No. 702,465. Patented June 17, 1902.

A. OLSON.

STITCH INDENTING MACHINE.

(Application filed May 28, 1901.)

(No Model.) 2 Sheets—Sheet 1.

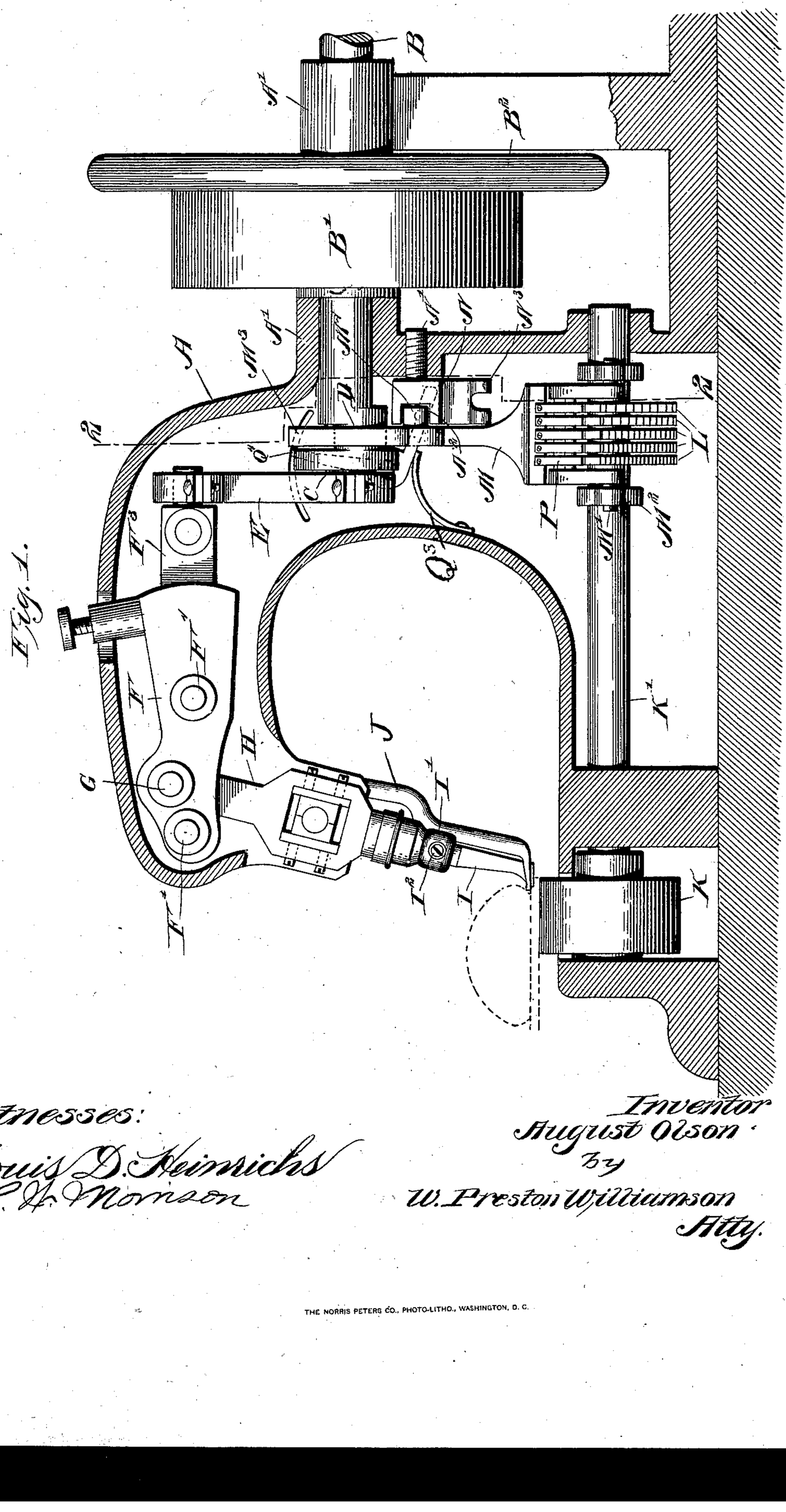

Fig. 1.

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Fig. 3.

Fig. 4.

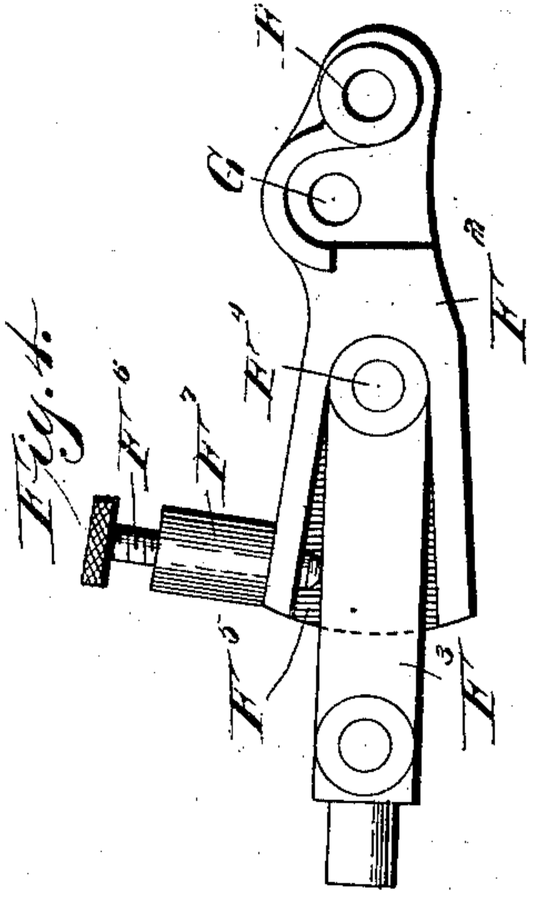

Fig. 2.

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UNITED STATES PATENT OFFICE.

AUGUST OLSON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD TO JOHN C. McKEON, OF PHILADELPHIA, PENNSYLVANIA.

STITCH-INDENTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 702,465, dated June 17, 1902.

Application filed May 28, 1901. Serial No. 62,241. (No model.)

To all whom it may concern:

Be it known that I, AUGUST OLSON, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a certain new and useful Improvement in Stitch-Indenting Machines, of which the following is a specification.

My invention relates to a new and useful improvement in stitch-indenting machines, and relates to that class of machines which have for their object to indent the welt or sole of a shoe between each stitch, and these indentations may be of simple V-shape indenture or they may be made of different shapes, according to the tool used to do the pricking.

The object of my invention is to construct a simple and effective means for pricking soles of shoes which is adapted to be operated by power and in which the shoe is fed automatically each time the tool is raised and also provide means whereby the length of the feed can be regulated.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my machine; Fig. 2, a section on the line 2 2 of Fig. 1. Fig. 3 is a side view of a portion of the head looking in the opposite direction to Fig. 1, showing in detail the guide-foot; and Fig. 4 is a rear view of the lever which transmits the motion from the eccentric to the slide which carries the tool.

In carrying out my invention as here embodied, A represents the framework of the machine, which is preferably made hollow, so as to protect all the working parts of the machine which are located upon the interior of this framework, in the bearings A′ of which is journaled a power-shaft B, which has secured to it the pulley B′ and fly-wheel B^2. Upon the inner end of this power-shaft B are formed two eccentrics C and D. The eccentric C is adapted to actuate the pitman E, the upper end of which is connected to the end of a lever F, which is pivoted to the framework at the point F′. This lever has pivoted to it at the point G a slide H, in the lower end of which is adapted to be secured the pricking-tool I. This slide H is adapted to be guided by suitable guideways formed with the head of the machine and is preferably placed upon a slant, as shown in Fig. 1, for the purpose of allowing the tool to operate upon the sole without touching the upper. Thus it will be seen that as the power-shaft is revolved the eccentric will communicate the motion through the pitman E to the lever F, which in turn will cause the tool I to be raised and lowered. The tool I is secured to the slide H by means of the block I′, which is adjustable vertically within the slide, and the tool I is secured within this block by means of the set-screw I^2. The lever F is composed of two parts, the part F^2, in which the pivotal point F′ and G are located, and the part F^3, which is pivoted to the part F^2 at the point F^4. This part F^2 is the part which is connected to the pitman E at its outer end and lies within a cavity F^5, formed in the back of the part F^2. A set-screw F^6 is threaded through a projection F^7, formed with the part F^2, and the end of this set-screw F^6 is adapted to protrude through into the cavity F^5 and limit the movement of the part F^3. When it is desired to give the tool the full stroke, so that it will be raised a considerable distance, the set-screw F^6 will be set against the upper surface of the part F^2 and bind the part F^3 between the set-screw and the lower wall of the cavity F^5. Thus the two parts will be virtually one lever, and any movement communicated to the lever by the pitman E will be transmitted directly to the slide H; but when it is desired to only raise the tool a short distance the set-screw F^6 is loosened, so that the part F^3 will have a certain amount of movement upon its pivot F^4, and such movement will be communicated to the part F^2.

J is a guide, which is forked so as to straddle the tool I. Against the edge J′ of this guide is adapted to be held the shoe, it coming in contact with the upper slightly above

the point where said upper is sewed to the welt. The shank J^2 of the guide extends upward to one side of the slide H and through a sleeve J^3, which sleeve is pivoted to the outside of the head at the point J^4. The upper end of the shank, which protrudes above the sleeve J^3, is threaded, and upon this threaded portion is screwed a thumb-nut J^5, which is for the purpose of regulating the height of the guide J.

J^6 is a set-screw, which is threaded through a boss J^7, formed with the head of the machine, and the end of the set-screw J^6 bears against the upper portion of the sleeve J^3. A spring J^8 has one end secured to the lower end of the sleeve J^3 and the other end to the head of the machine. This spring is on the opposite side of the sleeve from the set-screw J^6, and so always tends to keep the upper end of the sleeve in contact with the end of the set-screw, and thus by turning the set-screw J^6 the position of the guide J can be regulated horizontally. The tension of the spring J^8 is sufficient to hold the guide J in position against ordinary pressure, but will allow the guide to be pressed back when it is desired to indent the sole closer to the upper.

K is a roller journaled in suitable bearings within the framework and is secured upon the shaft K'. The shoe is held by hand so that the under side of the sole will come in contact with the roller K, so that the guide J will bear against the upper. The tool I then in its descent will strike the upper edge of the sole or welt and indent the same between two stitches. It is then necessary when the tool raises to feed the shoe forward, so that the next time the tool descends it will strike the space between the next two stitches, or, in other words, it is necessary to feed the shoe the distance equal to the distance between the stitches. I accomplish this feeding motion by rotating the roller each time the tool is raised and by the following mechanism:

L represents a series of ratchet-wheels secured upon the shaft K'. M is a lever, which is pivoted at the point M' to the outer end of a link M^2, the other end of this link being journaled loosely upon the shaft K'. The upper end of the lever M is forked at M^3, and the prongs of this fork embrace the eccentric portion D of the power-shaft B.

N is a block, which is pivoted to the main frame at the point N', and in the face of this block is formed a channel N^2, in which projects a stud or roller M^4, secured to the lever M.

N^3 is an arm extending downward from the block. The lower end of this arm N^3 is forked and adapted to straddle and lie within an annular groove formed upon the inner end of a screw O. Thus when the screw O is turned the block N will be tilted upon its pivot N', which will cause the channel to be inclined in one direction or the other.

P represents a series of pawls, one pawl arranged opposite each ratchet-wheel and all of the pawls being pivoted and carried by the lever M. These pawls are held in engagement with the teeth of their respective ratchet-wheels by means of the springs P'. The tilting of the block N is for the purpose of regulating the throw of the lever M. As shown in Fig. 2, the channel N^2 is lying horizontally. In such a position no vertical movement would be communicated to the lever M. It would simply rock back and forth upon its pivot M', because the stud or roller M^4 would travel backward and forward horizontally within the channel N^2 as the power-shaft B was revolved; but if the block N were tilted so that the channel N^2 would stand at an angle the lever M would be raised when it was forced in one direction and lowered as it returned, and by reason of the lower end of this lever being pivoted to the link M^2 this vertical movement of the lever M would be transformed into a rocking motion, with the shaft K' as a center. Thus the pawl P would be pulled back and forced forward the distance determined by the inclination of the block N.

Each one of the ratchet-wheels L is formed with a different number of teeth to the inch to correspond with the different number of stitches to the inch used in the sewing of shoes. When it is desired to prick a certain lot of shoes, the number of stitches to an inch are measured, and the block is then set at such an inclination that it will cause the pawl to travel back a sufficient distance to engage the teeth of the ratchet-wheel which corresponds to the number of stitches to the inch in the shoe. For the purpose of facilitating the setting of the block N at the right inclination I provide an indicating-arm Q, which is pivoted to the framework at the point Q'. This arm Q carries a contact-point Q^2, which is adapted to be held in contact with the under side of an extension N^4 of the block N by means of a spring Q^3. The arm Q has an indicating-finger Q^4, extending through the framework to the outside. It is obvious now that as the block N is tilted the arm Q will be swung in a radius upon its pivot Q', and the outside of the framework having a graduated scale marked thereon the number of stitches to the inch will be indicated by the finger Q^4.

The operation of the machine is as follows: It being first determined how many stitches the shoe to be operated upon has to the inch, the block N is then tilted so that the indicating-hand points to that number of stitches, and then the shoe is placed in contact with the roller K and the upper in contact with the guide J. Then when the power is applied the tool I will descend and indent the welt or sole between two stitches. At the same time as the tool is descending the lever M will draw back the pawls P the distance previously regulated by the inclination of the block N, and then as the tool I is raised the lever M will be caused to descend and one of the pawls P will engage just a sufficient number of teeth in one of the ratchet-wheels to revolve the shaft K' and the roller K the proper distance

so that when the tool I again descends it will again indent exactly between the stitches. The number of teeth in the different ratchet-wheels are arranged so that all the above number of stitches to the inch used in sewing shoes will be provided for.

Of course I do not wish to be limited to the exact construction here shown, as slight modifications could be made without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is—

1. In a sole-indenting machine, a reciprocating bar and means for actuating it, an indenting-tool adjustable in the slide-bar, a roller for feeding the shoe step by step alternately with the descent of the indenting-tool, ratchet wheels and pawls for rotating the rollers, means for permitting the operation of one ratchet-wheel independent of the others and means for indicating the distance the roller is actuated by the ratchet, substantially as described.

2. In a shoe-sole-indenting machine, an indenting-tool, a slide-bar to which the tool is secured, guideways for the slide-bar, a power-shaft, a pitman journaled eccentrically on the power-shaft, a lever pivoted at one end of the main frame, a pitman to which the opposite end is connected, a guide for the shoe, a feeding mechanism, means for regulating the feed and for indicating same, substantially as described.

3. In a machine of the character described, a suitable framework adapted to support the operating parts of said machine, an indenting-tool, a slide-bar in which said tool is secured, means for adjusting said tool vertically within said slide-bar, guides arranged upon the framework for guiding said slide-bar, a power-shaft, a pitman journaled eccentrically upon said power-shaft, a lever pivoted at one end to the main frame, and at its other end to the pitman, a pivotal point arranged between two ends of the lever to which the slide-bar is connected, said lever adapted to be composed of two parts pivoted together, each of the parts having a limited movement relative to the other part, means for regulating this movement, a guide against which the upper of the shoe is adapted to be held, means for adjusting said guide as to both vertical and horizontal positions, a spring connected to said guide against which the pressure is adapted to be exerted, a roller upon which the shoe is adapted to be held, means for revolving said roller a predetermined distance when the pricking-tool is raised, means for regulating the distance the roller is revolved, and means for indicating such distances, substantially as described and for the purpose specified.

4. In combination with a machine of the character described, an automatic feeding mechanism consisting of a roller upon which the shoe is adapted to be held, a shaft to which said roller is secured, a series of ratchet-wheels secured upon said shaft, each of said series of ratchet-wheels being provided with a different number of teeth to the inch, a series of pawls, one for each of the ratchet-wheels, means for causing the pawls to engage the ratchet-wheels to engage the teeth of the same, springs adapted to hold the pawls in engagement with the teeth, a common lever to which all of said pawls are pivoted, means primarily actuated by the power-shaft to cause said pawls to rotate a predetermined distance concentric with the ratchet-wheel, means for regulating the distance of rotation of the pawls concentric to the ratchet-wheels, and means for indicating at what feed the machine has been set, as and for the purpose specified.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

AUGUST OLSON.

Witnesses:
H. B. HALLOCK,
L. W. MORRISON.