

Kelly & Samuel,

Grinding Glass Jars.

No. 98270.

Patented Dec. 28. 1869.

Fig. 1.

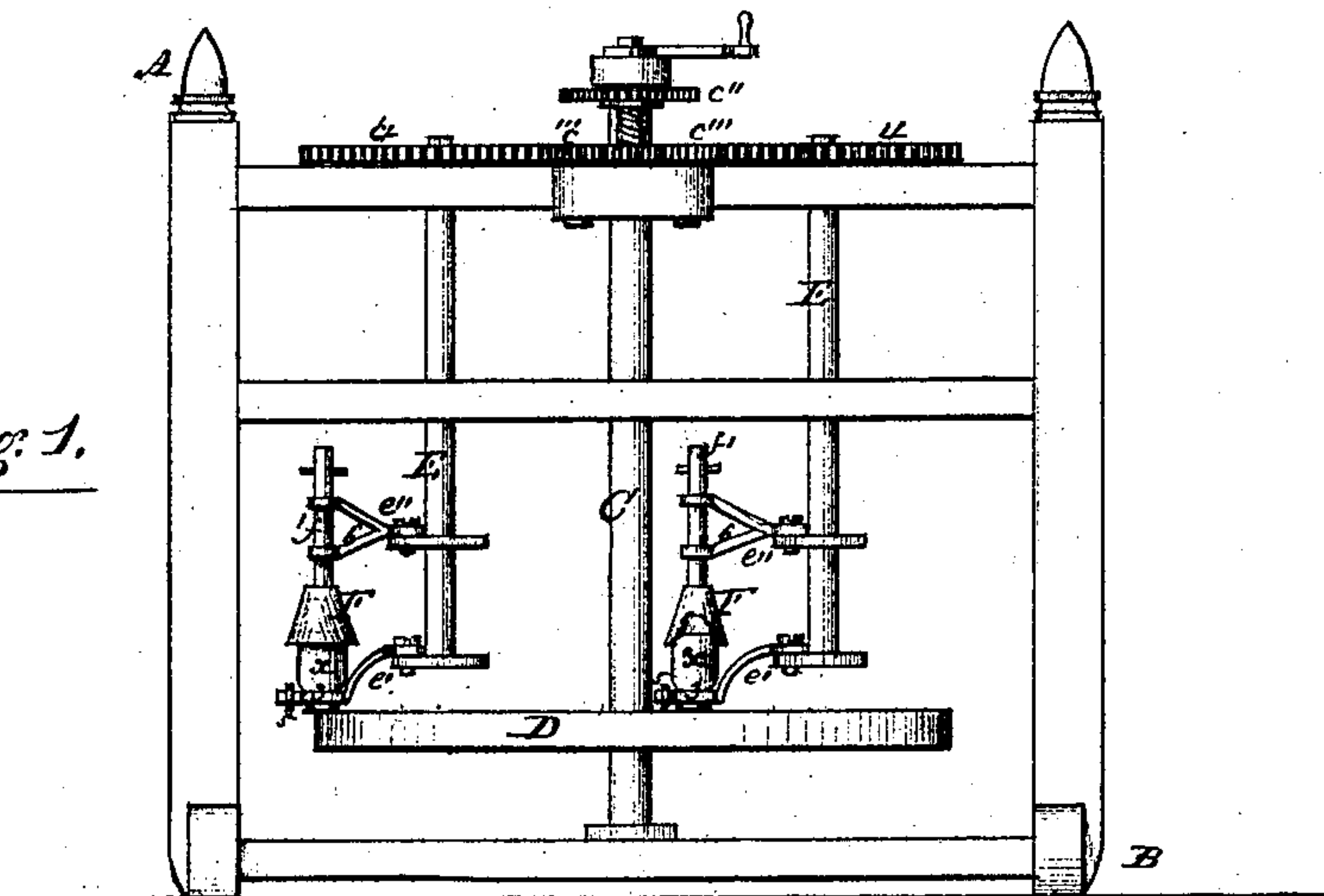
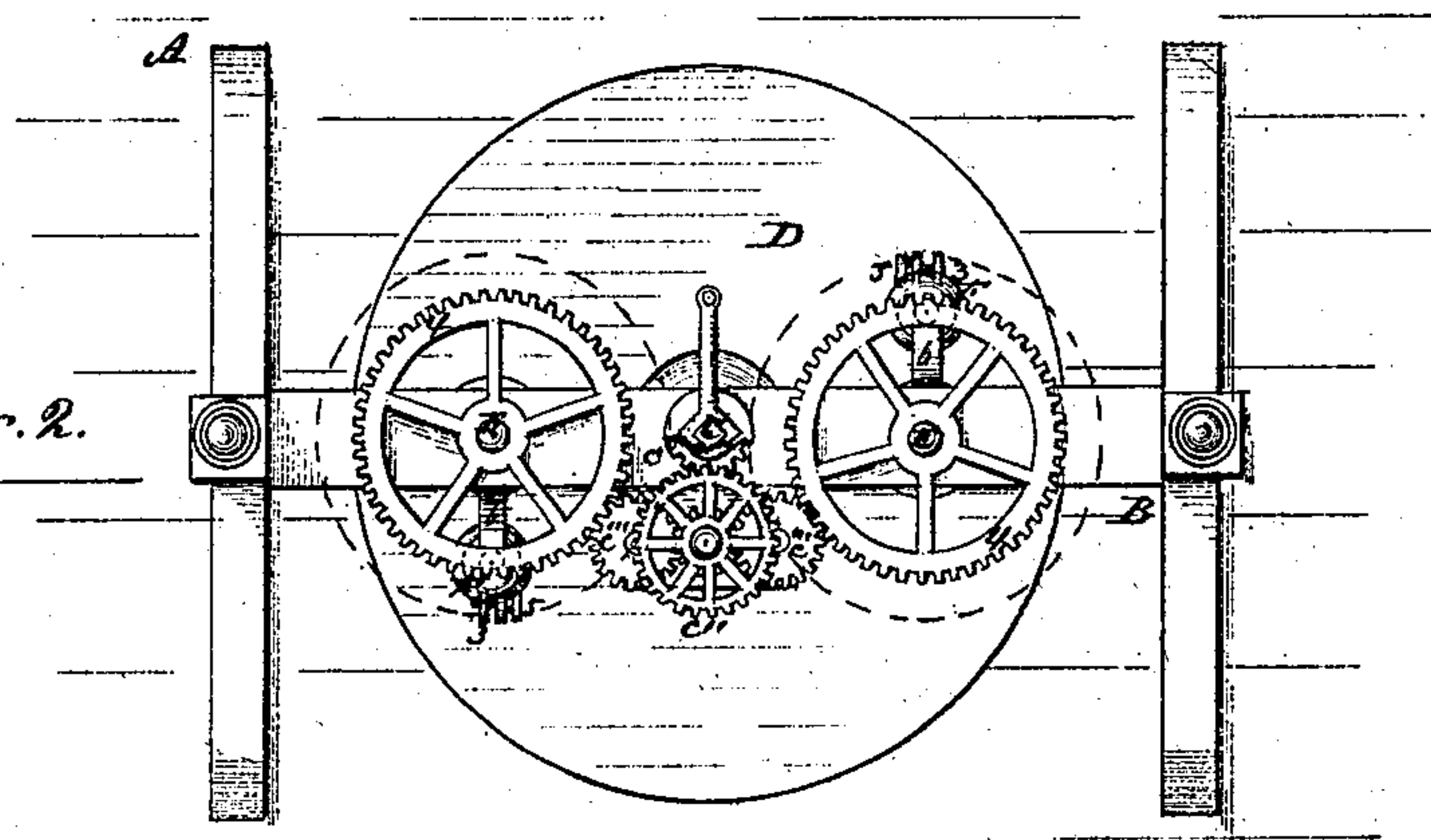


Fig. 2.



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Letters Patent No. 98,270, dated December 28, 1869.

IMPROVEMENT IN MACHINE FOR GRINDING GLASS JARS.

The Schedule referred to in these Letters Patent and making part of the same.

We, ALEXANDER W. KELLY and JOHN B. SAMUEL, of the city of Philadelphia, in the State of Pennsylvania, have invented certain Improvements in Machines for Grinding Glass Jars, of which the following is a specification.

Nature and Objects of the Invention.

Our invention relates to the combination of a series of vertical rotating shafts, each provided with a series of adjustable arms, having devices attached for receiving and supporting glass jars thereon, with a central rotating shaft, which carries a horizontal grinding-disk, in such a manner, that when the jars are being revolved around the central shaft, their mouth or lower ends will be kept in grinding-contact with the upper surface of the said horizontal grinding-disk, the object of our invention being to facilitate the operation of grinding the mouth-edges of a large number of glass jars at the same time in one machine, to facilitate in the removal of the ground jars and the substitution of others to be ground, and to prevent the rapid waste of the grinding sand and water required in grinding such vessels.

Description of the Accompanying Drawings.

Figure 1 is a side elevation of a grinding-machine embodying our invention.

Figure 2, a plan view of fig. 1.

General Description.

A B is a strong, steady frame, supporting, in its centre, in suitable bearings, the vertical main shaft C, which carries the horizontal grinding-disk D.

E E are two of the vertical rotating shafts, arranged around the shaft C, at suitable distances therefrom, and each provided with one of each of the adjustable arms *e'* and *e''*, the arms *e' e'* having their ends fitted with the adjustable rings 3 3, and the arms *e'' e''* fitted with the sliding holding-weights F F.

The upper end of the main shaft C has fixed upon it a small spur-wheel, *c'*, which gears into a spur-wheel, *c''*, fixed on a short shaft, and carries a small pinion, that gears into two small separate spur-wheels, *c''' c'''*, and these small spur-wheels *c'''* gear respectively into two larger spur-wheels, 4 4, which are fixed on the upper ends of the shafts E E, and, consequently, when rotary motion is given to the main shaft C, the several surrounding shafts E E will be rotated in the contrary direction, but with greatly reduced speed.

The adjustable rings 3 3 each consist of two nearly semicircular springs, attached together to the re-

spective ends of the adjustable arms *e' e'*, so as to form a divided horizontal ring, and have fitted to them a thumb-screw, 5, whereby the said rings can be contracted or adjusted in diameter, to receive the neck of the jar. (See fig. 1.)

The adjustable arms *e'' e''* have each branching arms, 6 6, through holes in the ends of which the respective vertical stems *f' f'*, of the weights F F, slide freely up and down within proper limits.

The lower end of each of the weights F is concave, and of sufficient diameter to fit around upon the bottom of the jar to be ground.

The whole length of each of the arms *e' e'* is such as will carry around the jar they support, so as to alternately clear the main or central shaft C, and reach the outer edge of the grinding-disk D, during each full rotation of the carrying-shaft E.

In using the machine, the necks of the jars, *x x*, to be ground, are placed in the previously-adjusted rings 3 3, (first lifting the weights F for the purpose, and then letting it fit down by gravitation around over the bottom of the jar,) the diameters of the said rings 3 3 being adjusted to let the necks of the jars freely slip down, and rest their mouth-edges upon the grinding-disk D; and, also, the height of the arms *e'* adjusted so that the shoulders of the jars will come in contact with and rest upon the top edges of the rings, and thus be stopped in their descent when the edges of the mouths of said jars have been ground away to the desired distance from the shoulders.

The disk D is of cast-iron, sand and water being caused to fall thereon as the grinding-medium.

It is intended to use three or four of the shafts E in one machine, and as many of the jar-carrying arms *e'* and *e''* on each shaft E as the diameter of the disk D will permit.

One complete rotation of either of the carrying-shafts E occupying about half a minute—the speed at which they are intended to be driven—completes the grinding of all the jars it carries, and, therefore, it will be evident that a very large number of the jars *x* can simultaneously be ground with facility on one machine in the half minute, and that as the grinding-disk is horizontal in its grinding-position, the sand and water required will not waste or run off the disk too rapidly, as is the case in grinding-machines having either vertical or inclined grinding-disks.

Claims.

We claim, as our invention—

1. The sliding holding-weight F, and the adjustable arm *e''*, the adjustable ring 3, and arm *e'*, in combination with the rotary shaft E, and as arranged

to operate together in supporting and holding the jar x in a vertical position, substantially as and for the purpose hereinbefore described and set forth.

2. The combination of a series of vertical rotating shafts, E, each provided with a series of adjustable arms, $e' e''$, having, respectively, the rings 3 and weights F attached, for receiving and supporting glass jars thereon in vertical positions, as described, with the central rotating shaft C, and its horizon-

tal disk D, the said parts being arranged to operate together, substantially as and for the purpose hereinbefore described and set forth.

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