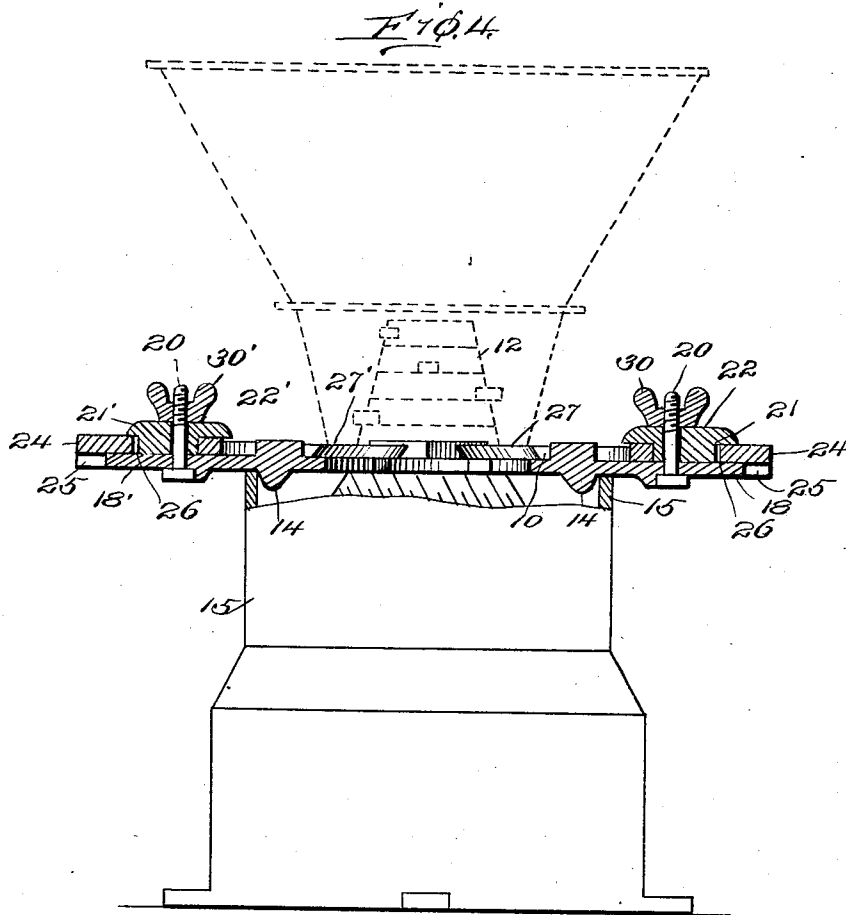


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FEED REGULATOR.
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999,118.

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

FREDERIC M. LYON, OF PONTIAC, ILLINOIS.

FEED-REGULATOR.

999,118.

Specification of Letters Patent.

Patented July 25, 1911.

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To all whom it may concern:

Be it known that I, FREDERIC M. LYON, a citizen of the United States, residing at Pontiac, in the county of Livingston and State of Illinois, have invented certain new and useful Improvements in Feed-Regulators; 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 it appertains to make and use the same.

This invention relates to feed regulators and while intended for use in connection with a grinding mill, it is to be understood that its usefulness is not limited to such association but is adapted for use at any place where a flow of granular material is to be regulated.

An object of the present invention is to provide a regulator having segmental plates movable toward and from the center, such movement being regulated by cams whereby the feed aperture may be increased or decreased at will.

A further object of the invention is to provide a device of the class of such construction that it may be placed between the hopper and grinding burs of a grinding mill and to surround an upwardly extending grinding cone.

With these and other objects in view, the invention comprises certain constructions, combinations and arrangements of parts as will be hereinafter fully described and claimed.

In the drawings:—Figure 1 is a top plan view of the improved feed regulator open, one of the levers being removed showing in section the cam for operating the segments. Fig. 2 is a top plan view of the feed regulators showing the segments closed and with the lever similarly removed showing the cam in section. Fig. 3 is a top plan view of the bed plate of the feed regulator with the segments and cams removed. Fig. 4 is a view partly in elevation and partly in dotted lines of a conventional grinding mill with the feed regulator applied thereto shown in longitudinal section on line 4—4 of Fig. 1.

Like characters of reference designate corresponding parts throughout the several views.

The improved feed regulator forming the subject-matter of this application has for a base a bed plate 10 and for the particular mill to which it is shown applied in Fig. 4

is provided with a central opening 11 sufficient in size to embrace the grinding or cutting cone shown in dotted lines at 12 in Fig. 4 and indicated in dotted lines at 13 in Fig. 1. In such embodiment the bed plate is also provided with a flange or rib 14 upon the under side adapted to bear against the housing 15 of the mill to prevent lateral displacement and is also provided upon the top side with oppositely disposed cams 16 and 16' and other cams 17 and 17' for controlling the movement of the parts. The bed plate is also provided with oppositely extending necks 18 and 18' having holes or openings 19 and 19' to receive bolts 20 and 20' forming the journals for cams 21 and 21'. The cams 21 and 21' are either rigidly connected or integral with disks 22 and 22' which are, in turn, either rigidly connected or integral with levers 23 and 23'. Slidable upon the necks 18 and 18' are blocks 24 and 24' having wings 25 and 25' offset therefrom to form guides which move slidably along the sides of the necks 18 and 18'. The blocks 24 and 24' are provided with cam openings 26 and 26' accommodating the cams 21 and 21' whereby the rotation of the cams 21 and 21' move the blocks 24 and 24' and therewith the wings 25 and 25'. Pivotal-ly secured to the wings 25 and 25' are segments 27 and 27' which are provided with cam bevels 28 and 28' bearing against the cam abutments 16 and 16' and also with other cam bevels 29 and 29' which bear against the cam abutments 17 and 17'.

For securing the segments and other moving parts in secured adjustment the bolts 20 are provided with any improved locking means as the winged nuts 30 and 30' whereby the cams may be locked at any rotary adjustment required for securing the necessary adjustment of the segments 27 and 27'.

In operation in conjunction with a mill as conventionally shown at Fig. 4 the organized feed regulator as shown at Figs. 1 and 2 is set upon the base of the mill above the bur with the cutting or grinding cone extending upwardly through the central cone 11 as indicated at Figs. 1 and 4. In this position when the segments are closed as shown at Fig. 2 they engage against the periphery of the cone and prevent the passage of any material between the cone and such segments. When it is desired to permit the passage of material the levers 23 and 23' are manipulated to open the segments 27 and

27' which produces a space between such segments and the cone as indicated at the dotted circle 13 and the segments in Fig. 1.

In use with certain material as for instance the grinding of corn on the cob the material is fed to the grinding burs in somewhat large pieces and it is necessary to provide an opening large enough to permit the passage of such pieces but not to produce an opening of such extent as to permit too great a supply of feed to the burs. For that purpose one only of the levers 23 or 23' may be manipulated to open the segments 27 or 27' or both such levers may be open but when only one segment is manipulated it is apparent that an area as wide radially is provided for the passage of pieces as when both are open but that the circumferential extent of the passage is not as great as when both are open.

What I claim is:—

1. In a feed regulator, a base having an opening therein and provided with cams, a plurality of segments movable upon the base, and means to manipulate a plurality of such segments simultaneously independently of others.

2. In a feed regulator, a base having an opening therein, cams mounted to rotate

upon the base, segments mounted to slide upon the base, means connecting the cam and segments whereby a movement of the cams moves the segments, and means to manipulate the cams.

3. In a feed regulator, a base provided with an opening, a plurality of segmental plates mounted to move upon the base substantially radial relative to the opening, a cam mounted to rotate upon the base, a block mounted to slide upon the base and to be operated by the cam, and pivotal connection between the block and the plates.

4. The combination with an annular ring having cam abutments upstanding from one side thereof, of necks disposed upon diametrical opposite sides, segmental members disposed between the cams and having their inner edges concentric with the inner edge of the annular ring, and mechanism carried upon the diametrical necks for actuating the segments.

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

FREDERIC M. LYON.

Witnesses:

C. E. MYERS,
W. S. BUTLER.