

I. M. ROSE.  
GRINDING AND POLISHING DEVICE.

(Application filed July 21, 1900.)

(No Model.)

Fig. 3.

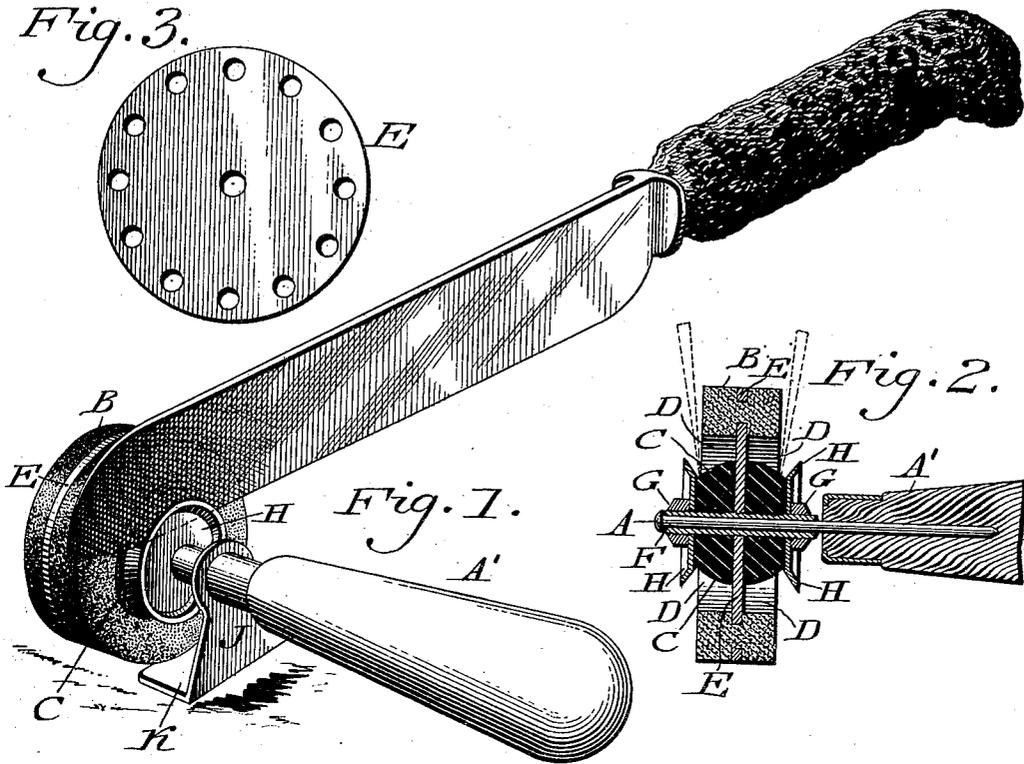
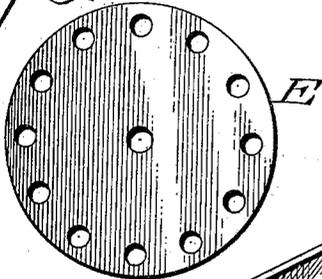


Fig. 1.

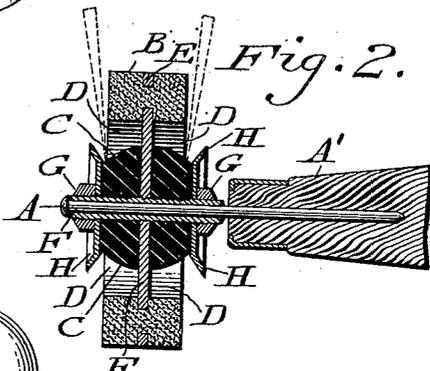


Fig. 2.

Fig. 4.

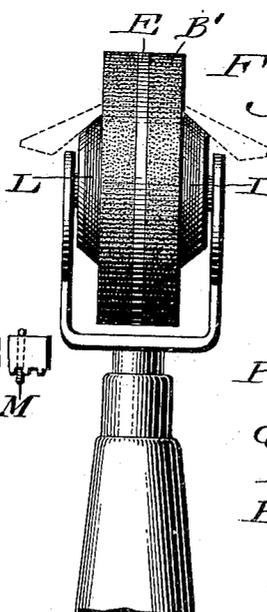


Fig. 5.

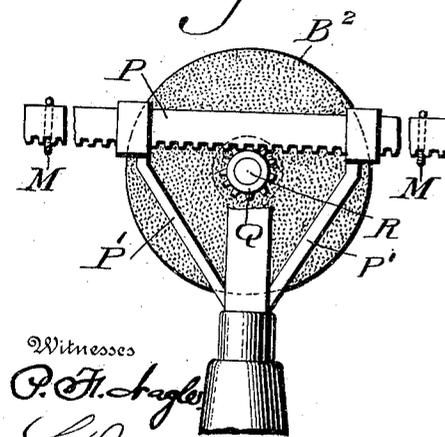
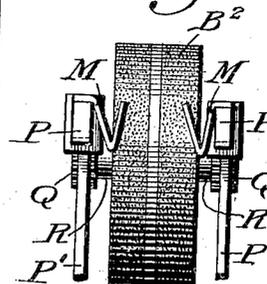


Fig. 6.



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334

# UNITED STATES PATENT OFFICE.

ISRAEL M. ROSE, OF PHILADELPHIA, PENNSYLVANIA.

## GRINDING AND POLISHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 662,629, dated November 27, 1900.

Application filed July 21, 1900. Serial No. 24,381. No model.

*To all whom it may concern:*

Be it known that I, ISRAEL M. ROSE, a citizen of the United States, residing in the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Grinding and Sharpening Devices, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a grinding and sharpening device embodying a grinding or sharpening stone, bur, or runner and means for rotating said stone by the reciprocations of a knife or other piece of cutlery, a skate-runner, or other article, the latter thus constituting the motor for the stone while being in grinding or sharpening contact with the same.

Figure 1 represents a perspective view of a grinding and sharpening device embodying my invention. Fig. 2 represents a diametrical section thereof. Fig. 3 represents a side elevation of a detached portion thereof. Fig. 4 represents a side elevation of a modification. Figs. 5 and 6 represent side elevations at a right angle to each other of another modification.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates a shaft which is carried by the handle A' and on which are freely mounted the grinding or sharpening bur or runner B and the friction-pulleys C C, the latter being of less diameter than the runner and located on opposite sides thereof and occupying recesses D in the same and formed, preferably, of soft rubber. In the present case the runner is connected with the web E, which is embedded centrally in said runner and secured to the sleeve F, and the pulleys C are fitted on said sleeve and pressed against said web by the nuts G, interposed between which and the pulleys are the washers H, which are located on the sleeve and are of somewhat flaring form, serving as face-plates for said pulleys, it being noticed that the sleeve F freely receives the shaft A and the nuts G engage with the threaded ends of the former.

In order to support the device while held by the handle A', there is secured to the latter the leg J, which is provided with the foot

K, the object of which will be apparent on reference to Fig. 1.

The operation is as follows: The blade of a knife or other article of cutlery is placed along one of the sides of the runner B with its edge rested upon the surface of the adjacent pulley C as a bed therefor. The knife is now drawn to and fro while being pressed against said pulley, so that reciprocating rotary motions are imparted to the same and similar motions communicated to the runner B, whereby by properly presenting the side of the edge portion of the blade to said runner it will be ground and sharpened. The blade is then placed on the other pulley C and manipulated as before, and thus the other side edge portion will be ground and sharpened, it being seen that the blade furnished the power by which the runner is rotated.

In Fig. 4 I show a device for grinding and sharpening scissors, shears, and the like. In this case the runner B' has conical pulleys L on the sides thereof for the support and contact of the blades of the scissors, &c., the reciprocations of which will rotate said runner and cause the sharpening of the blades.

In Figs. 5 and 6 I show beds M M, which are carried by the racks P on opposite sides of the runner B', said racks being guided on the frame P' and meshing with the pinions Q on the shaft R of said runner, it being evident that when a blade is seated in said beds M and reciprocated the beds, and consequently the racks, follow the motions thereof, whereby the pinions Q are operated and rotation imparted to the runner with which the edge portion of the blade is in contact.

The bur or runner will be formed of a body of emery or other suitable material readily cast into required wheel shape, with the web E embedded therein as a backing, reinforce, or strengthening-piece, said web being preferably formed of metal and having openings through which the material of the runner may flow, and thus clench. The central portion of the web constitutes the backs of the recesses D on opposite sides of the runner, so that the body of the latter may be said to be an annulus with the web as the means of mounting it on its bearings or shaft and forming the side recesses.

It will be noticed that while the contact of the edge of a blade on the surface of the pulleys C may wear or reduce said surface said pulleys, owing to their elasticity and comparative density, due to compression, will expand or yield as the blade contacts therewith, and so compensate for the wear and loss of the material of said pulleys.

I do not limit the use of my invention to cutlery, as I may grind, sharpen, shape, or surface other articles and pieces of various material.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A device for grinding or sharpening cutlery and other articles consisting of a runner against the side of which said article is adapted to be placed during the grinding or sharpening action, and a bed connected with said runner on the side thereof, said bed being adapted to primarily receive motion from said article and impart the same to said runner.

2. A grinding or sharpening runner, and a bed connected therewith on the side thereof, whereby the pressure and motion of an article to be ground or sharpened rested on said bed

causes the movement of the latter, and the consequent rotation of said runner with said article in grinding or sharpening contact with the latter.

3. A grinding or sharpening device consisting of a runner, a shaft carrying the same, and a pulley on the side of said runner, said pulley being of less diameter than said runner and forming the motor of said runner by the movement of the article to be ground or sharpened in contact with the same.

4. In a grinding or sharpening device, a runner with a recess in its side, a web in said runner, a shaft on which said web is mounted, and a pulley connected with said runner and also mounted on said shaft, said pulley being located aside of said runner and being of less diameter than the same.

5. In a grinding or sharpening device, a runner, a pulley of soft material aside of said runner and being of less diameter, a shaft carrying said runner and pulley, and means for adjusting the density of said pulley.

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Witnesses:

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