No. 764,569. PATENTED JULY 12, 1904.

E. ERICKSON.

WELT BEATER.

APPLICATION FILED APR. 14, 1903.

NO MODEL.

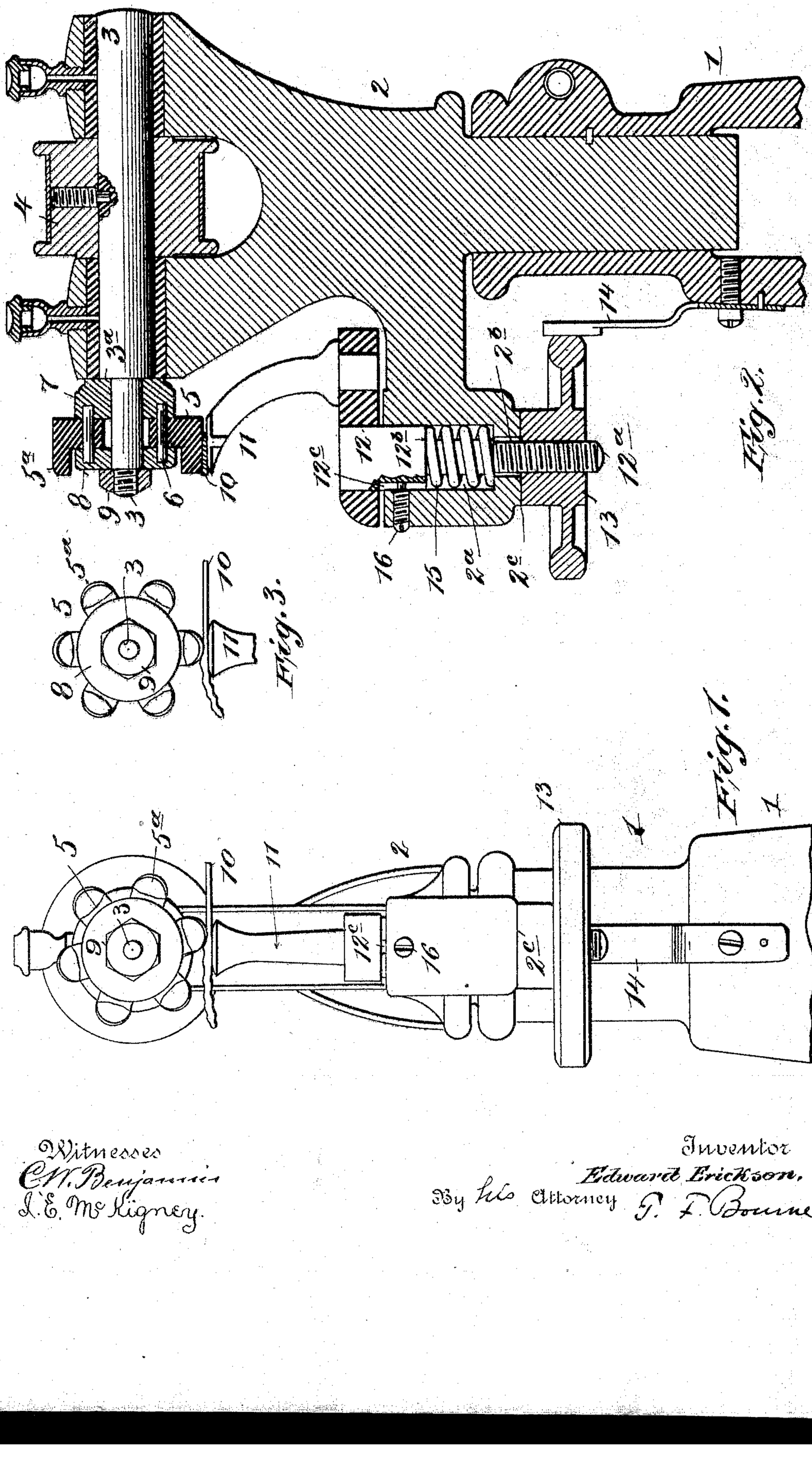

Fig. 2.

Fig. 3.

Fig. 1.

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UNITED STATES PATENT OFFICE.

EDWARD ERICKSON, OF SOUTH BOSTON, MASSACHUSETTS.

WELT-BEATER.

SPECIFICATION forming part of Letters Patent No. 764,569, dated July 12, 1904.

Application filed April 14, 1903. Serial No. 152,518. (No model.)

To all whom it may concern:

Be it known that I, EDWARD ERICKSON, a citizen of the United States, and a resident of South Boston, Suffolk county, Massachusetts, have invented certain new and useful Improvements in Welt-Beaters, of which the following is a specification.

My invention has reference to means for beating down, leveling, or burnishing various parts of a shoe during the process of manufacturing the same, and especially to means for beating a welt after it has been applied to an upper and before the sole is stitched to the welt, although the apparatus can be used as a channel or sole-layer, a sole or heel-seat leveler, a heel-burnisher, an edge-setter, and a power-hammer.

In carrying out my invention I provide a rotative member with beaters or arms pivotally connected therewith and adapted when rotated to be held in radial positions by centrifugal action, the outer or acting surfaces of said beaters being rounded or curved to engage stock to be operated upon, and beneath or alined with said beaters is a rest or support adapted to receive between itself and the beaters the stock to be operated upon, whereby as said stock is fed the rotating beaters will act thereon. To provide for regulating the effect of blows or strokes of the beaters upon the stock and to accommodate stock of different thicknesses between the rest or support and the beaters, I provide means for adjusting the rest or support toward and from the beaters, and to provide for cushioning the blows of the beaters upon the stock the rest or support is guided to have movement toward and from the beaters and is provided with a cushion or spring as a resilient resistance to the blows of the beaters.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a front elevation of a machine embodying my invention. Fig. 2 is a vertical section thereof, and Fig. 3 is a detail face view of the beaters.

In the accompanying drawings, in which similar numerals of reference indicate corresponding parts in the several views, the machine-frame shown comprises a pedestal or support 1 and a head portion 2 attached thereto, and at 3 is indicated a shaft journaled in bearings upon head 2 and shown provided with a pulley 4 for rotating it. At one end of shaft 3 are pivotally supported rigid beaters or arms 5, adapted to extend in radial direction by centrifugal action when rotated by said shaft. In the example shown the pivots 6 of the beaters 5 are arranged parallel to the axis of shaft 3, and said pivots are shown supported by disks or members 7 8, mounted upon said shaft, the beaters 5 being located between said disks. Said disks are shown provided with alined sockets, in which the pivots 6 rest, so that the pivots do not have longitudinal movement, and said disks are shown secured upon the reduced portion of the shaft between a shoulder 3^a thereon and a nut 9, secured on the end of the shaft. This construction provides a simple and convenient means for pivotally connecting the beaters with the shaft and enabling ready adjustment and replacement of the parts. The outer or wearing surfaces 5^a of the beaters 5 are shown rounded or convex in the direction of rotation, whereby such wearing-surfaces may strike the stock or material 10 to be operated upon in the nature of a glancing or wiping blow without cutting or tearing the material.

Alined with or beneath the beaters 5 is a rest or support 11 of suitable construction, upon which the stock 10 to be operated upon is placed, and said rest is shown supported by the head 2. In the example illustrated the rest 11 is shown somewhat in the form of a horn curved rearwardly to permit the free passage of a shoe while its welt is being beaten. The rest 11 is shown connected with a stem 12, guided in a socket 2^a in head 2, the lower portion of said stem being shown screw-threaded at 12^a and freely passing through an aperture 2^b in head 2, so as to have sliding movement therein. Upon the threaded part of stem 12 is mounted an internally-screw-threaded wheel or nut 13, adapted to bear against a portion of head 2, as at 2^c, whereby when the wheel is rotated the rest 11 may be moved toward and from the beaters.

At 14 is indicated a spring secured to pedestal 1 and bearing against wheel 13 to hold the same in set position. The stem 12 is shown cushioned upon a spring 15, located in socket 2^a and bearing at one end against the bottom of the socket and at the other end against a shoulder 12^b on said stem, said spring thereby tending to elevate the stem and rest 11 and keeping wheel 13 pressed against surface 2^b, the spring also permitting adjustment of rest 11 by wheel 13.

At 16 is indicated a screw entering head 2 and passing into a slot 12^c in stem 2 to permit the stem to reciprocate without rotating; but other means can be provided for this purpose if desired.

In using the machine the rest or support 11 is adjusted to the desired distance from the beaters 5, and when the latter rotate, preferably at high speed, the stock or material 10 is fed between the rest and the beaters, whereby said beaters will operate upon the stock with glancing or wiping blows, and as the beaters are held radially by centrifugal action they may turn on their pivots when striking the stock, so as to readily clear the same, and in so doing the beaters slide more or less upon the stock, and no injury is done to the latter owing to the rounded working surfaces of the beaters. The effect of the blows of the beaters may be regulated by means of wheel 13, and when the beaters strike the stock the spring 15 acts to cushion the blows more or less, according to the adjusted tension of the spring.

It will be observed that the beaters and the rest 11 are free and unobstructed at the front and sides to permit the stock to be readily presented thereto and guided in position to be operated upon. Thus after a welt has been sewed to a shoe in well-known manner, the welt usually being more or less bent and wrinkled, the welt can be readily slipped between the beaters and the rest and guided therebetween, and the beaters will act to smooth down and straighten the welt ready for the sole to be placed thereon. The machine can also be used for laying down the web along a channel on a shoe-sole after the latter has been stitched to a shoe and also as a sole-leveler and a sole-layer. The machine may also be used as an edge-setter for shoes by the operator properly holding the edge of the sole to the beaters and also as a heel-burnisher and a heel-seat leveler. In all such cases the high speed of rotation of which the beaters are capable of acquiring in conjunction with their pivotal and centrifugal action enables the machine to be used with speed and accuracy, producing a finish on stock of a high degree of excellency.

Having now described my invention, what I claim is—

1. A machine of the character described comprising a rotative member provided with rigid beaters pivoted eccentrically on said member to extend radially during rotation, and a rest alined with said beaters, whereby stock to be operated upon may be guided between the beaters and the rest, substantially as described.

2. A machine of the character described comprising a rotative member and relatively short rigid beaters pivoted eccentrically on said member adapted to extend radially during rotation, and capable of high speed of rotation, said beaters having rounded or curved wearing-faces extending in the direction of rotation arranged to glide along the surface of stock without cutting it, substantially as described.

3. A machine of the character described comprising a rotative member provided with relatively short rigid beaters pivoted eccentrically on said member adapted to extend radially during rotation and capable of high speed of rotation, a rest or support alined with said beaters, and means for adjusting the beaters and the rest with respect to each other to vary the effect of the blows of the beaters upon the stock, substantially as described.

4. A machine of the character described comprising a rotative member provided with rigid beaters pivoted eccentrically on said member adapted to extend radially during rotation, a rest or support alined with said beaters, a stem connected with said rest, a guide for said stem to permit the same to be adjusted, and means connected with the stem for adjusting the distance between the beaters and the rest, substantially as described.

5. A machine of the character described comprising a rotative member provided with beaters pivoted eccentrically on said member adapted to extend radially during rotation, a rest or support alined with said beaters, means for movably supporting said rest, and a cushion to coact with the rest to resiliently resist the blows of the beater, substantially as described.

6. A machine of the character described comprising a rotative member provided with beaters pivoted eccentrically on said member adapted to extend radially during rotation, a rest or support alined with said beaters, a stem connected with said rest, means for guiding said stem, and a resilient support for the rest, substantially as described.

7. A machine of the character described comprising a rotative member, beaters pivoted eccentrically on said member to extend radially during rotation, a rest alined with the beaters, a stem connected with said rest, a guide for the stem, a spring to coact with said stem, and means for adjusting the distance between the beaters and the rest, substantially as described.

8. A machine of the character described comprising a rotative member, beaters pivoted eccentrically on said member to extend

radially during rotation, a rest alined with the beaters, a stem connected with said rest, a guide for the stem, a spring to coact with said stem, said stem having a threaded portion, and a wheel or nut connected therewith to adjust the rest with respect to the beaters, substantially as described.

9. A machine of the character described comprising a rotative member, beaters pivoted eccentrically on said member to extend radially during rotation, a rest alined with the beaters a stem connected with said rest, a guide for the stem, a spring to coact with said stem, said stem having a threaded portion, a wheel or nut coacting with said threads and the frame, and means for holding the wheel or nut in adjusted position, substantially as described.

10. In a machine of the character described, the combination of a support, a rotative member carried thereby, beaters pivoted eccentrically on said member, a rest alined with the beaters and provided with a stem, a guide for said stem, a spring interposed between said support and said stem, and means for adjusting said rest toward and from the beaters, substantially as described.

11. In a machine of the character described the combination of a support, a shaft carried thereby, a pair of disks carried by said shaft and provided with opposed sockets, pivots located in said sockets, and beaters supported by said pivots and located between said disks and adapted to extend radially during rotation, substantially as described.

12. A machine of the character described comprising a frame, a head rotatively supported thereby, and rigid beaters pivoted eccentrically on said rotary head adapted to extend radially by centrifugal action during rotation, whereby said beaters deliver a sliding blow to the stock, substantially as described.

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