

H. E. WHIPPLE.
Washer-Cutters.

No. 143,738.

Patented Oct. 14, 1873.

Fig. 1.

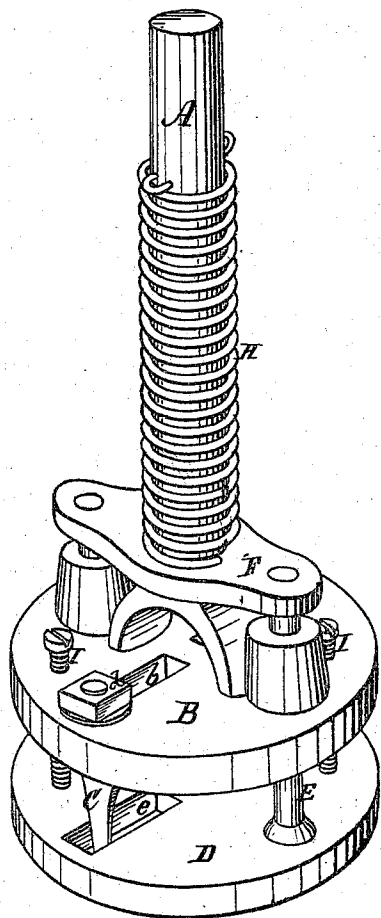


Fig. 2.

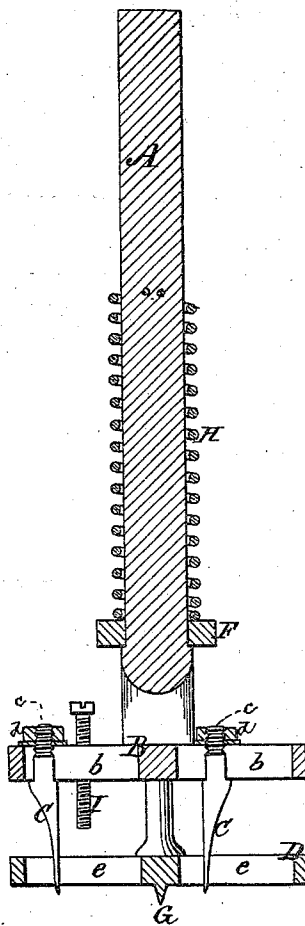
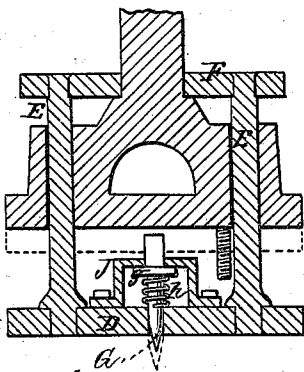


Fig. 3.



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HENRY E. WHIPPLE, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN WASHER-CUTTERS.

Specification forming part of Letters Patent No. **143,738**, dated October 14, 1873; application filed August 9, 1873.

To all whom it may concern:

Be it known that I, HENRY E. WHIPPLE, of the city and county of Providence, in the State of Rhode Island, have invented a certain new and useful Washer-Cutter, of which the following is a specification:

My invention is designed as an improvement in devices for cutting washers from leather, paper, or other material suitable for such purposes; and it consists in the combination of a cutter-holder in which the cutters are radially adjustable, attached to the end of a vertically-operating spindle, surrounded by a spiral spring, with a slotted clearing-plate so arranged, with relation to the spring and cutter, that, after the operation of cutting has been performed, and upon the release of pressure upon the spindle, the cutters are withdrawn from the scarf or cut by the action of the spring. Also, in providing the said cutter-holder with regulating-screws, arranged to come in contact with the clearing-plate, by which the depth of cut to be made by the cutters is determined; and I do hereby declare that the following specification, taken in connection with the drawing furnished, is a correct description of a washer-cutter embodying my invention.

In the drawing, Figure 1 represents a view in perspective of one of my washer-cutters. Fig. 2 represents a vertical central section of the same. Fig. 3 represents a modification of the invention.

A denotes the vertical operating spindle. In practice this spindle may be so constructed as to be capable of ready attachment to a rotary shaft of suitable machinery, and provided with means for effecting its vertical reciprocating movement. B denotes the cutter-holder. It is attached to the lower end of the spindle A, as shown. Upon each side, and extending from the center to the outer edge of the holder, are the slots *b*. C, in each instance, denotes a cutter.

In the operation of cutting washers it is desirable that two cutters be employed, one of which will remove the center of the washer, while the other will cut the outer circle. For this purpose, and, also, that washers of different sizes may be cut, it is essential that the cutters be made radially adjustable upon the holder.

As shown in the drawing, each cutter is provided with a screw-shank, *c*, which is passed from the under side through the slots *b* of the holder B, and they may be thereby secured, at any point therein, by means of nuts *d*.

D denotes the clearing-plate. It is connected with a yoke, F, by means of rods E attached to the upper surface of the plate, which pass through guides in the cutter-holder. Through the yoke F the base of the spindle passes, as shown. Slots *e* are made in the clearing-plate upon a line corresponding with the slots *b* in the cutter-holder. When in position in the slots *b* the points of the cutters C are, preferably, on a line with, or a little above, the lower edge of the slots *e* in the clearing-plate, so that no injury can occur to the edges of the cutters by the ordinary usage of the cutter, especially if arranged as a hand-tool. G denotes a center-pin, attached to the center of the clearer D, and which, in practice, enters and holds in position the material which is to be cut into washers. H denotes a spiral spring encircling the spindle A. The upper end of this spring bears against a projection upon the spindle, while the lower end rests upon the yoke F attached to the clearing-plate, the tendency of the spring being always to lift the cutter-plate from the clearer; or, in other words, force the clearer from the cutter-holder; and, until pressure is applied to the upper end of the spindle A, the cutters cannot be advanced through the slots in the clearer. I denotes, in each instance, one of two screws for regulating the depth of cut to be made by the cutters. They are attached to the cutter-holder B, and are capable of vertical adjustment in tapped holes therein, so that much or little space will be left between their ends and the top of the clearer-plate.

In practice my cutter may be used as a hand-tool; or, as before stated, the spindle A may be attached to the rotating shaft of a suitable machine, and provided, either with means for vertically reciprocating the spindle, or for giving the same movement to a table or bed on which the material may be placed.

As shown in the drawing, the cutters are arranged in such positions, within the slots *b* of the holder, that both the center and outer circles of the washer may be cut at one revolution of the spindle. If washers of various sizes are

desired, as many sets of cutters as the slots *b* will be capable of holding may be placed therein in an obvious manner.

The material to be cut into washers having been placed in proper position, the spindle *A* is depressed until the center-pin *G*, by the power of the spring, is forced into the material. It is desirable that the cutters penetrate the material to be cut only to its exact depth, which can be accomplished by adjusting the regulating-screws *I* until their ends are brought within the requisite distance from the upper edge of the clearing-plate *D*. By this means the cutting-edges need never be dulled by cutting into the bed on which the material is placed. Pressure being applied to the top of the spindle, the cutter-holder *B* is depressed as far as the screws *I* will permit, and meanwhile rotated so that the ends of the cutters, passing through the slots *e* of the clearing-plate, will fully penetrate the material to be cut. One or two revolutions of the spindle carrying the cutter-holder and cutters will be generally sufficient to cut a single washer, or as many as there may be pairs of cutters attached to the plate *B*. Upon the removal of pressure from the spindle *A* the cutters *C* are raised; and, the tendency of the cut material being to adhere to the cutters, it is entirely freed therefrom by contact with the under side of the clearing-plate *D*. It is also desirable, after the washer has been cut, that the core or center piece should be freely discharged from the center-pin *G*. This may be secured by mounting said pin within a holder, *J*, on the clearing-plate *D*, as shown in Fig. 3. *A* should

der or collar, *g*, on the pin *G*, engages with the holder in such a manner that the pin must move with the plate *D*. The collar of the pin is kept against the under side of the holder by means of an expansive spiral spring, *h*, the lower end of which bears against the upper edge of the plate *D*. The upper end of the pin projects above the holder in such a manner that when the cutter-holder *B* is pressed down thereon it will be forced downward into the material to be cut. After the cutting of the washer, and the removal of the pressure from the spindle *A*—the cutter-holder being thereby removed from the pin—the spring *h* raises the pin, and releases the core.

If desired, several thicknesses of material may be cut at one operation. In such cases it is simply necessary to provide slender knives, and adjust the regulating-screws *I* to the proper distance from the upper edge of the clearing-plate *D*.

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

1. The combination of a cutter-holder and a spring-spindle with a clearing-plate, substantially as and for the purposes specified.

2. The adjustable gage-screws, in combination with the cutter-holder and the clearing-plate, substantially as and for the purposes specified.

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Witnesses:

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