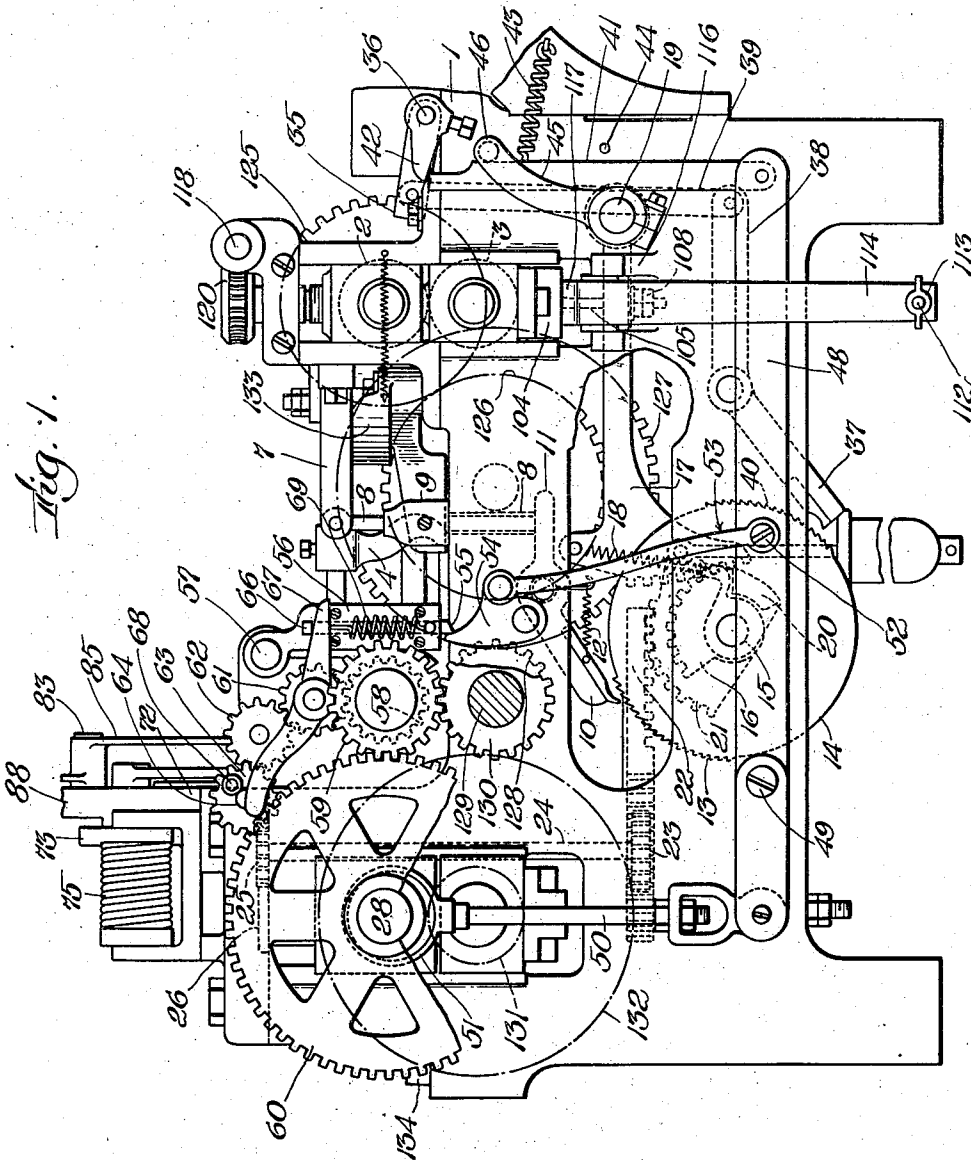


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APPLICATION FILED MAY 28, 1915.

1,162,387.

Patented Nov. 30, 1915.

2 SHEETS—SHEET 1.



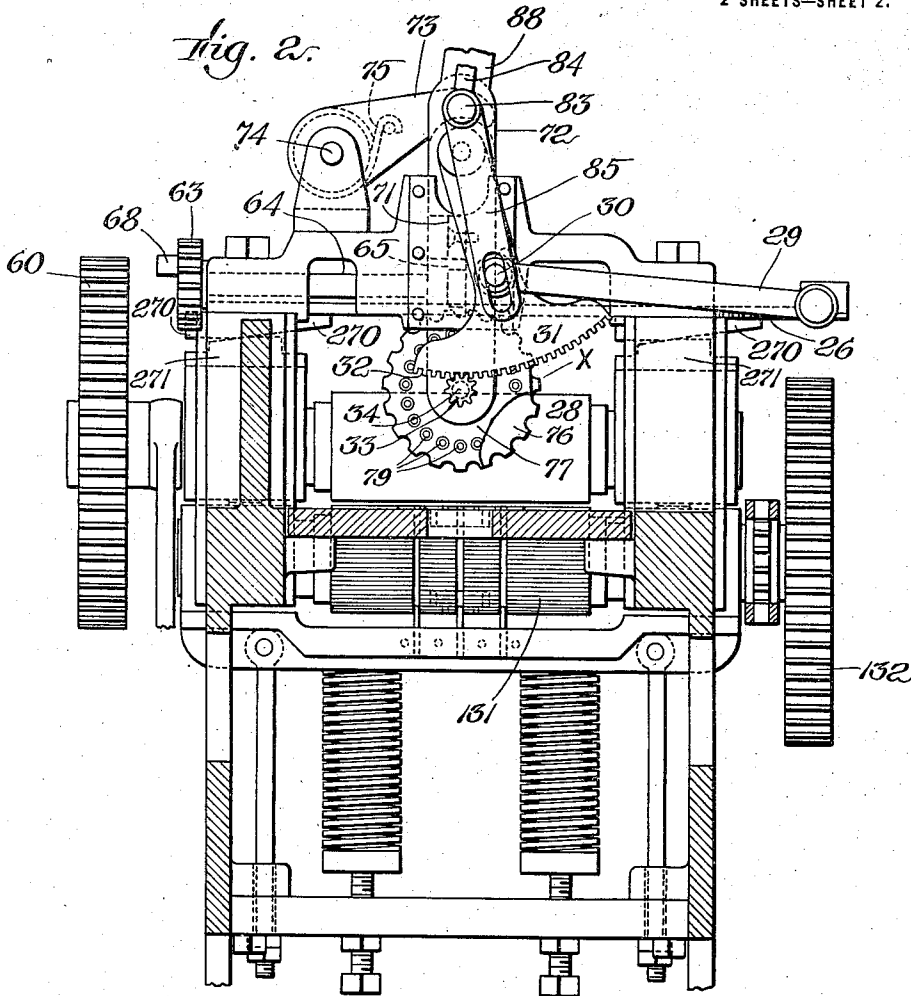
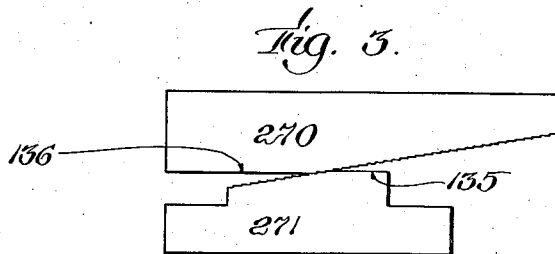
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Edmer P. Nichols,
by Geo. H. Maxwell,
Attorney.

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UNITED STATES PATENT OFFICE.

ELMER P. NICHOLS, OF MANCHESTER, NEW HAMPSHIRE, ASSIGNOR TO LACENE MANUFACTURING COMPANY, OF MANCHESTER, NEW HAMPSHIRE, A CORPORATION OF MAINE.

MACHINE FOR EVENING AND GRADING CUT SOLES AND THE LIKE.

1,162,387.

Specification of Letters Patent.

Patented Nov. 30, 1915.

Application filed May 28, 1915. Serial No. 30,940.

To all whom it may concern:

Be it known that I, ELMER P. NICHOLS, a citizen of the United States, and resident of Manchester, in the county of Hillsboro and State of New Hampshire, have invented an Improvement in Machines for Evening and Grading Cut Soles and the like, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My present improvement aims to provide a machine which will automatically even and grade-mark (or otherwise designate) all soles above a predetermined iron or thickness, and grade-mark but not even all soles below said predetermined iron or thickness. For example, many shoe manufacturers and cut-sole houses desire to have all their soles classified accurately as to grade but have only those above six iron split or skived to their grade, leaving those below six iron not evened. My present invention accomplishes this object. This leaves cobbler's soles, etc., below six iron not shaved off or evened but nevertheless marked. Similarly it enables a cut-sole house or shoe manufacturer to leave thin soles untouched by the knife but properly marked, which soles, although not fit for Goodyear welt work, are proper for McKay work.

My invention may be accomplished by a large variety of specific mechanisms and in order that it may be properly apprehended, I have shown one specific embodiment of the invention in connection with the general construction of machine contained in my Patent No. 1,130,321 of March 2, 1915.

Stated broadly, my invention resides in providing means responsive to the detecting mechanism or feeler operations for invariably actuating the grade-marking or designating mechanism for all thicknesses of the died-out stock, and in connection therewith providing means for setting or adjusting the skiving or evening mechanism, which means is responsive to the feeler mechanism for all thicknesses above the desired or predetermined iron, but is not responsive to thicknesses below said desired or predetermined iron. The responsive means for the marking and the evening may be the same device or separate devices as the case may be, and

in the machine of the drawings I have shown my invention applied to the wedge cams or stepped inclines.

In using the term grade-marking, I do not necessarily mean to restrict myself to actually marking or stamping on the leather excepting as said word may be used specifically in any given claim, although in practice my present invention is commonly used in connection with actual marking or stamping directly on the leather.

In the illustrative drawings Figure 1 is a view in side elevation of the complete machine. Fig. 2 is a transverse sectional view thereof, taken just in front of the marking device and Fig. 3 is an enlarged front view of two of the cooperating cams or stepped inclines.

As already stated, the general features of the machine are the same as in my Patent No. 1,130,321 and for conciseness of description I have used the same designating characters for the corresponding parts as in said patent, to which reference may therefore be made for a full description and explanation of the machine, aside from the particular new elements which I have now combined therewith in order to embody my present invention. The work table 1 and parts supported thereon are shown as omitted and broken away. The machine comprises all the parts mentioned in said patent, reference being made herein to the rolls 2, 3, trip 4, arm 7, rod 8, weight 9, pawl 10, 11, its spring 12, thinness-measuring teeth 13, of ratchet wheel 14, on shaft 15, carrying rack 16, engaged with the toothed end of lever 17, upheld by spring 18, and pivoted at 19, bracket 20, gear 21, rack 22, pinion 23, its shaft 24, pinion 25, rack bar 26, gage roll 28, link 29, pivoted at 30 to lever 31, whose segmental rack 32 meshes with pinion 33 of the marking disk shaft 34. The same gate 35 as in said patent is shown pivoted at 36 to operate with a locking pawl 37, whose end 38 connects to a link 39, said pall engaging locking teeth 40 on the ratchet wheel 14, all as in said patent. Likewise the lifting rod 41, arm 42, on pivot 36 of said gate 35, spring 43 and limiting stop 44 are the same as in the patent, and also the arm 45, pin 46, bar 48, pivot 49, rod 50, strap 51, pivot 52, link 53, dog 54, latch 55, cam plate 56 pivoted at 57, clutch gear 58,

gears and pinions 59, 60, 61, 62, 63, cam shaft 64, lifter cam or dropping means 65, deflected end 66 of the latch 55, to overhang the tripping lever 67, actuated by tripping roll 68, and the spring 69. The marking mechanism, Fig. 2, is likewise the same, including the lifter block or plunger 71, marking head or marker carrier 72, pressure arm 73 pivoted at 74, torsion spring 75, marking disks or dies 76, 77, dwells 79, pivot 83, indicator arm 84, lever 85 (the rest of the visual indicator being broken away), and bracket 88. I have likewise shown the same feeler mechanism, etc., including the bridge or yoke 104, feeler posts or detectors 105, threaded nuts 108, as herein shown, spring 112, adjusting nuts 113, elbow levers 114, end bearings 116, the ends 117 bearing against the yoke 104, the hand rod 118, worm wheel 120, gearing 125, 126, 127, 128, 129, 130, under roll or yielding gage roll 131, gear 132. The drawing also indicates the same auxiliary setting means 133 of said patent and the evening knife 134.

I have undertaken thus far merely to enumerate the parts herein designated to correspond to my patent aforesaid and I refer to the latter for a full disclosure and explanation of the machine in general and its various parts, constituting an element or elements in the combination necessary for carrying out my present invention.

In order to explain the new result of securing automatic grade-marking of all the pieces presented to the machine while securing the evening of only those pieces which are found by the machine to be above a certain thickness and automatically omitting to even those pieces which the machine determines are below such thickness, I have provided special wedge blocks or stepped inclines 270, 271 of the same general character as shown in the patent aforesaid (and which are claimed broadly in my Patent No. 1,046,213 of December 3, 1912) excepting that these stepped inclines, cams or wedge blocks, are so shaped or proportioned and located with relation to each other and with relation to the grade-marking and indicating mechanism that they may carry out my purpose. To this end I have provided the block 271 with a flat face 135 and the block 270 with a flat face 136, so that when the rack bar 26, which carries the longitudinally movable wedge 270 is shifted to the right, Fig. 2, a given distance, which brings the flat surface 136 over the surface 135, any further movement to the right simply maintains this situation and therefore can effect no further downward movement or vertical adjustment of the gage roll 28. In practice the slabbled off or horizontal plane surfaces 135, 136 are made at such relative heights and the wedges are so relatively positioned that when these surfaces 135, 136 come to-

gether they thereby regulate the gage roll to the adjustment required for evening a sole to 6 iron. If the limit desired by any given sole house or shoe manufacturer using my machine should be 7 iron, one of the wedges would simply be made one iron thinner, *i. e.* the wedge at its flat area would be one iron thinner (or this required difference in thickness could be distributed between both wedges). On the other hand if the sole house or manufacturer desired the limit to be at 5 iron, the wedges would be made one iron thicker. While it would be possible to provide an adjustable mechanism for carrying out this object, it is more practicable and desirable to have the machine built in the first place for a fixed minimum of skiving or evening, as shown. In use the soles are put into the machine between the feed or detecting rolls 2, 3, whereupon the detecting mechanism or feeler mechanism determines the grade of the leather piece by feeling of its various thin edge spots in the well known manner set forth in my various patents on this subject, and the grade, as thus determined, is transmitted by the gaging mechanism through the parts 105, 17, 16, 15, 21, 22, 23, 24, 25, and 26 to the members which control respectively the setting of the marking device for marking the grade of the leather piece and the setting of the evening mechanism for evening the leather piece, *viz.* for the former the link 29, sector 31, pinion 34, and marker or die 76, 77, and for the latter the wedges 270, 271 and gage roll 28. As, therefore the marker mechanism mentioned is shown as constructed to respond to all the transmissions of grade measurement or feeler and detecting determinations, it follows that the marker will be set for whatever grade may be determined, be it thick or thin, *i. e.* be it a 12 iron, for instance, or a 5 iron sole. On the other hand as the wedge mechanism is constructed to respond in its transmission or setting function to those adjustments only which are above a predetermined grade and not to those which are below said predetermined grade, it follows that, for instance, a sole which is above 6 iron is skived as well as marked, but a thinner sole will be marked only and will not be skived. As already explained, this is of particular benefit in saving stock and economizing labor for McKay work and in enabling the cut-sole house to accommodate economically the cobbler trade as to thin soles below a given iron. My invention is intended to be herein claimed broadly, as I believe that this patent is the first to mention, or provide means for accomplishing, this object.

My invention is accordingly further described and defined in the form of claims as follows:

1. In a machine of the kind described, 130

means for determining the grade of a died-out piece of leather, and mechanism responsive thereto, including means for indicating whatever grade is determined, and evening means, said responsive evening means having mechanism limiting the evening to a predetermined minimum grade.

2. In a machine of the kind described, a grade marker, mechanism for setting said marker in accordance with the varying grades of successive pieces of leather placed in the machine, cutting mechanism for evening the leather piece to its grade, and mechanism for limiting the adjustment of said cutting mechanism to a range of adjustments less than the range of adjustments of said grade marker.

3. In a machine of the kind described, detecting mechanism for detecting the grade of a leather piece with reference to its thin spots, evening means, grade indicating means, and mechanism for setting said evening means and grade indicating means in re-

sponse to the detecting mechanism, said setting mechanism having a portion connecting from said detecting mechanism partway toward said evening means and grade indicating means and thence dividing into two parts connecting respectively to said two means, the said part which connects with the evening means including a wedge member and a cooperating portion, said wedge member having its wedge surface terminated at a point to correspond to a given minimum of thinness measurement for limiting the responsiveness of the evening means to said minimum in its adjustment for thin stock while permitting free adjustments for thick stock.

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

ELMER P. NICHOLS.

Witnesses:

LEANDER A. COGSWELL,
MAUDE E. CHISHOLM.