Aug. 12, 1952 A. B. GRÖNBERG 2,606,722

GRAIN GRINDING MILL WITH ADJUSTABLE NONROTARY MEMBER

Filed Nov. 22, 1948

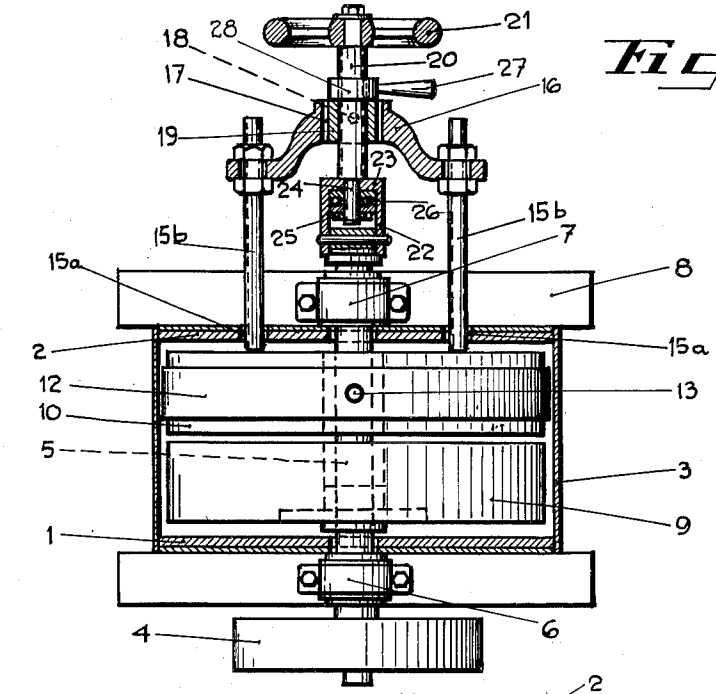


Fig. 1

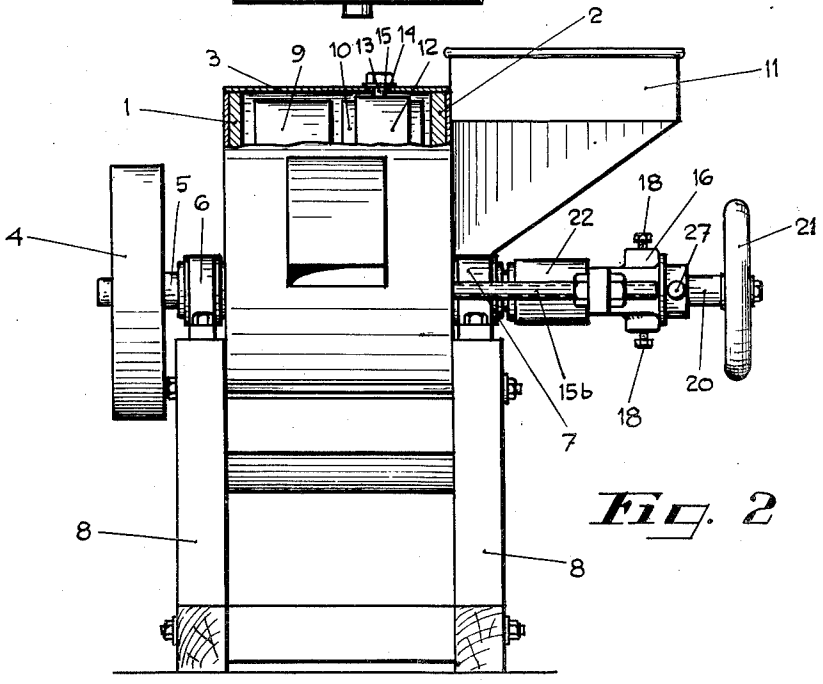


Fig. 2

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Patented Aug. 12, 1952

2,606,722

UNITED STATES PATENT OFFICE

2,606,722

GRAIN GRINDING MILL WITH ADJUSTABLE NONROTARY MEMBER

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Application November 22, 1948, Serial No. 61,443
In Sweden December 5, 1947

1 Claim. (Cl. 241—255)

1

The present invention relates to grain grinding mills of the kind comprising two cylindrical, coaxial grinding stones mounted within a casing, one of said stones (the runner) being fastened to a rotary horizontal shaft passing through the casing, while the other (a non-rotatable stone), which is axially movable for adjustment to and from the runner, is suspended and adjusted by a number of slidable rods passing through one wall of the casing. In this kind of mill an adjustable tightening device is adapted to press the non-rotatable grinding stone against the runner by means of the said rods.

The invention is broadly characterized in that the tightening device is connected to the one end of the shaft carrying the runner by means of a coupling, so that the reaction stress occurring on the tightening device when the non-rotatable grinding stone is forced against the runner will be taken up by said shaft. Such a device avoids imposing this reaction stress on the mill casing, which is very advantageous particularly in cases where the mill casing is made wholly or mainly from wood.

An embodiment of the invention is shown in the accompanying drawing, in which Figure 1 is a horizontal section through a mill according to the invention, while Figure 2 is a side view partly in section of the mill.

In the drawing 1 and 2 denote the wooden side walls of the cylindrical casing and 3 its mantle. In bearings 6 and 7 carried by a wooden stand 8 there is rotatably and axially slidably mounted a shaft 5 passing horizontally through the casing and carrying near one end a driving pulley 4. Within the casing and adjacent one of the side walls (1) there is provided a cylindrical grinding stone 9 (the runner) which is fixed on the shaft 5 so as to be driven thereby, and adjacent the opposite side wall 2 there is provided a non-rotatable cylindrical grinding stone 10, which during operation is stationary. The stone 10 has a central opening through which the material to be ground (the grain) is fed from a container 11 to the space between the grinding stones by means of a feeding screw (not shown) mounted on the shaft 5 in a known manner. The stone 10 is surrounded by an iron band 12 to which a pin 13 is fixed. Said pin passes through an axial slot 14 at the top of the mantle 3 and is at its upper end formed with an enlarged head 15, which by resting upon the portions of the mantle 3 adjacent the slot 14 carries the stone 10.

At each side of the shaft 5 and horizontally level with the same there are provided two rods

2

15b, parallel with the shaft 5, and these pass slidably through openings 15a in the side wall 2 with their inner ends abutting against the stone 10. The outer ends of these slidable rods 15b are screw-threaded and are adjustably connected to the ends of a yoke 16. In the middle portion of said yoke 16 there is provided an opening 17 into which is inserted an internally screw-threaded sleeve 19 which is tiltably mounted on two trunnion pins 18 provided opposite each other. Through said sleeve 19 passes a screw-threaded operating spindle 20, which is co-axial with the shaft 5 and provided with a hand-wheel 21. To the end of the shaft 5 facing the yoke 16 there is fastened by means of a cross-pin one end of a sleeve 22, and through the other end of said sleeve 32, which is formed with an inwardly projecting flange 23, there is introduced an end portion 24 of the screw spindle 20. To the free end of said end portion 24 there is fastened a ring 25, and between this and the end flange 23 of the sleeve 22 there is provided a ball bearing 25, the whole constituting a coupling between the spindle 20 and shaft 5 which allows relative rotation between these two members. Between the sleeve 19 and the hand-wheel 21 there is mounted on the screw spindle 20 a locking nut 28 with a projecting handle 27.

The grinding stone 10 is forced towards the runner stone 9 by rotating the screw spindle 20 by means of the hand-wheel 21, which causes the sleeve 19 with the yoke 16 to be moved in a direction towards the stone 10, it is clear that the reaction stress occurring on the screw spindle 20 will be taken up by the shaft 5 carrying the runner 9, through the medium of the bearing 25.

The invention is not limited to the embodiment described above and shown in the accompanying drawing, but may be varied in details without departing from the spirit of it.

What I claim is:

An improvement in grain grinding mills comprising a casing, a pair of coaxial grinding stones positioned within said casing, a driving shaft rotatably mounted and extending through said casing and said stones with one of said stones affixed thereto for rotation therewith, said casing having a slot formed in the top thereof extending parallel to said shaft, a pin slidably mounted on said casing and extending through said slot with the other of said stones suspended therefrom, a pair of rods slidably mounted each on an opposite side of said shaft through said casing and bearing against said second stone for

axially moving the same towards said rotatable stone, a yoke connected to said rods, an operating spindle having screw threads formed thereon, an interiorly threaded sleeve carried by said yoke and having said spindle extending therethrough in threaded engagement therewith and coupling means rotatably supporting said spindle on said shaft and axially transmitting the thrust of said spindle to said shaft.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
107,353	Forsman	Sept. 13, 1870
211,948	Wagner	Feb. 4, 1879
353,710	Raymond	Dec. 7, 1886
811,945	McLaughlin	Feb. 6, 1906

FOREIGN PATENTS

Number	Country	Date
12,879	Germany	Mar. 8, 1880
72,068	Germany	Dec. 14, 1892
285,545	Germany	July 6, 1915