(No Model.) 2 Sheets—Sheet 1.

# J. STEVENS.

## Grinding Mill.

**No. 236,643.** **Patented Jan. 11, 1881.**

*Fig. 1.*

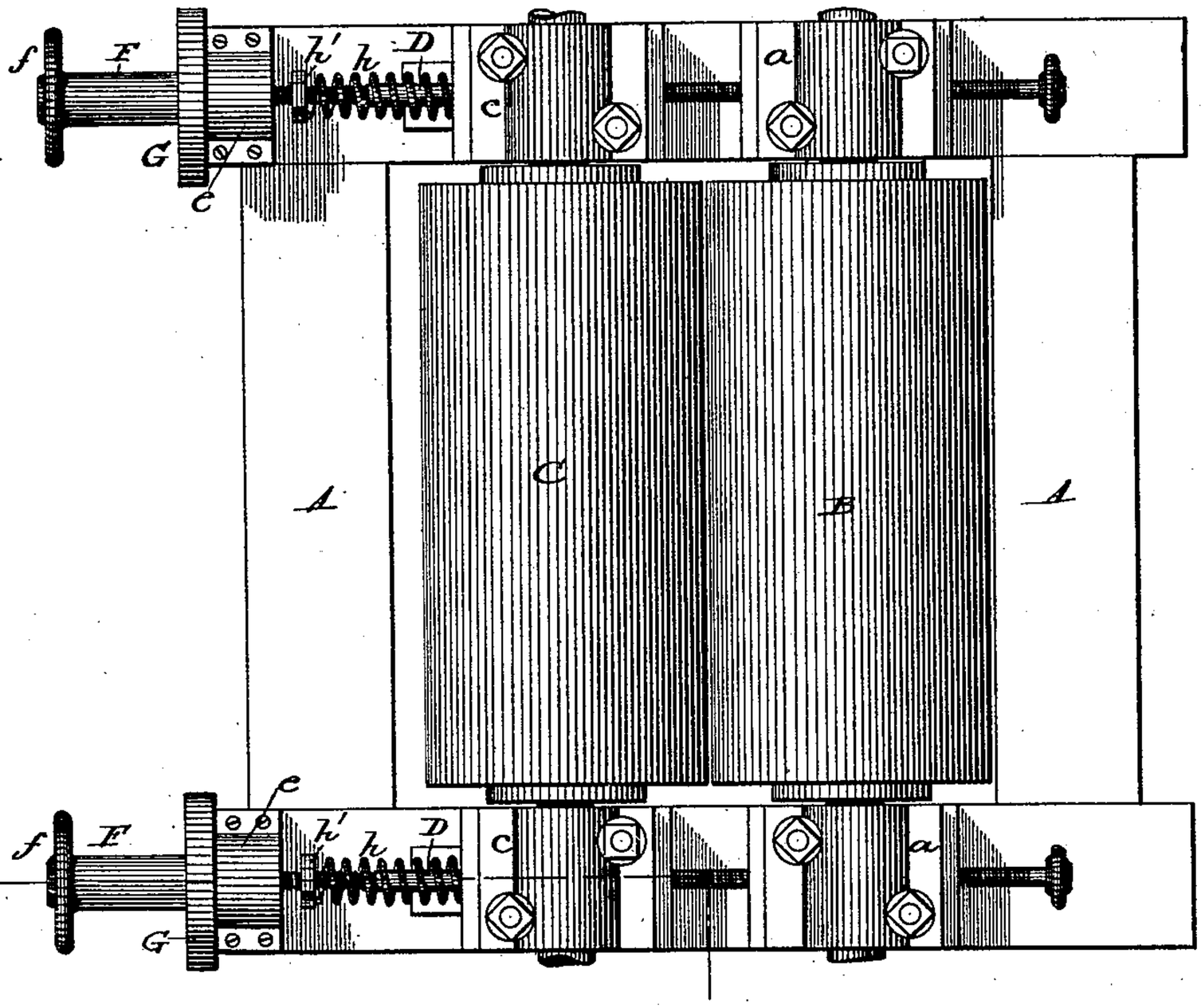
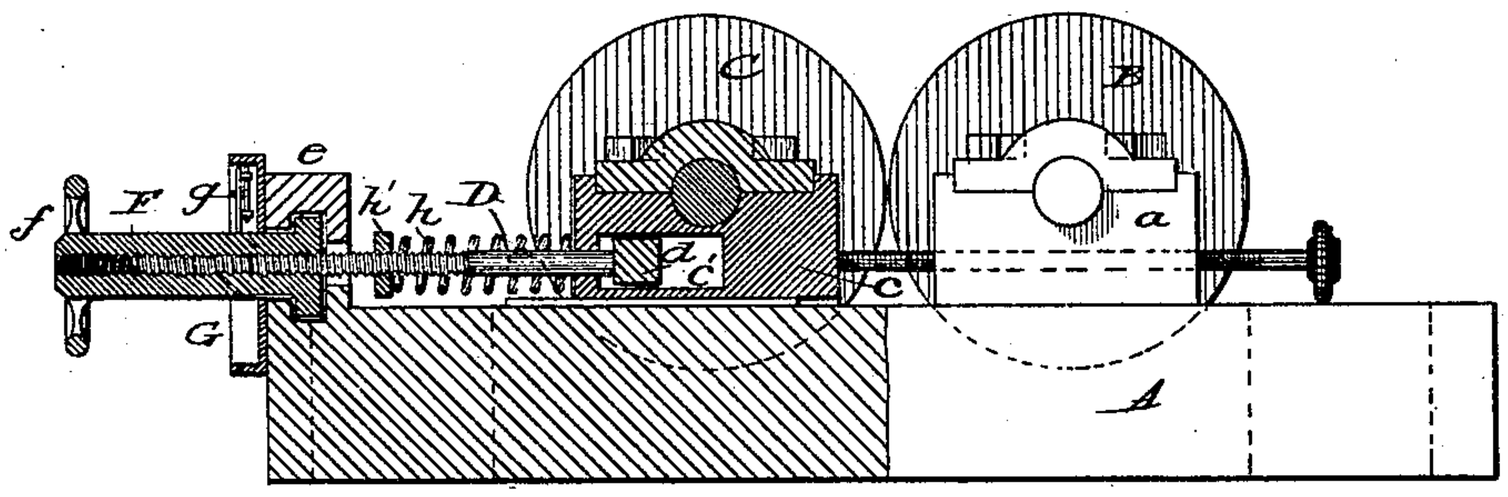



*Fig. 2.*




*Attest.*

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John R. Davis Jr

*Inventor.*

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By Parkinson & Parkinson

*Attys.*

(No Model.) 2 Sheets—Sheet 2.

# J. STEVENS.

## Grinding Mill.

No. 236,643. Patented Jan. 11, 1881.

*Fig. 3.*

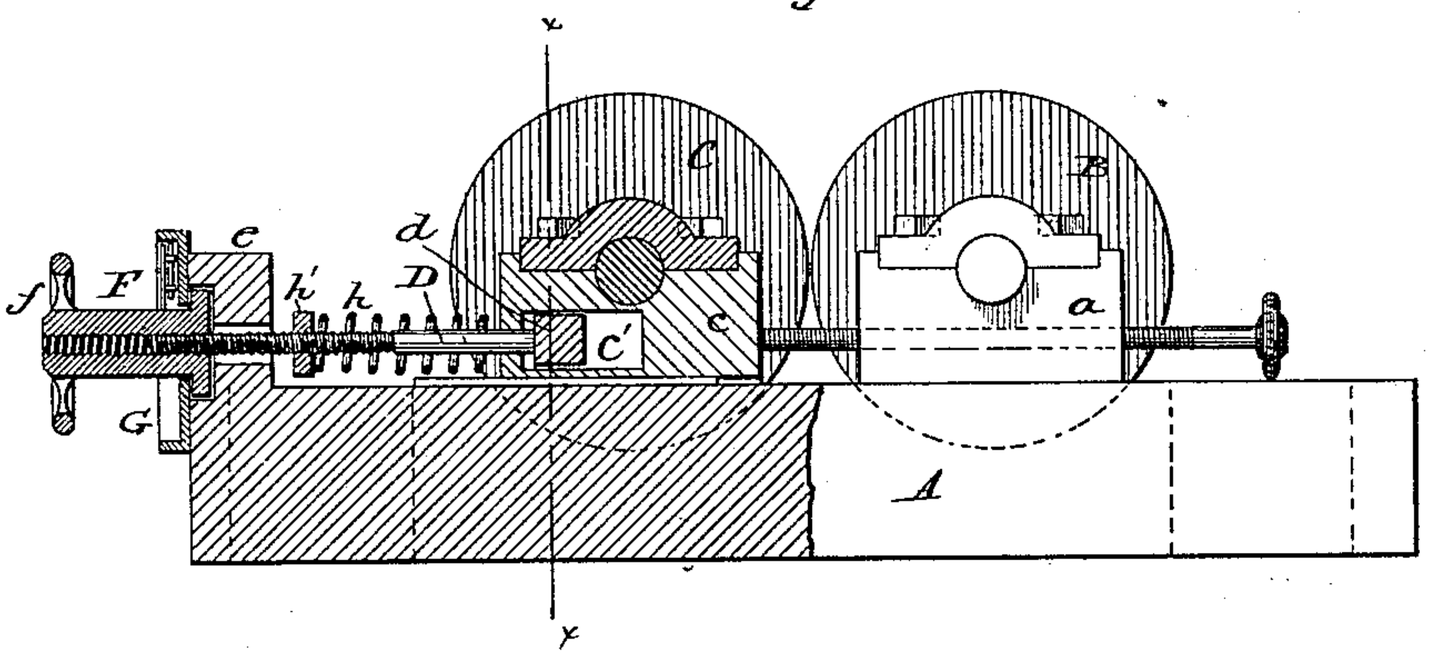



*Fig. 4.*

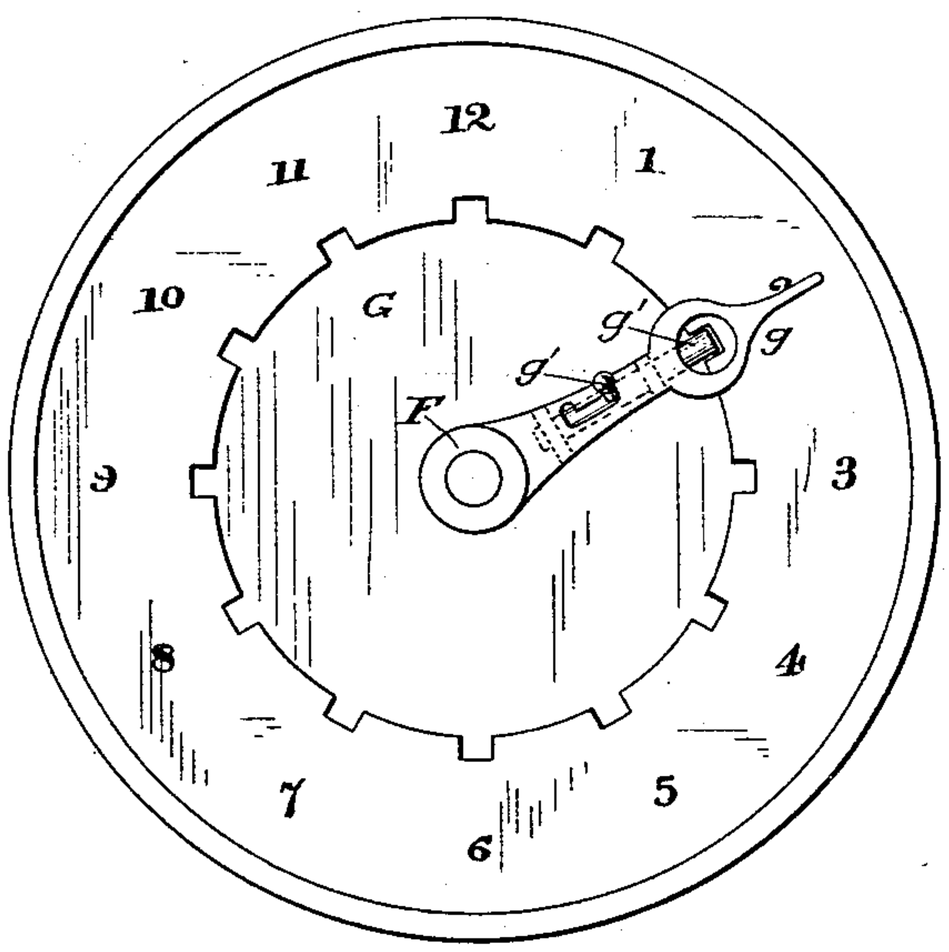
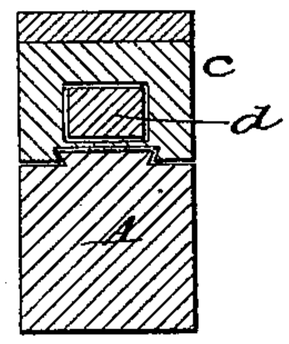



*Fig. 5.*

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# UNITED STATES PATENT OFFICE.

JOHN STEVENS, OF NEENAH, WISCONSIN.

## GRINDING-MILL.

SPECIFICATION forming part of Letters Patent No. 236,643, dated January 11, 1881.

Application filed December 3, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN STEVENS, of Neenah, in the county of Winnebago and State of Wisconsin, have invented certain new and useful Improvements in Grinding-Mills, of which the following is a specification.

My invention relates to adjusting devices used in connection with a movable roll or concave to determine its normal distance from the opposing grinding or crushing surface; and it consists in arrangements and combinations of mechanism to that end, substantially as hereinafter described and claimed.

In the drawings, Figure 1 is a top-plan view of a roller-mill embodying my invention. Fig. 2 is a side elevation thereof, a portion being broken away to show the construction and operation of the devices. Fig. 3 is a like side elevation of a modified or equivalent form of the invention. Fig. 4 is a detail view of an indicator and lock, which may be used in connection with the adjusting mechanism; and Fig. 5 is a section on the line *x x* of Fig. 3, being the same as a section through the corresponding part of Fig. 2.

In stationary blocks *a* upon a strong frame, A, of any suitable material, construction, and shape, are formed bearings for the roll B, and in other sliding blocks, *c*, opposed to the first, the roll C is journaled. These rolls are driven at equal or differential surface-speeds by means of the gearing usual in this class of machines. In each of the sliding blocks is a square, rectangular, or polygonal recess, *c'*, which receives and holds from revolution the corresponding head *d* of a rod, D, passing at the other end through the exterior frame-work, or through a lug, *e*, thereon, and screw-threaded, as shown, for a portion of its outer length. The aperture in the lug *e*, through which the rod passes, is recessed to receive and prevent from longitudinal movement the cylindrical head of a sleeve, F, the head being let into said recess and secured therein by means of a cap-piece which forms the upper half of the lug, or in any other suitable manner—as, for instance, that indicated in the modification shown in Fig. 3. The sleeve is threaded internally to take upon the threaded end of the rod D, and is provided with a hand-wheel, *f*, whereby it may be turned so as to take up or let out the rod and the block with which the rod connects, and thereby determine the limit to which the movable roll may approach the other.

Upon the outer face of the lug *e*, concentric with the sleeve, is a dial, G, having a raised rim and suitable graduation-marks thereon, and notches in the inner edge of said rim corresponding with each of the graduation-marks; and fast to the sleeve is a finger or pointer, *g*, so arranged as to move over the dial-face as the sleeve is turned and indicate the adjustment reached. A bolt, *g'*, carried by the pointer serves to take into any given notch and lock the pointer and sleeve, and consequently the screw-rod, positively at that adjustment until it is intentionally changed. In this construction, as there is no longitudinal movement of the sleeve, the pointer and bolt will move in a fixed vertical plane, and consequently can never be carried away from the dial. The result will also be the same if the arrangement is reversed and the dial carried by the sleeve while the pointer and bolt are mounted upon the lug.

The dial, pointer, and bolt, combined with adjusting devices for roller and other mills, have been made the subject of an application heretofore filed by me, and I lay no claim to them herein except so far as they enter into novel and improved combinations.

In order to permit the roll C to yield away from the other roll, the recesses in the sliding blocks are made of considerable length, so that the square head of the rods D may play back and forth therein. Springs *h*, coiled about each rod and seated against nuts *h'* thereon, press the blocks and the roll or other instrumentality carried thereby constantly toward the opposite roll or surface to the limit permitted by the adjustment of said rods, and the roll can yield against the stress of these springs in case hard, infrangible substances enter the mill to the limit permitted by the length of the recesses.

By means of the nuts *h'* the stress or force of the springs may be increased or decreased, as advisable; and it will be observed that the arrangement is such that this stress will not be disturbed by the mere act of changing the adjustment of the rolls.

I have described my invention as applied

to a roller-mill. It is, however, obvious that its application to a concave may be essentially the same, the concave being either fixed to or pivoted in the sliding blocks, or else taking the place of the stationary roll. Other mechanism may also be mounted in these blocks and controlled by means of the devices described.

I claim—

1. The combination of the recessed yielding blocks, the screw-rods formed with heads held in said recesses, the springs pressing against the sliding blocks, and the sleeves threaded upon the outer ends of the screw-rods, held from longitudinal motion by connection with the frame-work and provided with hand-pieces or wheels, whereby they may be turned.

2. The combination of the recessed yielding blocks, the screw-rods formed with heads fitting into said recesses, the springs coiled about the rods and pressing against the blocks, the nuts whereby the stress of the springs may be adjusted, and the sleeves threaded upon the outer ends of the rods, held from longitudinal motion by connection with the frame-work and provided with hand-pieces or wheels, whereby they may be turned.

3. The combination of the recessed yielding blocks, the screw-rods formed with heads fitting into said recesses, the sleeves threaded upon the outer ends of the rods, held from longitudinal motion by connection with the frame-work and provided with hand-pieces or wheels, whereby they may be turned, the pointers and bolts on the sleeve, and the notched dials on the frame-work.

4. The combination of the sliding blocks formed with elongated recesses, the screw-rods having heads which fit and play within said recesses, the adjustable springs coiled about the rods and pressing against the blocks, the sleeves threaded upon the outer ends of said rods, held from longitudinal motion by connection with the frame-work and provided with hand-pieces or wheels, whereby they may be turned, the pointers and bolts upon the sleeves, and the notched dials upon the frame-work.

JOHN STEVENS.

Witnesses:
JOHN R. DAVIS, Jr.,
JOSEPH G. PARKINSON.