

E. OFFERMANN.
GRINDING OR POLISHING MACHINE MOVABLE ON THE SURFACE TO BE TREATED.
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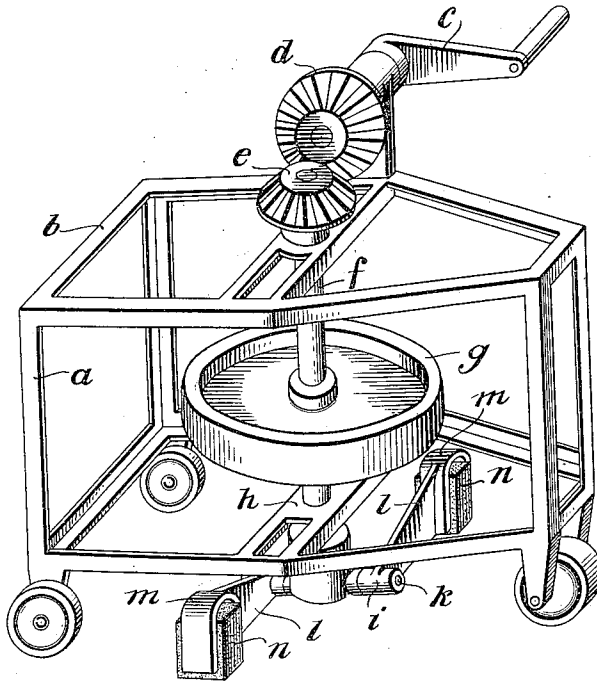


Fig. 1.

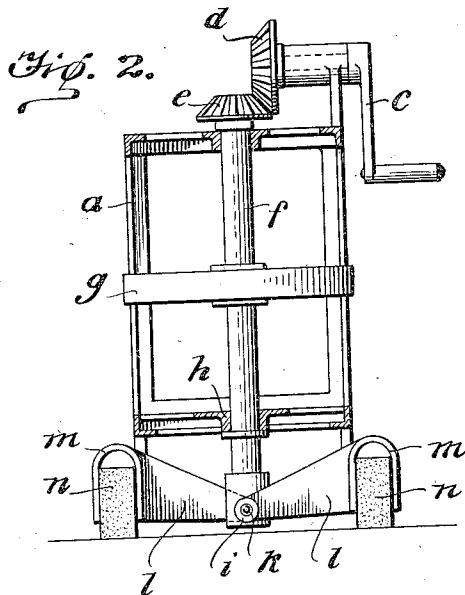


Fig. 2.

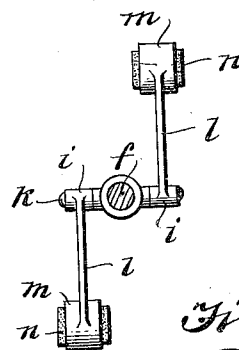


Fig. 3.

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Witnesses

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GRINDING OR POLISHING MACHINE MOVABLE ON THE SURFACE TO BE TREATED.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ERICH OFFERMANN, manufacturer, a subject of the King of Prussia, residing at No. 51 Büchel, Aix-la-Chapelle, in the Kingdom of Prussia, Empire of Germany, have invented certain new and useful Improvements in Grinding or Polishing Machines Movable on the Surface that is to be Treated; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to a machine designed for the grinding of surfaces which machine is movable on the surface which is treatable and consists of the special arrangement of the oscillating arms bearing the grinding-blocks, this disposition being of such a kind that the pressure exerted by the grinding-blocks on the surface that is to be treated, is determined by the single rotation of the arbor.

In the drawings: Figure 1 is a perspective view of my improved grinding machine. Fig. 2 shows a vertical sectional view of the machine according to my invention, and Fig. 3 shows the machine in a horizontal section above the grinding-blocks.

A frame (tripod) mounted on rollers bears in its upper part a plate *b*, Fig. 1, on which the driving-mechanism of the machine is arranged, which may be operated by means of the bevel-wheels *d* and *e* either by hand by the crank *c* or by a motor. The arbor *f* bears a fly-wheel *g* and is journaled with its upper end in the plate *b* and with its lower one in an arm *h*, which is fixed to the frame *a*. Beyond the arm *h*, a T-shaped part *i* is mounted on the spindle *f*, to which latter it is fixed by a pin or screw in well-known manner. The bolts *k* are mounted on opposite sides of the horizontal bar of the T-shaped part *i*, which bolts serve for axis of revolution to the oscillating arms *l*. The arms *l* are provided with forks *m* which receive the grinding- or polishing blocks *n*. The axis of rotation *k* of the arms *l* is situated below the center of gravity of the arms *l* with their grinding-blocks, and the above-mentioned action is based on this disposition.

When the machine is in position of repose, the pressure exerted by the grinding-blocks on the surface *u* is nearly equal to the weight

of one oscillating arm with its grinding-block. If, however, arbor *f* is set into rotation the pressure of the grinding-blocks on the surface *u*, which is to be ground, increases because the center of gravity of the oscillating parts, which is situated above the axis of rotation *k*, strives to place itself in the horizontal plane which passes through the axis *k*. In other words, as the centrifugal force works in the center of gravity, which is lying above the axis of rotation *k*, a turning moment arises the effect of which is to press the grinding-block on the surface which is to be ground, and which turning moment increases with the number of revolutions of the arbor *f*. Therefore the pressure is very weak when the machine is set in motion which has the advantage of little power being necessary at the starting.

The machine serves for grinding, polishing, rubbing, oiling, etc., of terrazzo-, mosaic-, marble-, wood-, inlaid- floors and the like.

Having thus described my invention, what I claim is:—

1. Grinding and polishing machine consisting of a frame movable on the surface that is to be treated, of a spindle journaled in said frame, means for rotating said spindle, oscillating arms at the lower end of the spindle, said arms being turnable around a horizontal axle and which receive grinding-blocks at their ends; the axis of revolution lying beyond the center of gravity of each oscillating arm with its grinding-block, in order to increase the force of pressure exerted by the grinding-blocks on the surface to be treated, by the centrifugal force produced by the rotation of the spindle.

2. In a grinding and polishing machine, the combination of a frame, a vertical shaft mounted in the frame, means for rotating the shaft, and arms loosely pivoted to the lower end of the vertical shaft and carrying at their ends grinding blocks which bear on the surface to be ground.

3. In a grinding and polishing machine, the combination of a frame, a vertical shaft mounted in the frame, means for rotating transverse trunnions extending from the opposite sides of the shaft near the lower end of the latter, an arm carrying a grinding block loosely mounted on each bearing the arms extending in opposite directions, the center of gravity of the arms being above

the center of the trunnions to cause the grinding blocks to bear on the surface being treated when the shaft is rotated, and means for rotating the shaft.

- 5 4. In a grinding machine, the combination of a frame, a vertical shaft mounted in the frame, an arm loosely pivoted to the shaft and having at its outer end a grinding block, the axis of revolution lying beyond
10 the center of gravity of the oscillating arm with its grinding block, whereby to increase

the pressure exerted by said block on the surface being treated by the centrifugal force produced when the shaft is rotated, and means for rotating the shaft.

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In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ERICH OFFERMANN.

Witnesses:

HENRY ANADPY,
ELISE KOILBURCK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."