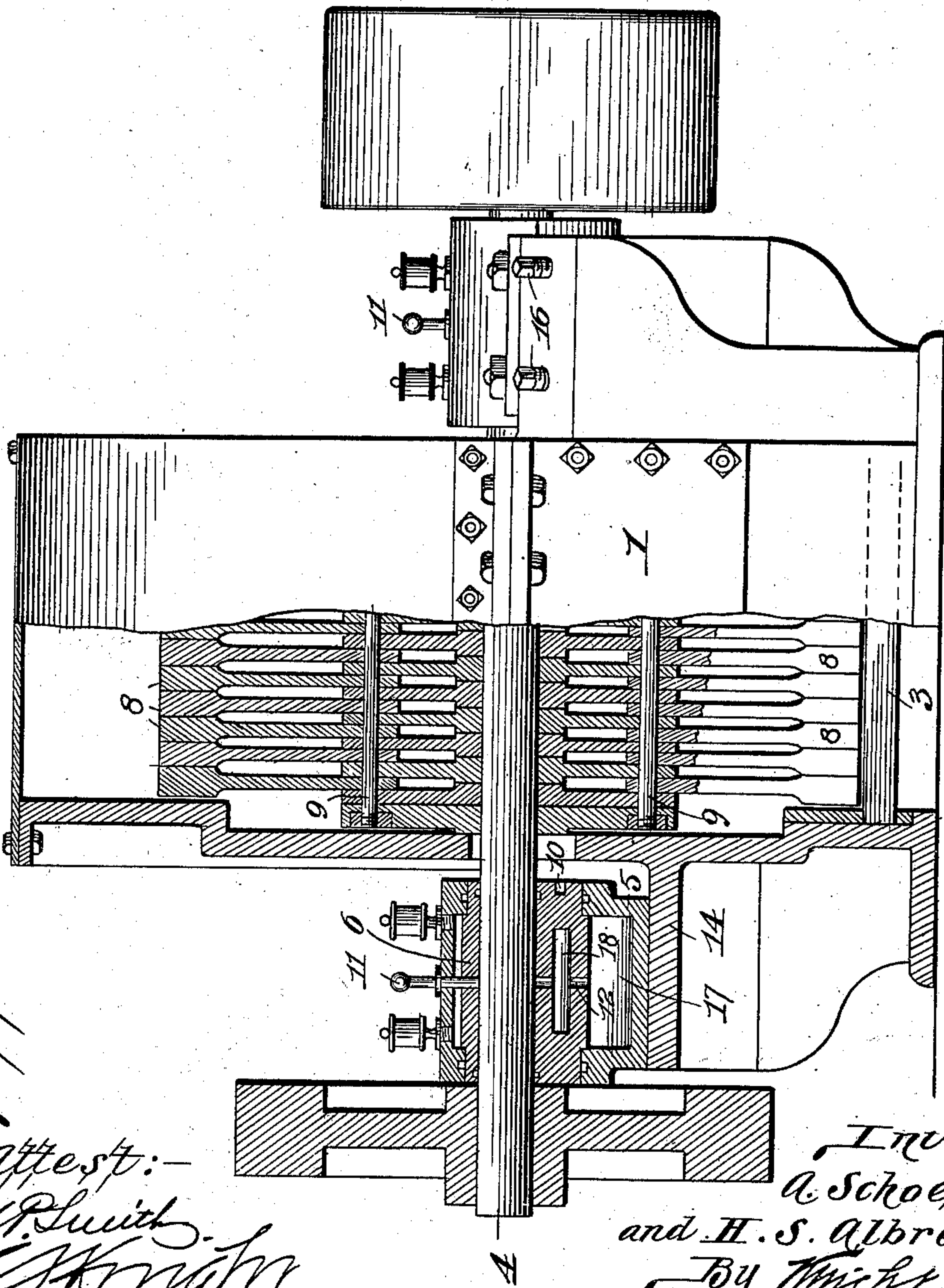
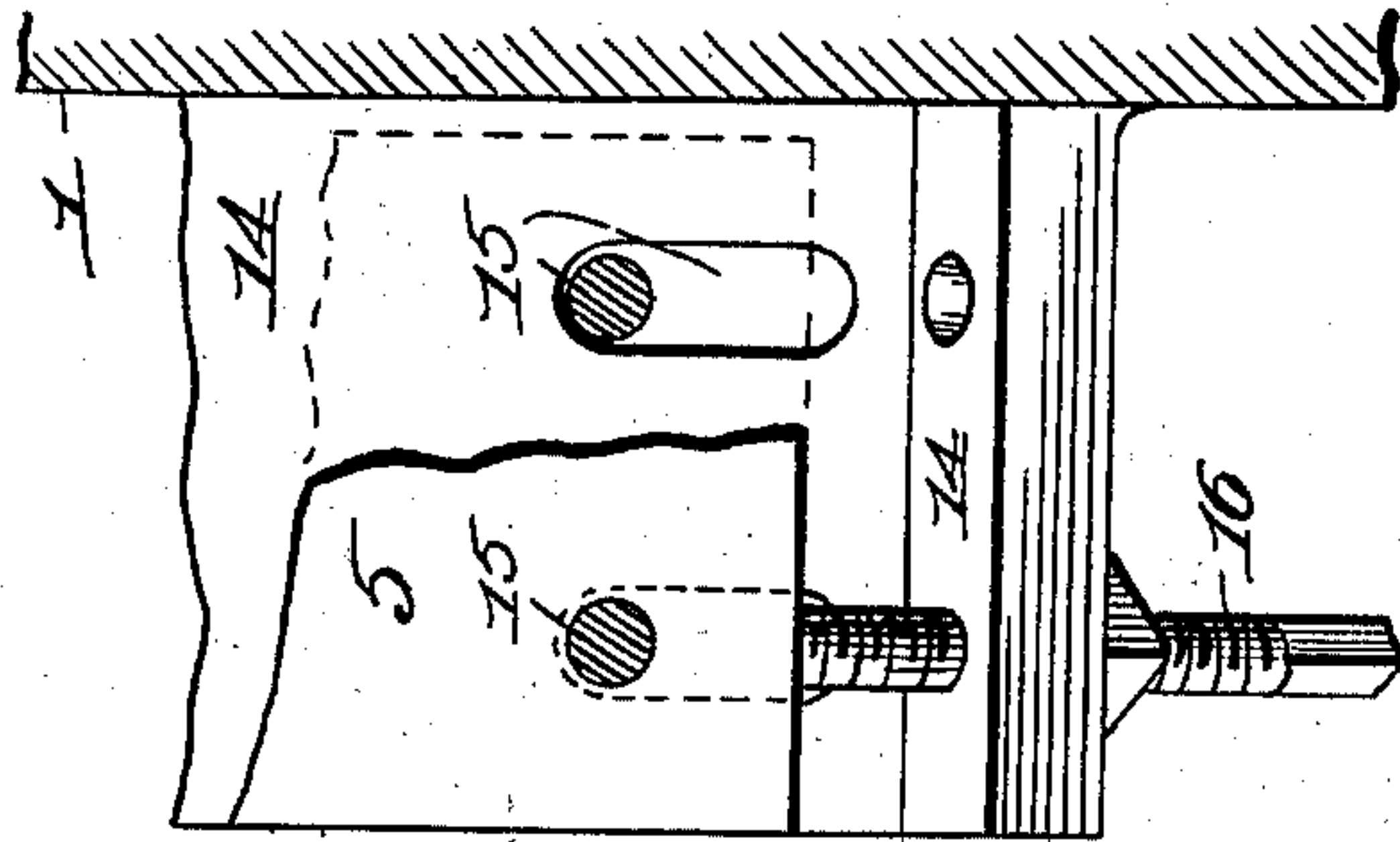


Fig. V.

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UNITED STATES PATENT OFFICE.

AUGUST SCHOELLHORN AND HERMAN S. ALBRECHT, OF ST. LOUIS,
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PULVERIZER.

SPECIFICATION forming part of Letters Patent No. 748,536, dated December 29, 1903.

Application filed December 17, 1900. Serial No. 40,126. (No model.)

To all whom it may concern:

Be it known that we, AUGUST SCHOELLHORN and HERMAN S. ALBRECHT, citizens of the United States, residing in the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Pulverizers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Our invention relates to certain improvements in machines for pulverizing or grinding various material, such as clay, shale, asphaltum, &c.

The invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a side view of our improved machine with part of the wall of the casing or housing broken away. Fig. II is a detail view, part in plan and part in horizontal section. Fig. III is an enlarged vertical section taken on line III III, Fig. II. Fig. IV is a vertical sectional view showing the hammers and their supporting-spiders and shaft and showing also part of the cage or screen through which the material passes as it is pulverized or broken up. Fig. V is a view part in elevation and part in vertical section. Fig. VI is a detail top view.

In machines of this class the ends of the hammers that do the pulverizing wear rapidly away from the cage or screen, and as they so wear away the machine becomes less and less efficient until the hammers are replaced by new ones. To provide a means for compensating for this wear is one of the objects of our invention, and with this object in view we so construct the machine that the hammers, with their carrying-shaft, can be adjusted toward the cage or screen as the ends of the hammers become worn away.

Referring to the drawings, 1 represents the casing or housing of the machine provided, as usual, with a feed-hopper 2, as in the patent of Herman S. Albrecht, No. 604,283, dated May 17, 1898.

3 represents the cage or screen of the machine corresponding to the screen 9 of said patent, but differing therefrom, as hereinafter particularly pointed out.

4 represents a horizontal shaft extending through the housing and supported by journal-boxes 5, eccentric disks or blocks 6 being interposed between the shaft and the boxes, as shown in the drawings. Secured to the shaft within the housing are a series of spiders 7, which are secured to the shaft, so as to revolve therewith.

8 represents hammers or bars fitted between the ends of the spiders and pivotally connected thereto by means of rods 9. As the shaft is revolved the hammers act to grind or pulverize the material until it is fine enough to pass through the cage or screen 3.

In order to efficiently do their work, the hammers should always be kept close up to the advanced or front portions of the cage, as stated, and to accomplish this we employ the eccentrics 6, so that as the hammers become worn away the eccentrics can be turned in the direction of the arrow, Fig. I, which will cause the shaft, with its hammers, to be moved downwardly and forwardly toward the lower front corner of the machine, and thus the wear on the ends of the hammers can be easily and readily taken up and compensated for. To thus turn the eccentrics we provide them with holes 10 to receive a suitable fork or key, and to hold the eccentrics to their adjustment we employ a pin 11 for each eccentric, which passes down through the top of the journal-box and enters holes 12, formed in the eccentrics a short distance apart. We prefer to divide each eccentric centrally, as shown by the line 13, Fig. I, the two parts being held closely together when placed in position and when the bolts of the journal-boxes are tightened up.

To provide for a greater adjustment of the hammers toward the cage than can be effected by the turning of the eccentrics, we mount the journal-boxes on benches or ledges 14, located outside of the casing or housing of the machine, the boxes having a bolt-and-slot connection 15 with the benches and being adjusted thereon when the bolts 15 are loosened up by means of set-screws 16. We prefer to arrange the benches in an inclined position, as shown in Fig. I, although they may be arranged horizontally. By arranging them in an inclined position the shifting of the boxes on the benches moves the hammers toward

the lower front corner of the machine in the same manner as they are thus moved by the turning of the eccentrics. By this arrangement it will be observed that the hammers can
 5 always be kept set up close to the cage and the work can be done by any inexperienced person without deranging any of the parts of the machine and at the expense of very little time and labor.

10 We prefer to form the journal-boxes with oil-receptacles 17, as in the Albrecht patent, No. 537,172, dated April 9, 1895, and we likewise provide the eccentrics with oil-chambers 18. The oil can pass by capillary attraction
 15 from the chambers 17 and 18 through the perforations or holes 12 to the shaft for lubricating the bearings between the shaft and the eccentrics.

In pulverizers for grinding certain materials it is desirable to have a shearing or cutting action, and to accomplish this without adding perceptibly to the cost of the machine we bevel off the upper faces of the bars that form the cage or screen 3, as shown in Fig.
 25 IV, so that the forward upper corners of the bars become cutting or shearing edges for the material as it is acted upon by the hammers.

In a former patent granted to us, No.
 30 681,984, dated September 3, 1901, we show a journal-box mounted on two movable wedges, the moving of which causes the hammer-sup-

porting shaft to move only in a vertical direction.

We claim as our invention—

1. In a pulverizer, the combination of the 35
 casing or housing, a cage within the housing, inclined benches upon the outside of the casing or housing held in an immovable relation to the cage and provided with longitudinal slots near each end, upwardly-extending flanges at each end of the benches, journal-boxes slidable on the inclined benches between the upwardly-extending flanges, a hammer-supporting shaft carried by the 40
 journal-boxes, adjustable bolts carried by the hammer-supporting shaft and extending through the slots in the inclined benches, and a set-screw mounted in each flange for adjusting the journal-boxes. 45

2. In a pulverizer, the combination of a housing or casing, a cage within the housing, inclined benches upon the outside of the housing or casing held in an immovable relation to the cage, journal-boxes slidable upon the 50
 inclined benches, a hammer-supporting shaft, and eccentrics located between the boxes and the shaft. 55

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In presence of—

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 N. V. ALEXANDER.