

(No Model.)

J. OEFINGER.
KNIFE SHARPENER.

No. 542,372.

Patented July 9, 1895.

Fig. 1.

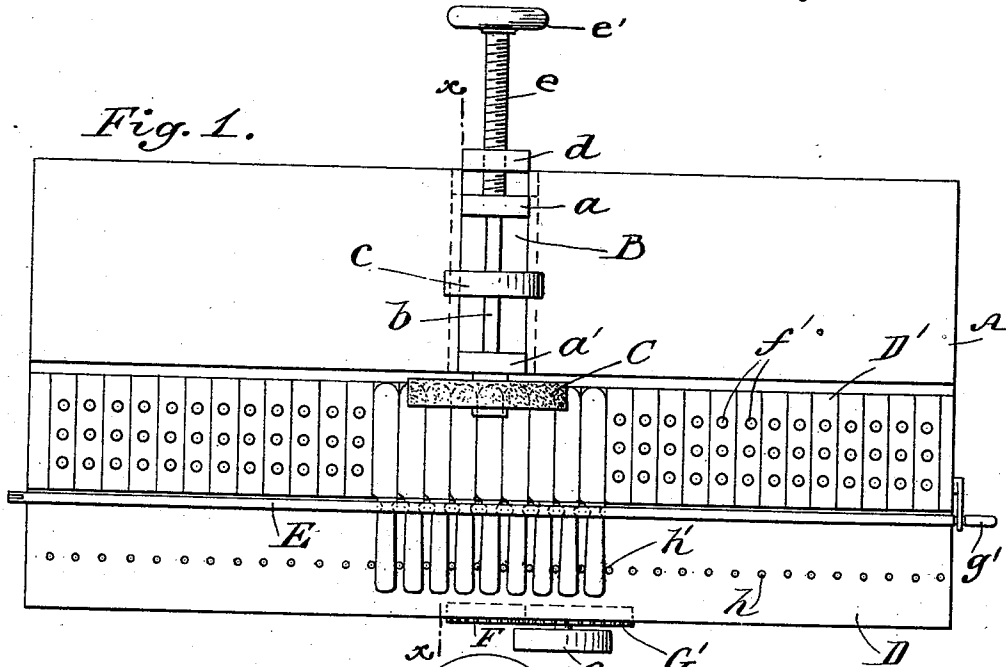


Fig. 2.

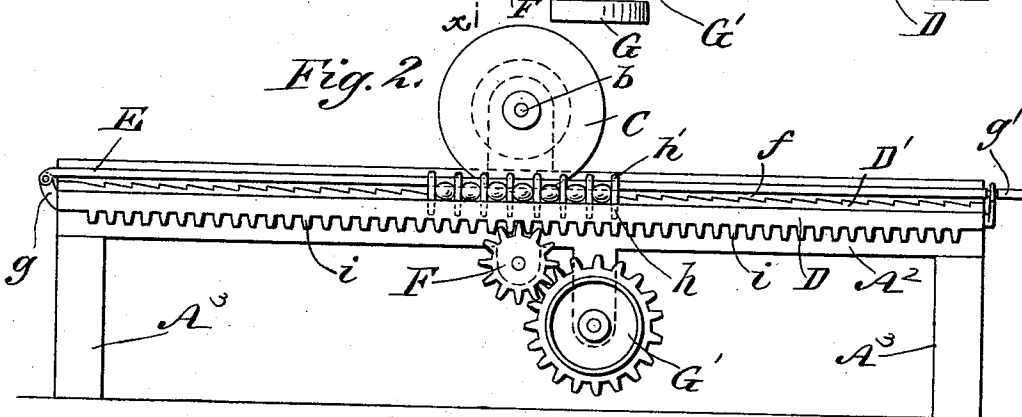
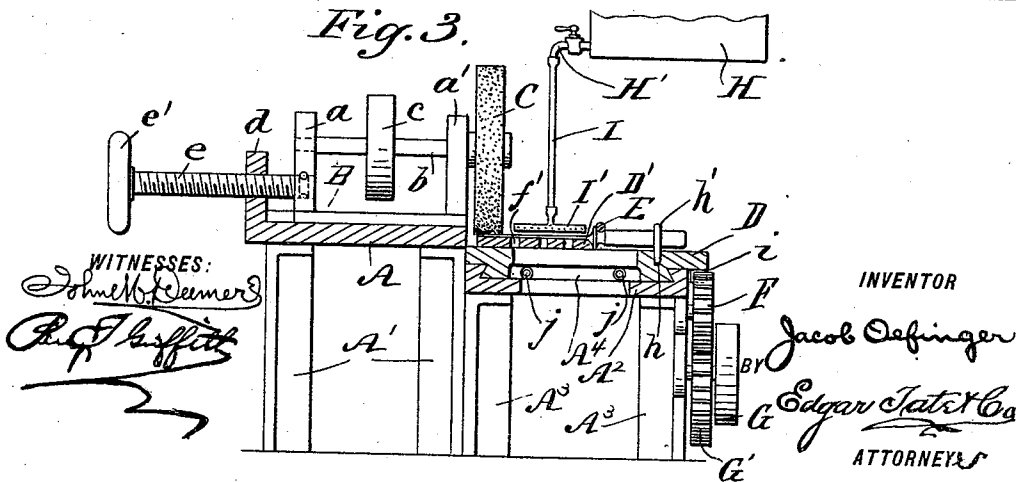


Fig. 3.



UNITED STATES PATENT OFFICE.

JACOB OEFINGER, OF MERIDEN, CONNECTICUT.

KNIFE-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 542,372, dated July 9, 1895.

Application filed October 4, 1894. Serial No. 524,878. (No model.)

To all whom it may concern:

Be it known that I, JACOB OEFINGER, a citizen of the United States, and a resident of Meriden, county of New Haven, and State of Connecticut, have invented a certain new and useful Improvement in Knife-Sharpener, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts in all the figures.

This invention relates to knife-sharpening machines, and has for its object to provide a simple, cheap, readily-constructed, and perfectly-operating device of this character which will thoroughly sharpen a number of knives and kindred articles at the one operation, to provide improved means for holding the knives under the sharpener, for carrying them off after being ground and substituting others, and for moistening the knives and preventing the same from becoming overheated.

The invention consists in the novel construction and arrangement of parts herein-after fully described.

In the accompanying drawings, Figure 1 is a plan view of a machine embodying my invention. Fig. 2 is a front elevation of the same. Fig. 3 is a vertical cross-section of the same taken upon the line xx , Fig. 1.

In the practice of my invention I construct a rectangular frame A supported on legs A', at the center of which frame is a laterally-sliding plate B, dovetailed therein and having upwardly-projecting bearings a a' , in which is journaled a shaft b , having mounted thereon the driving-wheel c , and in front of the bearing a' the emery-wheel or similar device C. At the rear of the frame is a flanged d , in which is mounted an adjusting-screw e , having a disk or head e' , by which it is turned, the point of the said screw being inserted in the side of the bearing a , whereby when the same is turned the bearing, the shaft, and the emery-wheel are forced forwardly.

Immediately in front of the frame A is a second frame A², mounted on legs A³, and having dovetailed therein a longitudinally-sliding block D, which, in common with the frame A², is centrally open to form an air-space A⁴. Upon the block D is secured a

longitudinal strip D' of heat-non-conducting material, preferably wood, having lateral recesses f formed in the entire surface thereof, the said recesses being of sufficient width to receive the usual form of kitchen or dining knives and being tapered downwardly toward one end of the machine, all in like direction, as best shown in Fig. 2, whereby only the edges of the knives will be presented to the emery-wheel C. In the bottom of these recesses are formed perforations f' .

Pivoted to a lug g , upon one end of the block D, is a metallic or other bar E, cylindrical in contour, to bear upon the knives immediately between the handles and the guards thereof, at which point, in all knife-blanks of this character, is formed a concave groove, the inclination of which the bar E takes. This bar extends beyond the opposite end of the table and rests beneath a hook g' upon the block D.

In the upper surface of the forward portion of the block D, immediately above which the handles of the knives rest, are formed openings h , in alignment with the edges of the recesses f at either side of the said handles, and in these openings, when the knives are in position, I insert pins h' . These pins might, where desired, be permanently secured in the block, but, by being made removable, larger or smaller pins may be employed, according to the width of the handles, and furthermore, in the form shown the knives are held more firmly in position.

Upon the under surface of the block D, at the front thereof, are formed teeth i , with which engages a pinion F, meshing with a gear G', mounted upon the axle of a driving-wheel G, whereby, when power is imparted to the said wheel G, the block D is caused to slide or reciprocate.

Above the machine is secured a tank or reservoir H, having a cock or spigot H', from which depends a flexible tube I, having a perforated moistening pipe section or jet I' secured thereon, and in order that the under surface of the knives and of the machine may be maintained free from the heat necessarily generated by the grinding, I may also locate air-pipes j beneath the block D, through which pipes an air-blast may be forced.

The operation of the device will be readily

understood from the foregoing description, taken in connection with the accompanying drawings.

The blades of the knives having been inserted in the recesses *f* until the strip *D'* is wholly covered thereby, or until the supply of unground knives is exhausted, the bar *E* is then brought down upon the said knives between the handles and the guards thereof, as hereinbefore described, and the said bar inserted beneath the hook *g'*, whereby the said knives are held rigidly in position. Between each of the handles are then inserted the pins *h'*, which prevent any lateral movement thereof. Motion is then imparted to the emery-wheel *C*, which, revolving at high speed, grinds down the edges of the knives immediately in front thereof, and as the said wheel revolves the screw *e* is turned, thereby forcing the said wheel forwardly, and this adjusting, which may be effected either by hand or by any other mechanical means, is continued until the whole edge of each of the blades before it has been sharpened, when motion is imparted to the driving-wheel *G* and the block *D* is reciprocated thereby to bring each of the knives beneath the wheel, which may be first screwed back to its first position or may be gradually drawn back during the next operation, to save time. If desired, the movement of the block may continue during the revolution of the emery-wheel, which would cause the same to take, in effect, a diagonal course across the blades.

By reason of the peculiar form and arrangement of the knife-carrier or strip *D'* the knives will ordinarily be sufficiently sharpened by the action of the emery-wheel upon one face thereof; but where it is desired to sharpen both sides of the blades the same are inverted and the position of the strip *D'*, which is removable from the block *D*, reversed, so that the direction of incline of the recesses *f* will be contrary to that of the first operation. Preferably, also, the direction of revolution of the emery-wheel *C* and reciprocation of the block *D* are reversed. Before and during the operation of sharpening, the strip *D'* and the knives are moistened by means of the jet or drip-pipe *I'*, the water escaping through the openings *f'* in the strip, which at the same time admit air to the knives from beneath, and if the air-pipes *j* are employed the same are caused to force air through the air-space *A'* against the said knives and the strip. The tube *I* being flexible, the jet *I'* is lifted out of the path of the emery-wheel and rested on the cock *H'* when not in use.

The advantages resultant from the use of my invention will be manifest to all who are conversant with the generally crude, slow, and laborious methods and means now employed for sharpening knife-blanks. I do not confine myself to the exact formation of parts or construction of details herein set forth and illustrated.

Having thus fully described my invention,

what I claim as new, and desire to secure by Letters Patent, is—

1. A knife sharpener comprising the combination of a supporting table, a frame longitudinally slidably secured upon the same at the front and transversely recessed to receive the knife-blades, pins removably inserted in the said frame where the handles rest to separate and prevent lateral movement of said handles, a rod pivoted to one end of the frame, adapted to bear upon the knives and engage beneath a hook upon the opposite end of the frame, whereby it serves as a clamp, teeth formed upon the under surface of said frame, gears meshing therewith to reciprocate said frame, an emery wheel journaled in bearings secured to the rear of the table to slide at angles to the knife-holder, and an adjusting screw bearing against said bearings to shift the wheel, substantially as shown and described.

2. A knife sharpener comprising the combination of a supporting table, a frame secured upon the same at the front, and longitudinally slidable, said frame and the table being open to form an air space, a strip upon the rear portion of the front frame, having a series of lateral recesses therein, and having openings or apertures in the base thereof, a clamping bar pivotally secured to the frame to hold the knives in position, pins removably inserted in the frame between the handles to prevent lateral movement thereof, means for moistening the knives, teeth formed upon the under surface of the gears meshing therewith to reciprocate the knife-holder, a plate sliding transversely upon the rear of the table, an emery wheel journaled thereon to revolve vertically across the knife blades, and a hand screw mounted in a flange upon the frame and inserted in one of the bearings to adjust the wheel, substantially as shown and described.

3. A knife sharpener comprising a frame suitably supported, and having an auxiliary frame at the front thereof, a block sliding longitudinally in the said frame, a strip thereon having lateral recesses therein tapered toward one side to hold the knives at an angle, the said block and strip being open to form an air space, a clamp to secure the knives, means for securing the same against lateral movement, a moistening tank secured above the strip and having a depending flexibly secured drip pipe or jet to moisten the knives, and an emery wheel journaled in contact with the knives substantially as shown and described.

4. A knife sharpener comprising a frame suitably supported, an auxiliary frame in front thereof, having a longitudinal block sliding therein, a strip mounted thereon, and having a series of lateral recesses therein tapered toward one side to hold the knife edges uppermost, a bar pivoted to one end of the block and secured beneath a hook at the opposite end, and adapted to fit between the

guards and handles of the knives, pins inserted in the block between the handles to prevent lateral movement thereof teeth formed upon the under side of the block, and gears meshing therewith whereby the same is reciprocated, means for moistening the knives and the strip, a plate sliding transversely across the rear of the frame, bearings mounted thereon, an emery wheel journaled in the said bearings in contact with the knives, and a screw at the rear of the frame to adjust the emery wheel, substantially as shown and described.

5. A knife sharpener comprising a frame suitably supported, an auxiliary frame at the front thereof, a block sliding longitudinally thereon, both the said frame and block being open to form an air space, a strip upon the rear portion of the block having a series of lateral recesses therein which are tapered toward one side to hold the edges of the knives uppermost, a bar pivoted to one end of the block and resting beneath a hook at the opposite end, the said bar being adapted to rest between the guards and handles of the

knives and clamp them in position, pins inserted in the block between the handles to prevent lateral movement thereof, teeth formed upon the under side of the block, gears meshing therewith to reciprocate the same, a tank or reservoir above the strip having a flexible pipe depending therefrom carrying a drip pipe or jet to moisten the knives and the strip, a plate sliding transversely across the main frame, bearings mounted thereon, a shaft journaled in the said bearings, having an emery wheel thereon, and a hand screw mounted in a flange upon the frame and inserted in one of the bearings, whereby the wheel may be forced forwardly and rearwardly over the knives, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 29th day of September, 1894.

JACOB OEFINGER.

Witnesses:

CHAS. P. MORSE,
JULIUS ZILLMER.