A. E. ELMER.

Grinding-Machine.

No. 202,640. **Patented April 23, 1878.**

Fig. 1.

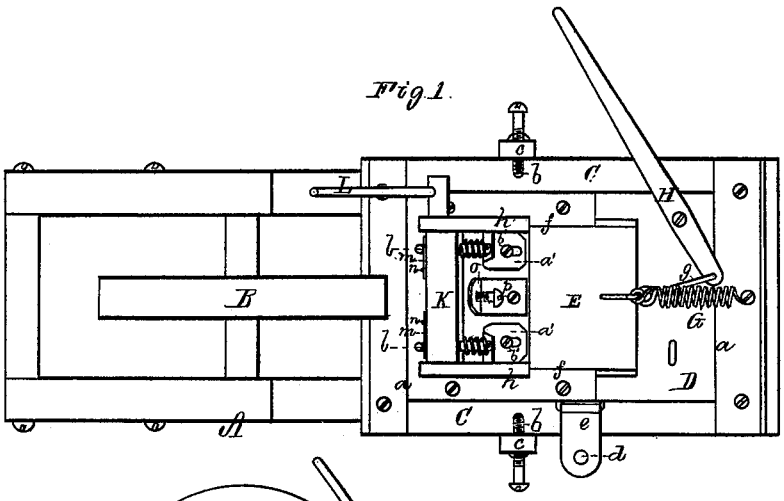


Fig. 2.

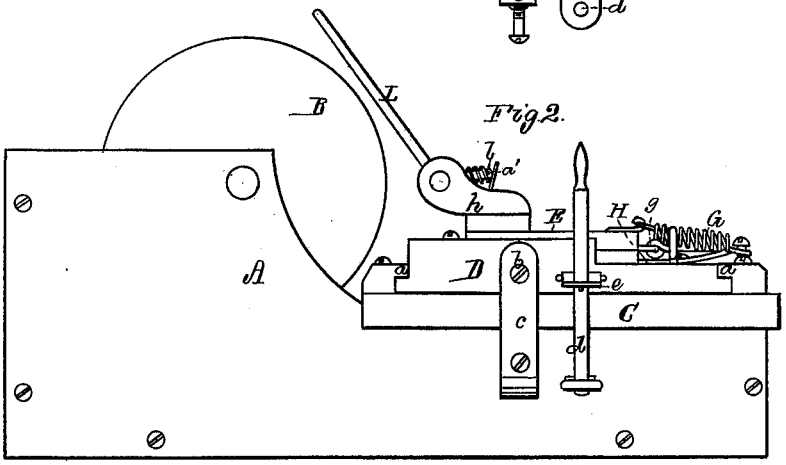
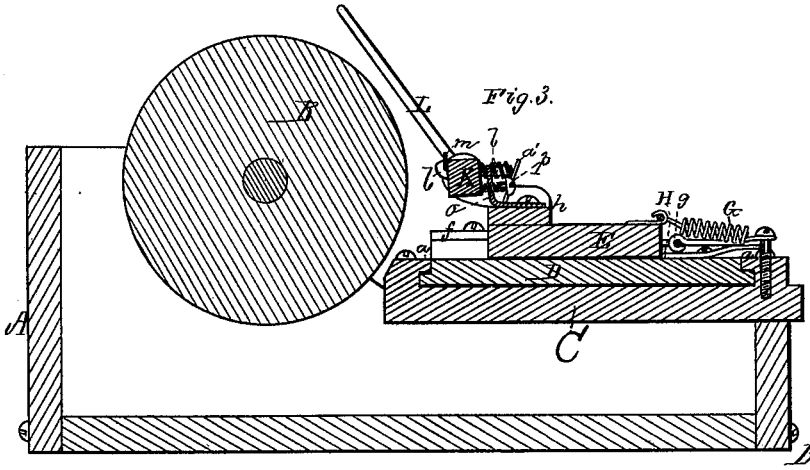


Fig. 3.

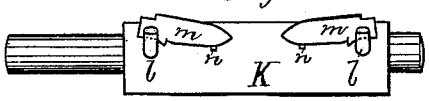


Witnesses.

S. N. Piper

L. A. Wilcox

Fig 4.



Inventor

Albert E. Elmer

by his attorney.

R. H. Eddy

UNITED STATES PATENT OFFICE.

ALBERT E. ELMER, OF SHELBURNE FALLS, MASSACHUSETTS.

IMPROVEMENT IN GRINDING-MACHINES.

Specification forming part of Letters Patent No. **202,640**, dated April 23, 1878; application filed August 21, 1877.

To all whom it may concern:

Be it known that I, ALBERT E. ELMER, of Shelburne Falls, of the county of Franklin and State of Massachusetts, have invented a new and useful Improvement in Machinery for Grinding the Blades of Cutlery; and do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 a side elevation, and Fig. 3 a longitudinal section, of a machine embracing my invention. Fig. 4 is an inner side view of the prismatic rotary blade-carrier.

By the said machine the backs as well as the sides of the blades may be ground, such blades being held and presented to the grinding-wheel by a rotary prism or carrier capable of being revolved so as to present the sides as well as the backs of the blades to the wheel.

In the drawings, A denotes the main frame, supporting the shaft of a grinding-wheel, B. On the platform C of the said frame is a carriage, D, arranged between parallel guides *a a*, and being capable of being moved transversely between and against either of two adjustable stops, *b b*, which are screws, screwed through standards *c c*, extending up from the frame A, as shown.

A lever, *d*, pivoted to the frame A, and extending up through a link, *e*, hinged to the said carriage D, enables a person to move the latter from one stop to the other, as occasion may require.

On the carriage D is another carriage, E, movable between parallel guides *f f*, either toward or from the grinding-wheel, such carriage E having a spring, G, for automatically retracting it. A lever, H, pivoted to the carriage D, and connected with the carriage E by a link, *g*, serves to advance the said carriage.

Furthermore, in a frame, *h*, projecting up from the carriage E there is fixed a rotary prismatic shaft, K, it being applied to the frame so as to be capable of being revolved on its axis. It is provided with a handle, L, arranged as shown, for turning it about ninety degrees. This shaft K or rotary blade-carrier is furnished with spring-clamps *l l*, for holding the blades *m m*. It also has studs *n n* for the edges of the blades to rest on.

Furthermore, in rear of the prismatic shaft is a standard, *o*, provided with a screw, *p*, which is screwed through the standard, and serves as a stop to determine the inclination of the blade side of the prism to the horizon, in order for the grinding-wheel to grind the side of a blade to its proper angle to the back of such blade.

It will readily be seen that with this machine, either before or after a blade may have been ground on its side, such blade may be partially revolved, so as to bring its back toward and against the wheel, and such blade may be moved lengthwise, so as to cause its back to be partially, if not entirely, ground or reduced.

My machine, though very like that described in the United States Patent No. 188,230, differs therefrom in having its knife-carrier capable of being revolved, so as to admit of the side and the back of a blade being ground, whereas, by the patented machine, the side only can be reduced.

Furthermore, my machine is provided with mechanism for automatically retracting the knife-carrier carriage, such enabling a workman to operate the machine to better advantage in some respects.

There are also to the machine inclined adjustable abutments *a' a'*, arranged as shown, and fixed by screws *b' b'* to the frame *h* of the carriage E. On revolving backward the shaft K the shanks of the clamps *l l* will be brought against such abutments, and will be moved so as to release the blades from the pressure of the clamps.

I do not claim a machine as described and claimed in the said Patent No. 188,230; but

What I claim as of my invention is as follows—that is to say:

1. In the machine as explained for grinding cutlery-blades, the rotary blade-carrier K, constructed and applied so as to be capable, on being revolved, of presenting to the stone, in succession, either a side or the back of a

blade, when such blade is clamped to it, as set forth.

2. The combination of the retractive spring G with the two carriages D E, the rotary carrier K, and the lever H, applied to such carriages, as set forth.

3. The combination of the inclined abutments a' with the carriage E and the rotary shaft K, and the blade-clamps thereof, all being substantially as described.

ALBERT E. ELMER.

Witnesses:
N. E. CHAPIN,
S. D. BARDWELL.