

No. 744,381.

PATENTED NOV. 17, 1903.

H. MOOR.
PULVERIZER.

APPLICATION FILED NOV. 3, 1902.

NO MODEL.

Fig 1

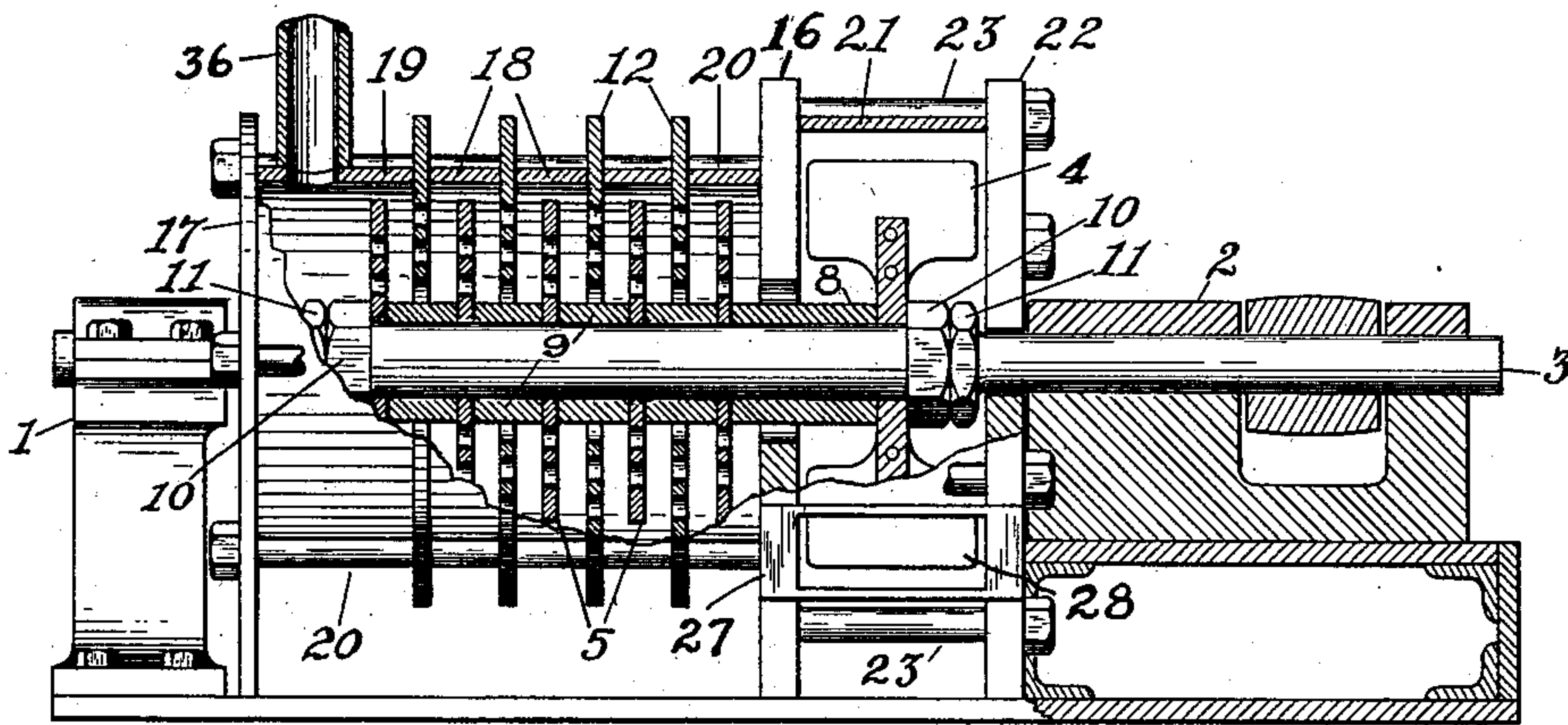


Fig 2

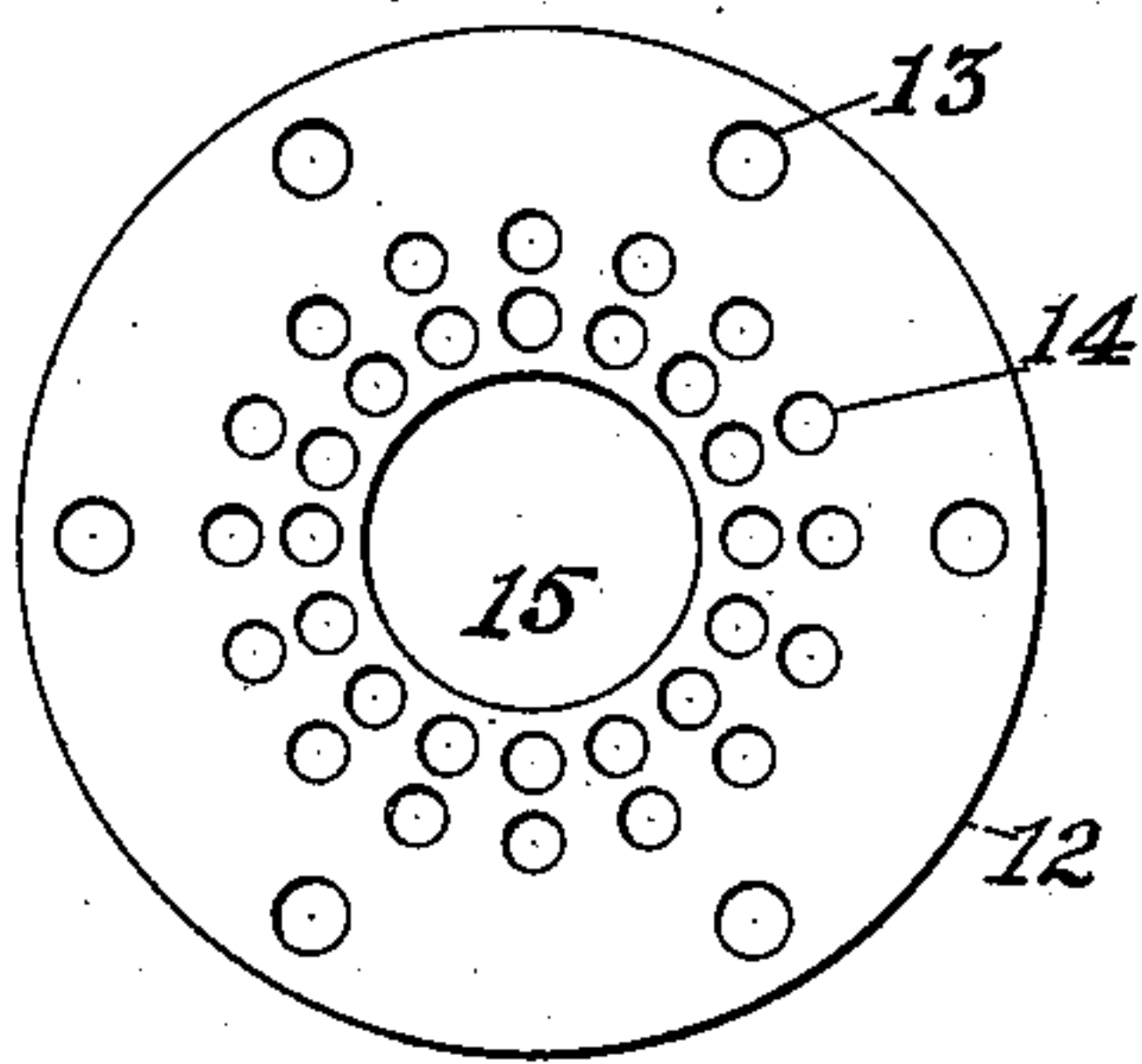


Fig 3

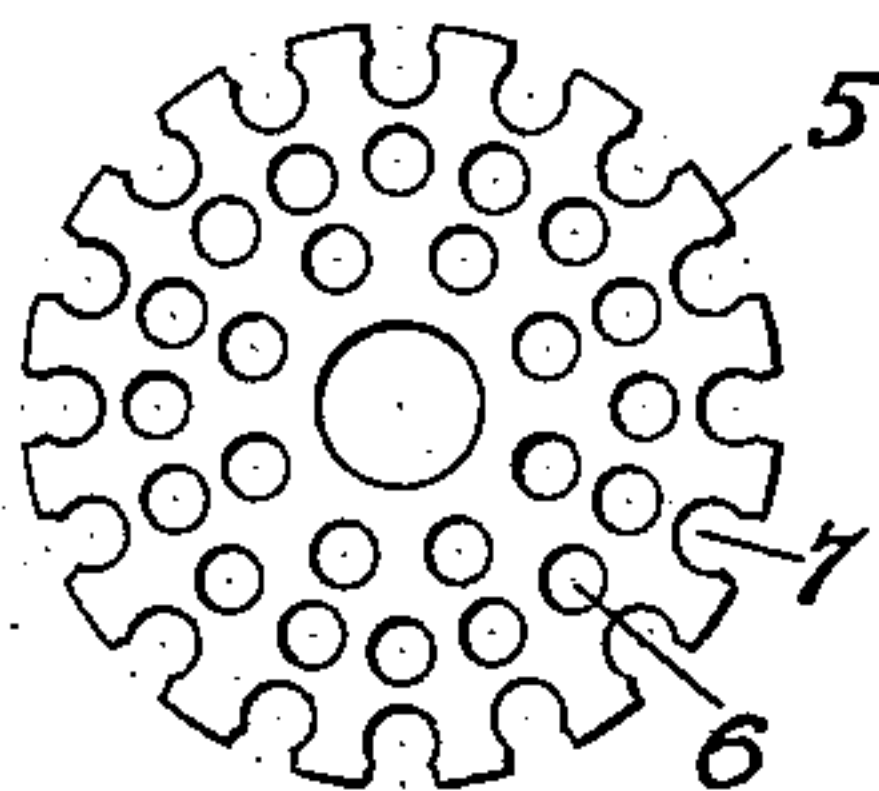


Fig 4

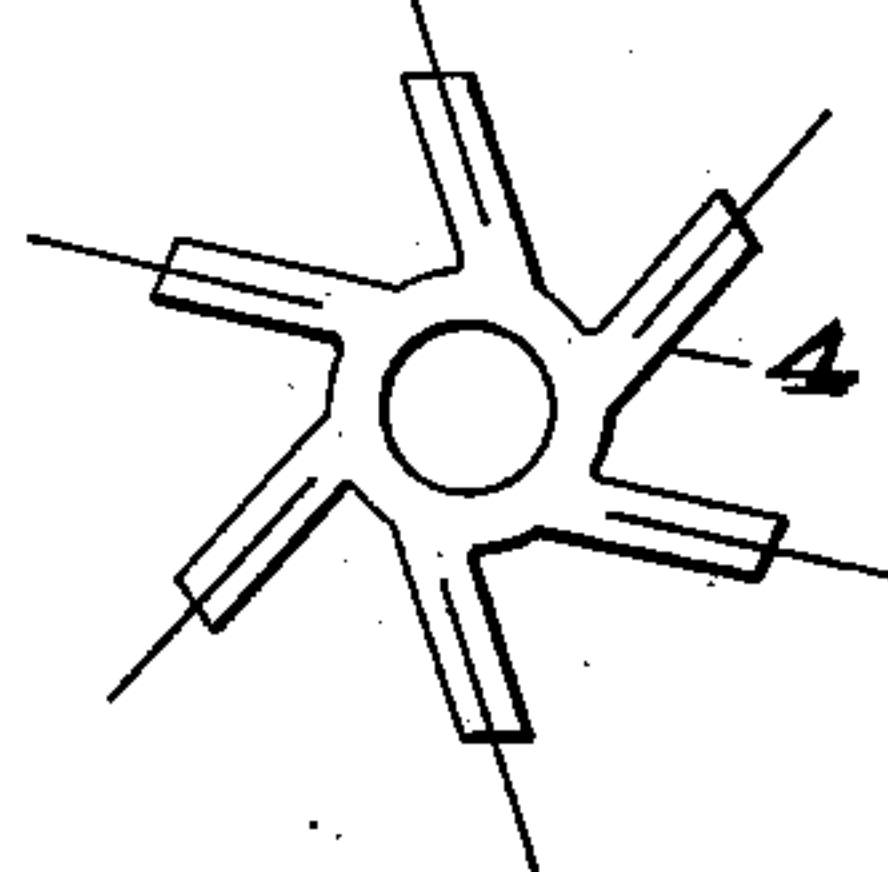


Fig 6

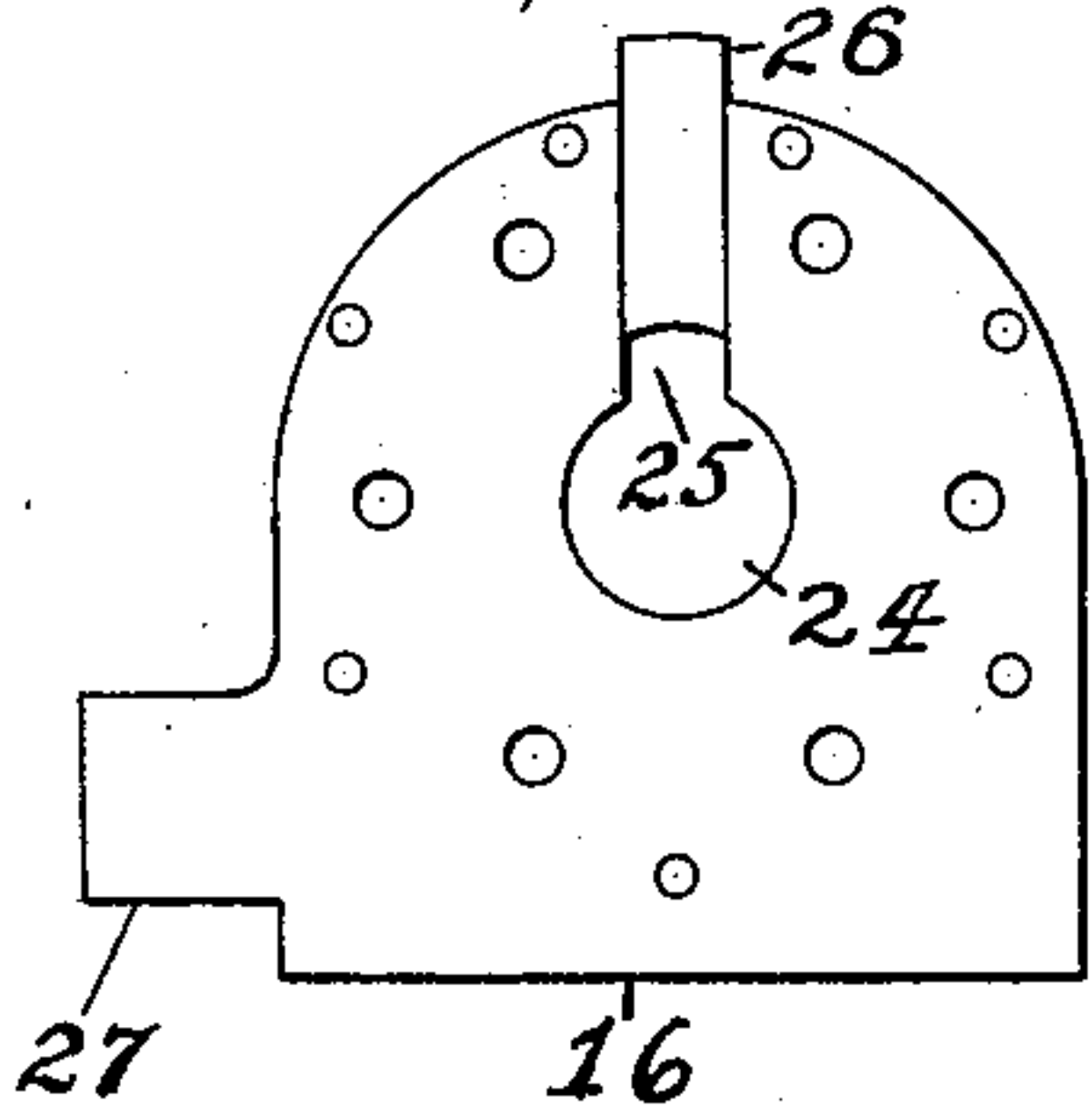


Fig 5

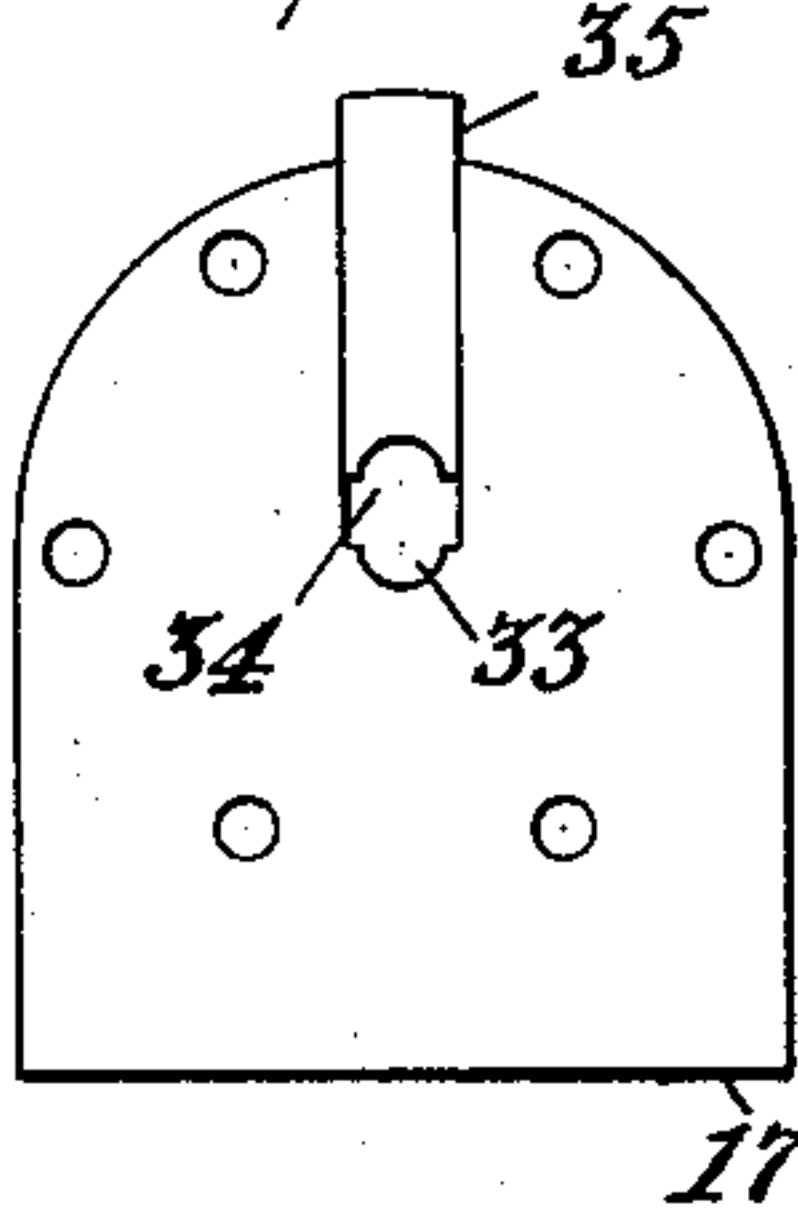
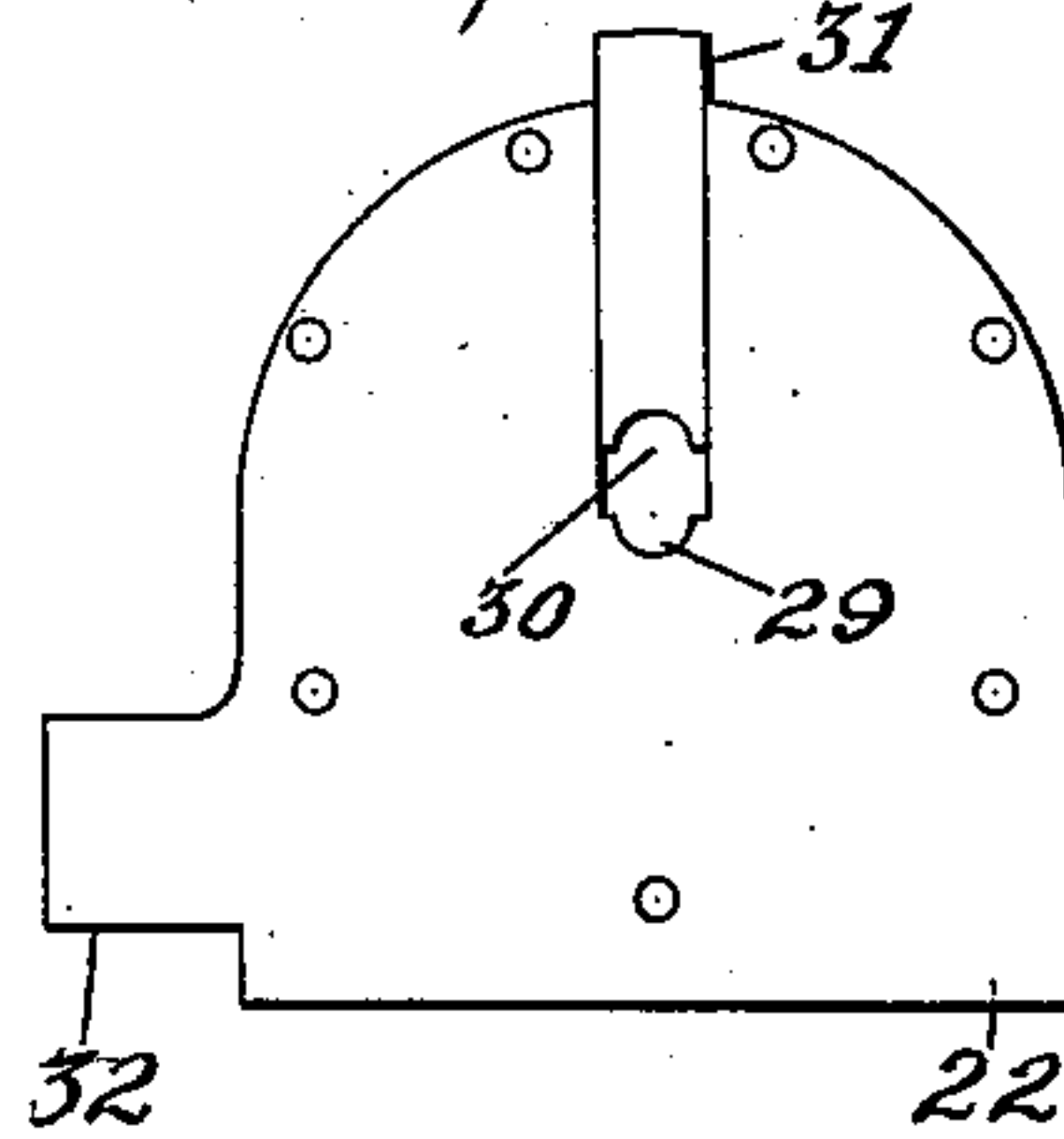


Fig 7



Witnesses
Wiley E. Crane Jr.
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UNITED STATES PATENT OFFICE.

HARRY MOOR, OF ROXBORO, PENNSYLVANIA.

PULVERIZER.

SPECIFICATION forming part of Letters Patent No. 744,381, dated November 17, 1903.

Application filed November 3, 1902. Serial No. 129,860. (No model.)

To all whom it may concern:

Be it known that I, HARRY MOOR, residing at Roxboro, in the county of Philadelphia and State of Pennsylvania, have invented certain Improvements in Pulverizers, of which the following is a specification.

This invention relates to mechanism for disintegrating and pulverizing solid materials, having reference in part to the subject-matter disclosed in my contemporaneously-pending application, Serial No. 129,861. It is particularly designed to provide improved means for reducing coal to a uniformly-pulverized and highly-comminuted state, rendering it most efficient as a fuel.

An object of the invention is to provide a construction of simple parts readily assembled or separated and easily replaced without material inconvenience or expense.

The nature and characteristic features of the improvements will more fully appear by reference to the following description and the accompanying drawings in illustration thereof, of which—

Figure 1 represents a sectional elevation of a pulverizer embodying the invention. Fig. 2 is a view of the division plate or disk. Fig. 3 is a view of the crusher-disk. Fig. 4 is a view of the fan. Fig. 5 illustrates a construction of the plate for closing the inlet end of the pulverizer. Fig. 6 illustrates the construction of the plate between the pulverizing and blowing compartments, and Fig. 7 illustrates the construction of the plate for closing the outlet end of the pulverizer.

As shown in the drawings, the bearings 1 and 2 have journaled therein a shaft 3, which may be driven in any suitable manner. On this shaft are slipped the fan 4, the crusher-disks 5, having the interior perforations 6 and peripheral perforations 7, and the sleeves 8 and 9. These sleeves space the fan and disks on the shaft, and the several parts are firmly clamped in their relative positions thereon by the nuts 10 and 11. Between the disks 5 are the partition plates or disks 12, having the peripheral holes 13, the interior perforations 14, and the openings 15, the latter providing free spaces around the respective sleeves 9 encircled by these plates. Separating the respective division-plates 12 and end plates 16 and 17 of the pulverizing-chamber

are the cylindrical sections 18 and 19, which form a sectional cylindrical casing, the several parts being clamped together by the long bolts 20, which pass through the plates 12, 16, and 17 and inclose the sections 18 and 19.

The fan 4 is inclosed in a casing comprising the cylinder 21 and the plates 16 and 22, these parts of the casing being clamped together by the bolts 23, which pass through the plates and inclose the cylinder.

The plate 16 has the opening 24, which provides a free passage around the sleeve 8 between the pulverizing and blowing chambers. A slot 25 provides an opening from the part 24 to the periphery of the plate, which slot is adapted to be closed by the slide 26. A projection 27 on the plate 16 is adapted to close the side of the outlet 28 from the blower-chamber. The plate 22 has the shaft-opening 29 and a slot 30 cut therefrom to the periphery. A slide 31 is adapted for closing the slot 30. A projection 32 on the plate 22 is designed to act as the side of the outlet 28 from the blower. The plate 17 also has its shaft-opening 33 connected with a slot 34, extending therefrom to the periphery, the slot having a slide 35 therein for opening and closing the same. These passages, with the slides therefor, provide means for regulating the admission of air to the pulverizer and permit the operative mechanism surrounding the shaft to be lifted therewith from its bearings.

Coal is admitted by the inlet 36 to the pulverizing-chamber, where it is subjected to the pulverizing influence or centrifugal grinding action of the revolving perforated crusher-disks 5 and the alternating plates or inwardly-projecting perforated members 12 and to the further influence of the exhaust created by the fan 4, which tends to force the disintegrating material longitudinally through the pulverizing-chamber into the fan-chamber and to eject the pulverized material therefrom. By this mode of action I have been enabled to obtain results superior to those obtainable with the pulverizers heretofore employed in the efficiency of the machine, as well as in the uniformity and fineness of the product.

The casing and transverse plates where large machines are employed may be divided upon a plane passing through or parallel with

the axis, and other changes may be made within the spirit of my invention.

Having described my invention, I claim—

1. A pulverizer comprising a cylinder having perforated projections extending inwardly therefrom, in combination with a revoluble shaft having perforated disks thereon alternating with said projections, substantially as specified.
2. A pulverizer comprising a casing having a series of inwardly-projecting perforated members, in combination with a revoluble shaft having a series of disks thereon respectively coacting with said perforated members, said disks having perforations therein providing for the longitudinal movement through the casing of the material acted upon, and means for carrying the material through said casing, substantially as specified.
3. A pulverizer comprising a cylinder having a series of inwardly-projecting perforated disks, in combination with a revoluble shaft having a series of perforated disks thereon, substantially as specified.
4. A pulverizer comprising a cylinder having a series of perforated division-plates therein, said plates dividing said cylinder into a series of compartments, in combination with a revoluble shaft having thereon a series of perforated disks adapted to revolve in said compartments, substantially as specified.
5. A pulverizer comprising a casing having annular sections and an inwardly-projecting member or members having holes therein, said member or members being located between the sections of said casing, in combination with a rotary shaft having a perforated disk or disks thereon, said perforations providing for the longitudinal movement through said casing of the material acted upon, substantially as specified.
6. A pulverizer comprising a sectional cy-

lindrical casing, perforated plates located between the sections of said casing and extending inwardly therefrom, said plates dividing said casing into compartments, plates closing the ends of said casing and paralleling said perforated plates, rods engaging said plates and clamping said casing together, in combination with a rotary shaft having crushers thereon, substantially as specified.

7. A pulverizer comprising a journaled shaft having a crusher disk or disks thereon, said disk or disks having perforations providing for the movement of the material acted upon in the direction of said shaft, in combination with a cylindrical casing within which said shaft is located, said casing having its end or ends provided with an opening or openings adapted to be regulated for the purpose of regulating the admission of air.

8. A pulverizer comprising a sectional cylindrical casing, a series of perforated division-plates respectively separating sections of said casing, end plates for said casing, a series of bolts passing through said plates externally to said casing, and a revoluble shaft having crusher-disks in said casing, said shaft passing through openings in said division-plates providing free space around said shaft, substantially as specified.

9. A pulverizer comprising a cylindrical casing having a series of inwardly-projecting perforated members, in combination with a shaft having a series of perforated disks and a fan thereon, substantially as specified.

In testimony whereof I have hereunto set my hand, in the presence of the subscribing witnesses, this 1st day of November, A. D. 1902.

HARRY MOOR.

Witnesses:

WILLIAM E. CHAPMAN,
UTLEY E. CRANE, Jr.