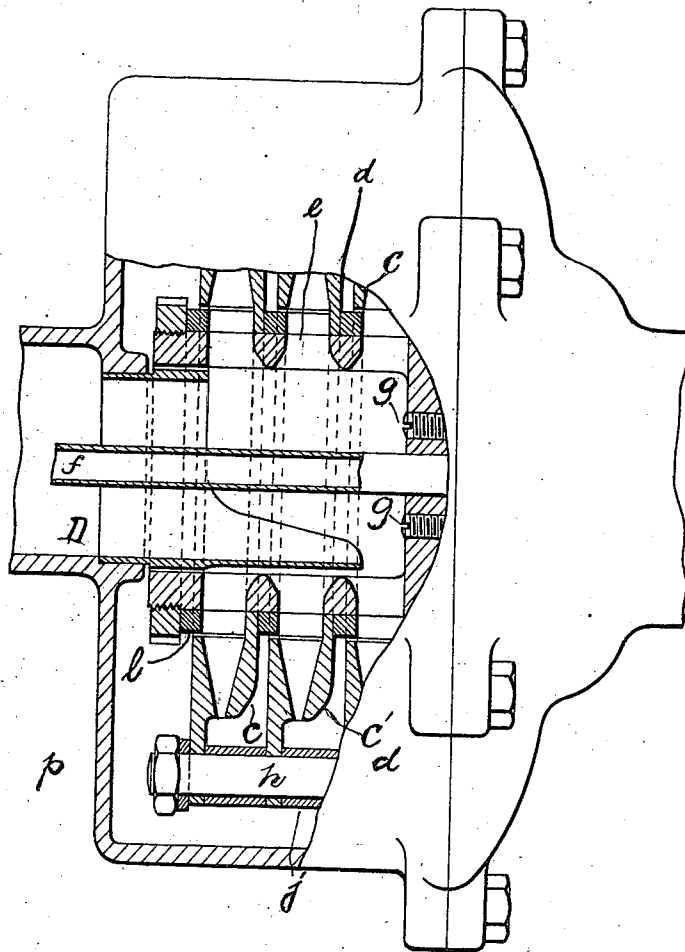


K. O. S. THORS.
GRINDING MILL.
APPLICATION FILED OCT. 27, 1909.

975,807.

Patented Nov. 15, 1910.



Witnesses.
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UNITED STATES PATENT OFFICE.

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GRINDING-MILL.

975,807.

Specification of Letters Patent.

Patented Nov. 15, 1910.

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To all whom it may concern:

Be it known that I, KARL OTTO SAMUEL THORS, engineer, citizen of Sweden, residing at Stockholm, Vasagatan 7, Sweden, have
5 invented certain new and useful Improvements in Grinding-Mills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which
10 it appertains to make and use the same.

The object of my present invention is a feeding device for rotary apparatus such as centrifugal machines, bolters, crushing and pulverizing machines and the like with inclined or horizontal shaft, in which solid
15 substances are treated.

The improvement relates to a stationary chute arranged in the feed-opening by means of which the substance conducted into the machine is equally distributed in the rotary
20 cylinder so that stagnation is prevented.

In feed-devices for rapidly rotating inclined or horizontal grinding machines hitherto known a stagnation of the material is easily caused, as the latter, if not fed in
25 quite evenly, will form a rotary-body in the rotary-cylinder, even if the latter is provided with pretty large openings for admitting the material between the grinding-disks.
30 In this way the new material, which is fed into the machine, is prevented from passing between the disks. In order to prevent this stagnation and to equally distribute the material a nonrotating chute is arranged in the
35 opening of the apparatus, said chute being constructed in such a way that the material is equally distributed in the machine.

In the annexed drawing a longitudinal section of the device is shown applied to a
40 grinding-machine.

According to the embodiment shown on the drawing the grinding machine consists of two series of grinding disks *c* and *d* respectively, which are arranged in pairs and
45 movable with relation to each other. The two disks *c* and *d* in each pair converge outwardly against each other and are provided with teeth, thus grinding or pulverizing the material passing outwardly between them-

selves. The disks are secured to a rotary
50 central cylinder *b*, into which the material is fed and which is provided with openings *e* at its periphery, leading the material between the grinding disks *c d*. The cylinder
55 *b* is rotated by means of the shaft *f*, and provided with screws *g*. The disks *d* are bound together by means of screw-bolts *h* and sleeves *j* and secured to a rotary shaft *k* surrounding and rotated in opposite directions to the shaft *f*. The disks *d* do not extend to the periphery of the cylinder *b*, but
60 spaces are left between said disks *d* and the cylinder for the insertion of packing rings *l*.

A stationary chute *a* consists of an annular outer part which is fixed in the inlet opening
65 *o* of the casing *p* and of an integral inner part *q* which projects into the interior of cylinder *b* and is of a tapering scoop form nearly as broad in its largest part as the said interior. The bottom of the inner part of
70 this scoop lies along the bottom line of said cylinder. The inclination of the side edges of said inner part of the chute approximates the natural inclination of the grain or other material fed in through said chute but is
75 slightly less than the maximum height of the latter. The material fed into the chute *a* flows over its edges and is thus distributed over the whole interior surface of the rotary cylinder *b*, even if the rotary cylinder is of
80 considerable length. In view of the edges of the chute sloping against the side wall of the cylinder as indicated the quantity of material falling down on the cylinder *b* is the same along the whole cylinder.
85

Claim:

In combination with a fixed cylinder provided with an inlet opening in its side and grinding mechanism secured to an inner wall thereof, rotary grinding mechanism
90 within said casing comprising a rotary cylinder having an open end and openings in its periphery and provided with grinding disks, and a horizontal chute fixed in said inlet
95 opening in a fixed cylinder and extending into the end opening into said rotary cylinder and having an inwardly extending tapering scoop-form portion arranged parallel to

and slightly above the bottom of the interior
of said cylinder, the inclination of its edges
approximating that of the body of the ma-
terial which enters through said chute but
5 low enough to permit this material to spill
over said sides substantially as set forth.

In testimony whereof, I have signed my

name to this specification in the presence of
two subscribing witnesses.

KARL OTTO SAMUEL THORS.

Witnesses:

ANNA SÖDERSTRÖM,
HARRY ALBIN.