

(No Model.)

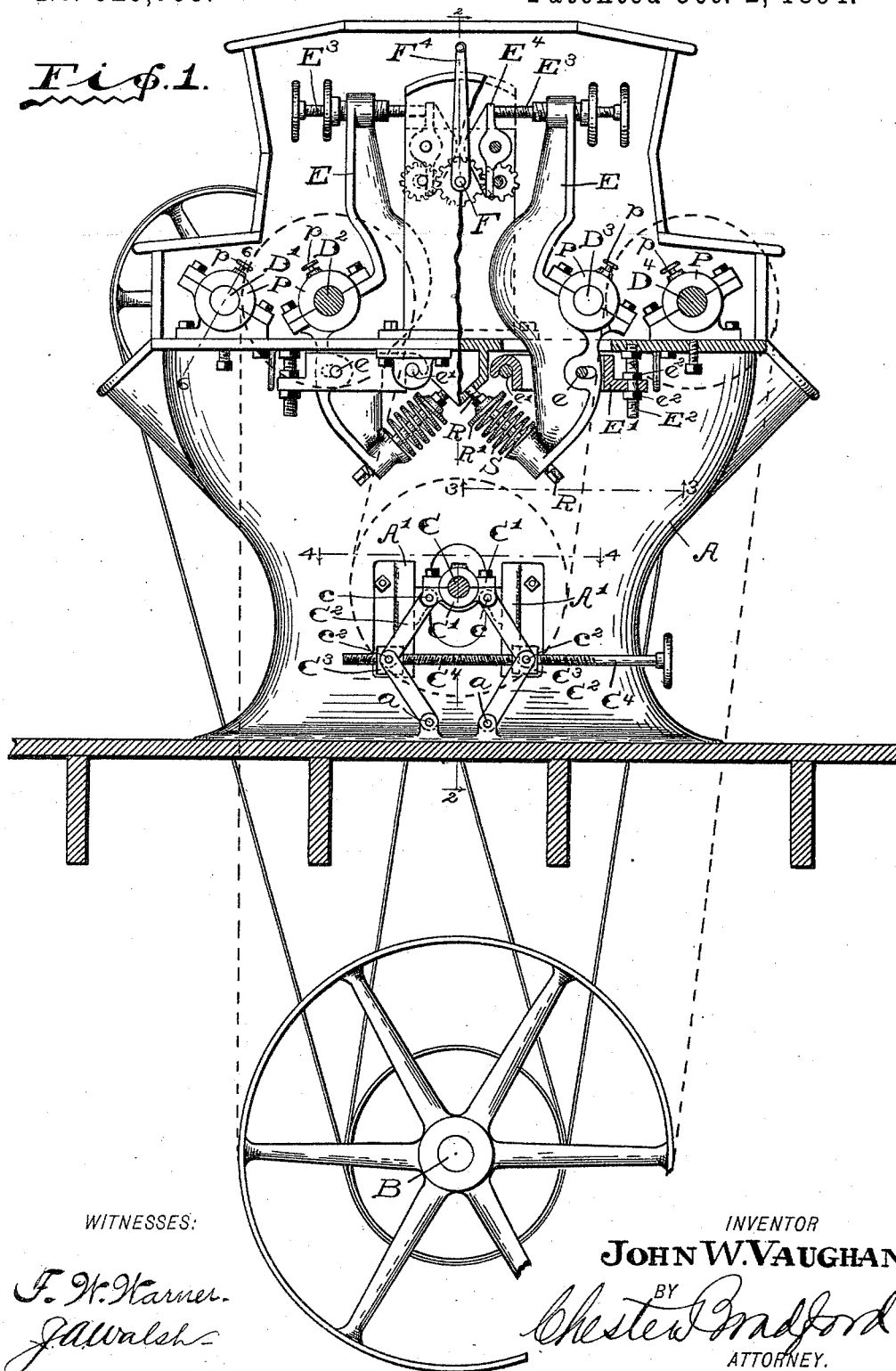
2 Sheets—Sheet 1.

J. W. VAUGHAN  
ROLLER MILL.

No. 526,795.

Patented Oct. 2, 1894.

*Figs. 1.*



WITNESSES:

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This technical drawing illustrates a mechanical assembly, possibly a part of a printing press. The device features a large horizontal cylinder labeled *D*, which is mounted on a frame. A horizontal bar labeled *F* is positioned above the cylinder. A vertical rod labeled *F'* is connected to the cylinder. A handle labeled *S* is attached to the top of the vertical rod. A lever labeled *E'* is connected to the handle. A small component labeled *E''* is also visible. A large gear or wheel labeled *R* is positioned below the cylinder. A vertical rod labeled *S* is connected to the gear. A horizontal bar labeled *C* is positioned below the gear. A small component labeled *A* is connected to the bar. A large gear or wheel labeled *R'* is positioned to the right of the main assembly. A vertical rod labeled *S'* is connected to the gear. A horizontal bar labeled *C'* is positioned below the gear. A small component labeled *A'* is connected to the bar. A large gear or wheel labeled *R''* is positioned to the right of the main assembly. A vertical rod labeled *S''* is connected to the gear. A horizontal bar labeled *C''* is positioned below the gear. A small component labeled *A''* is connected to the bar. The drawing is labeled with various letters and numbers, including *F*, *F'*, *S*, *E'*, *E''*, *D*, *B*, *R*, *S*, *R'*, *S'*, *C*, *A*, *A'*, *C'*, *R''*, *S''*, *C''*, *A''*, and *a*.

A technical drawing of a mechanical component, possibly a valve or a pump part, mounted on a base. The component has a cylindrical body with a flange on the left. A label 'S' points to the flange. A label 'R' points to a small circular feature on the top of the cylindrical body. A label 'H' points to a rectangular feature on the right side of the cylindrical body. The component is mounted on a base, which is labeled 'A' at two points.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN W. VAUGHAN, OF TAYLORSVILLE, INDIANA.

## ROLLER-MILL.

SPECIFICATION forming part of Letters Patent No. 526,795, dated October 2, 1894.

Application filed June 5, 1893. Serial No. 476,617. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN W. VAUGHAN, a citizen of the United States, residing at Taylorsville, in the county of Bartholomew and State of Indiana, have invented certain new and useful Improvements in Roller-Mills, of which the following is a specification.

The object of my said invention is to improve the means of adjustment of the various parts of roller mills.

A mill embodying said invention will be first fully described, and the novel features thereof then pointed out in the claims.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is an end elevation with some parts in section of a mill embodying my said invention; Fig. 2, a vertical sectional view on the dotted line 2 2 in Fig. 1; Fig. 3, a detail view of the lower end of one of the roll carrying arms and adjusting parts as seen from the dotted line 3 3 in Fig. 1; Fig. 4, a detail plan view of a fragment of the countershaft and its adjustable bearings; Fig. 5, a detail sectional view on the dotted line 5 5 in Fig. 2, and Figs. 6 and 7 detail sectional views, on an enlarged scale, of the adjustable boxings for the roll shafts.

In said drawings the portions marked A represent the frame-work of the machine; B, a driving shaft; C, a counter-shaft; D, the grinding rolls; D' D<sup>2</sup> D<sup>3</sup> D<sup>4</sup>, the roll-shafts; E, arms carrying the roll-shafts D<sup>2</sup> and D<sup>3</sup>, and F the rock-shaft by which and the gearing attached thereto the arms E are thrown back and forth, and the rolls into and out of grinding relation.

The frame A and driving shaft B are or may be of a well known form, and, not being of my present invention, will not be further described herein, except incidentally in describing said invention.

The counter shaft C is also positioned and operates in a well known manner. It is, however, peculiarly mounted. Its boxes C' are mounted in slides A' on the frame A, and are adapted to be moved vertically therein. Pivoted to said boxes and to points on the frame-work, by the pivots *c* and *a*, are toggle links C<sup>2</sup>, united, and connected to nuts C<sup>3</sup>, by pivots *c*<sup>2</sup>. A right and left hand screw threaded rod C<sup>4</sup>

passes through these nuts whereby they may be moved nearer together or farther apart, and the bearings C' on shaft C thus elevated or depressed, as will be readily understood. Said countershaft is thus adjusted to regulate the proper tension of the belts running over the pulleys thereon, for the usual and well known purpose of such adjustment.

The roll shafts D' D<sup>2</sup> D<sup>3</sup> D<sup>4</sup> run in boxes, mounted on the frame-work A and swinging arms E, in the usual and well known manner, and said boxes themselves are in their general form of a usual and well known construction. Within the cap P of each box, however, I prefer to place a bearing plate P' fitted to rest upon the shaft and adapted to be operated by a set screw suitably mounted on a screw threaded perforation in said cap. By this means the bearing of each roll shaft can be regulated independently of the others, and without stopping the machine, and all of said bearings kept tight, as they properly should be.

The swinging arms E are mounted on pivots *e*, which in turn are carried by housings E' supported by pivot bearings *e'* and bolts E<sup>2</sup>, the latter of which are attached to the frame A and extend down through perforations in said housings, with a jam nut *e*<sup>2</sup> upon each side. By moving said nuts *e*<sup>2</sup> the housing carrying the arm may be raised or lowered, and its relative vertical position thus determined. The lower ends of the arms are held against the pivots *e* by springs S surrounding rods R attached to the frame A at one end, and passing through perforations in said arms at the other. The follower R' on each of said rods, operated by a nut, regulates the tension of the spring, which is interposed between said follower and a bearing surface on the lower end of each arm. These springs are positioned to exert their force downwardly, as well as toward the pivots *e*, and thus they serve to hold the arms E, with the roll shafts which they carry, down firmly onto the pivots by which they are supported, thus effectually preventing any lost motion. At the upper ends the positions of the arms E are determined by screw threaded rods E<sup>3</sup> bearing against levers E<sup>4</sup>, and these are simultaneously operated to throw said arms in and

out, and the grinding rolls thus into or out of grinding relation, by the rock shaft F. Said rock shaft F has pinions F' mounted thereon which engage with other pinions F<sup>2</sup>,  
5 the shafts F<sup>3</sup> whereof are provided with cams or cam grooves which rest against the ends of the levers E<sup>3</sup>. By swinging the handle F<sup>4</sup> back and forth these cams are caused to operate through the levers and throw the arms E  
10 back and forth, as will be readily understood.

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

1. The combination, in a roller mill, with  
15 the counter shaft C, of its boxes C' mounted in vertical slides A' on the frame-work A, the toggle links C<sup>2</sup> pivoted to said boxes and to appropriate bearings on the frame-work at the outer ends, and to nuts C<sup>3</sup> at the inner ends  
20 where they come together, and a screw threaded rod C<sup>4</sup> passing through said nuts, whereby said toggle links are operated and

the bearings carrying the shaft thus elevated or depressed, substantially as set forth.

2. The combination, in a roller mill, of the  
25 frame-work, housings E' secured to said frame-work by pivots e' at one side and by screw rods E<sup>2</sup> having adjusting nuts e<sup>2</sup> at the other, pivots e in said housings, arms E having elongated slots mounted on said pivots,  
30 rolls supported by said arms, springs interposed between the lower end of said arms below the pivots and bearings on the frame-work, and mechanism for operating said arms at the upper ends thereof, substantially as  
35 shown and described.

In witness whereof I have hereunto set my hand and seal, at Edinburg, Indiana, this 31st day of May, A. D. 1893.

JOHN W. VAUGHAN. [L. S.]

Witnesses:

ARTHUR W. PRUITT,  
WILLIAM ASHBY.