

No. 625,728.

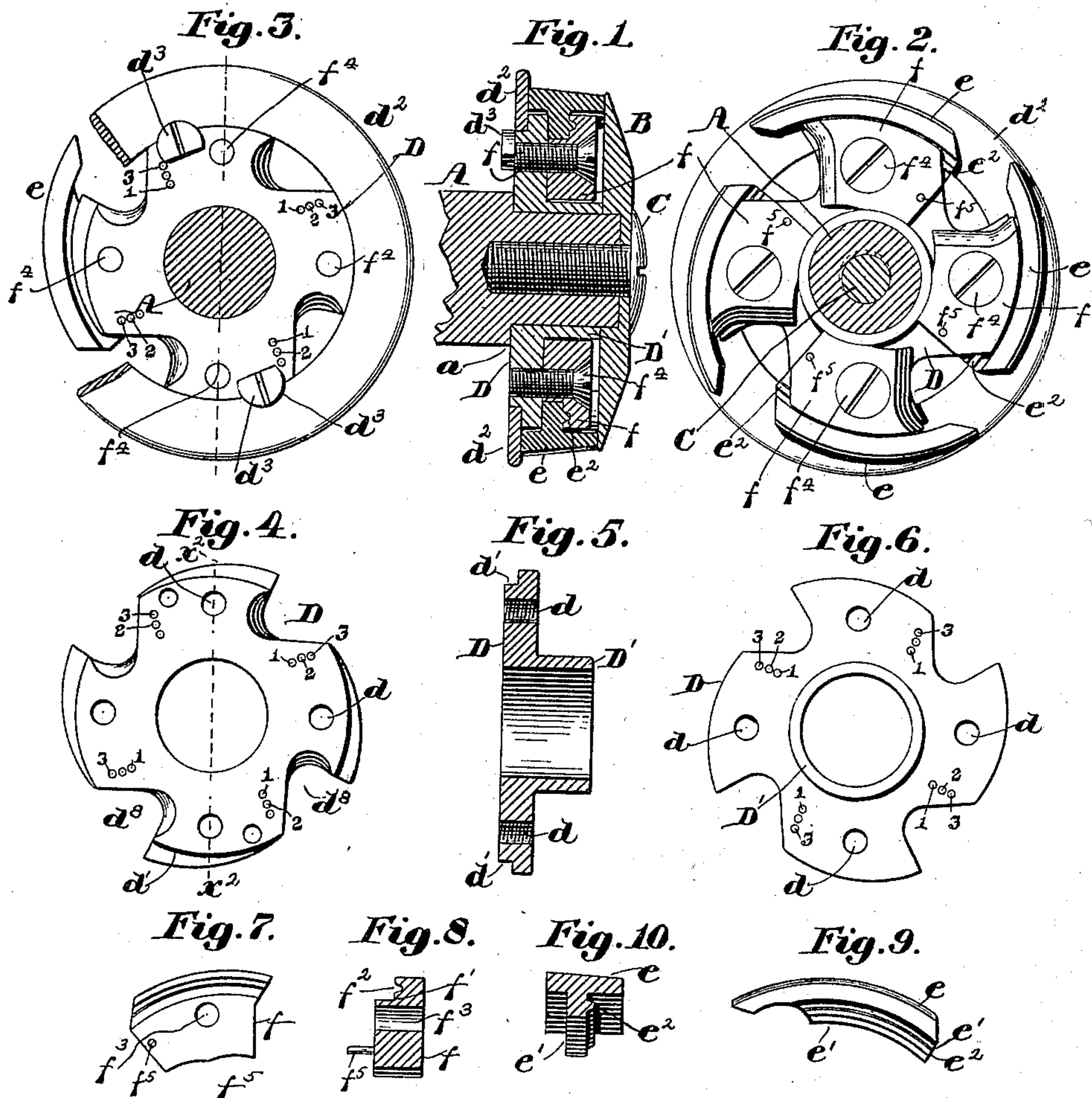
Patented May 23, 1899.

M. T. HARRIGAN.

ROTARY CUTTER HEAD FOR HEEL TRIMMING MACHINES.

(Application filed Apr. 19, 1898.)

(No Model.)



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## ROTARY CUTTER-HEAD FOR HEEL-TRIMMING MACHINES.

SPECIFICATION forming part of Letters Patent No. 625,728, dated May 23, 1899.

Application filed April 19, 1898. Serial No. 678,153. (No model.)

*To all whom it may concern:*

Be it known that I, MICHAEL T. HARRIGAN, of Wollaston, county of Norfolk, State of Massachusetts, have invented an Improvement in Rotary Cutters for Trimming Heels, &c., of Boots or Shoes, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

My improved cutter-head consists, essentially, of a plate or disk having at its center a hub and a series of detachable pivoted blocks having grooves to receive a suitable pin extended from a foot projected inwardly from the plate, said blocks being under the control of clamping-screws, whereby they may be made to clasp and hold each blade in adjusted position. I have herein shown the blocks as being capable of being held in three positions to thereby increase or decrease the clearance of the blades.

Figure 1 is a section taken through the cutter-head and rand-guide embodying my invention. Fig. 2 is a face view of the cutter-head with the rand-guide detached. Fig. 3 is a detail looking at the left-hand side of the cutter-head shown in Fig. 1, a part of the ring at the back being broken out. Fig. 4 is a rear side view of the disk carrying the blocks holding the blades. Fig. 5 is a section through said disk in the line  $x^2$ . Fig. 6 is a face view of the disk. Fig. 7 is an inner side view of one of the clamps employed to hold the individual blades. Fig. 8 is a section of said clamp. Fig. 9 shows a face view of one of said blades, and Fig. 10 is a section of a blade.

Referring to the drawings, let A represent any usual rotary shaft of a heel-trimming or other machine, B a usual rand-guide, and C a screw extended through a hole in the center of said rand-guide and screwed into a threaded hole in the end of said shaft. This shaft has a shoulder  $a$  back from its end, and between said shoulder and the inner side of the rand-guide is placed my improved cutter-head, which I will now describe.

My improved cutter-head is composed of a plate D, having projecting from it at one side a hub D', said plate having a series of threaded holes  $d$ , and each hole  $d$  has located near it,

as herein shown, a series of holes 1 2 3. The plate D at its rear side is cut away to leave a succession of shoulders  $d'$ , over and about which is fitted a ring  $d^2$ , said ring running against the top lift of the heel. This ring is shown in position in Figs. 1 and 3, and it is held in place on the disk by means of suitable screws  $d^3$ , said screws being herein represented as having their heads cut away, leaving a secant-line at one side, so that when said heads are turned and the said secant-line coincides with the inner edge of the ring where it meets the disk the ring may be freely removed from the disk, thus leaving the ends of the cutter-blades in position that access may be had to them to grind them.

The blades  $e$  are convexed in the direction of their length, and each blade has extended inwardly from one side thereof near its center a web or foot  $e'$ , said foot being provided with a tongue  $e^2$ , said tongue following the line of curvature of the face of the cutter.

For each blade  $e$  there is a clamping-block  $f$ , and each clamping-block is cut away to leave a shoulder  $f'$ , and said shoulder at its inner side is provided with a groove  $f^2$  to receive and embrace closely the tongue  $e^2$  of the cutter-blade. Each clamp has a screw-hole, as  $f^3$ , through which is extended loosely a screw  $f^4$ , said screw entering the threaded opening  $d$ . Each clamp has in practice a pin, as  $f^5$ , and said pin is adapted to enter either of the holes 1, 2, or 3 of the disk, said pin by entering one or the other of said holes determining the amount of clearance of each blade. By turning the screws  $f^4$  in snugly the clamps in engagement with the tongue effect the firm clamping of the blades in position.

The grooves in the clamp and the tongues when the cutter-blades are assembled, as represented in Fig. 2, occupy positions eccentric with relation to the center of rotation of the shaft A.

As the blades are worn away in the operation of grinding, they may be adjusted longitudinally in the grooves of the clamps. Each disk D has clearance-spaces  $d^8$ .

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

1. A rotary cutter-head composed of a disk



having clearance-spaces, a series of blades having feet provided each with a tongue, a series of independent detachable clamps shaped to engage said tongues and feet, and screws  
5 to enter said clamps and confine them in position on said disk, substantially as described.

2. A rotary cutter-head composed of a disk having a clearance-space, a series of clamps having grooves and a series of blades having  
10 feet, each provided with a tongue, the grooves of the clamps engaging the said tongues, and means to operate said clamps to engage and hold the blades firmly in position, substantially as described.

15 3. A cutter-head composed of a disk or plate, a series of clamps, and a series of cutters held in position through the action of tongues and grooves; combined with a ring detachably secured to said disk or plate, whereby when the  
20 ring is removed the blades are exposed in position to be ground.

4. A cutter-head, composed of a disk or plate having an attached ring, a series of blades having tongues, a series of detachable clamps,  
25 means to force said clamps toward said disk or plate to clamp the blades firmly in position, and a rand-guard substantially as described.

5. A disk or plate having screw-threaded

openings, and one or more pin-receiving openings, and a series of clamps each having a  
30 groove, combined with a series of blades each having a tongue, and a series of screws entering said threaded openings to hold said clamps in operative position, each of said clamps having a pin to enter one of the said series of  
35 holes in the disk or plate preparatory to forcing the clamps into their operative position, substantially as described.

6. A rotary cutter-head composed of a disk having clearance-spaces, and shouldered at  $d'$ ,  
40 a ring applied to said shouldered part, means to confine said ring on said disk, a series of cutter-blades having each a projecting foot, and a series of independent detachable clamps, said feet being engaged and prevented  
45 from tipping by said clamps, and means to hold said clamps in place on said disk, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of  
50 two subscribing witnesses.

MICHAEL T. HARRIGAN.

Witnesses:

J. COUPER EDWARDS,  
AUGUSTA E. DEAN.