(No Model.)

# C. S. DWYER.

## HEEL TRIMMER.

No. 292,633. Patented Jan. 29, 1884.

*Fig. 1.*

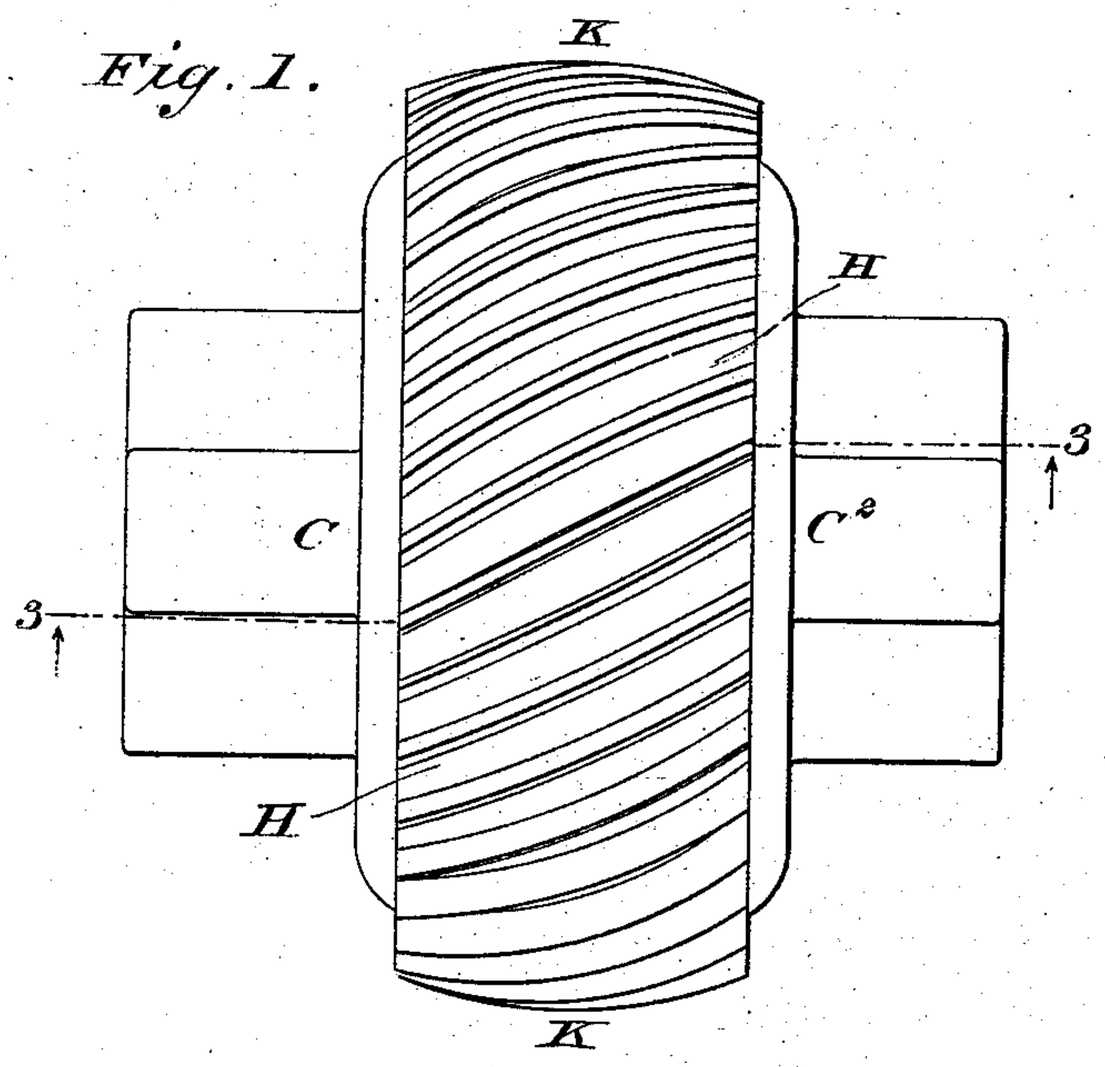



*Fig. 2.*

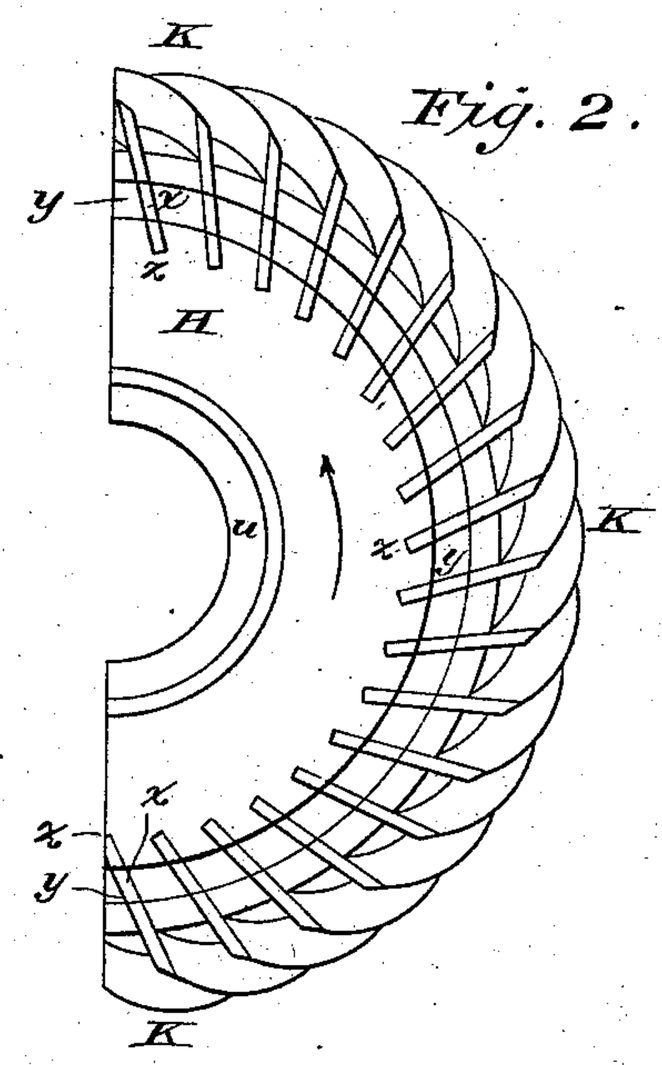



*Fig. 3.*

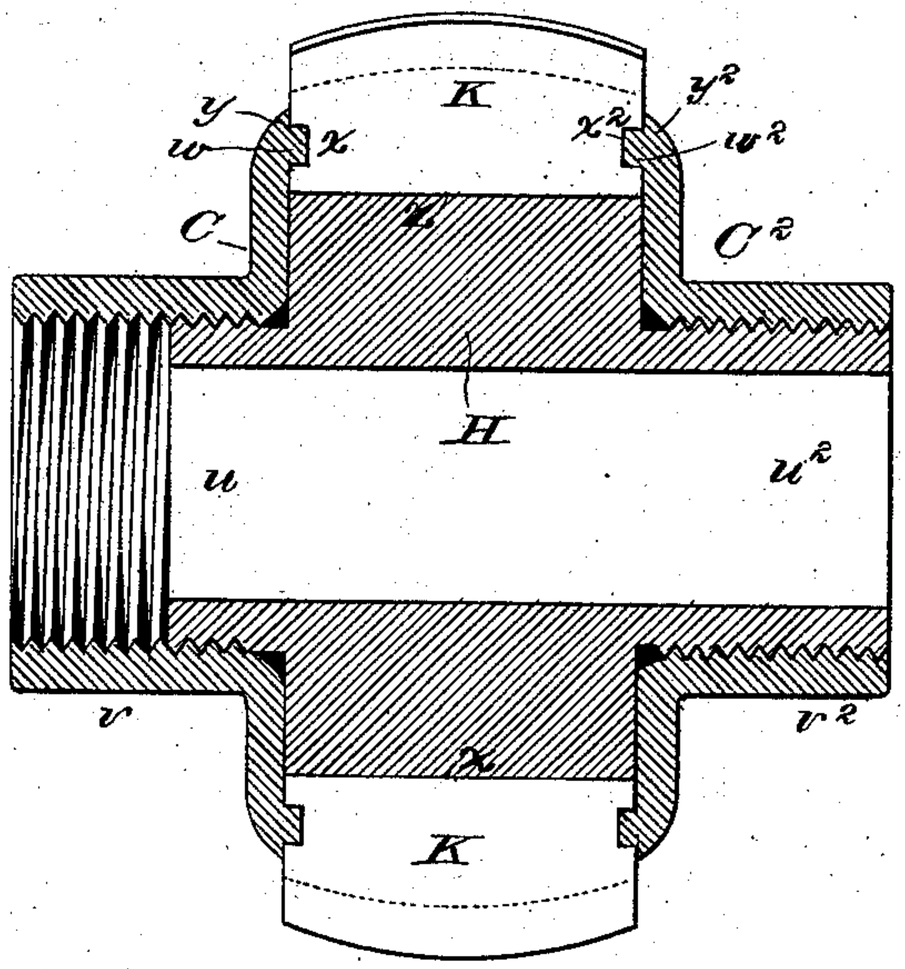
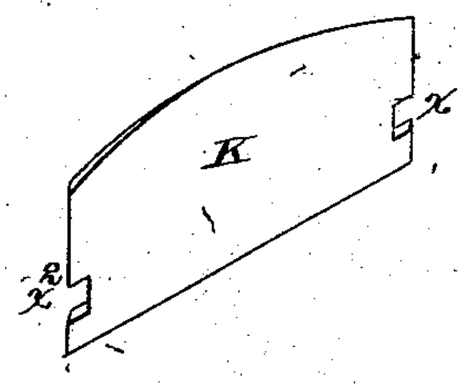



*Fig. 4.*




WITNESSES

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# UNITED STATES PATENT OFFICE.

CHRISTOPHER S. DWYER, OF SPENCER, MASSACHUSETTS.

## HEEL-TRIMMER.

SPECIFICATION forming part of Letters Patent No. 292,632, dated January 29, 1884.

Application filed June 20, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, CHRISTOPHER S. DWYER, a citizen of the United States, residing at Spencer, in the State of Massachusetts, have invented a new and useful Improvement in Heel-Trimmers, of which the following is a specification.

This invention relates to improvements in those devices used in machinery for making boots and shoes, known as "heel-trimmers," and consisting of rotary cutters or cutter-heads, carried by suitable spindles or arbors, and driven at a high rate of speed, for the purpose of removing surplus material from the edges of the heels, and for giving the latter their final shape and finish.

The present invention relates more particularly to the construction of heel-trimmers proper, or, in other words, the construction of cutter-heads for use as aforesaid; and it consists in forming the heel-trimmer of a novel combination of parts, as hereinafter described and claimed, whereby I am enabled to use knives or cutters of flat plate-steel readily formed and sharpened, and to support the same solidly, and preclude their displacement by centrifugal force in a very simple and effective way.

A sheet of drawings accompanies this specification as part thereof.

Figure 1 of these drawings is an elevation of my heel-trimmer. Fig. 2 is a half end view thereof, with the "collar" belonging to its near end removed. Fig. 3 is a longitudinal section of the same in the broken plane indicated by the line 3 3, Fig. 1, and Fig. 4 is a perspective view of one of the knives detached.

Like letters of reference indicate corresponding parts in the several figures.

This heel-trimmer has a central hub or main casting, H, having an axial bore fitted to the spindle or arbor, which is to carry the heel-trimmer. The periphery of this hub is curved substantially in conformity to the curve of the knife-edges, as indicated by dotted lines in Fig. 3, and is indented by equidistant oblique grooves *z*, of sufficient depth to receive half an inch, more or less, of the inner edge of each knife or cutter. These grooves *z* are provided with a complement of uniform knives, K, of the shape best seen in Fig. 4, which, when in position in said grooves, form spiral cutting-edges, and project from said periphery of the hub H a sufficient distance for cutting purposes. The protruding edges of the knives are suitably curved for trimming heels of given shape or style, and are beveled so as to have salient front edges, as seen in Fig. 2, the arrow in this figure representing the direction in which the trimmer rotates when at work. The effect produced by beveling the cutting-edges of the knives is increased by inserting them in oblique rather than radial grooves in the hub, as indicated in Fig. 2.

To provide for securing the knives K in said peripheral grooves *z*, annular grooves *y* $y^2$, concentric with the axis of the hub H, are formed in the respective end faces of said hub, so as to cross said grooves *z* at about mid-depth, as seen in Fig. 2, and each of the knives K is provided at its respective ends with notches *x* $x^2$, coinciding with said annular grooves *y* $y^2$. These notches *x* $x^2$ may be formed in the knives by inserting the latter before cutting the grooves *y* $y^2$, and then cutting said grooves and notches at one operation in the lathe. They have in practice been so formed. Said grooves *y* $y^2$ and notches *x* $x^2$ receive matching annular ribs *w* $w^2$, formed on the inner faces of a pair of collars, C $C^2$, that have, at right angles to the annular disks which bear said ribs, terminal nut portions *v* $v^2$, which embrace the protruding ends *u* $u^2$ of said hub H, said ends being externally screw-threaded to receive and hold said collars. The collar C is made longer than the matching hub end *u*, to which it is fitted, so as to embrace a fixed collar on the arbor, and coact therewith in fastening the heel-trimmer upon said arbor in a customary way, the screw-threads being suitably arranged with reference to each other and with reference to the direction of rotation indicated in Fig. 2, to preclude loosening by such rotation.

In operation it will be seen that the whole length, and as nearly as possible the whole body, of each of the knives K is supported by the solid metal of the hub H, and the knives are fastened with absolute security and at a single operation by means of the said annular ribs *w* $w^2$ and the walls of said annular grooves

$y$ $y^2$ and notches $x$ $x^2$, which coact with said locking-ribs.

To remove one or more knives for renewing the same or for sharpening the knives, it is only necessary to unscrew one of the collars C $C^2$, and to drive out the knife or knives by endwise pressure.

Having thus described my said heel-trimmer, I claim as my invention and desire to patent under this specification—

1. The combination, in a heel-trimmer, of the hub H, having oblique peripheral grooves $z$, annular grooves $y$ $y^2$ in its respective faces, and externally screw-threaded ends $u$ $u^2$, knives K, having notches $x$ $x^2$ in their ends, coinciding with said annular grooves, and clamping-collars C $C^2$, constructed with annular locking-ribs $w$ $w^2$ on their inner faces, matching said annular grooves and notches, and with internally screw-threaded ends $v$ $v^2$, matching said hub ends $u$ $u^2$, substantially as herein specified, for the purposes set forth.

2. In a heel-trimmer, knives K of thin steel, held solidly in oblique peripheral grooves in a suitable hub, and secured in said grooves bymeans of annular ribs coacting with corresponding grooves and notches in said hub and knives, substantially as herein described, for the purposes set forth.

CHRISTOPHER S. DWYER.

Witnesses:
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LEANDER SIBLEY.