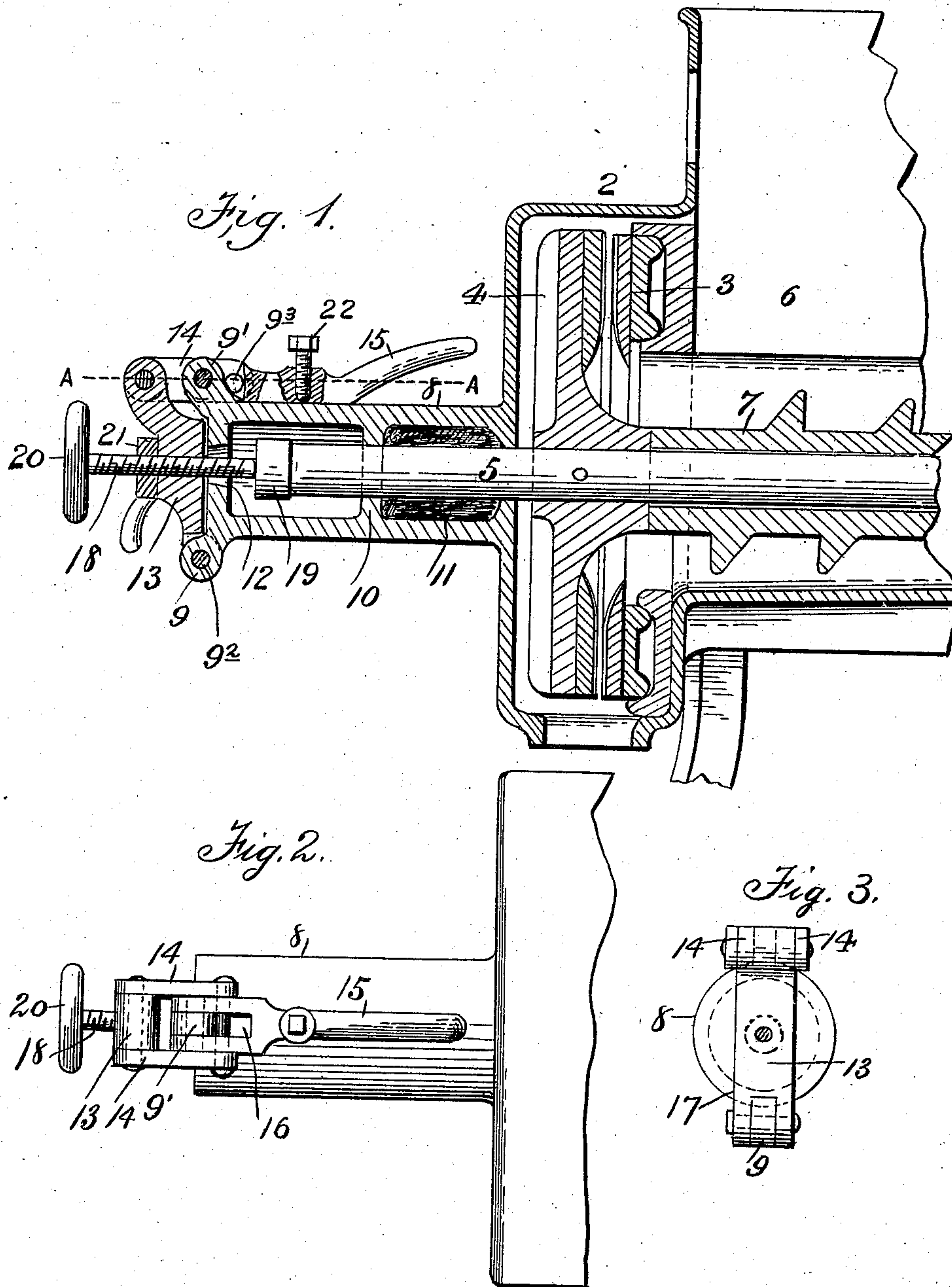


No. 855,099.

PATENTED MAY 28, 1907.

A. M. DELLINGER.
VERTICAL DISK GRINDING MILL.
APPLICATION FILED JUNE 15, 1906.



Witnesses
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ABRAHAM M. DELLINGER, OF LANCASTER, PENNSYLVANIA.

VERTICAL-DISK GRINDING-MILL.

No. 855,099.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed June 15, 1906. Serial No. 321,884.

To all whom it may concern:

Be it known that I, ABRAHAM M. DELLINGER, a citizen of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Vertical-Disk Grinding-Mills, of which the following is a specification.

This invention relates to new and useful improvements in quick releasing mechanism for grinding mills whereby the disks or heads may be quickly separated.

The invention has for its object to provide a novel device of this character operated by a lever, said lever being provided with means whereby its throw can be regulated, and thereby determine the adjustments of the grinding disks one with relation to the other.

Finally an object of this invention is to provide a device of the character noted, which will possess advantages in points of simplicity, efficiency and durability, proving at the same time comparatively inexpensive to produce and maintain.

With the foregoing and other objects in view, the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail, reference will be had to the accompanying drawings forming part of this specification wherein like characters denote corresponding parts in the several views, in which—

Figure 1, is a view partly in section and partly in elevation of a grinding mill with the invention applied thereto. Fig. 2, is a detail plan view. Fig. 3, is a detail elevation.

In the drawings 2, denotes a casing in which are mounted the grinding disks 3 and 4, the disk 3, being stationary while the disk 4, is the running disk and is mounted upon the shaft 5, which projects beyond the casing 2. This shaft within the hopper 6, is provided with the breaking drum 7, the purpose of which is thought to be apparent to those familiar with this class of invention.

Projecting from the casing 2, is a housing 8, into which extends that portion of the shaft 5, beyond the casing, and the outer end of said housing is provided with the perforated lugs 9 and 9'. Intermediately of the housing is formed a perforated partition 10, which provides a compartment 11 for Bab-bitt metal or other lubricating agent for the shaft. The end of the housing is provided

with a central perforation 12, for the purpose which will be hereinafter set forth.

Pivotally secured to the lower lug 9, is a lever 13, which is pivotally secured at its opposite end to the ends of the links 14, the opposite ends of said links being pivotally secured to the lever 15, intermediate its length. The lever 15, has one of its ends bifurcated as at 16, said bifurcations embracing the remaining lug 9', while the opposite end portion of the lever is bent upward in order that it may be readily grasped by an operator.

Threaded through the lever 13, is the temper screw 18, which extends through the perforation 12, of the housing and bears against an anti-friction ring 19, carried by the end of the shaft. The opposite or outer end of the screw 18, is provided with an adjusting wheel 20. It is thus to be seen that by the rotation of the screw through the lever 13, the throw of the disk on the shaft may be determined. To hold said screw in such position, a lock nut 21, is provided, said nut bearing against the lever 13. It will, of course, be understood by those familiar with the art to which this invention appertains that the shaft 5, is adjusted longitudinally in order to vary the distance between the grinding disks or plates. This adjustment is made in order to determine the quality of the ground out-put of the machine. This operation requires more or less skill on the part of the operator and is controlled by the hand wheel 20, moving the screw 18, in and out through the lever 13, which either diminishes or increases the pressure on the end of the shaft 5, which pressure determines the adjustment. When the desired adjustment is attained, the screw 18, is locked in position in the lever 13, by the winged nut 21. This adjustment is of course made when the quick release device is closed (as in Fig. 1).

When the machine is in operation, it is often necessary to quickly release the pressure on the grinding plates without disturbing the aforesaid adjustment, the said quick release being necessary by accident, foreign substances in the stock or by the stock giving out, and in this latter case permitting the cutting plates to contact one with the other. This release is obtained by lifting the lever 15, from the position shown in Fig. 1, which will with its intermediate parts, release the pressure on the end of the shaft 5 thus allowing the grinding plates to run free. It will be appreciated that this quick release is effect-

ed without disturbing the adjustment of the screw 18, in the lever 13.

When foreign substances, especially those of a hard nature, interfere with the operation of the machine some part of the machine is sure to break. The ordinary way of meeting this objection has been by making some part of the frame weak, a part that can be easily and cheaply replaced, this part being so positioned that it will break before the machine is seriously damaged. In this invention, provision is made for such an objection by having the pivot pin 9², of the lug 9, and the lever 13, of wood or other fragile material. When a sudden jar or shock is given to the machine by foreign substances, this pin will break and will cause the pressure on the shaft 5, to be released.

It is to be noticed (Fig. 1) that the center of the pivot pin 9², through the links 14, and the lever 15, is below the center line A—A. This distance below the center line is controlled by the adjusting screw 22, of the lever 15, coming in contact with the housing 8. The greater the distance below the center line A—A, the harder the quick release will be to operate automatically, and vice versa. In other words, under these conditions, the operator, by means of the adjusting screw 22, can cause the quick release to open at any desired amount or strain.

Having fully described my invention what I claim as new and desire to secure by Letters Patent, is—

1. In a grinding machine, the combination of a casing, a housing extending therefrom, a rotatable shaft supported by said casing and extending within the housing, said shaft being movable longitudinally, a lever, a fragile pin pivotally securing said lever to the housing, a temper screw threaded through the lever passing freely through the end of the housing and adapted to engage the end of the shaft, a second lever pivoted to the housing, and links pivotally connecting the first named lever and the second lever beyond its point of connection with the housing.

2. In a grinding machine, the combination of a casing, a housing extending therefrom, a rotatable shaft supported by said casing and extending within the housing, said shaft being movable longitudinally, a lever pivoted to the housing, a temper screw threaded

through the lever passing freely through the end of the housing and adapted to engage the end of the shaft, a second lever pivoted to the housing, links pivotally connecting the first named lever and the second named lever beyond its point of connection with the housing, and a set screw carried by the second lever contacting with the housing.

3. In a grinding machine, the combination of a casing, a housing extending therefrom, a rotatable shaft supported by said casing and extending within the housing, said shaft being movable longitudinally, a lever pivoted at one end of the housing, a temper screw threaded through the lever passing freely through the end of the housing and adapted to engage the end of the shaft, a lever at an end of the housing, and links pivotally connecting the first named lever and the second named lever beyond its point of connection with the second named lever below the plane passing through the pivotal connections of the links and the first named lever and the pivotal connection of the second named lever and the housing.

4. In a grinding machine, the combination of a casing, a housing extending therefrom, a rotatable shaft supported by said casing and extending within the housing, said shaft being movable longitudinally, a lever pivoted at one end of the housing, a temper screw threaded through the lever passing freely through the end of the housing and adapted to engage the end of the shaft, a second named lever at an end of the housing, links pivotally connecting the first named lever and the second named lever beyond its point of connection with the housing, the pivotal connection between the links and the second named lever being below the plane passing through the pivotal connection of the links and the first named lever and the pivotal connection of the second named lever and housing, and a set screw threaded through the free portion of the lever and adapted to contact with the housing.

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

ABRAHAM M. DELLINGER.

Witnesses:

CHAS. E. LONG,
MICHAEL H. HARNISH.