

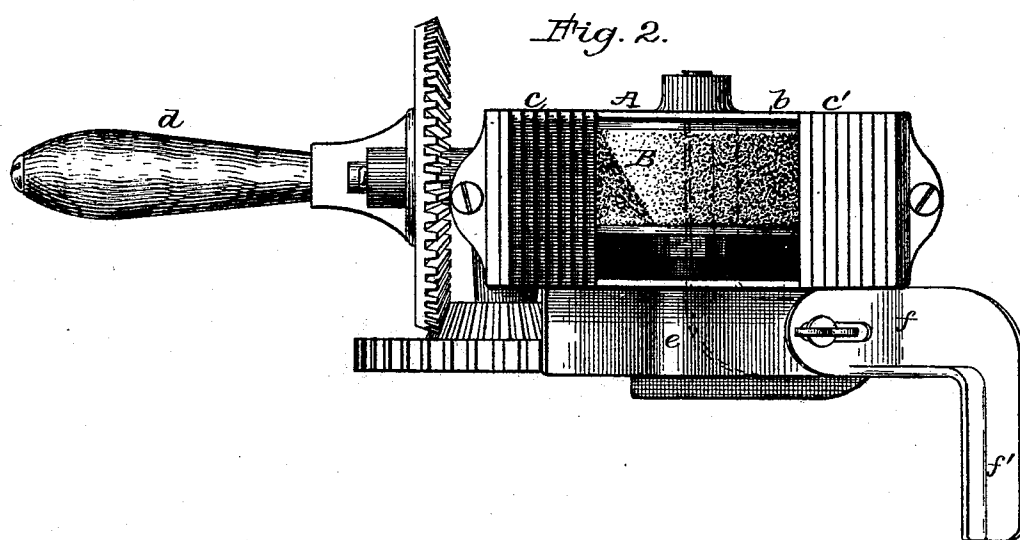
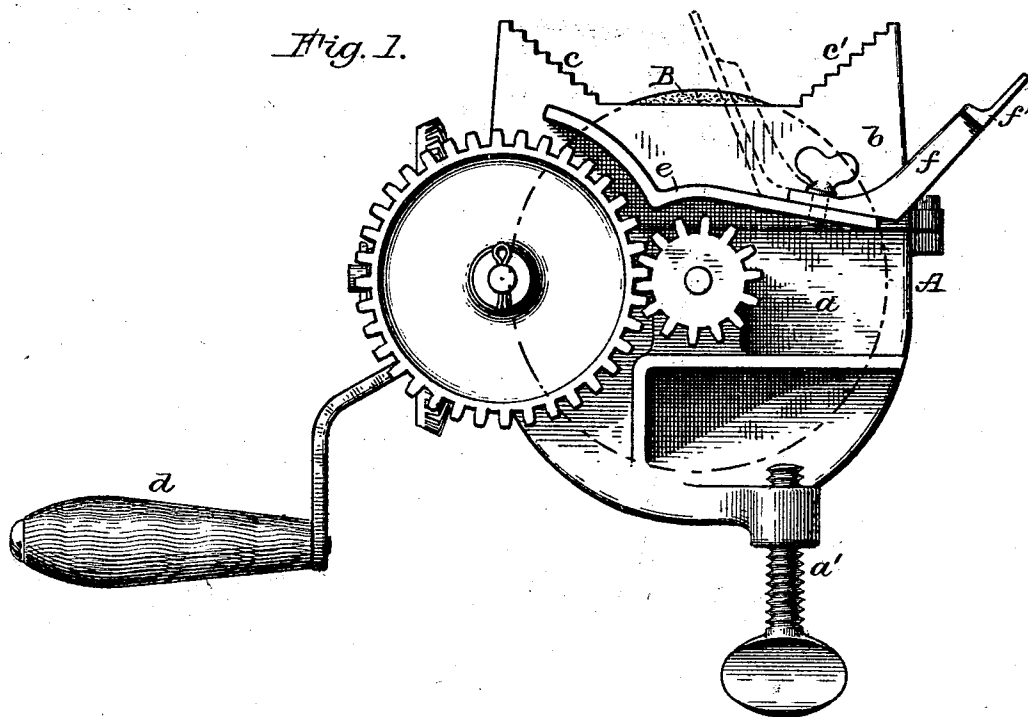
(No Model.)

2 Sheets—Sheet 1.

R. DUTTON.
GRINDING MACHINE.

No. 521,646.

Patented June 19, 1894.



Attest:
Philip F. Larner.
Howe & Suttle

Inventor:
Rufus Dutton.
By *Wm. C. Wood*
Attorney.

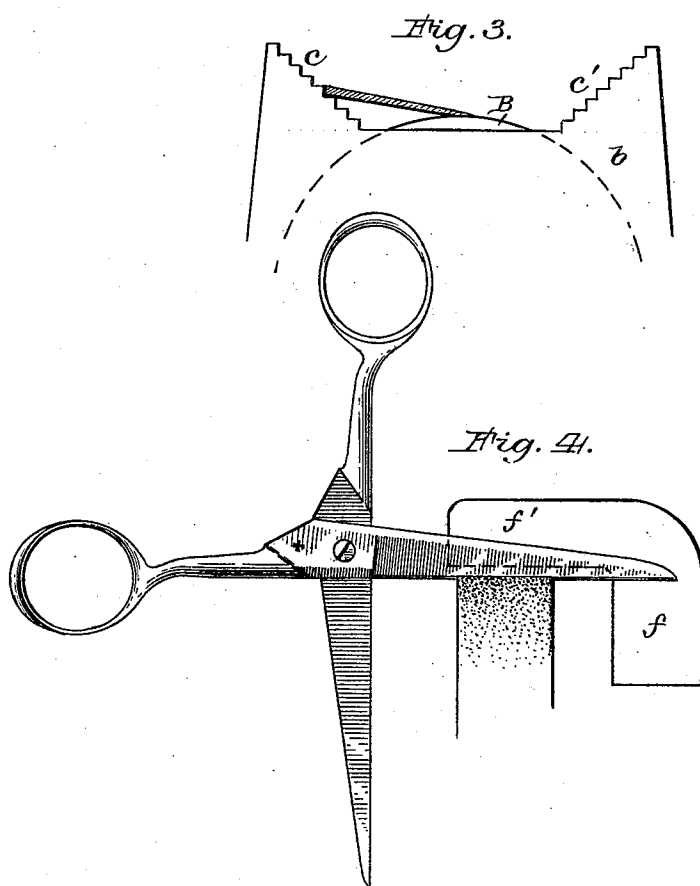
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2 Sheets—Sheet 2.

R. DUTTON.
GRINDING MACHINE.

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Attest:
Philip F. Larner.
Howell Zittel

Inventor:
Rufus Dutton.
By *Wm. M. Wood* Attorney.

UNITED STATES PATENT OFFICE.

RUFUS DUTTON, OF YONKERS, NEW YORK.

GRINDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 521,646, dated June 19, 1894.

Application filed September 22, 1888. Serial No. 286,095. (No model.)

To all whom it may concern:

Be it known that I, RUFUS DUTTON, of Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Grinding-Machines; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part of the same, is a clear, true, and complete description of my invention.

The object of my present invention is to provide a cheap, simple, and effective grinding machine for household or family use, which will enable even skilled grinders to rapidly operate, and also enable unskilled persons to obtain highly satisfactory results. In attaining these ends I have devised a frame which serves as a water pan, and as a support for the grinding wheel and its gearing, and on this frame I have provided a double series of knife guides or gages so that knives of various widths can be properly applied to the grinding surface, and enable the operator to move a blade longitudinally to and fro for developing a uniform and perfect edge, by the exercise of a minimum degree of skill.

Referring to the drawings: Figure 1 is a side view of one of my household machines. Fig. 2 is a top view thereof. Fig. 3 illustrates the knife gages or guides, a portion of a grinding wheel, and a knife in position for grinding. Figs. 4 and 5 in top and end views illustrate the scissors guide and a scissors blade in position for grinding.

The frame A is composed of two parts, the base *a* serving also as a water pan, and having a clamp screw *a'* by which it may be mounted on the corner of a bench or table. The cap *b* of the frame is bolted upon the top edge of the water pan, serving as a hood or guard, and leaving the upper portion of the grinding wheel accessible for service. On top of the cap there are two sets of knife guides, or gages *c* and *c'*, each consisting of a number of ledges arranged like steps, so that the horizontal portions may serve as supports for the back of a knife blade, and the vertical portions serve as guiding contacts for the backs, while the edge of the knife rests on the face of the grinding wheel. It will be readily seen that these gages or guides enable knife blades of various widths to be properly

presented for grinding, and that by moving the knife to and fro longitudinally while the back of the blade is supported and guided on some one of said ledges *c* one side of the knife edge will be evenly ground, and that the ledges *c'* in like manner will enable the opposite edge to be correspondingly ground, if a ledge or guide be used which corresponds with the one first employed.

It will be seen that while grinding the two sides of a knife blade, the knife need not be shifted end for end, and therefore one hand of the operator need not leave the crank for driving the wheel in either direction, and that the other hand while grasping the handle of a knife can present either side of the blade to the stone, and move it longitudinally to and fro, with the back of the blade resting on the appropriate guide.

The grinding wheel B is mounted in the water pan on a shaft, driven by gearing, and a hand crank *d* which is on a stud at right angles to the axis of the wheel, as disclosed in my application, Serial No. 286,394, thus locating the crank so that it does not interfere with the grinding surface or with knives placed crosswise thereon as in the act of grinding.

On the side of the cap portion *b* of the frame, there is a laterally projecting ledge *e* which serves as a guard for the gearing, and also as a support for the scissors gage *f*. This ledge *e* is inclined downwardly at the rear end, and the gage *f* is provided with a slot at its foot for the reception of a screw by which the gage is firmly mounted. When not required for use, the gage *f* is swung around to the rear as shown in Figs. 1 and 2, but when required, it is swung around so that its arm *f'* will stand across the face of the wheel, and a little above it, but at the precise angle required for properly presenting a shear edge to the wheel, when the shear blade is placed with its flat side against the side of the gage, as clearly indicated in Figs. 4 and 5. The inclination of the ledge *e* enables the gage to be moved rearward and downward, as the wheel becomes reduced in size, and at the same time to keep the bottom of the gage arm at a proper distance above the grinding surface.

The grinding wheel need seldom if ever be more than six inches in diameter, and from

one and a half to two inches in thickness, and the casing and gearing, being light but strong, the machine is compact, easily handled, and quite inexpensive.

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

10 The combination of the grinding wheel, and its crank and gearing, of a casing or frame serving as a water pan and provided with the two sets of knife gages, substantially as described, whereby while the grinding wheel is

being driven by one hand, the operator may hold a knife in the other, and move it to and fro longitudinally with its edge properly presented to the grinding surface, because of the supporting and gaging contact of the back of the blade first with one set and then with the other set of said gages. 15

RUFUS DUTTON.

Witnesses:

ANDREW J. TRACY,
W. S. HOLBROOK.