No. 798,333. PATENTED AUG. 29, 1905.

J. M. GROGAN.

HEEL BEADING MACHINE.

APPLICATION FILED SEPT. 17, 1904.

Fig. 1.

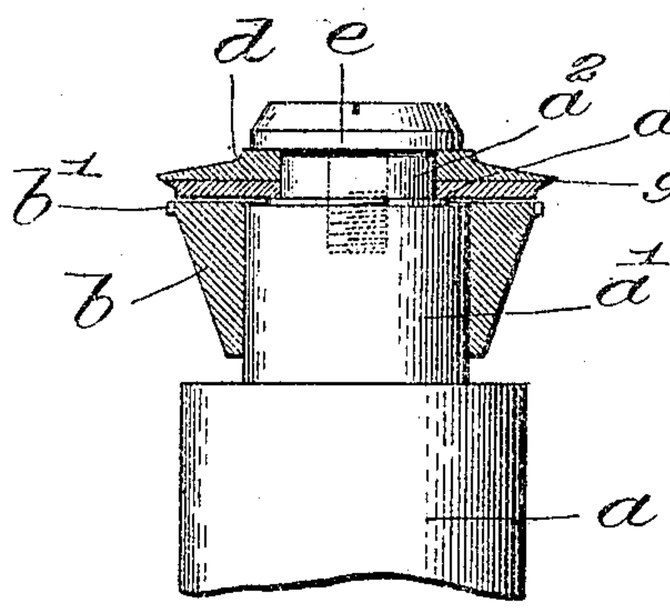


Fig. 9.

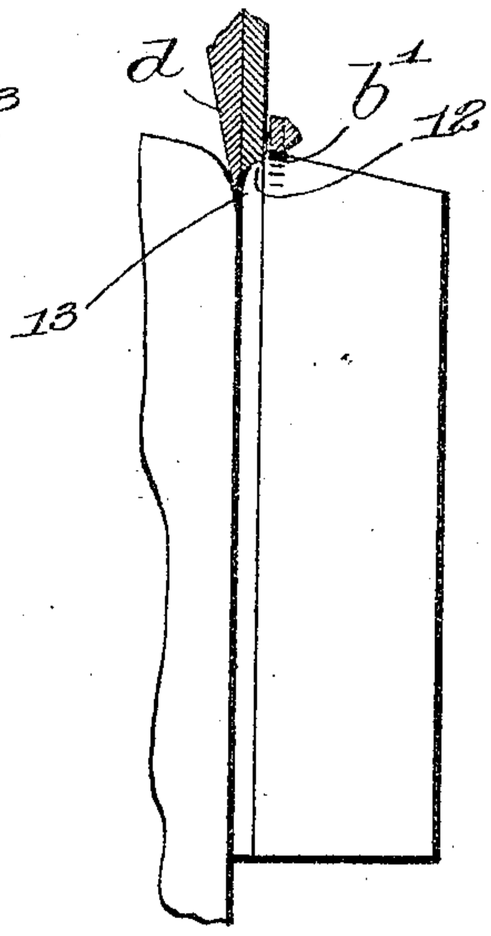


Fig. 2.

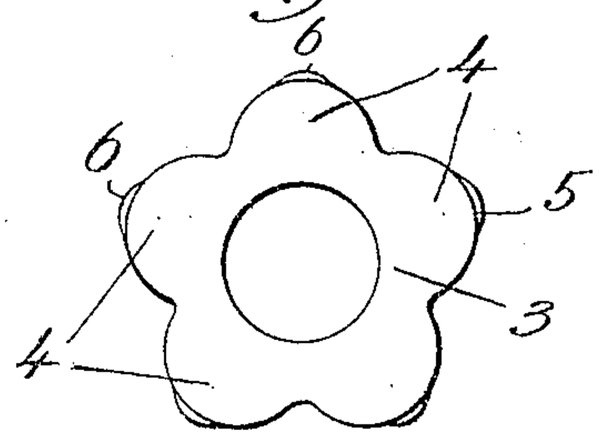


Fig. 3.

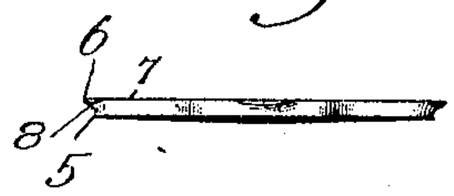


Fig. 4.

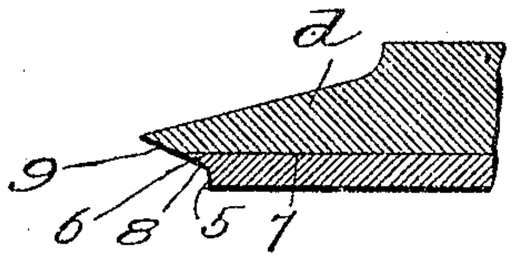


Fig. 5.

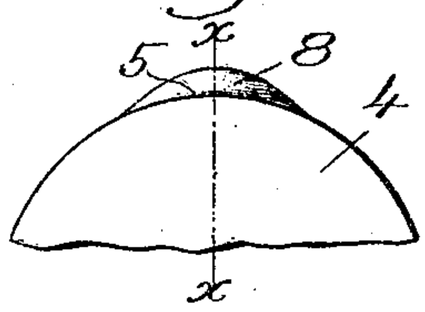


Fig. 6.

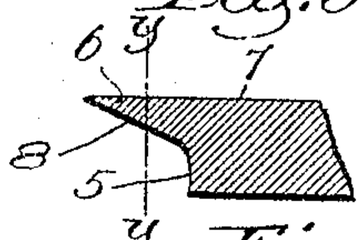


Fig. 8.

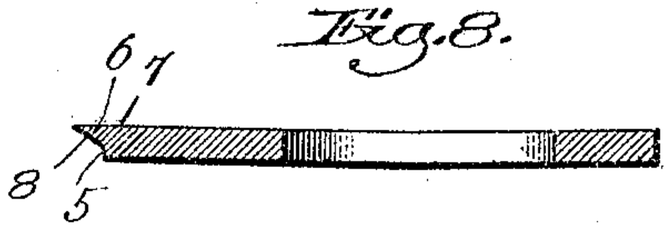
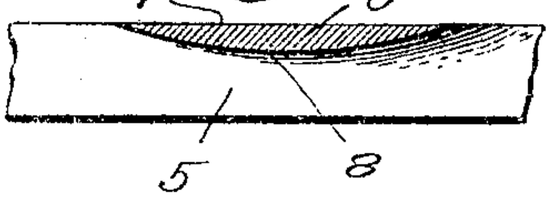


Fig. 7.



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Attys.

UNITED STATES PATENT OFFICE.

JOSEPH M. GROGAN, OF BROCKTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO JOHN F. DONNELLY, OF BROCKTON, MASSACHUSETTS.

HEEL-BEADING MACHINE.

No. 798,333. Specification of Letters Patent. Patented Aug. 29, 1905.

Application filed September 17, 1904. Serial No. 224,806.

To all whom it may concern:

Be it known that I, JOSEPH M. GROGAN, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented an Improvement in Heel-Beading Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to machines for beading, burnishing, or otherwise ornamenting the heels of boots and shoes and is an improvement upon the heel-beading machine illustrated and described in my Patent No. 560,136, dated May 12, 1896. The heel-beading machine illustrated in said patent comprises a loosely-mounted milled sleeve or heel-rest and a rand-guide or heel-seat guide and a toothed beader separate from each other and both rigidly secured to a driving-shaft. In beading or burnishing a boot or shoe heel with my said device the heel is pressed against the heel-rest with the heel-seat guide in the rand-crease. The rapid rotation of the shaft causes the end surfaces of the teeth on the beader to strike rapidly on the outer surface of the upper edge of the heel-seat, whereby a smooth and polished bead is soon formed. At the same time the milled portion of the sleeve-rest forms an ornamental line of indentations around the heel as the latter is subjected to the action of the beader.

In the device illustrated in my above-mentioned patent the teeth on the beader act only on the outer surface of the upper edge of the heel, with the result that only such outer surface is polished or beaded. In some styles of boots and shoes it is desirable to polish and bead not only the outer surface but also the top surface of the edge of the heel-seat, and to provide a beader which will accomplish this object I have devised the one hereinafter described and claimed. Said beader comprises two principal elements—to wit, a beading member and a rand-guide—these two elements being associated together and being either integral with each other or separate parts secured together. The beading member has a plurality of radial arms, each of which is shaped at its end to present one beading-surface substantially parallel to the axis of rotation and another beading-surface inclined to the first surface, and the rand-guide preferably has a beveled edge which lies just beyond the inclined beading-surface of each radial arm and forms, in effect, a continuation of such surface. The portion of the arm on which the inclined beading-surface is formed constitutes what I have termed a "tip," which extends beyond the end of the arm on which the beading-surface standing parallel to the axis of rotation is situated. In operation the latter beading-surface of each arm or tooth acts against and polishes the outer side of the corner of the heel-seat and the inclined beading-surface of each arm or tooth acts against and polishes the top side of said corner.

In the embodiment of my invention herein illustrated the beading member and the rand-guide are made in separate parts in order to facilitate construction; but my invention is not limited to making them of separate parts.

Referring to the drawings, Figure 1 is a vertical central section of my improved machine. Fig. 2 is a side view of the improved beader detached. Fig. 3 is an edge view thereof. Fig. 4 is a detail showing a portion of the beader and rand-guide on an enlarged scale. Fig. 5 is a side view of one tooth of the beader on an enlarged scale. Fig. 6 is a section on the line $x\ x$, Fig. 5. Fig. 7 is a section on the line $y\ y$, Fig. 6. Fig. 8 is a section through the beader. Fig. 9 is a view showing the operation of my improved beader.

a designates a driving-shaft with a reduced portion a', having thereon a boss a^2, which is separated from the reduced portion by a shoulder a^3. Upon the reduced portion a' is placed a loosely-revoluble sleeve or heel-rest b, having at its upper end a milled shoulder b'. The beader, which is mounted on the boss a^2, is designated by 3, and also mounted on said boss outside of the beader is a rand-guide or a heel-seat guide d, said heel-seat guide and beader being held in place by a screw e entering the end of the shaft.

The parts thus far described, with the exception of the particular construction of beader and heel-seat guide, are similar to the corresponding parts in my before-mentioned patent.

My improved beader is provided with a plurality of arms or teeth 4, and, as stated above, each tooth is shaped to present two beading-surfaces, one of which acts on and polishes the outer face of the corner of the heel-seat

and the other of which acts on and polishes the top face or side of said corner. The ends 5 of the teeth form the beading-surfaces which act on the said outer face, and to obtain the necessary beading-surfaces to act on the upper or top face I form each tooth with a tip portion 6, shaped to present a beading-face 8, which is preferably convexed in transverse cross-section and substantially straight in lines drawn from an extreme end of the tip toward the beading-surface 5 of the tooth. Each tip is located at the side of its tooth, and each tip has an outer face 7, situated in the plane of the outer face of the beader. Owing to the convexed shape of the beading-face 8 of each tip, said faces 7 and 8 come together to form a thin edge both at the end and sides of the tip. When the parts are assembled, the faces 8 of the tips rest flatly against the inner face of the heel-seat guide *d*, and the thin edges of the tip therefore hug closely the face of said heel-seat guide.

In the operation of my improved machine the heel is pressed against the heel-rest with the heel-seat guide occupying the rand-crease, as shown in Fig. 9, and with the parts in this position the rapid rotation of the main shaft causes the beading-surfaces 5 to rapidly strike the outer side surface 12 at the corner of the heel-seat and the beading-surfaces 8 to strike the top surface 13 of said heel-seat. The result is that both the side and the top surfaces of the corner of the heel-seat are given the desired polish.

The beading-surfaces 5 and 8 of each tip may have any desired angle relative to each other according to the form of bead which it is desired to give to the heel. If said beading-surfaces stand at a right angle to each other, the bead at the corner of the heel-seat will be given a square shoulder, while if said surfaces have any other angle relative to each other the said bead will have a corresponding shape. In the form of my invention herein illustrated said surfaces make an obtuse angle with each other and are connected by a rounding surface, with the result that the bead has a general convex shape. Said beading-surfaces may be given other shapes, however, without departing from the invention.

Where the beading-surfaces 8 of the tips are inclined, as shown, I will preferably form the heel-seat guide at its periphery with the bevel portion 9, the bevel of which coincides with the inclination of the beading-surfaces 8, so that when said beader rests against the rand-guide, as it does in the actual operation of the machine, said bevel-surface 9 forms, in effect, a continuation of the beading-surfaces 8, as best seen in Fig. 4.

It will thus be seen that my invention comprises a beading element and a heel-seat guide associated with each other, and the beading member is constructed with a plurality of radial arms or teeth, each of which is formed at its end to present a beading-surface substantially parallel to the axis of rotation and another beading-surface inclined thereto, the inclined beading-surface extending outwardly from the first-named beading-surface toward the periphery of the heel-seat guide. In this embodiment of my invention the heel-seat guide is beveled, as at 9, and each of the inclined beading-surfaces extends to and merges into the inclined beading-surface. While I prefer to make the heel-seat guide and the beader separate elements each of which is detachably supported by the shaft, because in this way the construction of the article is facilitated, yet it will be observed that, so far as the operation of the device is concerned, it is immaterial whether these elements are separate from each other or are made in one integral structure. My invention therefore is not limited to a construction in which the heel-seat guide and beader are separate elements detachable from each other.

Where the beader is separate from the heel-seat guide, I preferably make the outer face thereof slightly dished, (see Fig. 8,) so that when the beader and heel-seat guide are secured to the spindle the resiliency of the beader holds the tips 6 firmly against the face of said guide.

The number of teeth 4 with which the beader is provided is not essential to my invention; nor is it essential that the heel-seat guide and the beader be made separate from each other. The important thing about my invention is a beader having a beading surface or surfaces so shaped as to act on both the outer side and top side of the corner of the heel-seat, and as I believe that I am the first to devise a beader having this feature I desire to claim it broadly.

For convenience in manufacture I prefer to make the beader and heel-rest guide separate from each other; but, as stated above, my invention is not limited to making them separate.

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

1. In a heel-beading machine, a driving-shaft, a beader and a rand-guide separate from the beader both mounted on said shaft, said beader being provided with teeth, each of which has at its end a tip portion to give a convex shape to the bead.

2. In a beading-machine, a rand-guide and a beader mounted on a shaft, said beader having teeth, each of which has at its end a tip provided with a beading-surface.

3. In a heel-beading machine, a driving-shaft, a beader, and a rand-guide mounted thereon, said beader having teeth each provided at its end with a beading-surface and also with a tip having a convex beading-surface at an angle to the first-named beading-surface.

4. In a heel-beading machine, a driving-shaft, a rand-guide and a beader mounted thereon, said beader having a plurality of teeth each of which has a beading-surface at its end, a tip extending radially from each tooth, said tips each having a flat outer face in the plane of the outer face of the beader, which outer face rests flatly against the inner face of the rand-guide, and a tapering rounded inner or beading face which meets the outer flat face in a thin edge.

5. In a heel-beading machine, a driving-shaft, a rand-guide and a beader mounted thereon, said beader having a plurality of teeth each of which has a beading-surface at its end, a tip extending radially from each tooth, said tips having a flat outer face in the plane of the outer face of the beader, which outer face rests flatly against the inner face of the rand-guide, and a tapering rounded inner or beading face which meets the outer flat face in a thin edge, said rand-guide having an annular tapering face, as 9, to form a substantial continuation of the beading-faces of the tips.

6. A beader for a heel-beading machine having a plurality of similar teeth, each tooth having a radially-extended tip portion one side of which constitutes a beading-surface which is convex in lines concentric to the axis of rotation.

7. In a heel-beading machine, a driving-shaft, a toothed beader mounted thereon, each tooth of the beader having a tip portion forming with the tooth end a beading-surface adapted to act on both the outer and top sides of the edge of the heel-seat.

8. A device for beading heels comprising a beading member and a rand-guide associated therewith, said rand-guide having a beveled edge, and said beading member having a plurality of radial arms, each shaped at its end to present one beading-surface substantially parallel to the axis of rotation, and another radially-extending inclined beading-surface which merges into the beveled edge of said rand-guide.

9. In a device of the class described, a beading member and a rand-guide associated together, said beading member having a plurality of separate beading-surfaces extending substantially parallel to the axis of rotation, and a similar number of inclined beading-surfaces extending outwardly from the first-named beading-surface.

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

JOSEPH M. GROGAN.

Witnesses:
LOUIS C. SMITH,
MABEL PARTELOW.