

P. E. KOPP.
BLADE SHARPENER.
APPLICATION FILED MAR. 7, 1911.

1,011,211.

Patented Dec. 12, 1911.
2 SHEETS—SHEET 1.

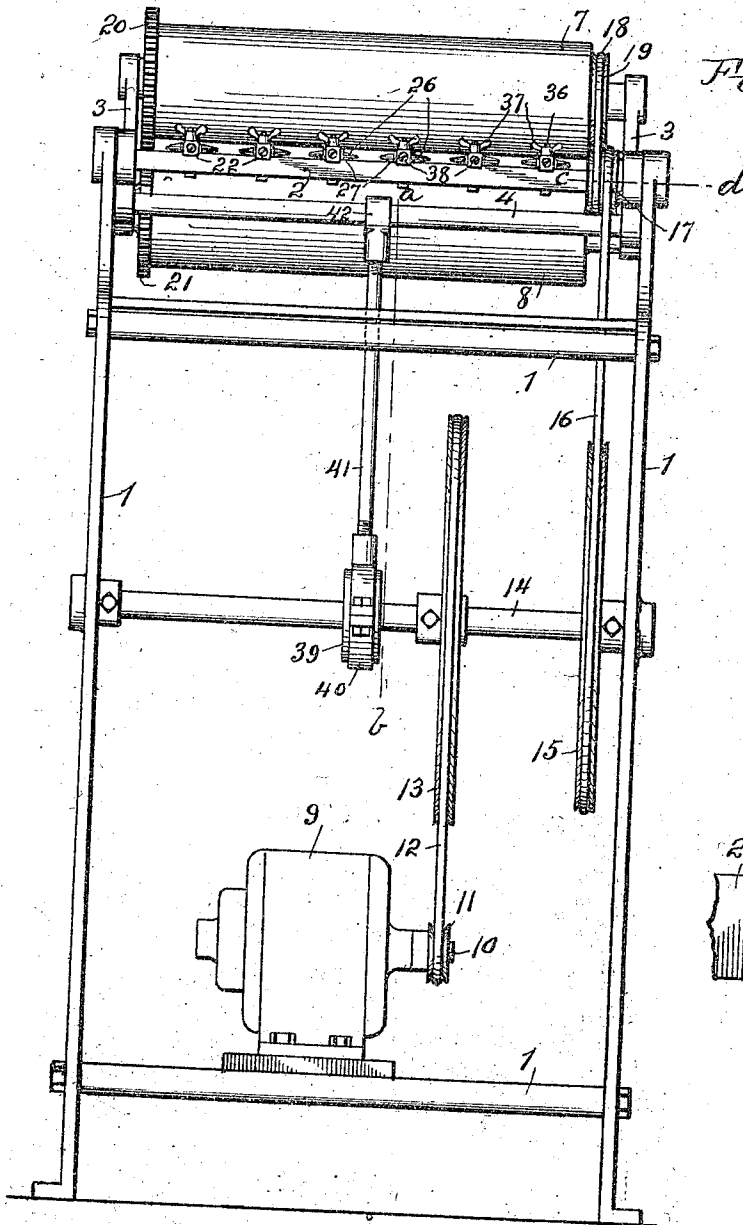


Fig 1

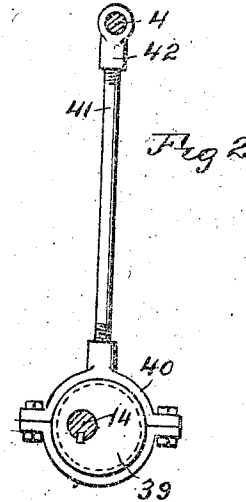


Fig 2

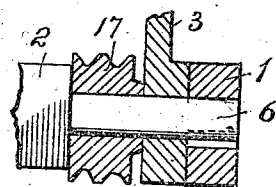


Fig 3

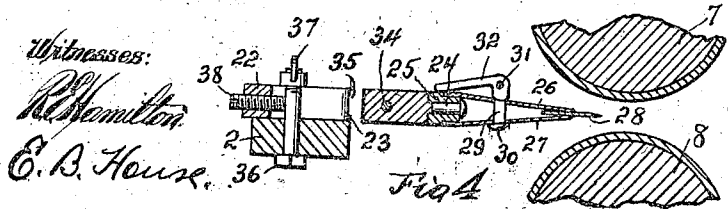


Fig 4

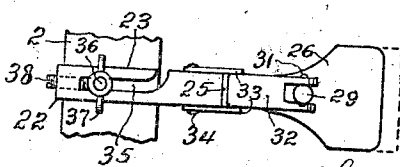
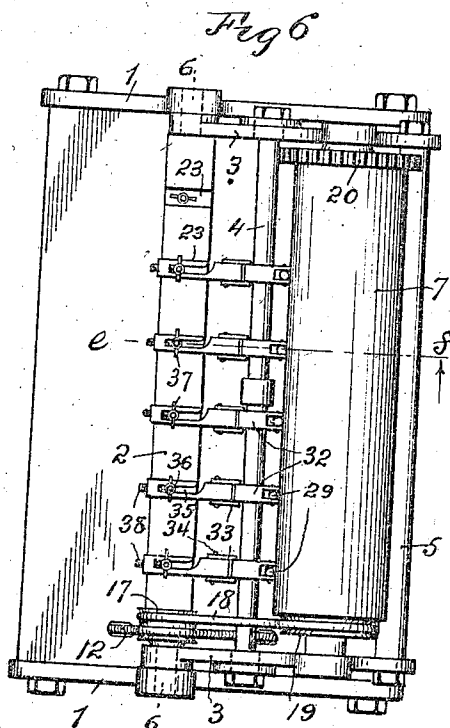
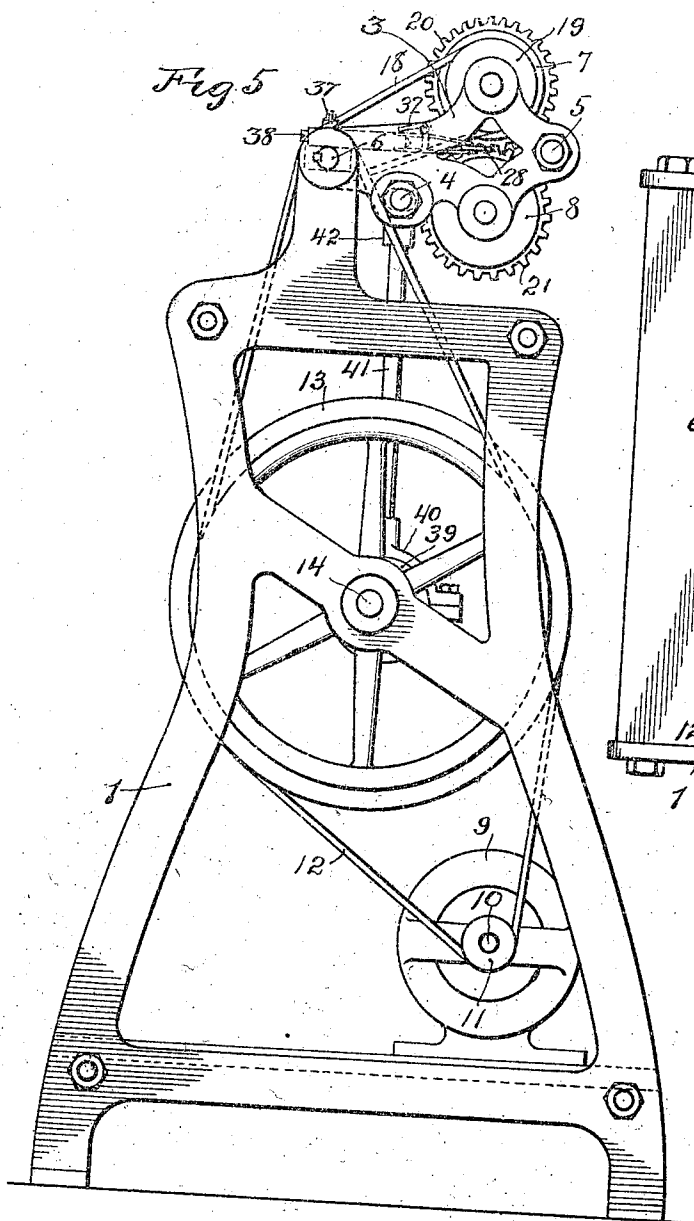
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Warren D. House
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UNITED STATES PATENT OFFICE.

PHILLIP E. KOPP, OF KANSAS CITY, MISSOURI.

BLADE-SHARPENER.

1,011,211.

Specification of Letters Patent.

Patented Dec. 12, 1911.

Application filed March 7, 1911. Serial No. 612,868.

To all whom it may concern:

Be it known that I, PHILLIP E. KOPP, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Blade-Sharpeners, of which the following is a specification.

My invention relates to improvements in blade sharpeners.

The object of my invention is to provide a machine by which blades, such as razor blades, may be quickly sharpened, and easily secured in or removed from the sharpening position while the machine is in operation.

The novel features of my invention are hereinafter fully described and claimed.

In the accompanying drawings which illustrate my invention, Figure 1 is a front elevation of the preferred form of my invention. Fig. 2 is a vertical section on the dotted line *a-b* of Fig. 1, showing the eccentric mechanism. Fig. 3 is a horizontal section, enlarged, on the dotted line *c-d* of Fig. 1. Fig. 4 is a vertical section on the dotted line *e-f* of Fig. 6, the parts being shown enlarged. Fig. 5 is an end elevation of the machine. Fig. 6 is a top view of the machine. Fig. 7 is a top view of a part of the stationary bar and one of the blade holders supported thereby.

Similar reference characters denote similar parts.

1 designates a supporting frame, which may be of any desired form and size.

2 is a horizontal stationary bar the ends of which are rigidly secured to the frame 1.

A swinging support comprising two parallel end plates 3 connected respectively to the ends of two horizontal tie rods 4 and 5, has its end plates 3 pivoted respectively to cylindrical end portions 6 of the stationary bar 2.

Two sharpening rollers 7 and 8 disposed one above the other and parallel with each other have their ends rotatively mounted in the end plates 3.

Driving mechanism for rotating the sharpening rollers 8 in opposite directions consists preferably in the following described mechanism. Supported on the frame 1 is a suitable motor 9 having a driving shaft 10 on which is secured a pulley 11, which is

connected by a belt 12 with a pulley 13 secured to a horizontal shaft 14 the ends of which are rotatively mounted in the frame 1. Secured to the shaft 14 is a pulley 15 which is connected by a belt 16 with a pulley 17 rotatively mounted on one of the cylindrical portions 6 of the stationary bar 2. The pulley 17 is connected by a belt 18 with a pulley 19 secured to one end of the roller 7. Secured respectively to the rollers 7 and 8 are two spur gear wheels 20 and 21 which mesh with each other. When the motor 9 is operated, the rollers 7 and 8 are rotated in opposite directions by means of the mechanism just described.

The stationary bar 2 is adapted to have secured to it one or more blade holders adapted to hold the blades to be sharpened between the rollers 7 and 8 in positions in which the rollers when they are swung upwardly and downwardly will alternately contact with the blades to be sharpened thereby.

Each blade holder consists preferably of the following described parts: A horizontal member 22 is mounted in a transverse groove 23 provided therefor in the upper side of the bar 2. The end of the member 22 nearest the rollers 7 and 8 is provided with a horizontal longitudinal stud 24 on which is pivotally mounted a block 25 to the upper and lower sides of which are secured respectively two clamping plates 26 and 27, which are adapted to clamp between them the blade 28 which is to be sharpened. Extending vertically through the clamping plates 26 and 27 is a pin 29 the lower end of which is provided with a head 30 which bears against the underside of the plate 27. The pin 28 above the plate 26 is provided with a transverse hole in which is mounted a horizontal pin 31 the ends of which pivotally support a bifurcated cam lever 32, which is adapted to bear upon the upper side of the plate 26 so as to tightly clamp the plates 26 and 27 against the blade 28. To limit the turning movement of the block 25 on the stud 24 two resilient plates 33 are secured by a horizontal pin 34 to opposite sides of the member 22 and have their free ends projecting over opposite vertical sides of the block 25. When the rollers are alternately moved into contact with the

blade 28, the plates 33 will yield sufficiently to permit the blade to lie flat against the rollers 7 and 8, so as to effect an even grinding away of the edge of the blade.

5 To clamp the member 22 tightly to the bar 2 and to permit of the longitudinal adjustment of said member and of its ready attachment to and removal from the bar 2, the member 22 is provided with a longitudinal
10 vertical slot 35, which has an open end adjacent the block 25 terminating in one side of the member 22. A vertical bolt 36 extends through the slot 35 and through a hole provided therefor in the bar 2. The head of the
15 bolt 36 bears against the under side of the bar 2, and the threaded part of the bolt above the member 22 is fitted in a thumb nut 37 which bears upon the upper side of the member 22. The left end of the member 22,
20 as viewed in Fig. 4, is provided with a screw threaded hole in which is fitted a horizontal adjusting screw 38, which is adapted to bear against the bolt 36 to limit the forward movement of the member 22. For swinging
25 the swinging support for the rollers 7 and 8 upwardly and downwardly so as to alternately bring said rollers in contact with the blades 28 the following described mechanism is preferably provided.
30 On the shaft 14 is rigidly secured an eccentric disk 39 which is engaged by an eccentric strap 40 to which is secured the lower end of an eccentric rod 41, the upper end of which is secured to a block 42 pivoted on
35 the tie rod 4. When the shaft 14 is rotated, the supporting frame carrying the rollers 7 and 8 is swung upwardly and downwardly on the bar 2 by the eccentric mechanism just described.
40 In operating my invention, the motor 9 is operated, thus rotating the sharpening rollers 7 and 8 and swinging upwardly and downwardly the support carrying said rollers in the manner already described. The
45 blades 28 are then clamped between the clamping plates 26 and 27 by swinging the cam levers 32 to the position shown in Fig. 4. The thumb nuts 37 are then loosened, after which the members 22 may be mounted
50 on the bar 2 by slipping the bolts 36 into the slots 35, and moving the members 22 into the grooves 23 in the upper side of the bar 2. The members 22 are then moved forwardly until the screws 38 strike the bolts 36, after
55 which the thumb nuts 37 are turned so as to clamp the members 22 against the bar 2. The shaft 14 in rotating will, through the intermediacy of the mechanism already described, cause the sharpening rollers 7 and 8
60 to contact with and sharpen the blades 28. As the blades are sharpened, the blade holders may be removed from the bar 2 and new blades inserted between the clamping plates of the blade holders, which may then be re-
65 placed in operative positions on the bar 2.

By reason of the bar 2, which supports the blade holders, being stationary, the blade holders may be easily secured to and removed from the bar 2 without having to stop the operation of the rollers 7 and 8. 70

By adjusting the screws 38, the blades 28 may be moved toward or from the rollers 7 and 8.

I do not limit my invention to the structure shown and described, as many modifications, within the scope of the appended claims, may be made without departing from the spirit of my invention. 75

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:— 80

1. In a machine of the class described, a stationary razor blade support, rotary dressing means mounted for movement into contact with opposite beveled faces of the cutting edge of such blade for the sharpening thereof, means for rotating the dressing means, and means for raising and lowering the razor blade dressing means in alternate contact with such blade. 85 90

2. In a blade sharpener, a frame, a support pivoted to the frame, two sharpening rollers rotatively mounted in said support, a blade holder, means carried by the frame for supporting the blade holder, driving means for rotating the rollers, and means actuated by the driving means for swinging said support. 95

3. In a blade sharpener, a frame, a support pivoted to the frame, two sharpening rollers rotatively mounted in said support, a blade holder, means carried by the frame for supporting the blade holder, a rotary shaft, means actuated by the shaft for rotating the rollers, and an eccentric mechanism connected with the shaft for swinging said support. 100 105

4. In a blade sharpener, a frame, a support pivoted thereto, two sharpening rollers rotatively mounted in said support, a stationary bar supported by the frame, a blade holder carried by the bar, driving means for rotating the rollers, and means actuated by the driving means for swinging the support. 110

5. In a blade sharpener, a frame, a support pivoted thereto, two sharpening rollers rotatively mounted in said support, a stationary bar supported by the frame, a blade holder carried by the bar, a shaft rotatively mounted in the frame, means actuated by the shaft for rotating the rollers, an eccentric mechanism connected with the shaft for swinging said support, and means for rotating said shaft. 115 120

6. In a blade sharpener, a frame, a stationary bar mounted on said frame, a support pivoted to said bar, two sharpening rollers rotatively mounted on said support, a pulley rotatively mounted on said bar, means actuated by the pulley for rotating 125 130

said rollers, a shaft rotatively mounted in
said frame, means for rotating said shaft,
means actuated by said shaft for rotating
said pulley, a blade holder mounted on said
5 bar, and an eccentric mechanism connected
with said shaft for swinging said support.

In testimony whereof I have signed my

name to this specification in presence of two
subscribing witnesses.

PHILLIP E. KOPP.

Witnesses:

E. B. HOUSE,

FLORENCE M. VENDIG.