Oct. 13, 1931. E. LEY 1,827,688

GRINDING MACHINE

Filed Nov. 23, 1929

Fig. 3.

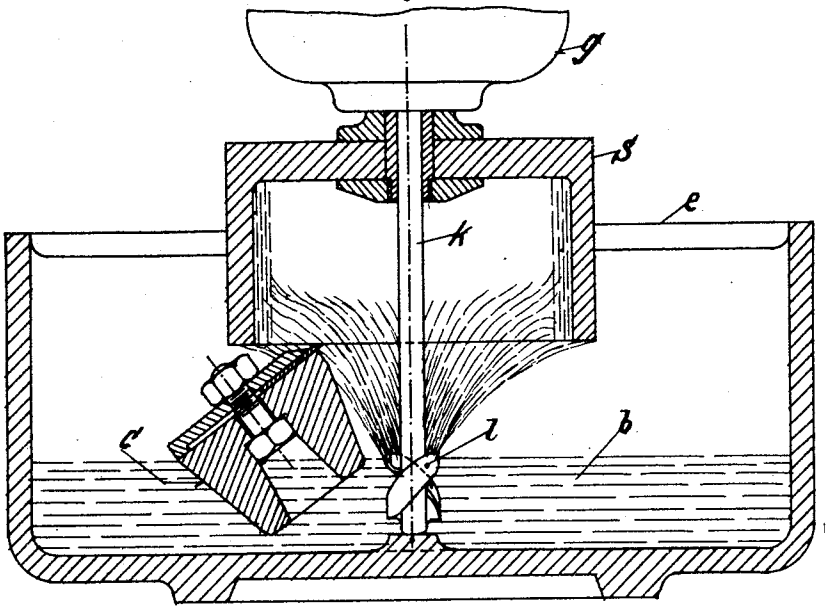


Fig. 4.

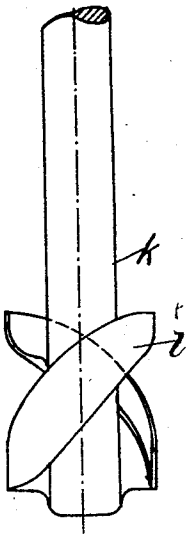


Fig. 1.

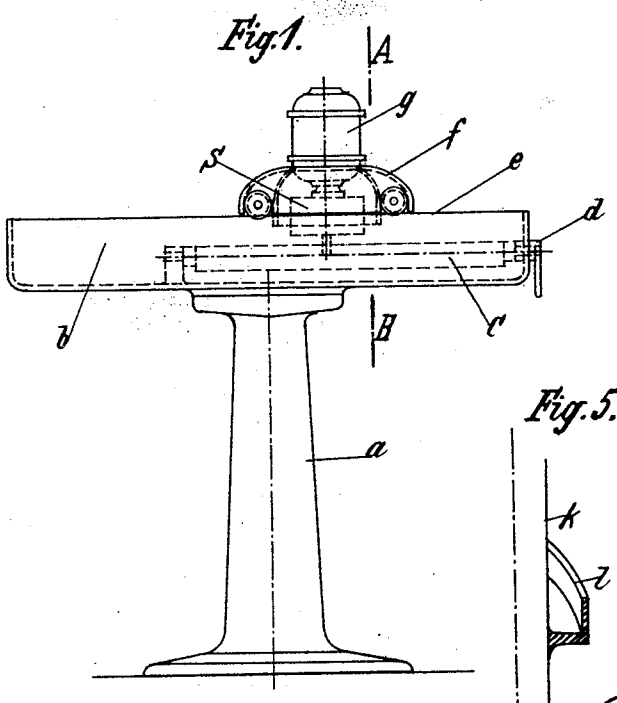


Fig. 2.

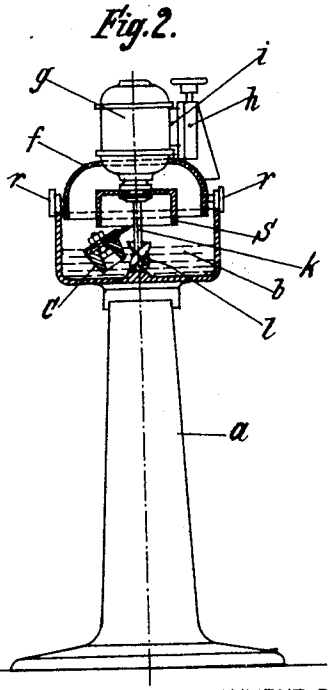


Fig. 5.

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UNITED STATES PATENT OFFICE

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GRINDING MACHINE

Application filed November 23, 1929, Serial No. 409,307, and in Switzerland November 26, 1928.

The invention refers to a grinding machine, especially for grinding the planes of wood-working machinery.

One part of the invention consists in the fact that a grinding table on which a motor with a vertical shaft, at the lower end of which is a grindstone in a prismatic guide, the sledge of which is of one piece with the motor housing, is arranged with vertical movement and runs on the upper longitudinal edge of a water tank in which there is a gripping device rotatable on its longitudinal axis and firmly adjustable in every position for the blades to be ground, which does not take up the whole length of the tank.

Another part of the invention consists in the fact that on the end of the shaft on which the grindstone is fixed a prolongation is provided which reaches into the water in the tank and bears at its extremity a screw-like formation serving to convey from the tank to the grinding part the cooling water necessary for grinding.

Fig. 1 of the accompanying drawings is a front view of the grinding machine;

Fig. 2 is a side view;

Fig. 3 a section through the grindstone and tank;

Fig. 4 a view of the screw-like formation;

Fig. 5 a section through the same.

The grinding machine consists of a stand *a* on which there is a water tank *b*. In this tank *b* is a gripping device *c* for the blades to the ground, which is rotary on its longitudinal axis. By means of a fixing contrivance *d* this gripping device can be fixed in any position so that every cutting angle which the blade to be ground must have can be adjusted.

A grinding table *f* runs on pulleys *r* which are provided with ball-bearings, on the upper longitudinal edge *e* of the tank. This table bears a motor *g* with a vertical axis which is vertically movable in a prismatic guide *h*. The glide *i* of the vertical guide is of one piece with the motor housing. Both the horizontal movement of the grinding table and the vertical movement of the motor can be actuated either by hand or automatically. At the lower end of the shaft of the motor is a grindstone *s*; as a rule a potstone disc is employed. As may be seen by this arrangement the grinding is accomplished in the plane of the surface to the ground whereby a perfect grinding is obtained with the lateral surface of the grindstone, respectively of the pot rim.

In order to provide the grindstone and the blade to be sharpened with the necessary cooling water a prolongation *k* which reaches into the water in the tank is at the shaft end of the motor; at its end it has a screw-like formation *l*. When the motor is started the threads of the formation *l* take up water and fling it in a hyperboloid fountain and on the grindstone.

The tank *b* is longer by the length of the grinding table than the gripping device for the blades to be ground, in order that the grinding table can be so far thrust aside when the blades are inserted or removed that it is not at all in the way.

I claim:

1. A grinding machine comprising in combination a stand, a liquid tank supported horizontally upon the stand and having longitudinal track ways, a grinding table movable along the track ways, a motor carried by the table and having its rotating shaft depending vertically into the tank, a grinding element carried by the shaft above the liquid level in the tank, a work holder mounted in the tank below the grinding element, and agitating means carried by the lower end of said shaft for spraying the liquid upwardly upon the grinding element.

2. A grinding machine comprising in combination a stand, an elongated liquid tank supported horizontally on the stand and having track ways provided along its longitudinal sides, a grinding table movable along the track ways, a motor vertically adjustable in the grinding table and having its shaft depending into the tank, a work holder mounted longitudinally in the tank and adjustable about its longitudinal axis, a grinding element carried by the motor shaft above the work holder and above the liquid level in the tank, and means carried by the lower end of the motor shaft for directing liquid upward-

ly upon the grinding element and work holder.

3. A grinding machine comprising in combination a stand, an elongated liquid tank supported horizontally on the stand including parallel side walls providing track ways at their upper edges, a grinding table movably guided along the track ways, a motor carried by the table including a shaft depending vertically into the tank, an adjustable work holder mounted longitudinally in the tank at one side of the shaft and terminating short of one end of the tank a distance equal to the length of the grinding table, a grinding element carried by the motor shaft above the work holder, and means carried by the lower end of the motor shaft for spraying the liquid upwardly upon the grinding element and work holder.

4. A grinding machine comprising in combination a stand, an elongated liquid tank supported horizontally upon the stand and having a track way provided along its longitudinal sides, a dome-like carriage movable along the track ways, a motor vertically adjustable in the carriage including a shaft depending into the tank, a work holder mounted longitudinally in the tank, a grinding element carried by the motor shaft above the work holder, and a spraying screw extended spirally about the lower end of the motor shaft for spraying the liquid upwardly upon the grinding element and work holder.

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