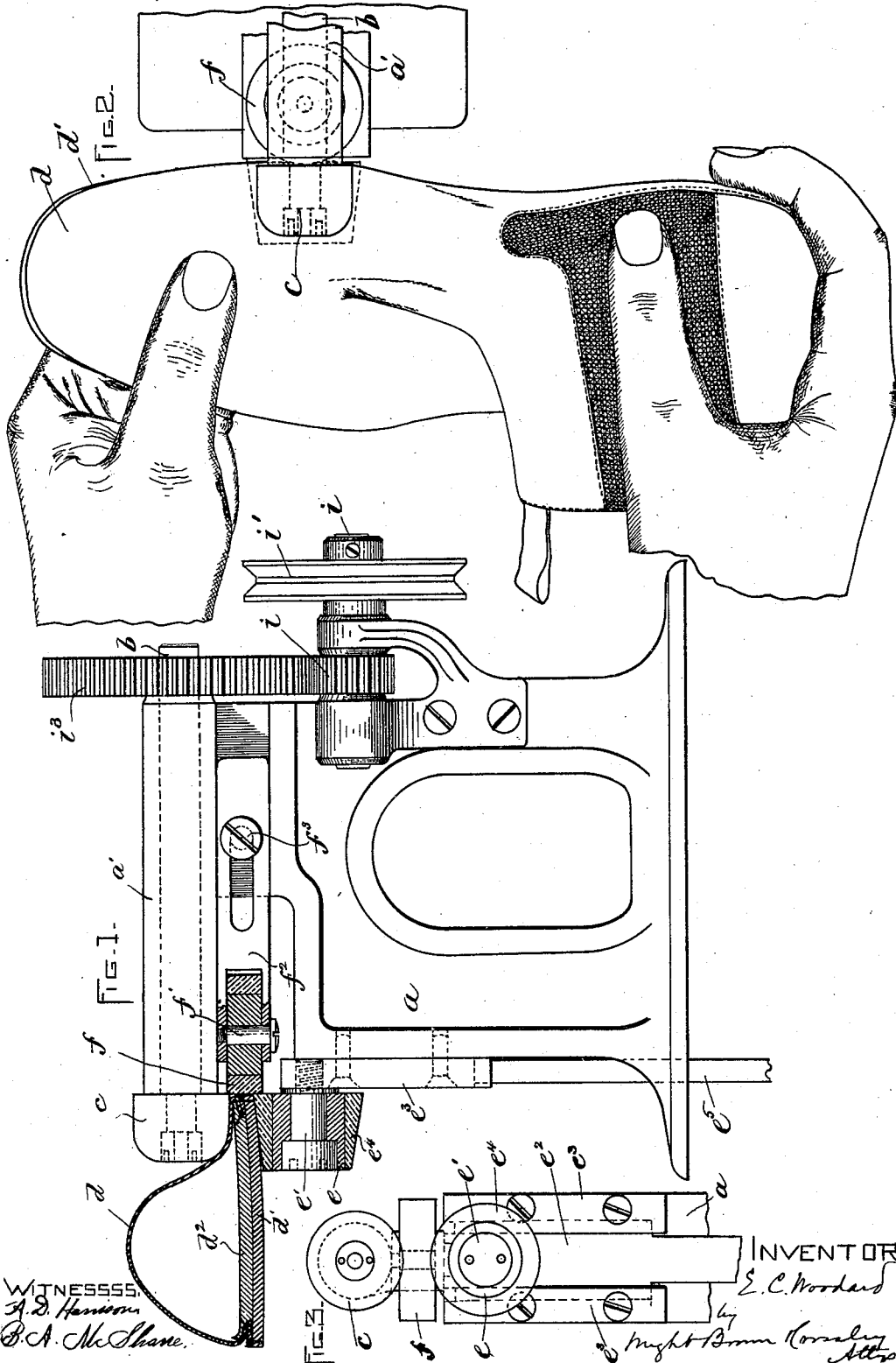


(No Model.)

E. C. WOODARD.
MACHINE FOR LAYING SOLE EDGES.

No. 478,299.

Patented July 5, 1892.



UNITED STATES PATENT OFFICE.

EDWARD C. WOODARD, OF BROCKTON, MASSACHUSETTS.

MACHINE FOR LAYING SOLE-EDGES.

SPECIFICATION forming part of Letters Patent No. 478,299, dated July 5, 1892.

Application filed November 16, 1891. Serial No. 411,997. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. WOODARD, of Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Means for Laying Feather-Edges of Inner Soles, of which the following is a specification.

This invention has reference to machines for manufacturing welted boots or shoes. It is well known that the inner sole of a welted boot or shoe is beveled or tapered, so that its margin presents a feather-edge bearing against the inner surface of the upper. The pressure of the upper against this thin feather-edge causes it to curl upwardly, and thus fail to give the upper a well-defined shape at the edge of the inner sole.

My invention has for its object to enable the feather-edge to be flattened or bent downwardly into the plane of the main upper surface of the inner sole, at the same time creasing or sharply folding the upper over the edge of the inner sole to give the upper a well-defined shape close to the point where it is attached to the welt.

To this end my invention consists in the construction and combination of parts, as hereinafter described and claimed.

Of the accompanying drawings, forming part of this specification, Figure 1 represents a side elevation, partly in section, of a machine embodying my invention. Fig. 2 represents a top view of a portion of the machine, both of said figures showing a boot or shoe as presented to the machine. Fig. 3 represents an end elevation of a portion of the machine.

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

In the drawings, *a* represents a supporting-frame, which may be of any suitable form, and is adapted to be secured to a base or support, such as a bench or table. Journaled in a bearing *a'* on the upper portion of the frame *a* is a shaft *b*, to one end of which is affixed a roll *c*, preferably made of steel, having a smoothly-polished periphery, which is made cylindrical, or substantially so, from the inner end of the roll partly to its outer end, and is then curved or rounded inwardly to meet the outer end of the roll, this form of the roll preventing the formation of an angle upon

any part of the roll, which exerts pressure upon the upper *d* of a boot or shoe, as shown in Fig. 1, in which the boot or shoe is shown in section.

e represents a roll, which is mounted to rotate loosely upon a stud or journal *e'*, affixed to a slide *e²*, which is adapted to move vertically between guides *e³ e³*, affixed to the supporting-frame. The roll *e* is located below the steel roll *c*, and its periphery is composed of a sleeve or sheath *e⁴*, of rubber or other suitable yielding material.

The object of the roll *e* is to support the tread-surface of the outer sole *d'* of the boot or shoe at a point below the roll *c* and exert an upward pressure, which causes the roll *c* to flatten the feather-edge of the inner sole *d²*. The roll *e* is adapted to be pressed upwardly to exert the desired degree of pressure of the innersole and upper against the roll *c* by means of a treadle or other suitable device, (not shown,) which acts through a rod *e⁵*, connected with the slide *e²* to raise the roll *e* and exert any pressure of the inner sole and upper against the roll *c* that the operator may desire. The yielding periphery of the roll *e* prevents defacement of the tread-surface of the outer sole during the operation. The periphery of the roll *e* is preferably tapered, its larger end being coincident with the larger end of the roll *c*. This form of the roll *e* causes the maximum pressure to be exerted upon the edge of the inner sole and the part of the upper that bears upon said edge, the pressure decreasing from said edge toward the central portion of the inner sole, as will be seen by reference to Fig. 1.

f represents a roll mounted to rotate loosely upon a stud *f'*, which is supported by a slide *f²*, connected to the supporting-frame by a screw or bolt *f³*, passing through a slot *f⁴* in said slide. The roll *f* has a yielding periphery, composed of rubber or other suitable material, and it is arranged to bear upon the edge of the outer sole *d'*, as shown in Fig. 1, said roll forming a yielding-surfaced rolling gage, which determines the position of the edge of the inner sole, with reference to the inner end of the roll *c* and permits the boot or shoe to be moved easily along by the operator during the progressive rolling of the

upper and inner sole, the yielding surface of the roll *f* preventing injury to or defacement of the edge of the outer sole. The slide *f*² is rendered adjustable by the slot *f*⁴ and bolt *f*³,
 5 so that the roll *f* can be adjusted to accommodate the width of the projecting portion of the outer sole. In some boots and shoes the outer sole projects farther from the outside edge of the inner sole than in others, and as
 10 it is desirable that the edge of the inner sole be presented to the roll *c* at a point near the inner end of the latter it follows that the adjustability of the roll *f*, which permits the edge of the outer sole to extend, if necessary,
 15 inside of the inner end of the roll *c*, is a very desirable feature.

The roll *c* is rotated by power applied in any suitable way, the power-applying means being here shown as a shaft *i*, rotated by a
 20 driving-belt running on a pulley *i'*, the pinion *i*² on said shaft and the gearing *i*³ on the shaft *b* meshing with the pinion *i*².

In the operation of the machine above described the operator, holding the boot or shoe
 25 in his hands, as indicated in Fig. 2, interposes the same between the rolls *c* and *e*, as shown in Fig. 1, the roll *e* being depressed by the operator's foot to permit the insertion of one edge of the boot or shoe. The operator then,
 30 exerting the desired pressure on the roll *e*, moves the boot or shoe along until all parts of the edge of the inner sole have been subjected to the action of the roll *c*. It will be seen that by thus applying a progressive roll-
 35 ing pressure to the inner sole and upper, the feather-edge of the inner sole is laid or flat-

tened down and the upper folded or bent sharply over the edge of the inner sole without the possibility of indenting or defacing the upper. During the operation the opera- 40
 tor pulls the upper over to bring it to a sufficiently-close bearing on the edge of the inner sole, so that the fold formed in the upper by the rolling action is inevitably parallel with the edge of the inner sole. 45

I claim—

1. The combination of a smooth-surfaced roll of rigid material, a yielding-surfaced pressure-roll movable toward and from the rigid roll and adapted to bear on the bottom 50
 of the outer sole of a boot or shoe interposed between the rolls, the axes of the said rolls being parallel, and a yielding-surfaced gage-roll adapted to bear on the edge of the outer sole, as set forth. 55

2. The combination of a smooth-surfaced roll of rigid material, a yielding-surfaced pressure-roll movable toward and from the rigid roll and having its axis parallel with that of the first-mentioned roll, a yielding-surfaced 60
 gage-roll adjustable toward and from the inner ends of said rolls, and means for securing the gage-roll at any position to which it may be adjusted, as set forth.

In testimony whereof I have signed my 65
 name to this specification, in the presence of two subscribing witnesses, this 5th day of November, A. D. 1891.

EDWARD C. WOODARD.

Witnesses:

SAMUEL L. RYDER,
 IRA A. LEACH.