(No Model.)

O. A. WINTER.

MACHINE FOR GRINDING THE CUTTERS OF WOOD CUTTING MACHINES.

No. 403,712. Patented May 21 1889.

Fig. 1.

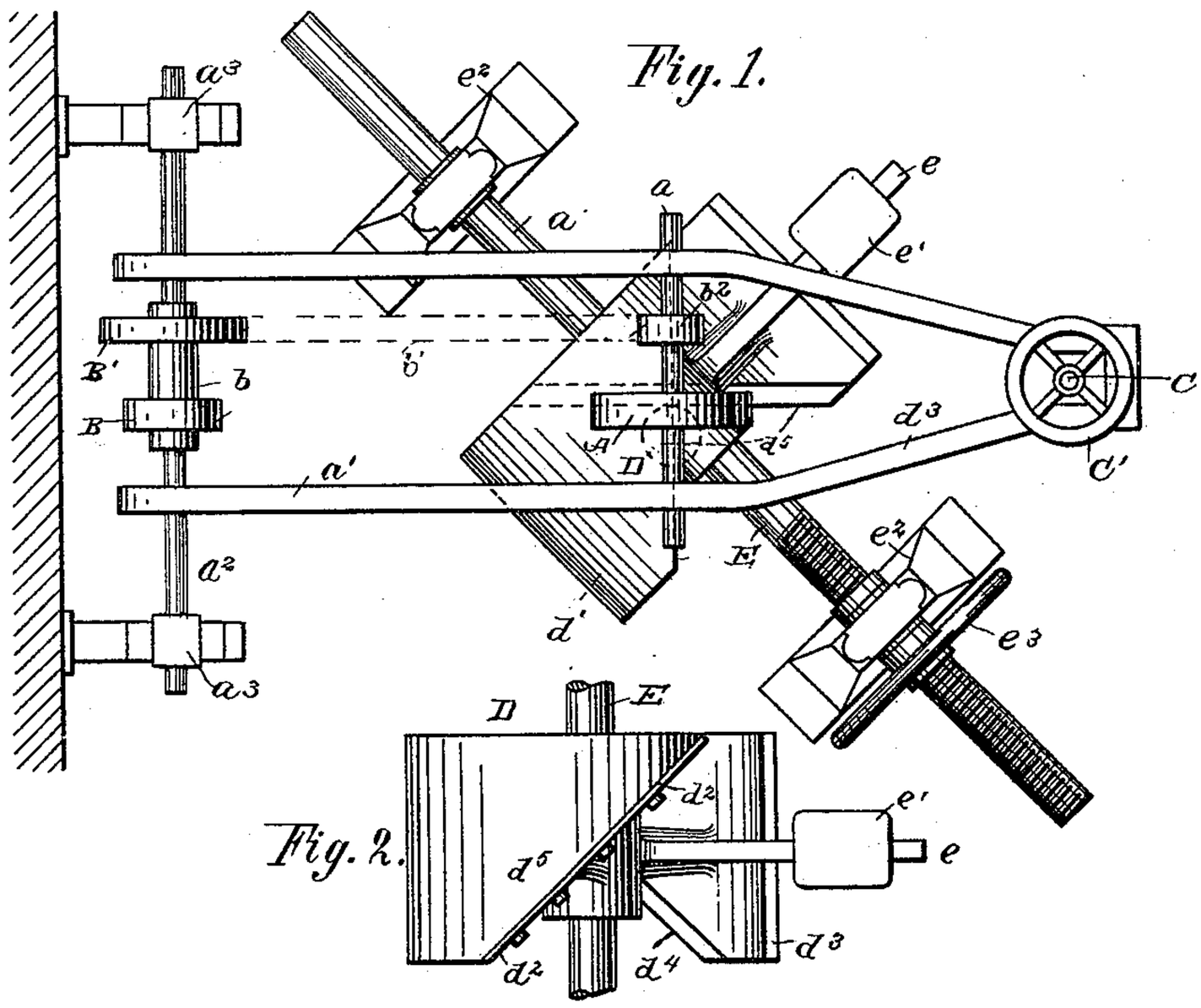


Fig. 2.

Fig. 3.

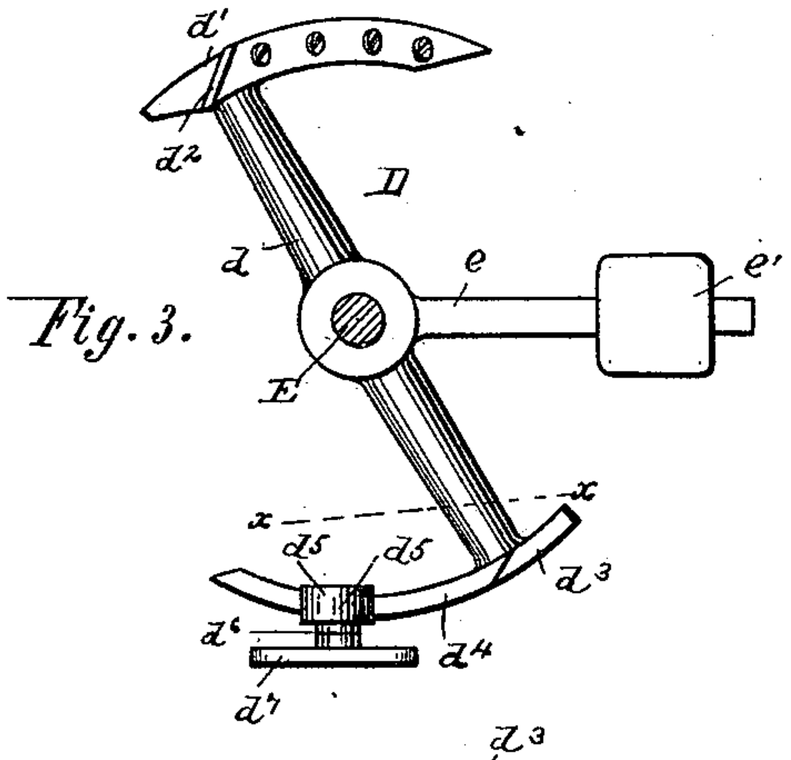
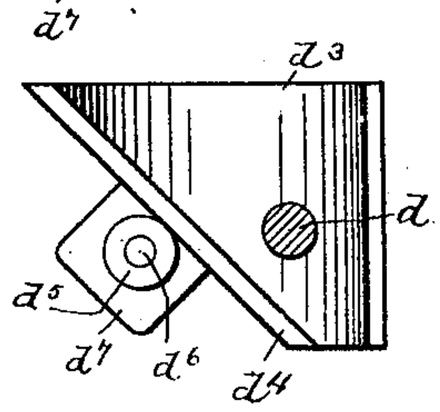


Fig. 4.



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UNITED STATES PATENT OFFICE.

OTTO ASMUS WINTER, OF BUXTEHUDE, PRUSSIA, GERMANY.

MACHINE FOR GRINDING THE CUTTERS OF WOOD-CUTTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 403,712, dated May 21, 1889.

Application filed May 28, 1888. Serial No. 275,270. (No model.) Patented in Germany July 18, 1888, No. 43,808.

To all whom it may concern:

Be it known that I, OTTO ASMUS WINTER, a subject of the Emperor of Germany, and a resident of Buxtehude, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Machines for Grinding the Cutters of Wood-Cutting Machines, (for which I have secured Letters Patent in Germany, No. 43,808, dated July 18, 1888,) of which the following is a specification.

This invention relates to certain new and useful improvements in machines for grinding the cutter-knives of shaving-drums, having for its object the provision of new and improved highly efficient means for readily and accurately sharpening such knives or cutters.

The invention comprises the details of construction, combination, and arrangement of parts, substantially as hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of my improved machine. Fig. 2 is a detail view of the knife holder or support. Fig. 3 is a side view thereof. Fig. 4 is a detail sectional view on the line x x, Fig. 3.

Referring to the drawings, A designates a grindstone, the shaft a of which is loosely mounted in the side arms of a frame, a'. This frame is loosely secured at its rear end upon a shaft, a^2, held in bearings a^3. Between the arms of this frame on said shaft a^2 are secured two driving-pulleys, B B', separated by a collar, b. Around the pulley B' is passed a belt, b', (shown in dotted lines, Fig. 1,) also passed around a small pulley, b^2, on shaft a. By this means motion is transmitted to the grindstone. To the forward end of this frame is secured a vertical spindle, C, upon the upper end of which is a hand-wheel, C', the lower end of said spindle resting on the base or platform. (Not shown.) By turning wheel C' the frame a' can be adjusted and held at the desired altitude.

D is the knife holder or support, having an arm, d, secured at its center upon a shaft, E, running at an angle of about forty-five degrees to the shaft a. To the normally upper end of this arm d is secured a plate, d', to the inclined or beveled edge d^2 of which is designed to be secured the knife to be sharpened. A correspondingly-shaped plate, d^3, is secured to the other end of said arm d, and against the inclined or beveled edge d^4 of which bears a small roller, d^5, mounted upon a stud, d^6, of a plate, d^7, secured to the base or platform. An arm, e, is secured to the hub of the arm d, and to it is attached a weight, e', as shown. The inclined or beveled edges of the plates d' d^3 are at right angles to each other, as shown in Fig. 1.

The shaft E, above referred to, is mounted in bearings e^2 e^2, and its threaded portion has secured thereon a hand-wheel, e^3, by which the knife-holder is moved in the direction of its shaft E.

In practice the knife to be sharpened is first secured to plate d', and the hand-wheel e^3 is properly adjusted. Motion is imparted to the grindstone by the endless belt, and the weighted arm e gives the knife-holder D a rotary motion, holding the edge of the knife firmly against the revolving grindstone. The action of the weighted arm is controlled by the roller d^4 bearing against the oppositely-inclined or beveled edge of plate d^3. By this means the weight descends only within the limit depending upon the axial movement of the shaft E.

It is obvious that as the sharpening operation is completed the shaft E will have reached the extent of its movement and the knife-holder will have been so moved therewith as to cause the roller d^5 and the end of the inclined edge of plate d^3 to be in contact.

I claim as my invention—

1. As an improvement in grinding-machines, the combination of the knife holder or support and the grindstone, the former being disposed at about an angle of forty-five degrees to the latter, and the shaft for said holder having a limited movement therewith, substantially as set forth.

2. As an improvement in grinding-machines, the combination, with the grindstone, of the knife holder or support having a plate provided with a beveled or inclined edge, and the shaft running at an angle of about forty-five degrees to said grindstone, substantially as set forth.

3. The combination, with the grindstone, of the knife holder or support having upper and lower plates provided with inclined or beveled edges at right angles to each other, the shaft for said holder, and the roller against which said lower plate bears, substantially as set forth.

4. The combination, with the grindstone, of the knife holder or support having the upper and lower plates provided with inclined or beveled edges at right angles to each other, the weighted arm, the shaft having a threaded portion, and a hand-wheel and the lower roller, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 3d day of April, 1888.

OTTO ASMUS WINTER.

Witnesses:
ALEXANDER SPECHT,
H. T. WAGNER.