(No Model.)

F. ECAUBERT.

KNIFE SHARPENER.

No. 457,148. Patented Aug. 4, 1891.

Fig. 2.

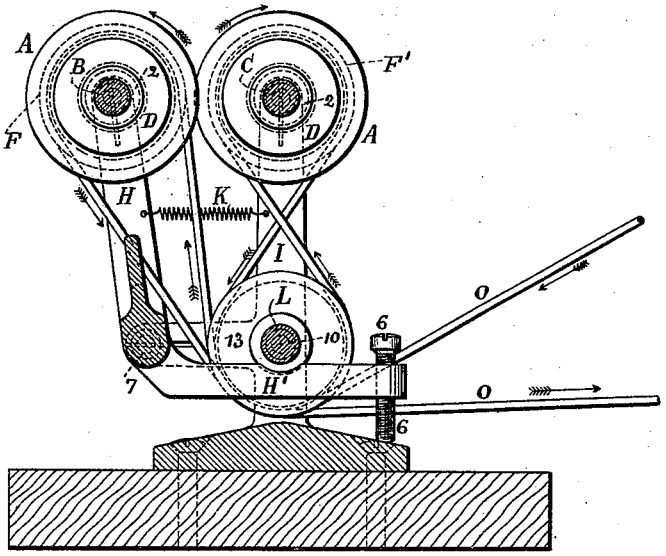


Fig. 3.

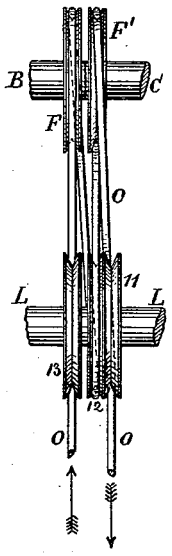
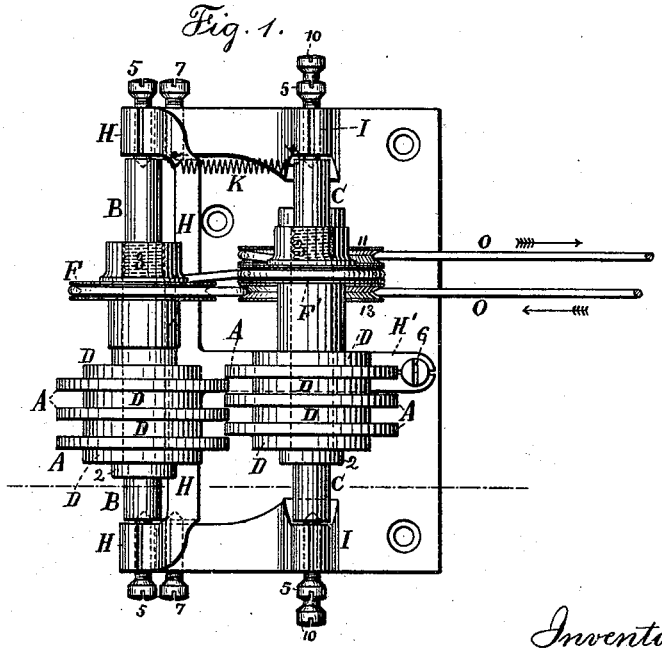


Fig. 1.



Witnesses:
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UNITED STATES PATENT OFFICE.

FREDERIC ECAUBERT, OF BROOKLYN, NEW YORK.

KNIFE-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 457,148, dated August 4, 1891.

Application filed March 25, 1889. Serial No. 304,610. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC ECAUBERT, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Knife-Sharpeners, of which the following is a specification.

In cases where rotary grinding or sharpening devices have been employed there is a risk of injury to the knife if the pressure of the revolving sharpeners against the edge is too great. I prevent this difficulty by mounting one of the revolving sharpeners in a swinging frame, so that it can swing away from the other sharpener, and there is a spring or its equivalent to draw such swinging frame toward the stationary frame, and the positions of the sharpeners, as one is moved toward the other, are limited by a screw. Thus the shape of the cutting-edge is determined by the position of the stop, and the sharpeners are free to be swung apart from this position, and only a definite or regulated pressure can be applied of the sharpeners upon the edge of the blade.

In the drawings, Figure 1 is a plan view of my improved sharpening apparatus. Fig. 2 is a vertical section of the same, and Fig. 3 shows the pulleys detached and the direction in which the belt passes.

The rings A A are made of suitable sharpening-stones, preferably Arkansas oil-stone, and they are threaded upon the shafts B and C, with intervening disks D, of suitable material, such as brass, and a washer 2 at one end and a nut 3 at the other serve for clamping the rings firmly in place and also for holding the pulleys F F′ upon the respective shafts. These shafts B C are preferably supported upon center screws 5, passing through the respective frames H I and into conical holes at the ends of the shafts, and the parts are so placed that the disks A A lap slightly past each other, as seen in Fig. 1, and the frame H is preferably provided with an arm H′ and an adjusting-screw 6 and the frame H is pivoted upon the screws 7, that pass through arms extending out from the frame I. A suitable spring—such as the contractile spring K—serves to draw the frame H toward the frame I, and the amount of motion is limited by the screw 6. Hence as the respective sharpening rings and shafts are revolved in the direction of the arrows by belts applied to the pulleys the knife can be accurately ground as it is drawn along endwise with its edge resting upon the two sharpening-cylinders, and as the sharpening-surfaces move toward the cutting-edge there will not be any thin leaf or thread formed at the edge; but the cutting-edge will be left in a complete condition ready for use.

The belts made use of in driving the respective pulleys and sharpeners may pass in any desired direction; but I find it convenient to make use of the shaft L, supported by screws 10 in the frame I, and upon this shaft are three pulleys 11 12 13, the pulleys 11 and 12 being formed in one and the pulley 13 separate and both being free to revolve upon the shaft L. The belt O passes beneath the pulley 13, up over the pulley F, down beneath the pulley 12, up over the pulley F′, and down beneath the pulley 11, and thence to the pulley by which the belt is driven. By this arrangement the driving-belt is kept out of the way of the knife as it is drawn along between the sharpening-rings.

In cases where the grinding-cylinders can be more conveniently or cheaply made each of one piece instead of separate rings of stone, such grinding-cylinders are to have peripheral rings that are narrower than the intervening grooves, and located so that the grooves of one cylinder receive the edges of the rings on the other cylinder where the parts lap past each other. These grinding rings or cylinders may be of natural stone or of emery or other suitable material.

The number of grinding-rings may be more or less than shown. Two only may be used, the edge of one lapping past the edge of the other, or there may be two on one side lapping past the edge of the other.

I claim as my invention—

1. The combination, with two arbors and sharpening-rings thereon, of a stationary frame for one arbor, a pivoted frame for the other arbor, a yielding device acting to draw one arbor toward the other, and a stop to limit the movement, substantially as specified.

2. The rings of sharpening-stones and intermediate filling-pieces, the shafts for receiv-

ing the rings and the filling-pieces, and clamps for securing the parts together and to the shafts, in combination with a stationary frame for one shaft, a swinging frame for the other shaft, and an adjusting-screw for determining the position of the swinging frame and the relative positions of the sharpening-rings, substantially as set forth.

3. The sharpening-rings and filling-pieces, in combination with the two shafts, pulleys, and clamping device, the frames for supporting such shafts and the shaft L, and pulleys 11 12 13 below the sharpening-rings, and the driving-belt passing around the respective pulleys, substantially as set forth, whereby such driving-belt is kept out of the way of the knife to be sharpened, substantially as specified.

Signed by me this 20th day of March, 1889.

F. ECAUBERT.

Witnesses:
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