

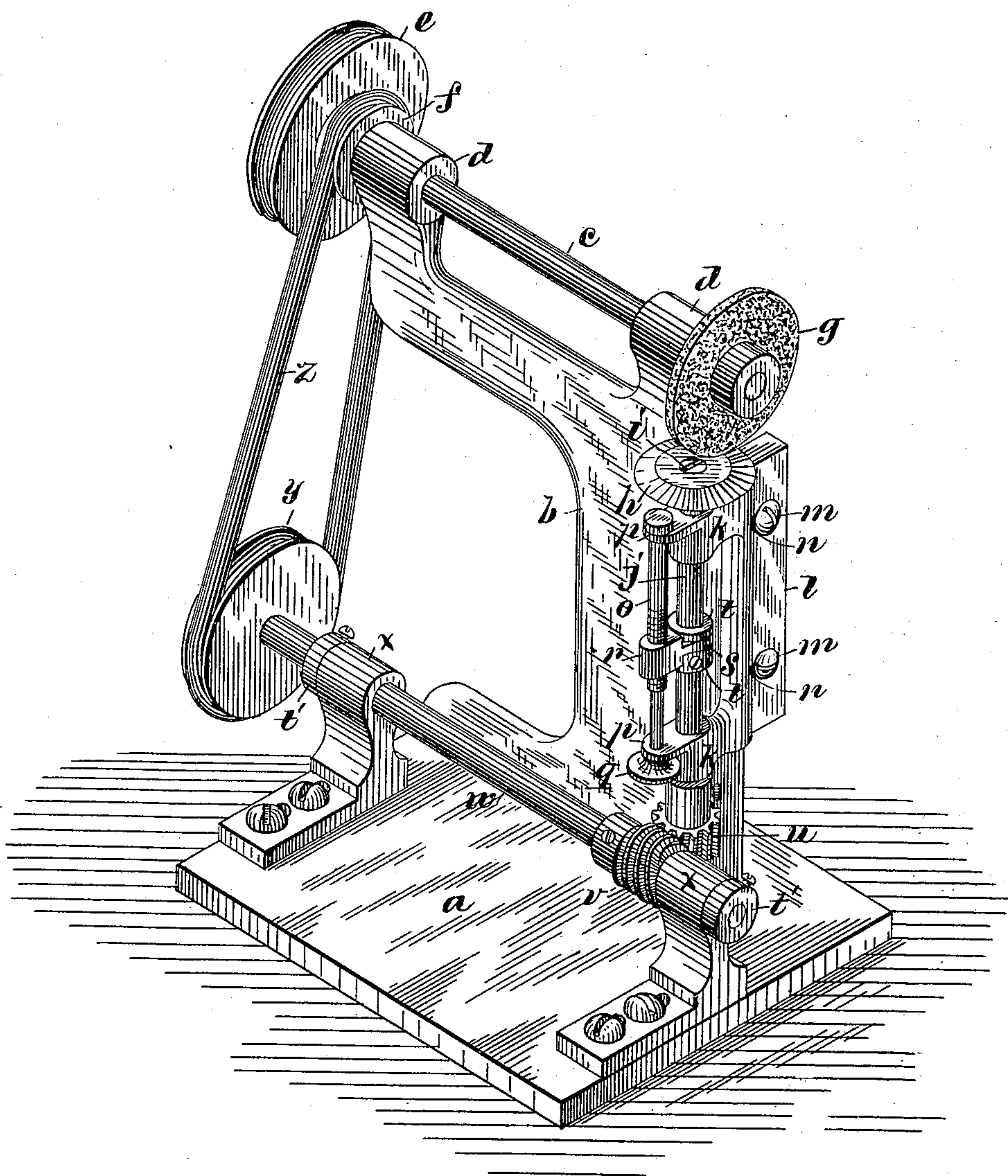
(No Model.)

E. SHAW & F. D. WALDEN.

KNIFE SHARPENER.

No. 337,023.

Patented Mar. 2, 1886.



Witnesses
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UNITED STATES PATENT OFFICE.

ELIJAH SHAW AND FRANK D. WALDEN, OF MILWAUKEE, WISCONSIN,
ASSIGNORS OF ONE-HALF TO CHARLES T. BRADLEY AND WM. H.
METCALF, OF SAME PLACE.

KNIFE-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 337,023, dated March 2, 1886.

Application filed April 20, 1885. Serial No. 162,823. (No model.)

To all whom it may concern:

Be it known that we, ELIJAH SHAW and FRANK D. WALDEN, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Knife-Sharpener; and we do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

Our invention (to be hereinafter distinctly claimed) relates to a device for sharpening circular knives, and particularly such knives as are in use in boot and shoe manufactories for cutting and trimming leather, with machines for that purpose.

The accompanying drawing is a perspective view of the device with the knife to be sharpened attached thereto.

a is a base-plate, to which is rigidly affixed the vertical bracket *b*. In the top of the bracket *b* the driving-shaft *c* is supported, and rotates in suitable bearings, *d d*, provided therefor. To this driving-shaft *c*, at its outer end, are rigidly affixed the driving-pulley *e*, intended and adapted for driving the mechanism of this device by power applied thereto by and through a belt over said pulley from the power-supplying mechanism, and the small driving-pulley *f*, for transferring power to other parts of the device.

To the shaft *c*, at its other or inner end, is affixed the emery-wheel *g*, which rotates with said shaft, and is provided with emery on its periphery, constituting it an edge or buff grinder.

The knife to be ground, *h*, is rigidly affixed upon the top of the vertical shaft *j* by the screw *i*, passing through a central aperture in said knife and screwing into the top of said shaft *j* in a socket with screw-thread provided therefor. The vertical shaft *j* has its bearings and rotates in lugs *k k*, rigid upon the movable bracket *l*. This bracket *l* is attached to the rigid bracket *b* by the screws *m m*, through short horizontal slots *n n* in said bracket *l*, which slots are a little wider than the diameter of the shank of screws *m m*, and which screws *m m* enter sockets with screw-threads

provided therefor in said bracket *b*, by means of which adjustable attachment said bracket *l* may be moved slightly to front or rear, either at the top or bottom or entirely, to adapt it for properly holding on the shaft *j*, for grinding thereon knives varying somewhat in size, and to secure the desired bevel on such knives, and whereby, at the same time, the worm-gear connected therewith, and to be hereinafter described, may be properly adjusted.

In front of the shaft *j* is the vertical rod *o*, which rod has bearings at its upper and lower ends, respectively, and rotates in the ears *p p*, which ears are rigid on and project from the lugs *k k*, respectively, said rod being secured in its place in said ears by a rigid head on its upper end, and by the rigid milled head *q* on its lower end, by which milled head *q* said rod can be made to rotate by hand, as desired. Said rod is screw-threaded around its middle part, upon which is the traveling nut *r*, having an arm, *s*, extending rearward, and through which arm, in an aperture therefor, the shaft *j* passes and rotates freely. Upon said shaft *j*, and made rigid thereto by set-screws, are the sleeves *t t*, which serve as stops against which said arm *s* bears.

By rotating the rod *o* by means of the milled head *q* the shaft *j* may be raised or lowered by and through the traveling nut *r* and arm *s*, as desired, carrying the superimposed knife *h* up against the emery-wheel, or lowering it therefrom.

Rigid on the lower end of shaft *j* is the worm-wheel *u*, adapted to mesh with the worm *v*, rigid on shaft *w*. The horizontal shaft *w* has its bearings in the brackets *x x*, which brackets are movably attached to the base-plate *a* by screws through slots in said brackets, which screws screw into the base-plate, said brackets being, by means of said slots and screws, movable slightly toward the front or rear, to adjust the worm on said shaft *w* to the movable worm-wheel *u*. The shaft *w* is provided on its outer end with the rigid pulley *y*, upon which the belt *z* runs, which belt also runs upon the pulley *f*, whereby said shaft *w* is driven. The shaft *w* is held in position against endwise movement by the stops or sleeves *t' t'*, movably affixed to said shaft by set-screws. The circular knife *h*, for the grinding of which this

device is constructed, has a beveled surface from its edge inward on one or both sides. To grind it, the knife is affixed to the top of the shaft *j*, and is raised against the emery-wheel by turning the rod *o* by its milled head *q*. The emery-wheel *g*, being caused to revolve with the shaft *c* by power applied through the belt running upon pulley *e*, will grind the beveled surface of the knife, the knife being properly adjusted against the wheel *g* by means of the adjustable bracket *l* and the raising and lowering device attached to the shaft *j*, already described.

By means of the belt *z*, pulley *y*, shaft *w*, and worm-gear *v* and *u* the knife is caused to rotate slowly when the shaft *c* revolves, whereby the entire circular beveled surface of the knife is successively brought into contact with the grinding emery-wheel.

What we claim as new, and desire to secure by Letters Patent, is—

1. In a device for grinding circular beveled-edged knives, a bracket, *l*, supporting the knife-carrying mechanism, which bracket is provided with slots *n n* and supported on screws *m m* through slots *n n*, in combination with bracket *b*, whereby the bracket *l* is adjustable laterally at its top or bottom independently or concurrently, and the desired inclination of bracket *l* may be secured, substantially as described.

2. In a device for grinding circular knives, the upright rigid supporting-bracket *b*, in combination with the horizontally-adjustable bracket *l*, and the vertically-adjustable knife-carrying rod *j*, supported and rotating in the bracket *l*, substantially as described.

3. In a device for grinding circular knives, the rotating knife-carrying rod *j*, vertically adjustable in its bearings, in combination with

the rod *o*, traveling nut *r*, arm *s*, and collars *t t*, all supported on a bracket, *l*, substantially as described.

4. In a knife-grinding device, the movable bracket *l*, adjustably attached to the rigid bracket *b*, the shaft *j*, supported and having endwise and rotary motion in lugs on said bracket *l*, in combination with rod *o*, supported and having rotary motion in ears rigid to bracket *l*, and provided with a screw-thread carrying the traveling nut *r*, the nut *r* provided with rigid arm *s*, claspingshaft *j*, and the sleeves *t t*, rigid to shaft *j*, one on each side of the arm *s*, substantially as and for the purpose set forth.

5. The knife-grinding device hereinbefore described, consisting of the grinding-wheel *g*, affixed to and rotating with the driving-shaft *c*, said shaft being supported on bracket *b*, affixed to base-plate *a*, the knife-supporting rotating shaft *j*, supported and rotating in lugs affixed to movable bracket *l* and provided with worm-wheel *u*, and adjusting-rod *o*, supported and rotating in ears *p p*, rigid on lugs *k k*, said rod having a screw-thread and provided with the traveling nut *r*, moving upon said rod, and the arm *s*, claspingshaft *j*, in combination with the worm *v* on shaft *w*, shaft *w*, supported and rotating in brackets *x x*, provided with rigid pulley *y*, and the belt *z*, running upon pulleys on shafts *c* and *w*, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

ELIJAH SHAW.

FRANK D. WALDEN.

Witnesses:

C. T. BENEDICT,

JAS. B. ERWIN.