No. 768,975. PATENTED AUG. 30, 1904.

W. S. BOWER.

POLISHING MACHINE.

APPLICATION FILED NOV. 23, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

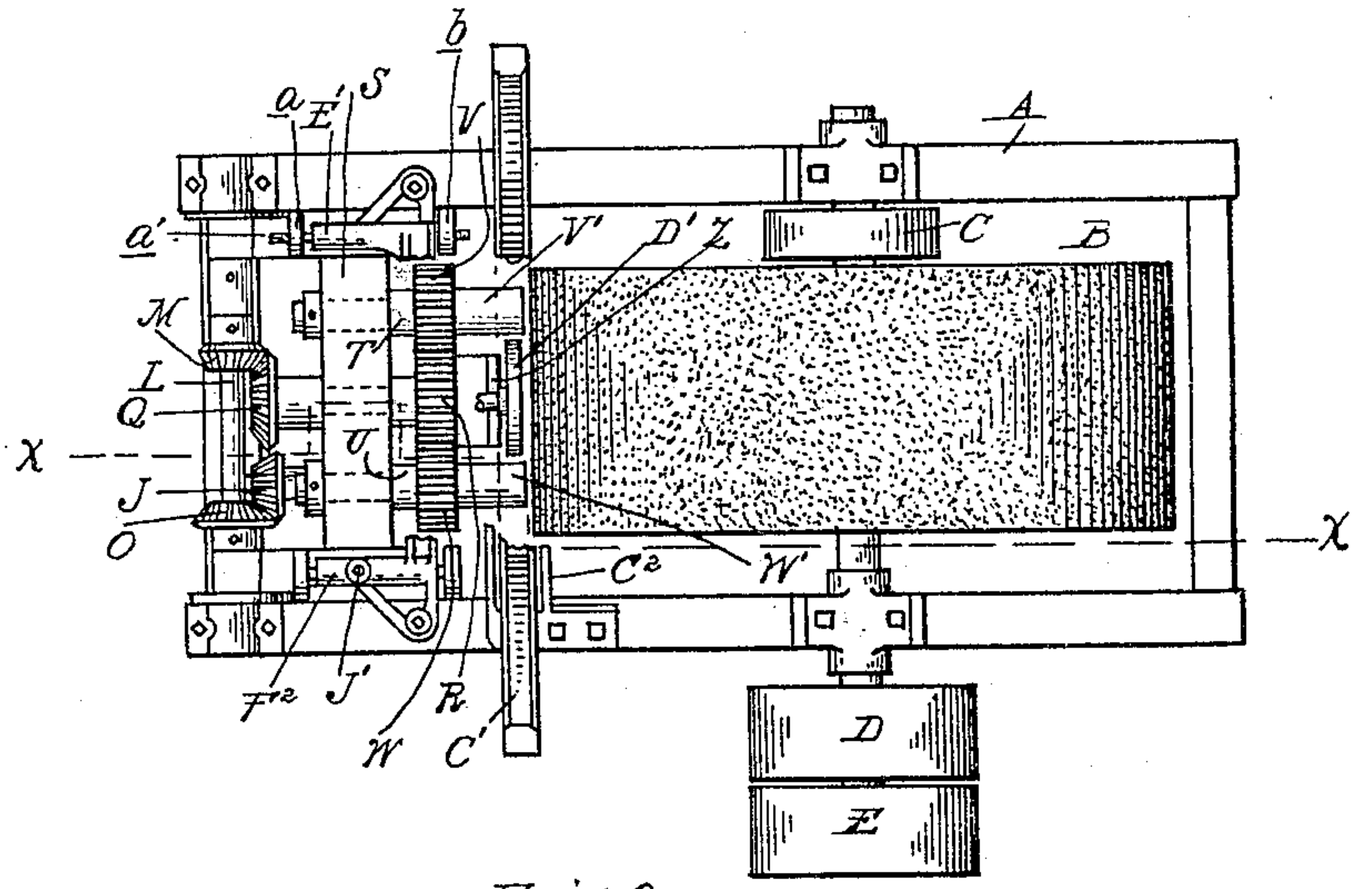
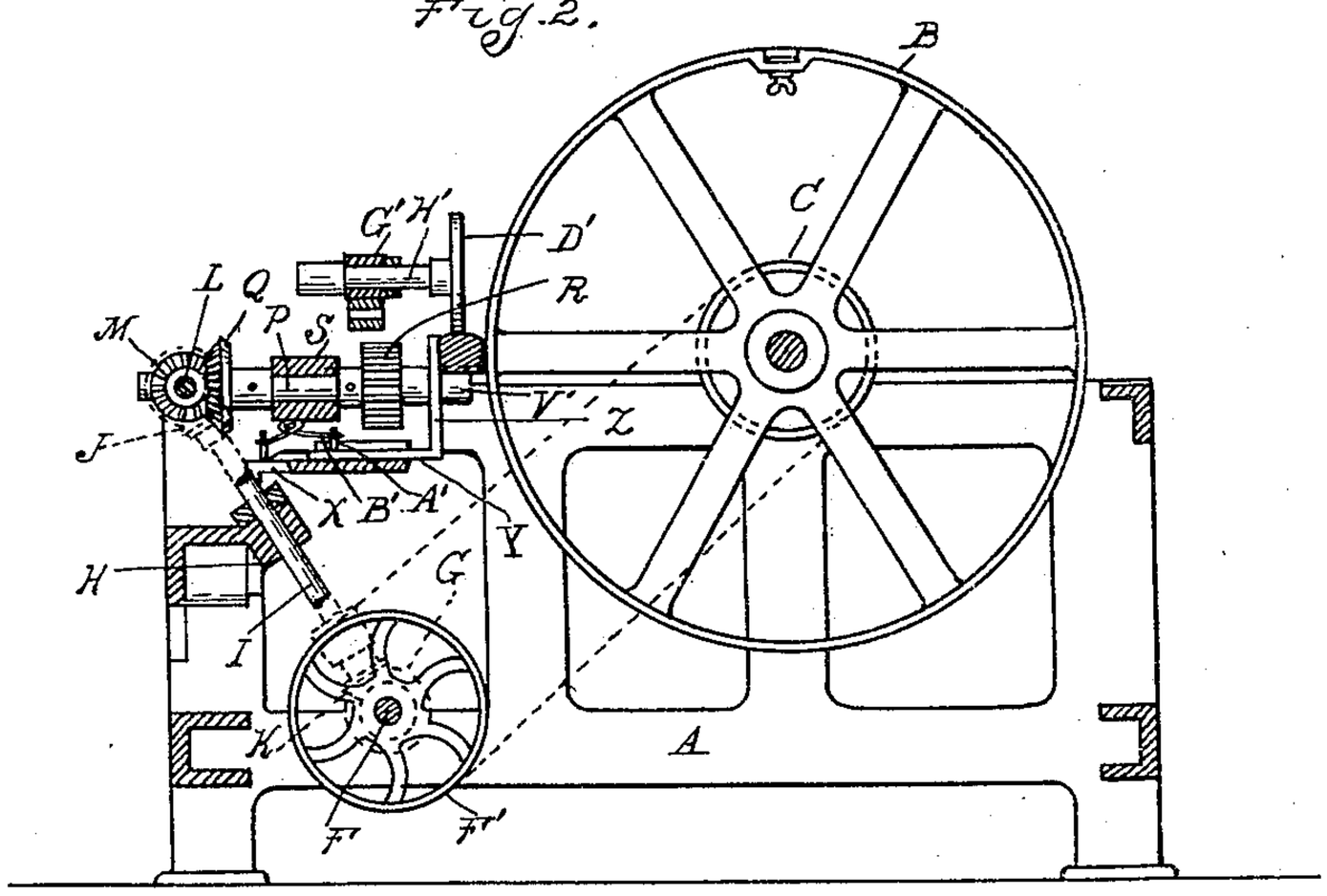


Fig. 2.



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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 4.

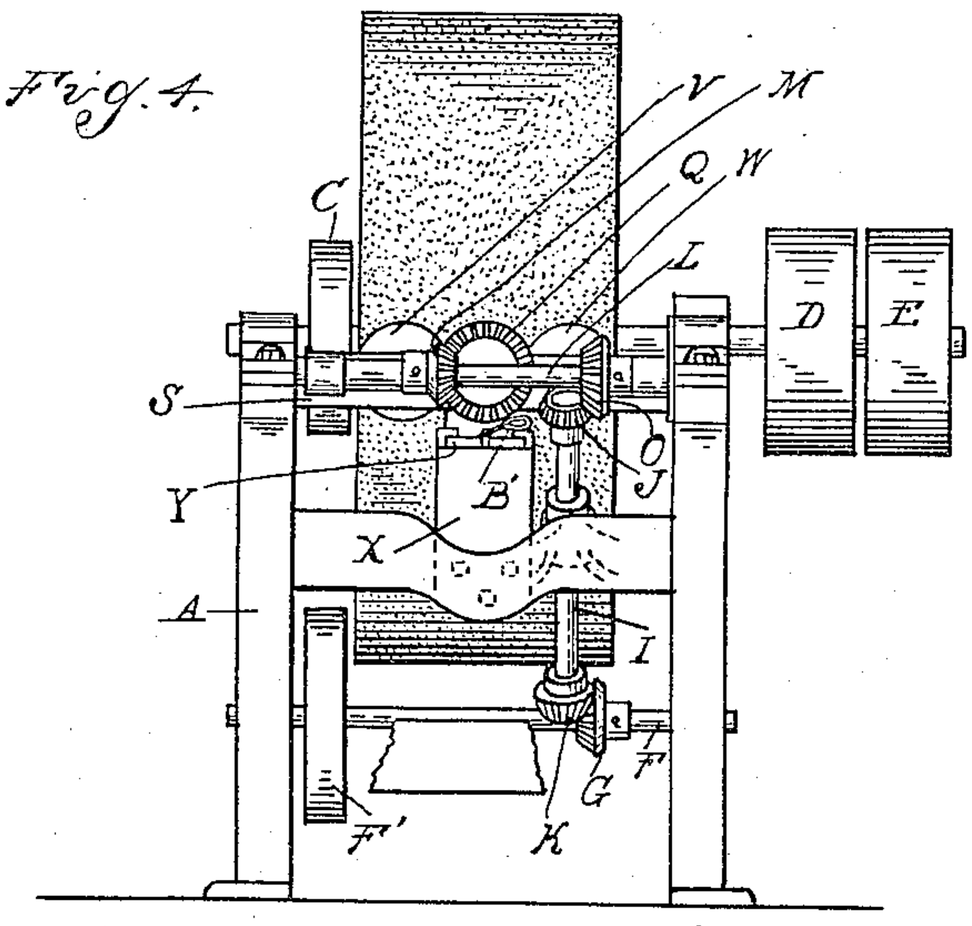


Fig. 3.

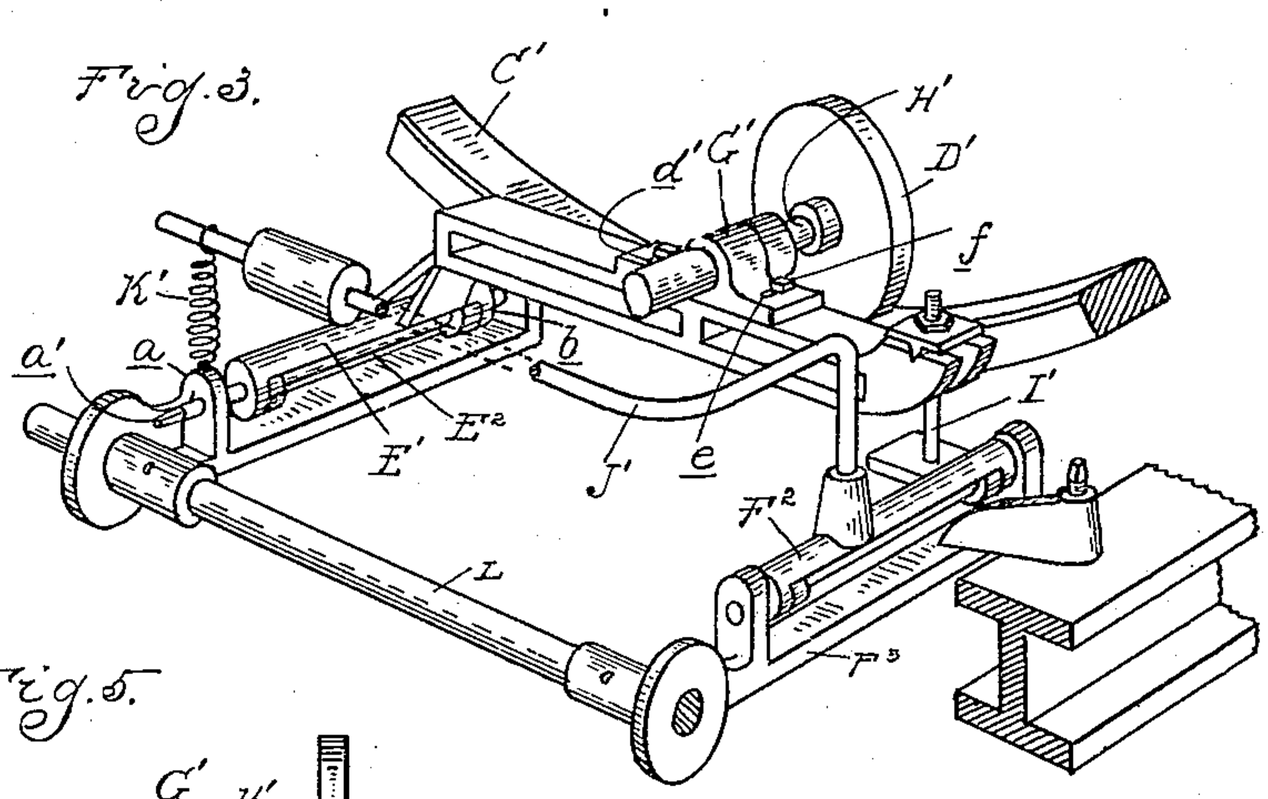
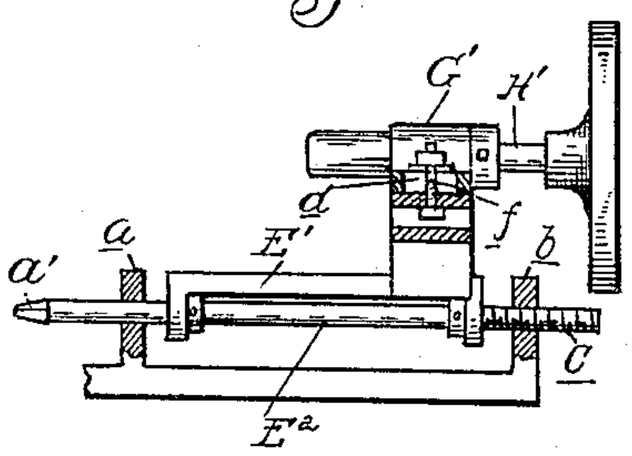


Fig. 5.



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No. 768,975. Patented August 30, 1904.

UNITED STATES PATENT OFFICE.

WELLS S. BOWER, OF HILLSDALE, MICHIGAN.

POLISHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 768,975, dated August 30, 1904.

Application filed November 23, 1903. Serial No. 182,299. (No model.)

To all whom it may concern:

Be it known that I, WELLS S. BOWER, a citizen of the United States, residing at Hillsdale, in the county of Hillsdale and State of Michigan, have invented certain new and useful Improvements in Polishing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates generally to polishing-machines, and has particular reference to a machine of this character adapted for finishing wheel rims or fellies.

The invention consists in the novel construction of the machine and in the peculiar arrangement and combination of its various parts, as will be more fully hereinafter set forth and illustrated.

In the drawings, Figure 1 is a plan view of a machine embodying my invention. Fig. 2 is a longitudinal section on line *x x* of Fig. 1. Fig. 3 is a detached perspective view of the presser mechanism. Fig. 4 is an end elevation of the machine; and Fig. 5 is a view, partly in section, of a portion of the pressure mechanism.

In the drawings thus briefly described, A represents a suitable frame, preferably rectangular in configuration, which supports the other parts of the mechanism. Journaled in the rear portion of this frame is the sand-cylinder B, its shaft, as shown, carrying at opposite ends the drive-pulley C and the fixed and loose pulleys D and E.

F represents a transverse shaft journaled in the front part of the frame, carrying a pulley F′, belted to the pulley C, as shown, and in proximity to its opposite end a bevel gear-wheel G.

H is a bracket having a bearing at its extremity, in which is journaled a shaft I, provided with the bevel-gears J and K, the latter meshing with the bevel-gear G, as indicated in Figs. 1 and 2.

L represents a drive-shaft journaled in the extreme front portion of the frame, carrying thereon bevel-gears M and O, the latter meshing with the gear J.

Journaled centrally within the framework described is a longitudinal shaft P, carrying the bevel-gear Q, meshing with the gear M, and a gear-wheel R, arranged centrally of and in proximity to the sand-cylinder.

Upon opposite sides of the shaft P and journaled in a cross-bar S of the frame are stub-shafts T and U, carrying, respectively, gear-wheels V and W, which mesh with the central gear R. The stub-shafts described are of considerable diameter at their free ends and form the feed-rolls V′ and W′ for the felly.

Arranged beneath the gear mechanism on a suitable bracket X is an angle-shaped slide Y, the vertical portion Z of which projects upwardly in proximity to the sand-cylinder. A′ represents a pin on the horizontal member of the slide, and B′ is a spring interposed between the pin and the frame, acting normally to force the slide toward the sand-cylinder.

In the operation of the machine power is applied to the fixed pulley D, which causes the sand-cylinder to rotate and the gear-wheel R and feed-rolls to operate. One end of the felly C′ to be sanded is then inserted between a pair of suitable transverse guides C^2 and resting upon one and subsequently both of the feed-rolls is driven crosswise of the sand-cylinder. Thus the direction of the cut of the sand is continually changed, and consequently a much smoother surface is produced than where a lengthwise feed is employed.

The felly while being fed across the sanding-roll is held in operative relation therewith by the spring-pressed slide described and a spring-pressed member D′, preferably in the form of a wheel or roller, which normally engages the concave face of the felly.

The roller or wheel referred to forms a part of a presser mechanism adapted not only to hold the rim or felly down upon the feed-rolls, but also to guide the felly toward or parallel with the sand-cylinder, according to whether considerable pressure against the sand-roller or a slight pressure is desired.

In construction the presser mechanism comprises two pivoted members E′ and F^2, arranged, as shown in Fig. 3, upon an auxiliary frame F^3, supported within the main frame. The member E′ is mounted upon the rod E^2 for rocking movement, and the rod in turn is

journaled at one end within a bearing *a* and at its opposite end in a threaded bearing *b*, this end of the rod being threaded, as at *c*, to engage the bearing.

I′ represents an adjustable link forming a pivotal connection between the meeting portions of the pivoted members, and G′ is a journal-box mounted upon the transverse portion of the pivoted member E′, in which is journaled the shaft H′ of the presser-roller.

The journal-box G′ described is slotted, as at *d* and *e*, and is adjustably secured to the member E′ by bolts *f*, so that it may be turned or adjusted in a horizonial plane, and with it the presser-roller, so as to bring the latter into angular relation or parallelism with the sand-cylinder.

J′ is a weighted arm secured to the member F^2, which serves to keep the presser-roll tightly in contact with the inner surface of the wheel-felly, and K′ is a spring for the free end of this arm, serving to steady it and prevent it from jumping during the operation of sanding.

To adjust the mechanism described for different widths of fellies so that the pressure-roll will travel in the center of the felly, it is only necessary to apply a wrench or other suitable tool to the squared end *a′* of the rod E^2, the rotation of the rod throwing the wheel forward or backward the desired distance.

In cases where pressure between the sand-cylinder and stock is required in excess of that afforded by the spring-pressed slide the journal-box is so adjusted as to throw the presser-roll in angular relation to the cylinder, which causes the felly to travel toward and press against the sanding-surface, giving the additional pressure desired, the degree of angular adjustment determining the amount of additional frictional contact.

What I claim as my invention is—

1. In a polishing-machine, the combination of a rotary polishing-cylinder, and mechanism operable upon the movement of the cylinder, for automatically feeding stock to the cylinder in a direction transverse to its rotation, said mechanism being arranged in front of, and intermediate the sides of, the cylinder.

2. In a polishing-machine, the combination with a rotatable polishing-cylinder, of feed-rolls spaced from one another, arranged intermediate the sides of the cylinder, and mounted for rotary movement in a direction transverse to the rotation of the cylinder, and means operable by the movement of the cylinder for simultaneously driving the cylinder and rolls.

3. In a polishing-machine, the combination with a polishing-cylinder, of means for driving the same and mechanism associated with said last-mentioned means for feeding the stock in a direction transverse to the rotation of the cylinder, and spring-actuated means for automatically holding the work during its transverse travel against the periphery of the cylinder.

4. In a polishing-machine, the combination with a rotary polishing-cylinder, of mechanism operable upon the movement of the cylinder for feeding stock thereto in a direction transverse to its rotation, and automatically-adjustable means for holding the stock in frictional engagement with the feed mechanism.

5. In a polishing-machine, the combination with a rotary polishing-cylinder, of feed-rolls adjacent to the cylinder and adapted to revolve in a direction substantially at right angles to the direction of rotation of the cylinder, a spring-actuated member for holding the work to the cylinder, and a spring-pressed rotary member for holding the work on the rolls.

6. In a polishing-machine, the combination with a rotary polishing-cylinder, of mechanism for feeding stock thereto, and angularly-adjustable means for holding the stock in frictional engagement with the feed mechanism.

7. In a polishing-machine, the combination with a rotary polishing-cylinder, of two spaced feed-rolls adjacent to the cylinder and adapted to revolve in a direction substantially at right angles to the direction of rotation of the cylinder, a spring-actuated member for holding the work to the cylinder, and spring-actuated means for holding the work on the rolls.

8. In a polishing-machine, the combination with a rotary polishing-cylinder, of feed mechanism therefor operating to feed stock to said cylinder crosswise of its surface, and means adjustable transversely relative to the axis of rotation of the cylinder for holding the stock in frictional engagement with the feed mechanism.

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

WELLS S. BOWER.

Witnesses:
F. W. THOMPSON,
E. M. LASH.