

(No Model.)

H. F. ROONEY.
BOOT OR SHOE SOLE TRIMMING MACHINE.

No. 464,289.

Patented Dec. 1, 1891.

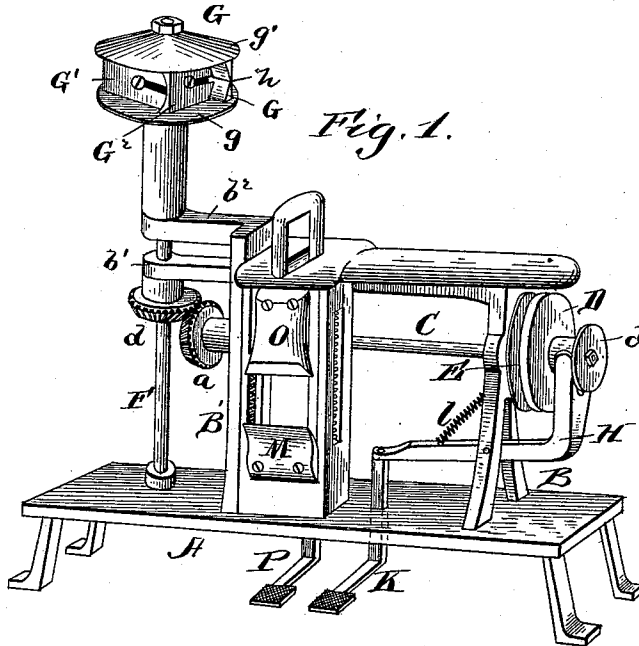


Fig. 2.

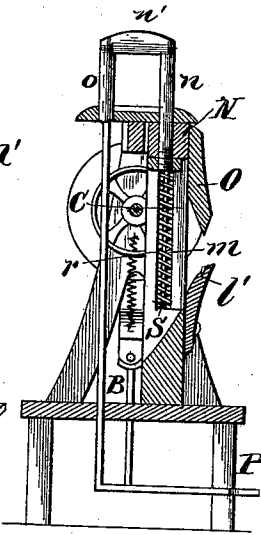


Fig. 3.

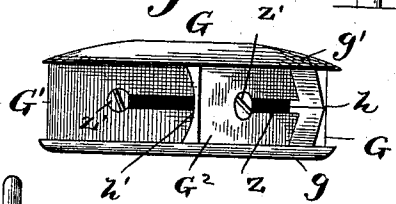
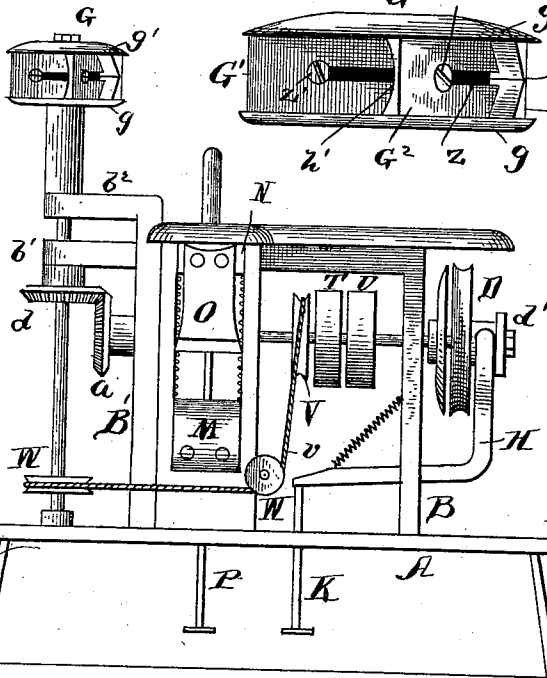


Fig. 4.



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HENRY F. ROONEY, OF RANDOLPH, ASSIGNOR TO GEORGE H. P. FLAGG, OF BOSTON, MASSACHUSETTS.

BOOT OR SHOE SOLE TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 464,289, dated December 1, 1891.

Application filed February 24, 1891. Serial No. 382,576. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. ROONEY, a citizen of the United States, residing at Randolph, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Boot or Shoe Sole Trimming Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in machines for trimming the seams of boots or shoes; and the object of the invention is to provide a machine which will operate efficiently in cutting the edges of the leather adjoining the seam without spreading and injuring the same.

A further object of the invention is to provide mechanism for severing the free edges of the welt; and a further object is to provide a simple and durable machine which is efficient in operation and can be manufactured at a low cost.

With these and other ends in view the invention consists of the combination, with a suitable frame and driving or operating mechanism, of a vertical shaft carrying a rotary cutter-head provided with a series of cutters or knives; and the invention further consists of an independent welt-cutting device comprising a stationary cutter-block and a vertically-movable knife adapted to be forced against the stationary block to sever the free edges of the welt of the shoe.

The invention further resides in the peculiar construction and arrangement of parts, as will be hereinafter more fully described and claimed.

To enable others to understand the invention, I have illustrated the same in the accompanying drawings, in which—

Figure 1 is a perspective view of a machine constructed in accordance with my invention.
Fig. 2 is a vertical sectional view through welt-cutting devices on line *x x* of Fig. 1.
Fig. 3 is a detail view showing the forms of knives or blades of the rotary cutter-head, and Fig. 4 is a view of a modified form of driving mechanism.

Like letters of reference denote correspond-

ing parts in all the figures of the drawings, referring to which—

A designates a base, to which is rigidly secured or made integral with a pair of uprights or standards B B'. In these uprights or standards B B' is journaled a horizontal driving-shaft C, and on one end of this shaft is loosely fitted a friction-clutch band-pulley D. Between the pulley D and the upright standard B of the frame is a frictional disk E, keyed to the shaft C. The opposite end of the shaft C is provided with a bevel-pinion or gear-wheel *a*, which meshes with a similar gear-wheel *b*, rigidly keyed or secured to a vertical shaft F, which has its lower end journaled or supported in the base A, and said shaft is also supported or held in an upright position by arms *b' b'*, extending outwardly from the standard B'.

To the upper end of the vertical shaft F is secured the cutter-head G, which consists of two disks *n*, plates *g g'*, and a series of cutters or knives G' G², arranged between these disks tangentially to the axis of the cutter-head. The cutters G' are each provided with an angular cutting-edge *h* (see Fig. 3) to secure a shear cut on the edges of the leather adjacent to the seam, while the cutters G² are each provided with a curved or segmental cutting-edge *h'*. The cutting-blades or cutters G' G² are arranged alternately with relation to each other around the cutter-head, and each blade is further provided with a longitudinal slot *z*, in which is fitted a headed screw or bolt *z'*, secured to the cutter-head, whereby the knives or cutters can be easily adjusted to cut the leather more or less, as may be required, and can be readily removed for the purpose of sharpening or being replaced by new knives.

The pulley D is provided with a collar or shoulder *d*, the outer end of which has a flange *d'*.

In the lower end of the standard B is fulcrumed a lever H, one end of which extends outwardly and upwardly and has its bifurcated end fitted partially around the collar *d* of the pulley D. The other inner end of this lever H is suitably attached to a treadle K, arranged below the base A, and adapted to be operated by the operator to force the pulley

D into contact with the disk E, and thus rotate the shaft C. The inner end of the lever H is normally raised and the pulley D kept out of contact with the disk E by means of a coiled spring *l*, attached at one end to the lever H and at its other end to the standard B.

The welt-cutting mechanism is arranged in front of the machine and at one side of the driving-shaft C close to the standard or upright B', and said welt-cutting mechanism consists of a fixed or stationary cutter-block M and a movable knife-block N, which movable knife-block is guided in suitable ways *m* and carries a knife or cutter O. To the upper end of the knife-block N is secured a short vertical rod *n*, which is connected by a cross-piece *n'* to another upright rod *o*, the lower end of which rod *o* is connected to a suitable treadle P, arranged below the base A, and adapted to be operated by the workman to depress the movable knife.

The stationary cutter-block M has its upper side curved, as shown in Fig. 2, so as to lie in the path of the movable knife, and it is provided with a groove *l'*, adapted to receive the cutting-edge of the knife or cutter O. In the ways *m* of the movable knife-block N are fixed the vertical rods S, the lower ends of which are attached to the base of the knife-block and are attached to the upper part of the frame of the machine. Around the rods S, between the movable block N and the lower end of the ways, are arranged coiled springs *r*, which serve to return the block N and its attached knife or cutter to the upper end of the guides or ways *m*, where the pressure is removed from the treadle P.

In Fig. 4 I have illustrated a modified form of driving mechanism, in which figure T and U designate a tight and loose pulley, respectively, and V designates a band-pulley secured on the horizontal shaft C. W W' designate pulleys secured, respectively, to the lower end of the knife-box and to the lower end of the cutter-shaft F, and around the pulleys V, W, and W' passes a suitable belt *w*, and around the pulley T is passed a belt *v*, the other end of said belt *v* passing around a suitable driving-wheel.

The operation of my invention is simple, and may be briefly stated as follows: The operator holds the shoe or boot to be trimmed across the line or in the path of the cutters G' G², and by pressure of the foot forces the pulley D into contact with the face of the disk E. The cutter-head is thus rotated by the bevel-gears and shafts, and the operator turns the shoe gradually, so that the cutters follow the ends of the seam and operate and trim or cut the leather adjacent to the seam. By the arrangement and construction of cutters herein shown and described I am enabled

to secure a clean shear cut of the seam, and there is no liability of spreading the leather and injuring the same, which objection is one of the disadvantages with many machines now in use. After the seam has been trimmed the shoe is held in such a position that the extended free end of the welt thereof rests on the fixed knife-block, and the movable knife is then depressed to sever the welt, the coiled springs returning the movable knife to its normal position as soon as pressure is removed from the treadle P. Changes in the form and proportion of parts and details of construction can be made without departing from the spirit or sacrificing the advantages of my invention.

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

1. In a sole-trimming machine, the combination of a supporting-frame, a horizontal driving-shaft journaled in said frame, a disk rigidly secured on said driving-shaft, a friction-clutch band-pulley loosely fitted on said shaft, a treadle connected with a lever having a forked or bifurcated end and adapted to force the pulley into close contact with the fixed disk, a vertical shaft, a cutter-head attached to said vertical shaft, and the beveled gears mounted on the horizontal and vertical shafts and meshing with each other, substantially as shown and described.

2. In a sole-trimming machine, the combination, with a supporting-frame, a driving-shaft, and a cutter-carrying shaft geared to the driving-shaft, of a cutter-head secured on the cutter-carrying shaft and comprising the upper and lower plates, and the detachable knives or cutter-blades arranged between the plates, each alternate knife or cutter having an angular cutting-edge, and the intermediate knife or knives having a curved or concave cutting-edge, substantially as shown, for the purpose specified.

3. In a sole-trimming machine, the combination, with a supporting-frame, a driving-shaft, and a cutter-carrying shaft geared to the driving-shaft, of a rotary cutter-head comprising two plates, and a series of tangential blades arranged between said plates, one or more of the blades having an angular cutting-edge, and the alternate blade or blades having a segmental cutting-edge, the said cutting-edge of the blades being in substantially the same horizontal plane, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY F. ROONEY.

Witnesses:

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