

(No Model.)

F. B. FRENCH.
SHARPENING DEVICE.

No. 477,592.

Patented June 21, 1892.

Fig. 1.

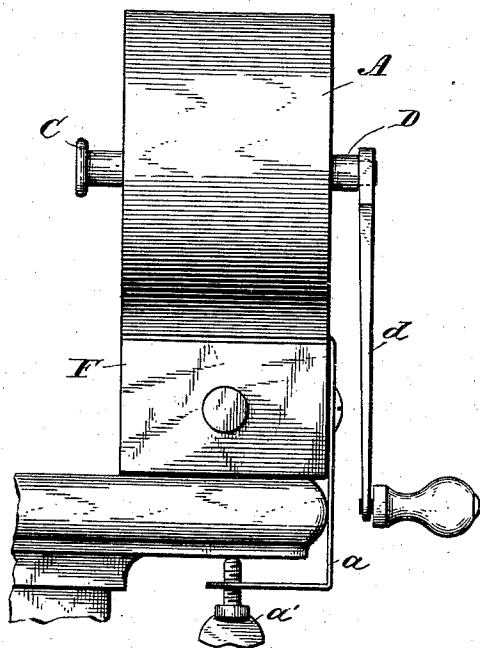


Fig. 2.

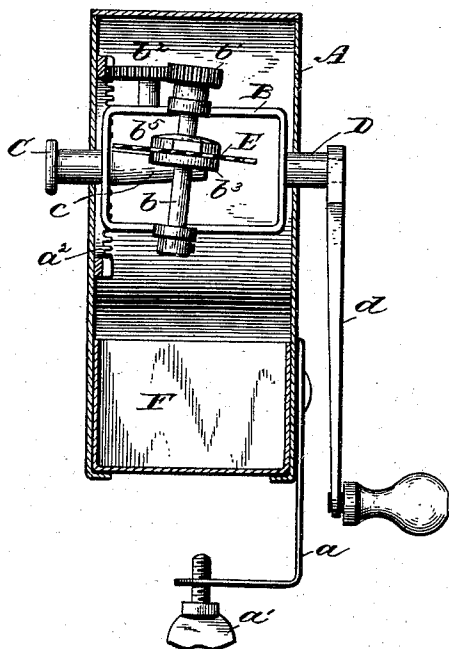


Fig. 3.

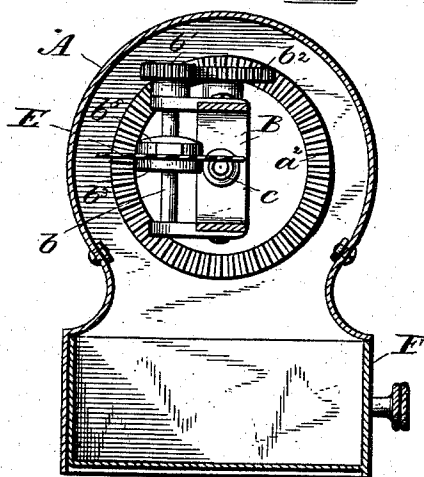


Fig. 4.

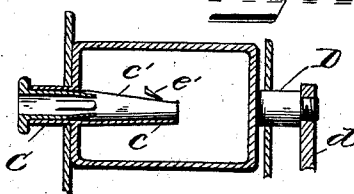
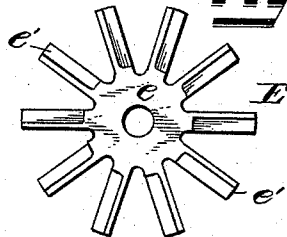


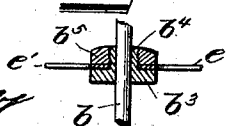
Fig. 5.



Witnesses.

Thomson Cross,
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Fig. 6.



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UNITED STATES PATENT OFFICE.

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SHARPENING DEVICE.

SPECIFICATION forming part of Letters Patent No. 477,592, dated June 21, 1892.

Application filed April 11, 1892. Serial No. 428,621. (No model.)

To all whom it may concern:

Be it known that I, FRANK B. FRENCH, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Sharpening Devices, of which the following is a specification.

The object of my invention is to produce a sharpening device for pencils and other objects which will operate rapidly and efficiently and which will avoid the breakage incident to prior machines.

My invention consists in the parts and combination of parts described and claimed.

In the drawings, Figure 1 is a front view of my improved sharpening apparatus; Fig. 2, a central vertical section from side to side of the machine; Fig. 3, a vertical section from front to rear; Fig. 4, a vertical section of the pencil-guard; Fig. 5, a front view of the cutter, and Fig. 6 a detail showing a preferred method of attaching the cutter to this shaft.

A is the casing of the machine, and *a* an angle-arm adapted to take around the edge of a table or equivalent support, and *a'* a clamping-screw adapted to lock the frame to the support.

B is a frame journaled in suitable bearings in the casing A. In the form shown one of the bearings C is tubular and serves as a pencil holder and guard, while the other end is provided with an ordinary journal D, adapted to be rotated by a crank *d* or equivalent means.

Mounted in suitable bearings upon the frame B is a shaft *b*, carrying a cutter E and provided with a gear-wheel *b'*, adapted to mesh with another gear-wheel *b''*, also mounted upon frame B, which in turn meshes with an annular rack *a''*, fixed to the frame or casing of the machine. Shaft *b* is preferably inclined relatively to the axis of the rotary frame.

The cutter E consists of a hub *e*, carrying a series of radially-extending blades *e'*, and it may be secured to the shaft in any suitable manner. In the form shown the shaft is provided with a fixed collar *b''*, having a threaded projection *b'''*, adapted to receive a clamping-nut *b''''*, and the cutter is clamped between the collar and the nut. The tubular bearing C has an inward projection *c*, having a conical internal taper and provided with a longitudinal slot *c'*, the edges of which are inclined to

correspond with the bevel to be applied to the end of the pencil. It will be seen that operation of the crank will cause rotation of the frame B and pencil-guard C, and will at the same time impart a traveling rotation to the shaft *b* and cutter E. The cutter is so placed that its blades in their rotation will travel along and in close contact with the edges of the slot *c'*. The pencil is inserted in the guard C and held against rotation therein. The crank is then actuated and the slight portion of the pencil projecting above the slot edges removed by the traveling blades, the parts of the pencil not immediately exposed to the cutting action being positively supported and thereby protected against fracture. The pencil is advanced as the cutting proceeds until it receives as fine a point as may be desired.

Fig. 6 is a detail showing a preferred method of attaching the cutter to this shaft.

I have illustrated the cutter as provided with knife-blades; but it is obvious that an abrading-disk may be used in its place, and in the claims I employ the term "cutter" as denoting the reducing agent, whether the work be performed by the cutting or abrading.

I claim—

1. The combination, in a sharpening device, of a rotatable frame, a cutter carried by the frame, and mechanism for imparting a rotary movement to the cutter, substantially as and for the purpose specified.

2. The combination, in a sharpening device, of a rotatable frame, a cutter carried by the frame, mechanism for imparting a rotary movement to the cutter, and a guard for the object to be sharpened, adapted to rotate with the frame, substantially as and for the purpose specified.

3. The combination, in a sharpening device, of a rotatable frame, a cutter carried by the frame, mechanism for imparting a rotary movement to the cutter, and a slotted guard for the object to be sharpened, adapted to rotate with the frame, substantially as and for the purpose specified.

4. The combination, in a sharpening device, of a rotatable frame, a cutter carried thereby, mechanism for imparting a rotary movement to the cutter, and a guard for the object to be sharpened, the guard having a conical internal taper and a longitudinal slot, substantially as and for the purpose specified.

5 5. The combination, in a sharpening device, of a rotatable frame, a shaft carried thereby, a cutter carried by the shaft, an annular rack upon the casing, and gearing connecting the cutter-shaft with the annular rack, substantially as and for the purpose specified.

10 6. The combination, in a sharpening device, of the frame B, the shaft *b*, the cutter E, mounted upon said shaft, the gear-wheels *b'* and *b²*, and the rack *a²*, substantially as and for the purpose specified.

7. The combination, in a sharpening device, of the frame B, the shaft *b*, the cutter E, mounted upon said shaft, the gear-wheels *b'* and *b²*, the rack *a²*, and the guard C, having slot *c'*, substantially as and for the purpose specified.

FRANK B. FRENCH.

Witnesses:

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