# M. Neckermann,

## Grinding Glass.

No. 85,022. Patented Dec. 15, 1868.

Fig: 1.

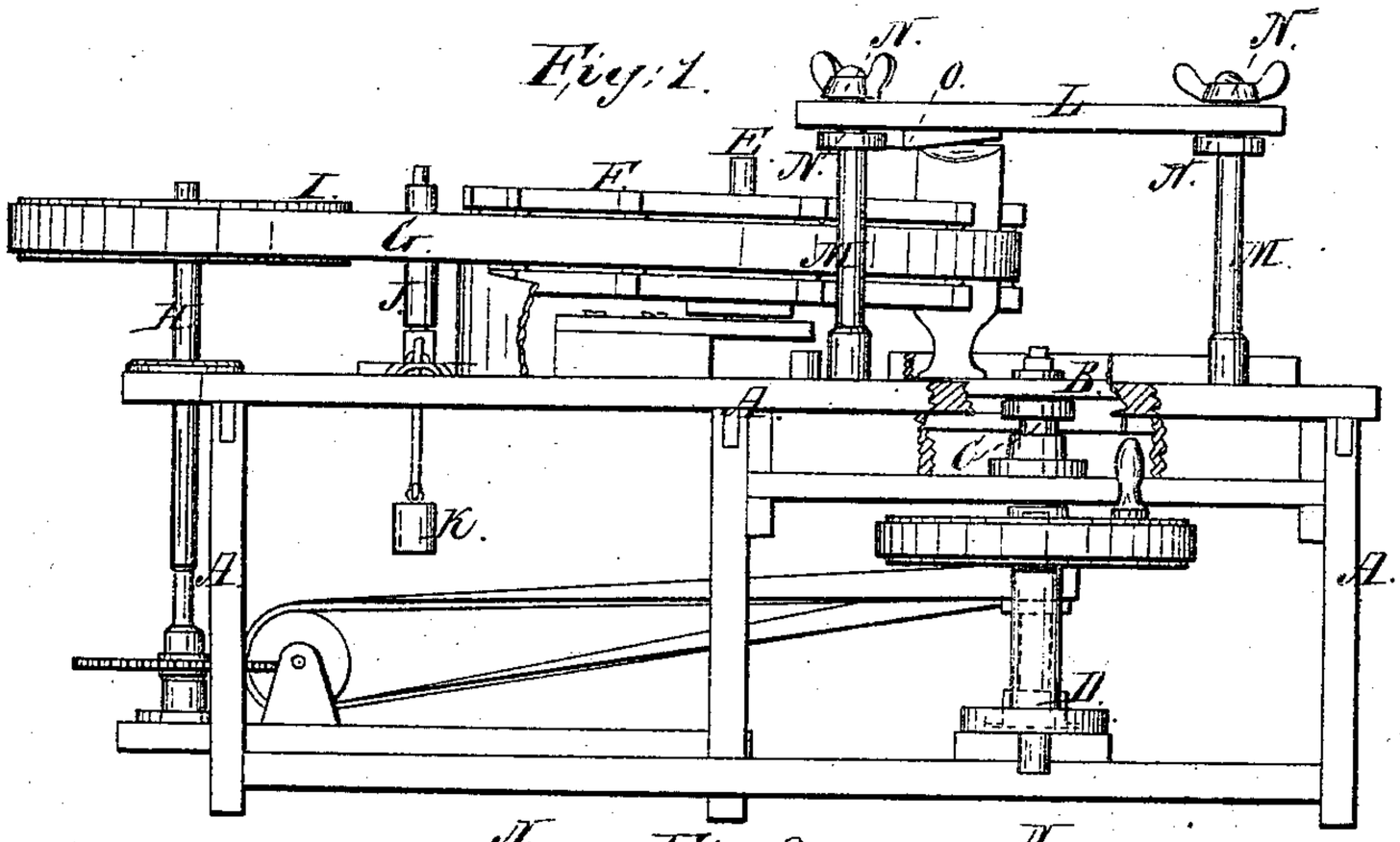



Fig: 2.

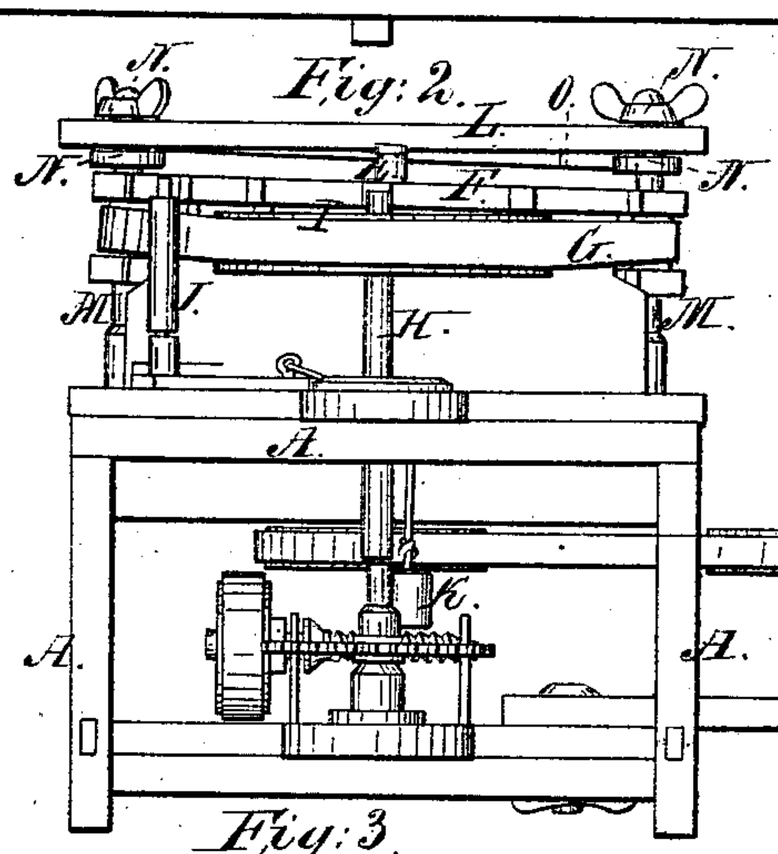



Fig: 4.

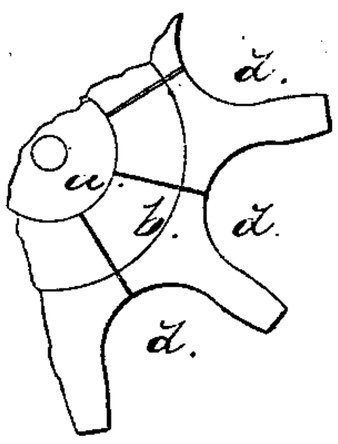
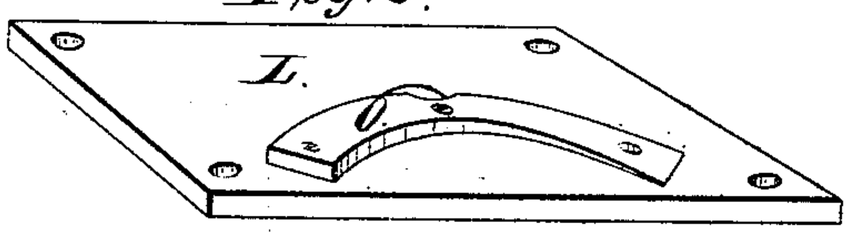



Fig: 3.

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*Letters Patent No.* 85,022, *dated December* 15. 1868.

## IMPROVED MACHINE FOR GRINDING GLASS FRUIT-JARS.

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

*To all whom it may concern:*

Be it known that I, MICHAEL NECKERMANN, of Pittsburg, in the county of Allegheny, and State of Pennsylvania, have invented certain new and useful Improvements in a Machine for Grinding Glass Jars, &c.; and do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in the construction and general arrangement of a machine for grinding glass jars, tumblers, and other articles of similar nature.

In order to enable others skilled in the art to which my invention appertains, to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, which form a part of this specification, and in which—

Figure 1 is a longitudinal elevation;

Figure 2, an end view;

Figure 3, a bottom view of the upper grinding-plate or guide; and

Figure 4, a sectional plan view of the frame which holds the jars while they are being ground.

A represents a table or frame of suitable dimensions, which has a circular hole cut through its top, in which hole a circular grinding-plate, B, is placed.

This plate is horizontal, and secured to a shaft, C, which passes through a box or collar in the table A, thus being held perfectly vertical. The lower end of said shaft rests in a journal-box, D, which should be provided with a set-screw and jam-nut, for the purpose of keeping the grinding-plate always at the proper height.

On the table A, at a suitable distance from the grinding-plate B, is a small shaft, E, which is placed in a slightly-inclined position towards the grinding-plate.

On this shaft is placed a wheel, F, which consists of a cast-iron hub or centre-piece, *a*, with a circular frame, *b*, secured to the same.

The frame *b* has a number of semicircular notches, *d d*, on its outer periphery, for the purpose of holding and carrying the jars over the surface of the grinding-plate. Said circular frame is made of wood in segmental parts, and joined together. Afterwards the whole frame is secured to the cast-iron centre-piece *a* by bolts, to facilitate the changing of the same for others, to suit different kinds and sizes of jars.

A belt, G, passing around the wheel F, and a pulley, I, on the vertical shaft H, impart motion to the same, and keep the jars firmly in their places.

The belt is kept sufficiently tight by means of a pulley, J, the shaft for which is secured to a slide moving on top of the table A, and which slide is held or pressed in proper position by means of the cord and weight K.

The belt G is kept in place, when there are no jars in the frame, by means of the ends of the partitions which separate the semicircular notches *d d*, these ends being cut, as shown in fig. 1, so as to form a recess in which the belt rests.

The vertical shaft H is driven by means of a worm-gear and belt, connecting with the driving-shaft C, as shown in fig. 1.

The cross-piece L is held in position, and regulated to any required height over the grinding-plate B, by two or more upright posts M M and nuts N N.

This cross-piece is provided on its under side with an inclined semicircular iron plate or plane, O, corresponding with the inclined position of the wheel F.

The semicircular portion of the table, where the jars are put in and taken out, is covered with sheet-iron, to prevent the wearing of the same. Said sheet-iron cover projects somewhat above the surface of the grinding-plate, where the jars enter, and below the same, where the jars leave it, in order not to give any obstructions to the jars during the operation of grinding.

The operation of the machine is as follows:

The machine is set in motion, and the jars put in the notches *d d*, provided for that purpose, when they will be carried over the grinding-plate B, by means of the belt G, and gradually pressed down by the inclined iron plane O, and corresponding inclined position of the wheel F, which holds the jars, when they will come out finished on the opposite side, from where they will be taken out for washing.

It will be seen that the wheel F, holding the jars, occupies but one-half of the surface of the grinding-wheel, and therefore another wheel for larger-sized jars may be placed on the opposite side.

The whole surface of the grinding-plate is brought in use, and thereby the uneven wear of the same is prevented, and by the partial change of position of the jars, in relation to their axis, an even-ground face is obtained.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The adjustable cross-piece L, provided with a semicircular inclined plate, O, and arranged substantially as and for the purposes herein set forth.

2. The wheel F, constructed, as described, of a cast-iron centre-piece, *a*, and wooden frame *b*, the latter provided with semicircular notches *d d*, all substantially as herein set forth.

3. The combination of the inclined shaft E, wheel F, and inclined plate O, all arranged and operating substantially as and for the purposes herein set forth.

4. The arrangement of the grinding-plate B and wheel F on the table A, so that another wheel may be added, if desired, substantially as herein set forth.

5. The arrangement of the sliding pulley J, operating on the belt G by means of a weight, K, or its equivalent, for the purpose of holding the jars tightly in their places, substantially as herein set forth.

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