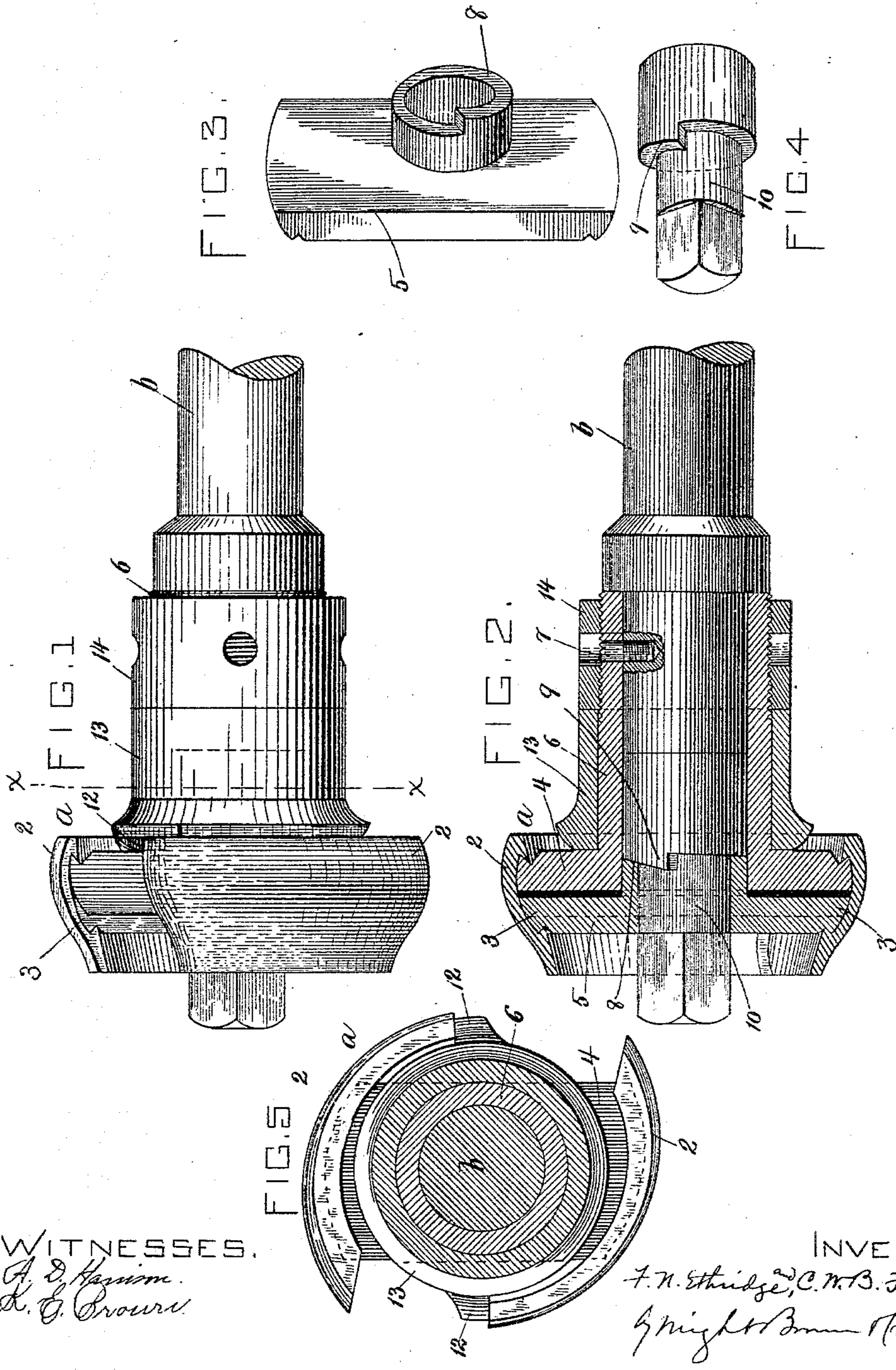


(No Model.)

F. N. ETHRIDGE & C. W. B. FULLER.  
HEEL TRIMMING MACHINE.

No. 412,026.

Patented Oct. 1, 1889.



WITNESSES.  
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*Att'y*

# UNITED STATES PATENT OFFICE.

FRANK N. ETHRIDGE, OF BOSTON, AND CHARLES W. B. FULLER, OF MALDEN,  
ASSIGNORS TO THE ACME HEEL TRIMMER COMPANY, OF BOSTON, MASSA-  
CHUSETTS.

## HEEL-TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 412,026, dated October 1, 1889.

Application filed May 25, 1889. Serial No. 312,060. (No model.)

*To all whom it may concern:*

Be it known that we, FRANK N. ETHRIDGE, of Boston, in the county of Suffolk, and CHARLES W. B. FULLER, of Malden, in the county of Middlesex, both in the State of Massachusetts, have invented certain new and useful Improvements in Heel-Trimming Machines, of which the following is a specification.

This invention relates to heel-trimming machines employing a rotary cutter-head, a top-lift support or rest located at one end of the cutter-head and formed to support both the tread and the edge of the top lift when the heel is presented to the cutter, a counter-guard arranged to cover the end of the cutter-head opposite the top-lift rest, and provided with means whereby it may be adjusted and fixed in different positions to accommodate cutters of different sizes, and a rand-trimmer located on another shaft and formed to trim the rand and heel-seat portions of the heel after the main trimming operation.

The invention consists in certain improvements, hereinafter described, relating to the cutter-head.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side view of our improved cutter-head. Fig. 2 represents a longitudinal section of the same. Figs. 3 and 4 represent perspective views of the movable part of the holder and the adjusting devices or cam. Fig. 5 represents a section on line *x x*, Fig. 1.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents the cutter-head, which is mounted on a shaft *b*, to which power is applied by a driving-belt, the shaft *b* being journaled in suitable bearings on the frame of the machine.

The cutter-head *a* is composed of blades 2 2, in the curved inner surfaces of which are dovetail grooves 3, arranged at right angles to the axis of rotation of the cutter-head, and a holder for said blades made in two parts 4 5, one of which 4 is formed on a sleeve 6, which is rigidly attached to the shaft *b* by a screw 7, while the other 5 is mov-

able toward and from the part 4 on a rotary stud 10, which is fitted to rotate in the sleeve 6, and is provided with a spiral shoulder or cam 9, which bears against a similarly-formed shoulder 8 on a hub or sleeve formed on the part 5. By rotating the stud 10 (which may be done by applying a wrench to its squared outer end) the movable part 5 may be forced away from the fixed part 4, the two parts being thus expanded in the grooves 3 of the knives and caused to engage the dovetail edge of said grooves, the parts 4 5 being provided with dovetail shoulders on their outer ends fitting the edges of said grooves. (See Figs. 1 and 2.)

To release the knives it is only necessary to rotate the stud 10 in the opposite direction, as will be readily seen. The knives are supported and prevented from moving backwardly on the holder 4 5 by stops or projections 12 12, formed on a sleeve 13, fitted to rotate on the sleeve 6, said stop being arranged to bear against the rear ends of the blades 2, as shown in Fig. 5. The sleeve 13 may be turned to bring the stops 12 to a proper adjustment, and is secured after being adjusted by a nut 14, which is screwed upon a threaded portion of the sleeve 6, and when turned in one direction holds the inner end of the sleeve 13 firmly against the part 4 of the blade-holder, so that said sleeve cannot turn on the sleeve 6.

We claim—

1. The cutter-head composed of the knives having grooved backs, the holder engaged with said grooves and composed of the part 4, affixed to the shaft, and the part 5, having the cam-shaped hub or collar 8, and the stud 10, having the cam-shaped shoulder formed to engage said cam-shaped hub or collar, as set forth.

2. The combination of the knives having grooved backs, the holder engaged with said grooves and composed of the part 4, affixed to the shaft and provided with the screw-threaded sleeve 6 and the adjustable part 5, the adjustable sleeve 13, movable on the sleeve 6 and having stops 12 for the rear

ends of said blades, and a locking-nut 14,  
engaged with the threaded portion of the  
sleeve 6, whereby said sleeve 13 may be se-  
cured at any point to which it may be ad-  
5 justed, as set forth.

In testimony whereof we have signed our  
names to this specification, in the presence of

two subscribing witnesses, this 22d day of May,  
A. D. 1889.

FRANK N. ETHRIDGE.

CHARLES W. B. FULLER.

Witnesses:

C. F. BROWN,

A. D. HARRISON.