(No Model.)

J. F. FREEMAN.

ROTARY CUTTER.

No. 388,549. Patented Aug. 28, 1888.

Fig: 1.

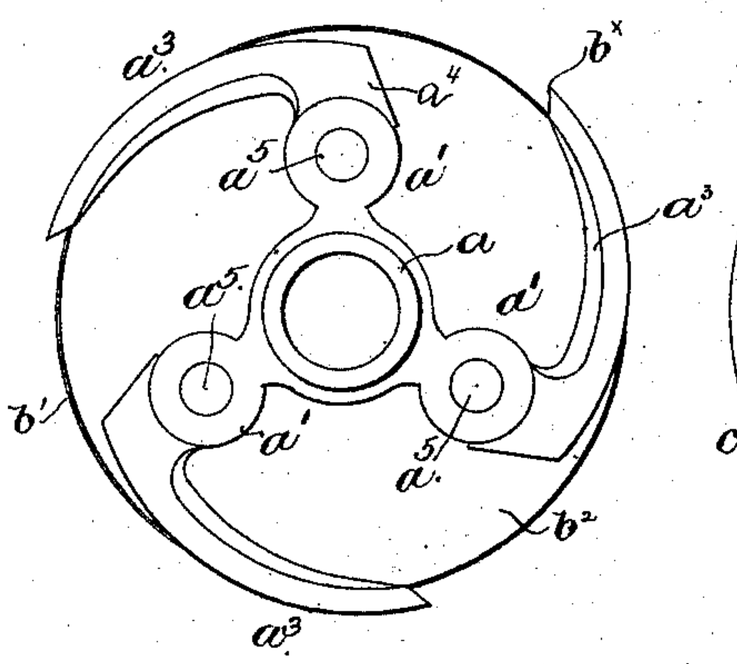


Fig: 2.

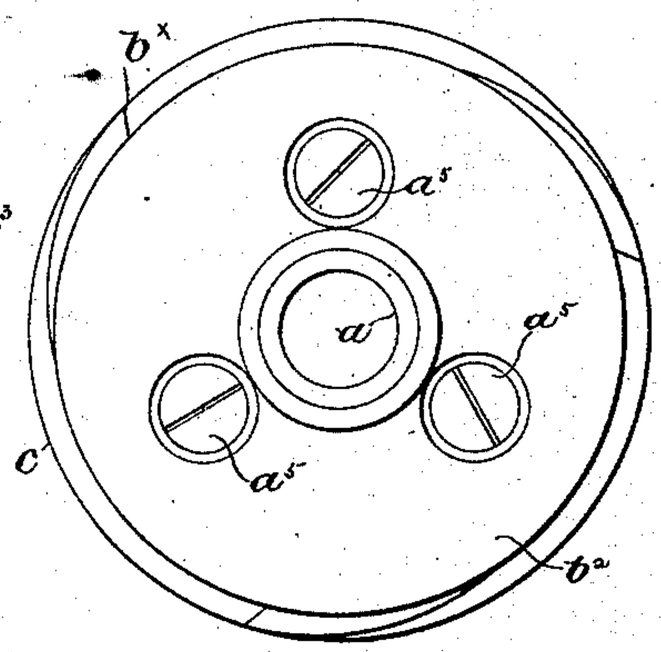


Fig: 3

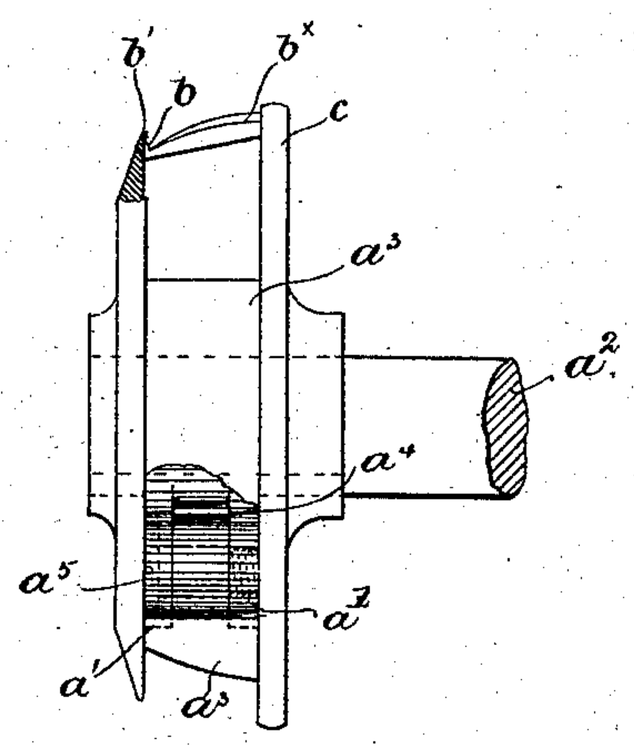


Fig: 5

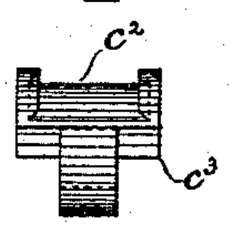
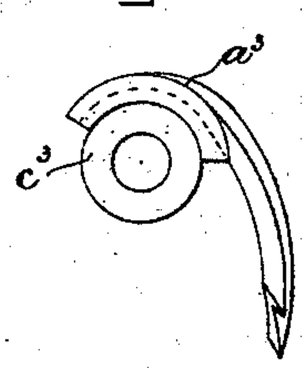


Fig 4



Witnesses:

Fred S. Greenleaf.

Francis L. Emery.

Inventor.

James F. Freeman.

by Crosby & Gregory. Attys.

UNITED STATES PATENT OFFICE.

JAMES F. FREEMAN, OF LAWRENCE, ASSIGNOR TO JAMES W. BROOKS, TRUSTEE, OF CAMBRIDGE, MASSACHUSETTS.

ROTARY CUTTER.

SPECIFICATION forming part of Letters Patent No. 388,549, dated August 28, 1888.

Application filed March 29, 1888. Serial No. 268,851. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. FREEMAN, of Lawrence, in the county of Essex and State of Massachusetts, have invented an Improvement in Rotary Cutters, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to rotary cutters, especially adapted, among other things, to be used in trimming the sole-edges of boots or shoes, it having for its object to provide a cutter in which the knives, as they are shortened by grinding, will automatically adjust themselves into correct operative position by the engagement of the knives with the work.

My improved rotary cutter is adapted to trim the fore parts of boots or shoes, as well as to rand the heel. In accordance with my invention the knives, preferably two or more, are pivoted upon pivots parallel to the axis of rotation of the trimmer-shaft. As herein shown, the blades are carried by arms of a hub constituting a cutter carrier or head, which in practice is mounted on a rotating shaft of a boot or shoe trimming machine. The outer face of each knife or cutting-blade is of convex shape, and provided at one edge or side with a flange, which in practice engages a stop (preferably a lip or flange) on a rand-guard, herein shown as a disk or plate fitted upon the hub referred to.

My invention therefore consists, essentially, in a rotary cutter, of a rand-guard having a flange or stop and a cutter carrier or head, combined with a knife or blade pivoted to the carrier or head, the flange or stop determining the correct working position of the blades, substantially as will be described.

Figure 1 is a plan or top view of a rotary cutter embodying my invention, the guard employed therewith when heels are to be trimmed being omitted; Fig. 2, a top or plan view of the cutter turned completely over from the position shown in Fig. 1, the heel-guard being shown; Fig. 3, a side or edge view of the cutter shown in Fig. 2, with one of the knives broken out to more clearly show the manner of securing the knives to the cutter-head; and Figs. 4 and 5, modifications to be referred to.

Referring to Fig. 1, the cutter carrier or head, herein shown as a hub, a, which in practice is adapted to be mounted on a shaft, a^2, of a boot or shoe trimming machine of any usual or well-known construction, is provided, as herein shown, with three sets of radial arms, a', to which are pivoted knives or cutting-blades a^3. Each knife or cutting-blade a^3, as shown in Figs. 1 and 3, is provided with an ear or lug, a^4, extended between the forked or bifurcated ends of the arms a', (see Fig. 3,) the said knife being pivoted to the said arms by a threaded bolt or screw, a^5, extended through holes in the arm a' and the ear or lug a^4. The outer face of each knife or blade is convexed or made in the arc of a circle, and each blade at its side or edge is shown as provided with an outwardly-turned flange, b, (see Fig. 3,) which in practice co-operates with a stop which acts to limit the outward movement of the free end or cutting-edge $b^\times$ of the knife or cutting-blade, the said stop being herein shown as a lip or flange, b', on a disk or plate, b^2, fitted upon or connected to the hub a, the said disk or plate constituting a rand-guard by which the upper is protected from the knives when the latter act to trim the fore part or sole-edge of a boot or shoe.

To prevent the knives from cutting or trimming the heel when the rand is being trimmed, a guard is provided, it being shown as a disk or plate, c, mounted upon the hub a on the side of the knives opposite to the rand-guard.

Instead of pivoting the knives or blades directly to the arms a', each knife may be fitted or dovetailed into a channel or groove, c^2, (see Fig. 5,) in a lug, c^3, secured to the said arms by a screw or bolt, a^5. In practice the cutting-edge of each knife, when the latter is in its operative position with the flange b in engagement with the lip b', is eccentric to its own center or pivot, but remains concentric to the hub or the shaft upon which the cutter is mounted. After the knives have become dulled the hub may be taken from the shaft and the knives ground in usual or well-known manner. With my improved cutter especial care is not required in the grinding, for when the rand-guard is again fitted on the hub a the outward movement of the cutting-edges of the knives is limited by the lip. The posi-

tion occupied by the outturned blades will be determined by the lip *b'*.

I claim—

In a rotary cutter, a rand-guard having a flange or stop and a cutter carrier or head, combined with a pivoted knife or blade, the said flange or stop determining the correct working position of the blades, substantially as described.

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

JAMES F. FREEMAN.

Witnesses:
GEO. H. HULL,
HENRY F. HOPKINS.