(No Model.)

J. J. & B. CLARK.

GRINDING MILL.

No. 302,826. Patented July 29, 1884.

Fig. 1.

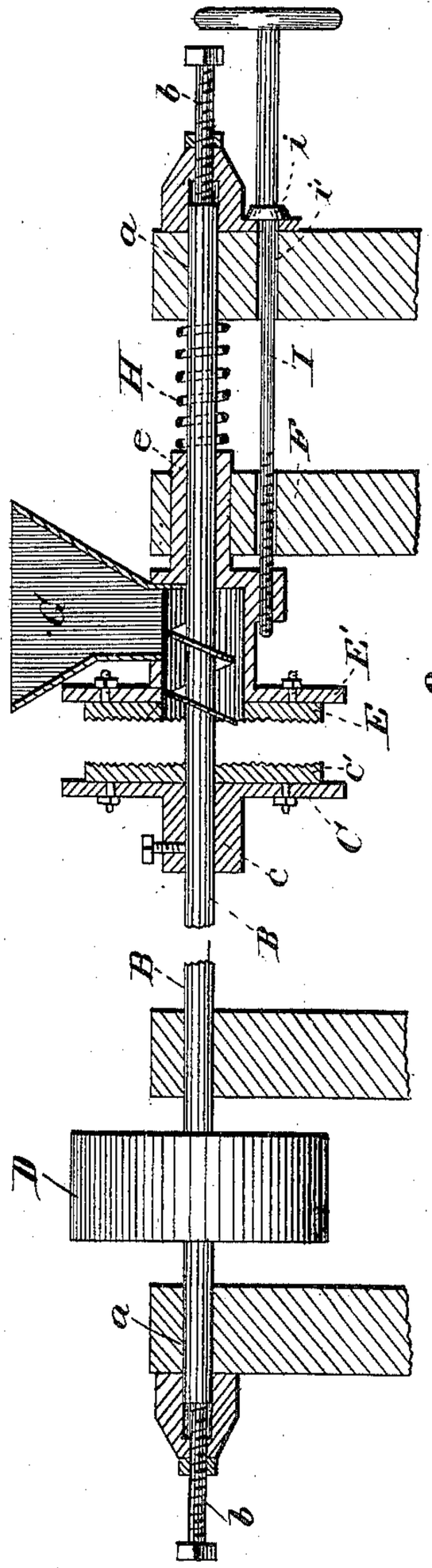
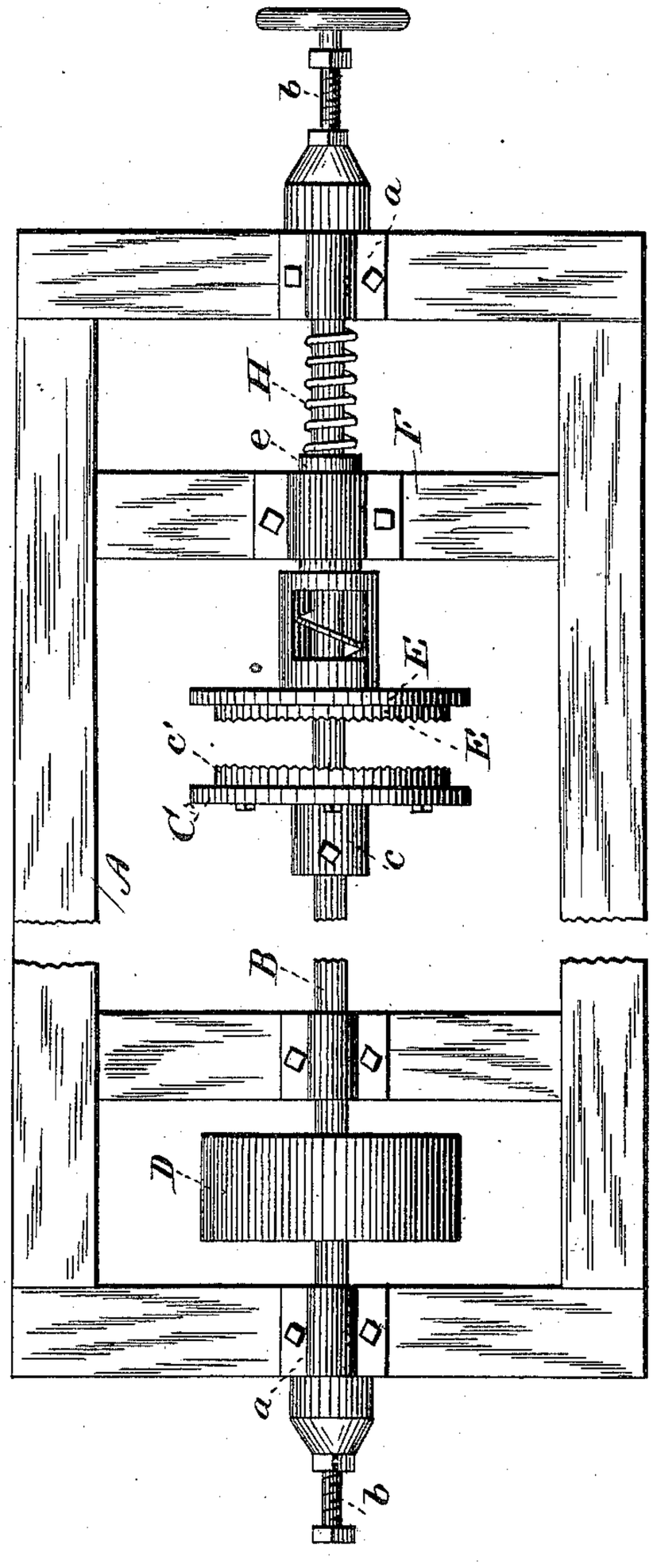


Fig. 2.



WITNESSES

Chas. R. Burr

Fred F. Church

INVENTOR

John J. Clark

Byron Clark

by Church & Church

Their Attorneys

UNITED STATES PATENT OFFICE.

JOHN J. CLARK AND BYRON CLARK, OF ELGIN, ILLINOIS.

GRINDING-MILL.

SPECIFICATION forming part of Letters Patent No. 302,826, dated July 29, 1884.

Application filed May 2, 1884. (No model.)

To all whom it may concern:

Be it known that we, JOHN J. CLARK and BYRON CLARK, both of Elgin, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Grinding-Mills; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

Our present invention relates more especially to that class of grinding-mills wherein the grain or other material is fed in at the center between a fixed and a rotary disk, the two disks having their proximate surfaces suitably dressed or prepared for grinding, and lying in parallel vertical planes; and it consists in the novel arrangement and construction of the adjusting mechanism, whereby the space between the fixed and movable disk may be accurately adjusted and maintained, at the same time permitting one of the disks to yield in case any hard substance is fed between the grinding-surfaces, as will be hereinafter more fully described, and set forth in the claims.

In the accompanying drawings, Figure 1 is longitudinal section, and Fig. 2 a plan view, with the hopper removed, of a machine embodying our invention.

Similar letters of reference in the several figures indicate the same parts.

Upon the main frame or casting A is mounted a shaft, B, carrying the grinding-disk C and driving-pulley D. The shaft B rotates in suitable bearings, *a a*, and is prevented from moving endwise by the set-screws *b b*, which serve also to adjust and determine its longitudinal position and compensate for wear at the ends. The grinding-disk C is preferably composed of a head or cylinder, *c*, bolted to the shaft B, and carrying the metal grinding-ring *c'*, secured thereto in any well-known manner. The stationary grinding-disk E, situated in front of and parallel with the running disk C, is bolted or otherwise secured to the end or face of a head, E', which latter is provided with an extension or shank, *e*, fitted to slide in a bearing formed in the cross-piece F. The head E' is provided with an enlarged central opening for the reception of a screw-conveyer attached to the shaft B, which latter passes entirely through the stationary head, and turns in a bearing formed in the shank *e*. A hopper, G, situated above or upon the head E', communicates with the central opening in the latter.

Between the end of the shank *e* and the cross-piece of the main frame is interposed a spiral or other suitable spring, H, preferably applied upon the shaft B, and a rod, I, provided with a shoulder, *i*, works freely through a bearing, *i'*, attached to the main frame, while the screw-threaded extremity of said rod engages a nut formed on or attached to the head E'. This rod I is for the purpose of adjusting the stationary grinding-disk by being turned to the right or left, to bring the grinding-disks nearer together or to separate them, as desired.

The operation of the grinding mechanism is apparent. The material fed in the hopper passes to the center of the stationary head, and is carried by the conveyer on the shaft and delivered to the center of the grinding-disks, whence it passes radially between the grinding-surfaces, as in other machines of the same general class. It will be observed, however, with respect to the adjusting devices, that the running disk is at all times maintained in its proper position, and prevented from the longitudinal motion so destructive to machines of this kind, the screws being arranged to compensate for wear on the ends of the shaft. Moreover, the longitudinally-adjustable disk is held to its work by a yielding pressure, the tension of the spring being such that it will hold the disk firmly in its adjusted position without permitting it to be carried beyond, even when there is no material between the disks, at the same time permitting the disk to yield or be retracted should any hard substance be fed or introduced between the grinding-disks.

We claim as our invention—

1. In combination with the shaft carrying the movable disk, the bearings for said shaft, and the adjusting-screws, the fixed grinding-disk having the enlarged central opening for

the passage of the material, the spring, the means for adjusting the said fixed disk, and the conveyer upon the shaft, substantially as described.

2. In combination with the head carrying the stationary grinding-disk, the spring, and the screw-threaded rod having the collar and working through the bearing on the main frame, substantially as described.

3. In combination with the rotating shaft carrying the grinding-disk, the longitudinally-adjustable head carrying the non-rotating disk, and provided with the central opening and the bearing for the shaft, the spring surrounding said shaft and constantly pressing against the adjustable head, and the rod provided with a collar passing through the bearing on the main frame and engaging the nut on the sliding head, substantially as described.

JOHN J. CLARK.
BYRON CLARK.

Witnesses:
E. K. ALLEN,
C. D. GORDON.