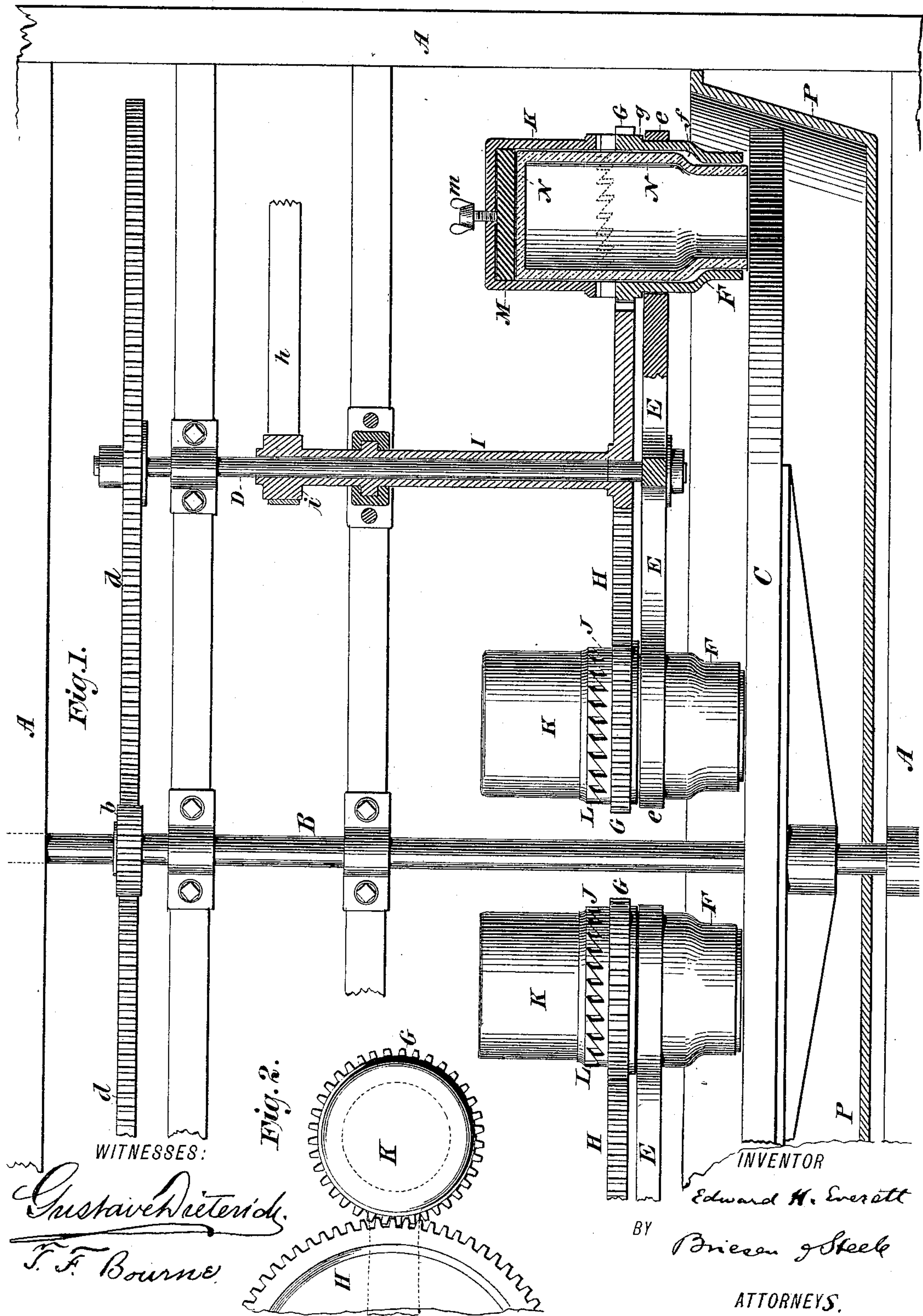


E. H. EVERETT.  
JAR GRINDING MACHINE.

Patented Aug. 16, 1887.





# UNITED STATES PATENT OFFICE.

EDWARD H. EVERETT, OF NEWARK, OHIO.

## JAR-GRINDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 368,200, dated August 16, 1887.

Application filed January 31, 1887. Serial No. 226,012. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD H. EVERETT, a resident of Newark, in the county of Licking and State of Ohio, have invented an Improved Jar-Grinding Machine, of which the following is a specification.

My invention relates to jar-grinding machines; and it consists in a lower cup or holder for the jar, open at both ends and carried in a revolving frame above a suitable grinding-plate, and means for rotating said cup on its own axis. This cup also extends above and below the revolving frame, which enables the article to be ground to be held in position without pressure from above.

The invention also consists in the combination, with the above parts, of an upper cup which rests on the bottom of the jar to be ground, and means for connecting said upper and lower cups, whereby the upper cup, and with it the jar, will be revolved until the mouth of the jar is ground off to a definite amount, as will be more fully hereinafter set forth.

In the accompanying drawings, Figure 1 is an elevation, partly in section, of my improved machine. Fig. 2 is a plan view of a cup and gear for revolving said cup, partly in section.

Journaled in the frame A of the machine is the shaft B, upon the lower end of which is mounted the grinding-plate C. Upon the upper end of shaft B is mounted the pinion c, which meshes with spur-wheel d upon shaft D, suitably journaled in the frame A. Mounted upon said shaft D, at the lower end and above the grinding-plate C, are a number of radial arms, E, having sockets e in their outer ends for the reception of the cups F.

The cups F have each an internal configuration corresponding to that of the jar to be ground, and are provided with the shoulder f, for the purpose which will more fully hereinafter appear. On the outer periphery of the cup F is a flange, g, which rests upon the radial arm E and supports the cup in said arm. The cup also has a toothed flange, G, which meshes with the spur-wheel H on the lower end of a sleeve, I, surrounding the shaft D and suitably journaled in the frame A. The spindle I is revolved by means of belt h and pulley i, or other suitable means may be employed.

The upper edge of the cup F has ratchet-teeth J formed thereon, and resting on said ratchet-teeth is an upper cup, K, which at its lower edge is provided with corresponding ratchet-teeth, L. The upper cup, K, may be provided with an adjustable bottom, M, which bottom is adjusted up and down by a thumb-screw, m, or other suitable means. This bottom M may be made of rubber or some springy substance to ease the weight on the bottom of the jar, and by addition of friction causing said jar to revolve with more certainty on its own axis in connection with the upper cup, K. The adjustment of the bottom of the cup K provides for jars of different heights, also regulating the distance the weight should have bearing on the jar.

This machine can be operated either with the lower cup, F, alone or with the upper and lower cups, K and F. When the lower cup, F, is used alone, the jar to be ground is inserted vertically in the cup F, as in Fig. 1, until its mouth rests on the grinding-plate C. The revolution of the arms E carries the cup F, and with it the jar, around over the surface of the grinding-plate C, grinding the mouth of the jar. During this movement the cup F is revolved by the spur-wheel H; but as there is no contact between the jar and the cup other than that necessary to maintain the jar in a vertical position, the latter will not be rotated on its axis by the rotation of the cup F until the mouth of the jar has been ground off a sufficient amount to allow the shoulder of the jar to rest on the shoulder f of the cup F. As soon as this contact takes place the jar will be revolved by the cup, the grinding stopped, and the operator warned by the rotation of the jar that the grinding operation is completed. When the upper cup, K, is used in connection with the lower cup, the jar N is inserted vertically in the cup F until its mouth rests on the grinding-plate C. The upper cup, K, is then placed so as to rest on the bottom of the jar N, the ratchet-teeth L just meshing with ratchet-teeth J on the cup F.

As the upper cup, K, is made sufficiently heavy to put more or less pressure on the bottom of the jar, the latter, through the medium of cup K, will be rotated on its axis by the ro-



tation of the connected lower cup, F. As the grinding of the edge of the mouth of the jar proceeds the ratchet-teeth L penetrate more deeply into the ratchet-teeth J, and finally, when the ratchet-teeth lock—that is, the edge of the ratchet-teeth L rests on the bottom of the ratchet-teeth J, or vice versa—the weight of the upper cup, K, will be supported, not by the jar, but by the lower cup, F.

10 In place of having the radial arms E, I may use a plate or disk which has sockets for the cups F. The spindle I may be held stationary by any suitable means, in which case the rotation of the cup F on its own axis will be faster than when the sleeve rotates in the same direction as the shaft D, and slower than when in a reverse direction.

P is a tub or receptacle under the grinding-plate C and extending up around the same to catch the water, &c., that is thrown off the grinding-plate during revolution.

This machine has the great advantage that the cups F are of sufficient height to maintain the jars in a vertical position during the grinding operation, and that one jar, as soon as the grinding is completed, may be removed without stopping the machine.

This machine may be provided with two or more shafts D and connected parts, all arranged around the central shaft, the one grinding-disk on the central shaft serving to grind all the jars put into the machine. Other means for locking the cups F and K than the ratchet-teeth J and L may be used, if desired.

35 Having now described my invention, what I claim is—

1. In a jar-grinding machine, the combination of a cup, F, open at top and bottom, the lower portion being narrower than the upper and adapted to hold the lower portion of the

article to be ground, and means for rotating said cup on its axis, with a revolving frame, E, for supporting said cup, the cup F extending above and below the frame E, thereby enabling the article to be ground to be held in position without pressure from above, substantially as described. 45

2. In a jar-grinding machine, the cup F, open at top and bottom, the lower portion being narrower than the upper and adapted to hold the lower portion of the article to be ground, said cup having shoulder f, in combination with a revolving frame, E, for supporting said cup, the cup F extending above and below the frame E, thereby enabling the article to be ground to be held in position without pressure from above, substantially as described. 55

3. In a jar-grinding machine, the combination of a lower cup having ratchet-teeth on its upper edge and an upper cup having corresponding teeth on its lower edge, substantially as described. 60

4. The combination of a lower cup, F, having ratchet-teeth J, and an upper cup, K, having ratchet-teeth L, which mesh with the teeth J, with a frame for supporting said lower cup, and means for rotating said lower cup on its own axis, substantially as described. 65

5. In a jar-grinding machine, the grinding-disk C, shaft D, arms E, and cup F, said cup having shoulder f, ratchet-teeth J, and toothed flange G, gearing with spur-wheel H, and sleeve I, in combination with cup K, having ratchet-teeth L for locking said cups F and K together, substantially as described. 70 75

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Witnesses:

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