(Model.) 4 Sheets—Sheet 1.

A. DEY.

RAZOR SHARPENING MACHINE.

No. 389,291. Patented Sept. 11, 1888.

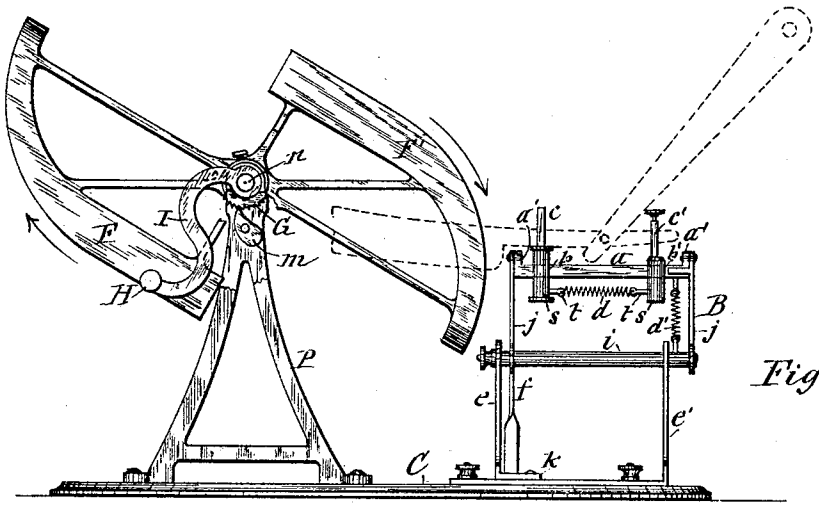


Fig. 1

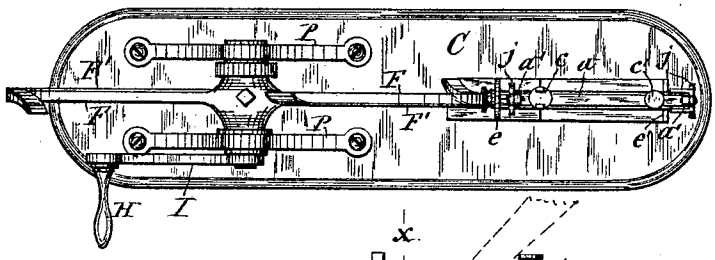


Fig. 2

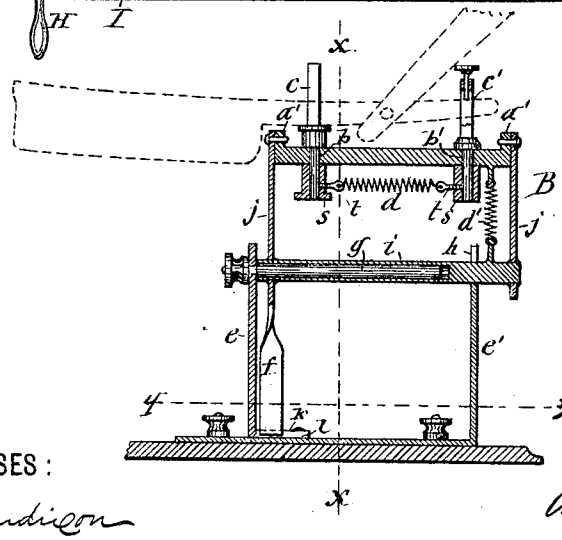


Fig. 3

WITNESSES:

E. L. Bendixon

H. R. Denison

INVENTOR.

Alexander Dey.

BY

Hull, Lacey & Hull,

ATTORNEYS.

N. PETERS. Photo-Lithographer. Washington, D. C.

(Model.) 4 Sheets—Sheet 2.

A. DEY.

RAZOR SHARPENING MACHINE.

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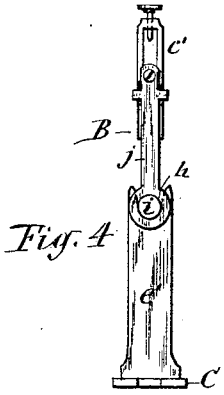


Fig. 4

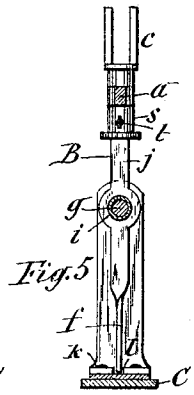


Fig. 5

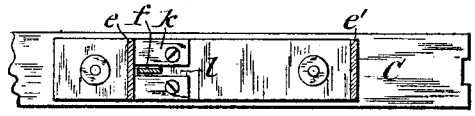


Fig. 6

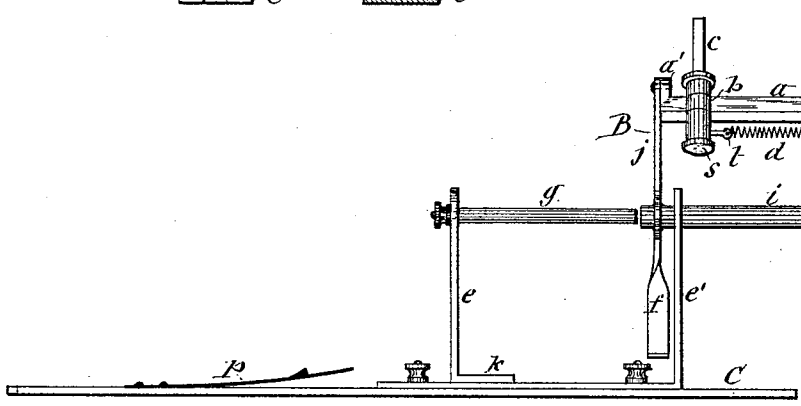


Fig. 11

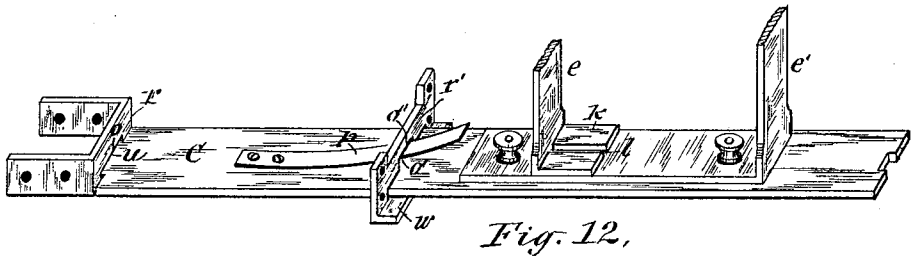


Fig. 12.

WITNESSES:

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(Model.)

4 Sheets—Sheet 3.

A. DEY.

RAZOR SHARPENING MACHINE.

No. 389,291. Patented Sept. 11, 1888.

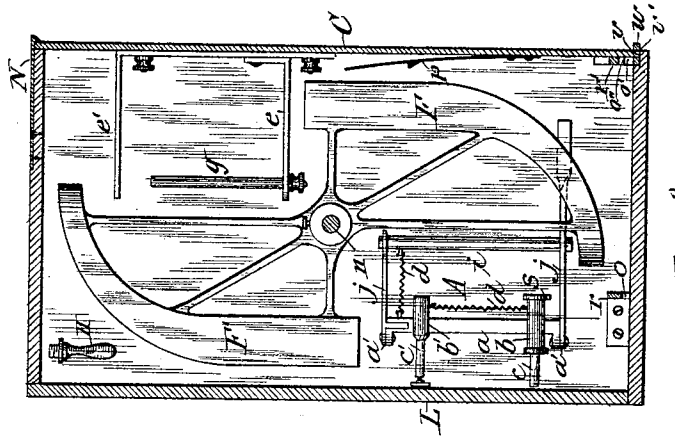


Fig. 8



Fig. 9

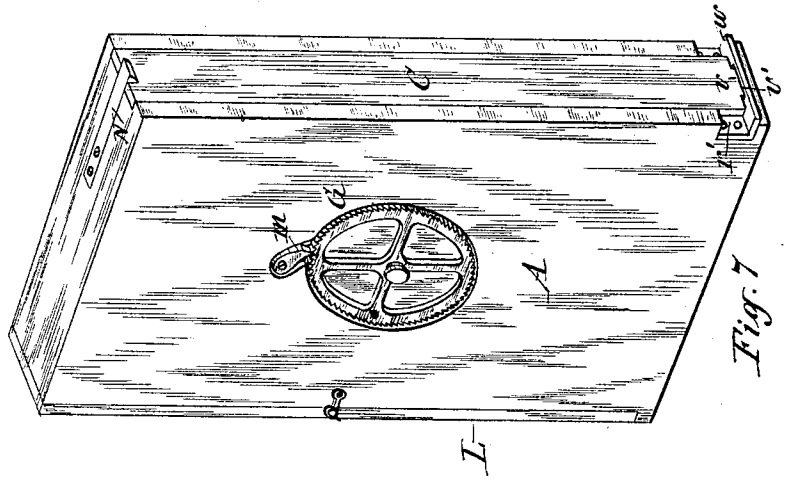


Fig. 7

WITNESSES.

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(Model.) 4 Sheets—Sheet 4.

A. DEY.

RAZOR SHARPENING MACHINE.

No. 389,291. Patented Sept. 11, 1888.

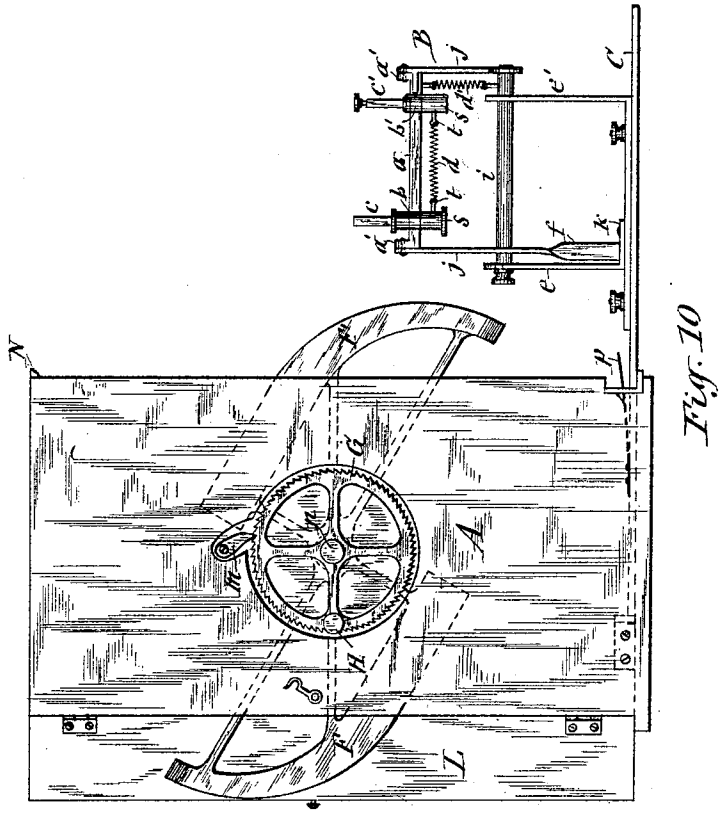


Fig. 10

WITNESSES:
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UNITED STATES PATENT OFFICE.

ALEXANDER DEY, OF GLASGOW, SCOTLAND.

RAZOR-SHARPENING MACHINE.

SPECIFICATION forming part of Letters Patent No. 389,291, dated September 11, 1888.

Application filed September 7, 1887. Serial No. 249,009. (Model.) Patented in England November 11, 1884, No. 14,825.

To all whom it may concern:

Be it known that I, ALEXANDER DEY, a subject of the Queen of Great Britain, residing at Glasgow, in the county of Lanark, Scotland, in the Kingdom of Great Britain, have invented a new and useful Razor-Sharpening Machine, (for which I have obtained a patent in Great Britain, No. 14,825, bearing date November 11, 1884,) of which the following is the specification.

This invention relates to a machine designed to expeditiously, conveniently, and accurately sharpen razors by strapping or honing, and has special reference to the machine for which I have obtained Letters Patent of Great Britain, No. 14,825, of November 11, 1884.

My present invention embodies certain improvements in the construction and combination of parts which constitute a machine of superior efficiency and convenience of operation, all as hereinafter fully described, and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a side elevation of a razor-sharpening machine embodying my invention. Fig. 2 is a top plan view of the same. Fig. 3 is an enlarged vertical longitudinal section of the razor-holding devices. Fig. 4 is an end view of the latter. Fig. 5 is a vertical transverse section on line $x\,x$, Fig. 3. Fig. 6 is a horizontal transverse section on line $y\,y$, Fig. 3. Fig. 7 is a perspective view of a case containing the razor-sharpening mechanism stowed therein for convenience of transportation. Fig. 8 is a vertical longitudinal section of said case. Fig. 9 is a face view of the removable end plate of the case. Fig. 10 is a front elevation of the case with the razor-sharpening mechanisms in their operative position. Fig. 11 is a front view of the razor-holding devices, illustrating the manner of attaching and detaching the same to and from their support; and Fig. 12 is a detached isometric view of the devices for sustaining in the case the base-plate on which the razor-holding devices are mounted during the operation of the machine.

Similar letters of reference indicate corresponding parts.

F′ F′ represent razor strops or hones, which are mounted on pivoted carriers F F, supporting said strops or hones in their operative positions and in a plane at right angles to the axis of the carriers. Said carriers are of the form of wings radiating from a shaft, *n*, which may be journaled either in pedestals P P, secured to a suitable rigid base, C, as shown in Figs. 1 and 2 of the drawings, or in bearings secured to the side plates of an inclosing-case, as represented in Figs. 8 and 10 of the drawings, the strops or hones F′ F′ being secured to opposite sides of said wings.

The peripheral portions of the wings F F, to which the strops or hones are attached, I prefer to form eccentric in relation to the shaft *n* or axis of said wings, for the purpose of causing the strops or hones F′ F′ to move along the side of the razor from the heel to the point thereof. The strops or hones move in the direction indicated by arrows in Fig. 1 of the drawings and receive motion by means of a crank, I, connected to the shaft *n*, and provided with a handle, H, by which to turn it.

The strop or hone carriers F F are confined to one direction of movement by a suitable detent, preferably of the form of a ratchet-wheel, G, secured to the shaft *n* and a dog, *m*, pivoted on the pedestal P or on the case A, and held in engagement either by a suitable spring or by gravity, as represented in Figs. 1 and 7 of the drawings.

In connection with the described rotary strop or hone carriers I employ a razor support or holder adapted to hold the razor in the path of the strops or hones and in a plane parallel with that of said strops or hones. Said razor support or holder consists of the standards *e e′*, secured to the base C and standing in line with the plane of the strop or hone carriers F F. The standard *e′* is provided in its upper end with a vertical slot, *h*, and to the standard *e* is firmly secured a shaft, *g*, which is extended toward the slot *h* and terminates short of the standard *e′*, so as to leave a space between them, for the purpose hereinafter explained. On the aforesaid standards is removably mounted a bracket, B, formed with a sleeve, *i*, which slides on the shaft *g*, and from opposite ends of said sleeve rise posts *j j*, on the upper ends of which is pivoted the bar *a*, arranged in line with the plane of the strop or hone carriers F F. The bar *a* is formed at its ends with upper projecting cranks, *a′ a′*,

at or near the ends of which the bar is pivoted to the posts, and thus said bar is allowed to rock laterally. The bracket B is sustained in an upright position by means of a shank, *f*, extending downward from and formed integral with one of the posts *j*, and having its free end in the slot *l* in the base or foot *k* of the standard *e*. The bracket B is placed in its requisite operative position by placing one end of the sleeve *i* in the slot *h* of the standard *e'*, and in doing so bringing between the said standard and end of the shaft *g* the post *j* and shank *f* on said end of the sleeve, as illustrated in Fig. 11 of the drawings, and then pushing the sleeve over the shaft *g* until it abuts against the standard *e*, the lower end of the spring-arm *f* being simultaneously introduced into the slot *l* of the base *k*. The rocking movement of the bar *a* is to a certain degree resisted by a spring, *d'*, connecting said bar with the bracket B. The bar *a* is provided with two vertical eyes, *b b'*. In the eye *b* is pivoted the bifurcated jaw *c*, having a cylindrical shank passing through said eye and confined therein by a collar, *s*, secured to the end of the shank projecting below the bar *a* by a set-screw, *t*, passing horizontally through the collar and engaging the aforesaid shank, as illustrated in Fig. 3 of the drawings. In the other eye, *b'*, is pivoted the clamp *c'*, also secured to the bar *a* by a collar, *s*, fastened to the lower protruding end by a set-screw, *t*. A spring, *d*, connected at opposite ends to the respective set-screws *t t*, serves to yieldingly sustain the jaws *c* and clamp *c'* with their gripping portions in line with each other.

In the operation of the machine the razor is secured to its holder or support by inserting the shank of the razor between the jaws *c* and into the clamp *c'* and fastening it in the latter by the set-screw *u*, connected to said clamp, the razor being placed with its edge downward or in the direction indicated by arrows in Fig. 1 of the drawings. Then by turning the crank I, so as to revolve the wings F F in the direction aforesaid, the strops or hones F' F' are caused to be drawn alternately across opposite sides of the razor-blade. The advancing ends of the wings are deflected laterally in opposite directions to insure the passage of the said wings respectively across opposite sides of the razor-blade, as aforesaid. The strop or hone, first coming in contact with the thick or back portion of the razor-blade, crowds the latter to one side and causes the portion adjacent to the edge of the blade to be pressed correspondingly against the strop or hone, the spring-arm *f* sustaining the bracket B, and the spring *d'*, resisting the lateral movement of the bar *a*, imparts the requisite pressure to the razor against the strop or hone. The wings F F, moving with the ends which are farthest from the axis in advance, cause the strops or hones to be drawn from the heel of the razor-blade to the point thereof.

In order to render my improved razor-sharpening machine convenient for storing or transporting, I inclose the same in a case, A, formed with open opposite ends, to one of which I connect a door, L, and to the opposite open end I detachably connect a plate, C, which is of the same width as the interior of the case, so as to allow it to enter the same, the foot of said plate being formed with a tenon, *v*, which enters a mortise, *v'*, in a metal plate, *w*, secured to the base of the case, as shown in Figs. 7 and 8 of the drawings. A spring-catch, N, attached to the top of the case, engages the upper end of the plate C to hold the same in its closed position in the end of the case, as illustrated in Fig. 7 of the drawings. This plate C, I utilize as a base for the razor-support by attaching thereto the standards *e e'*, for the attachment of the razor-support, and securing to the base of the interior of the case two bridges, *r r'*, the bridge *r'* being preferably formed on the plate *w*, hereinbefore referred to. The bridge *r* is provided with a mortise, *o*, and the bridge *r'* is provided with a slot, *o'*, and with a notch, *o''*, in the upper edge of said slot, as best seen in Fig. 12 of the drawings. By removing the plate C from the end of the case and passing it endwise and horizontally through the slot *o'* and inserting the end tenon, *v*, into the mortise *o* of the bridge *r*, said plate is sustained in a horizontal and outwardly-projecting position on the base of the case A, as illustrated in Fig. 10 of the drawings.

A spring-latch, *p*, is secured to the plate C and adapted to pass through the notch *o''* and engage the back of the bridge *r*, so as to lock the plate C in its aforesaid position. The strop or hone carriers F F are arranged inside of the case and pivoted in the sides thereof, and the crank I is attached to the protruding end of the shaft *n* at the exterior of the case, the crank in this instance being formed of the ratchet-wheel G, and the handle H detachably connected to said wheel, the dog *m* being necessarily also connected to the exterior of the case A.

By turning the wings F F into the position shown in Fig. 8 of the drawings ample room is obtained inside of the case to stow therein the bracket B and handle H and permit of closing one end of the case by the plate C, with the standards *e e'* attached thereto, and projecting into the case, and also permit the closing of the door L.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A razor-sharpening machine comprising a rotary shaft, wings radiating from said shaft, and razor-strops secured to opposite sides of said wings, substantially as set forth and shown.

2. A razor-sharpening machine comprising a rotary shaft, wings radiating from said shaft and formed with eccentrically-curved peripheral portions, and strops secured to opposite sides of said peripheral portions, substantially as specified and shown.

3. A razor-sharpening machine comprising

a rotary shaft, wings radiating from said shaft, strops secured to the sides of said wings, and a razor-support adapted to hold the razor in the path of the aforesaid strops and in a plane parallel with that of the strops, as specified.

4. A razor-stropping machine composed of a rotary shaft, wings radiating from said shaft and formed with eccentrical peripheral portions, razor-strops secured to opposite sides of said peripheral portions, and a razor-support adapted to hold the razor in the path of the strops and in a plane parallel with that of the strops, as set forth and shown.

5. A razor-sharpening machine composed of a rotary shaft, wings radiating from said shaft, strops secured to opposite sides of said wings, a razor-holder arranged in a line parallel with the plane of the wings and sustained yieldingly laterally, as and for the purpose specified.

6. In combination with the rotary strop-carriers, a razor-holder consisting of jaws or clamps arranged in a line parallel with the plane of the strop-carriers and pivoted at right angles to said line, and a spring connecting the jaws or clamps with each other, substantially as and for the purpose set forth.

7. In combination with the rotary strop-carriers, the bar *a*, pivoted axially in line with the plane of the aforesaid carriers and provided with the eyes *b b'*, the jaw *c* and clamp *c'*, pivoted in said eyes, and the spring *d*, connecting the said jaw and clamp to each other, substantially as described and shown.

8. In combination with the rotary strop-carriers, the bracket B, the bar *a*, pivoted on said bracket axially in line with the plane of the aforesaid carriers and provided with the eyes *b b'*, the jaw *c* and clamp *c'*, pivoted in said eyes, the spring *d*, connecting said jaw and clamp to each other, and the spring *d'*, connecting the bar *a* to the bracket, substantially as described and shown.

9. In combination with the rotary strop-carriers, the standards *e e'*, the bracket B, mounted on said standards and sustained in its upright position by the arm *f*, the bar *a*, pivoted on the bracket, the jaw *c* and clamp *c'*, connected to the said bar, and the spring *d'*, connecting the bar *a* to the bracket, substantially as and for the purpose set forth.

10. In combination with the rotary strop-carriers, the standard *e'*, provided with the slot *h*, the standard *e*, the shaft *g*, projecting from the latter standard toward the slot *h* and terminating short of the standard *e'*, the razor-holding bracket B, formed with the sleeve *i*, sliding on the shaft *g*, the base *k*, provided with the slot *l*, and the shank *f*, extending from the bracket and entering the slot *l*, substantially as described and shown.

11. A portable razor-sharpening machine, comprising a case having its opposite ends open, strop-carriers inclosed in said case and journaled therein, a base-plate detachably connected to one of the open ends of the case and extending horizontally therefrom, and a razor-supporting bracket on said base, as set forth.

12. The combination, with the case A, of the bridges *r r'*, secured to the base of the interior of said case, and the plate C, adapted to enter endwise into said bridges, substantially as described and shown.

13. In combination with the rotary carriers, a razor-holder pivoted axially in line with the plane of the carriers, and a spring connecting the razor-holder to its support, as set forth.

14. A portable razor-sharpening machine, comprising a case having its opposite ends open and carriers inclosed in said case and journaled therein, as set forth.

In testimony whereof I have hereunto signed my name, in the presence of two witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 3d day of September, 1887.

ALEXANDER DEY. [L. S.]

Witnesses:

HOWARD P. DENISON,

C. L. BENDIXON.