W. WELLS.

LASTING MACHINE.

No. 28,120. Patented May 1, 1860.

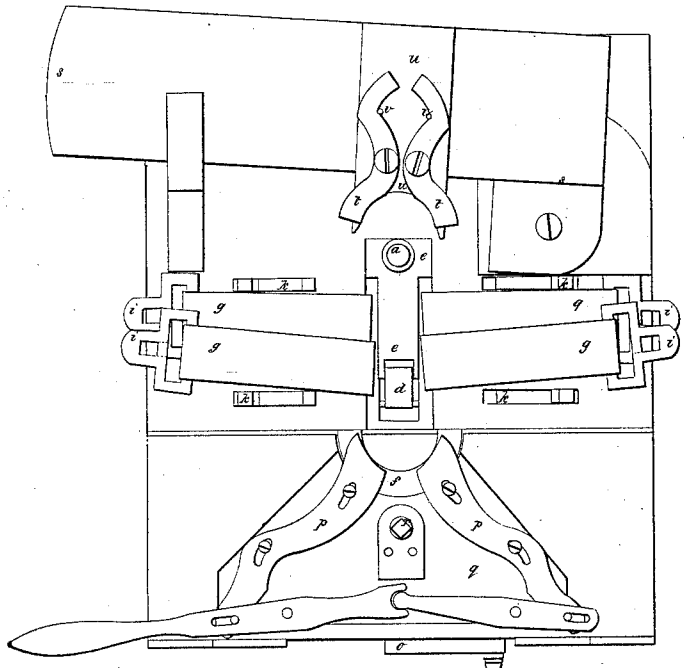

Fig. 1.

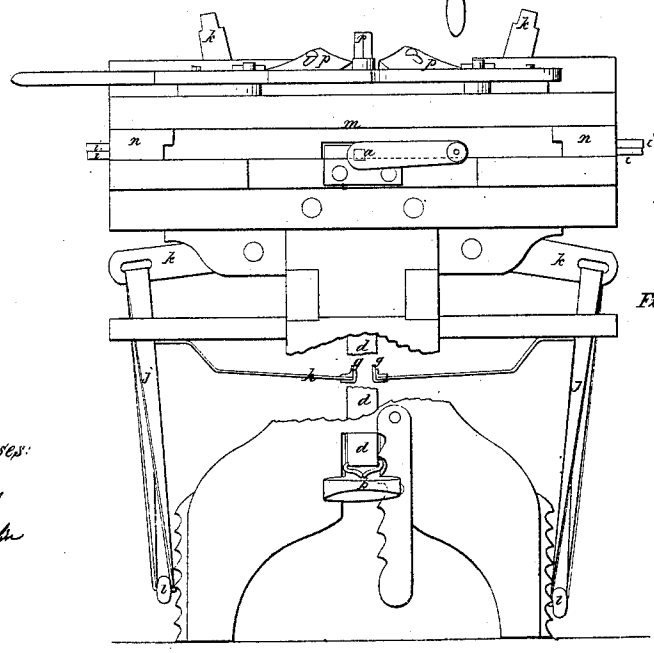

Fig. 2.

Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM WELLS, OF BOSTON, MASSACHUSETTS.

LASTING-MACHINE.

Specification of Letters Patent No. 28,120, dated May 1, 1860.

To all whom it may concern:

Be it known that I, WILLIAM WELLS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Machines for Lasting Boots and Shoes, Which Machines are Commonly Known as "Lasting-Machines;" and I do hereby declare that the following, taken in connection with the drawings which accompany and form a part of this specification, is a description thereof so full and exact as to enable those skilled in the art to practice my invention.

Figure 1, is a plan, and Fig. 2, an end elevation of a "lasting machine" embodying my invention.

In this machine the last, which has a hole bored into it for the purpose, is slipped upon the pin (*a*) after having the vamp and inner sole attached to it as is usual in preparing boots or shoes by hand. This pin is fixed in a pivoted lever (*e*), so that by means thereof and the strap (*d*) and the treadle (*b*) the toe of the last is thrown upon the elastic bed (*f*) in such a way as to draw the vamp well upon the toe part of the last. The last and the parts upon it now being fixed rigidly in position the vamp is drawn up and over the inner sole along the sides by means of the straps (*g* and *g*). These straps are made fast by one end, below the last, to springs (*h*), and have couplings (*i*), at their opposite ends, by which they can be connected with the bent levers (*k*). These levers are pivoted, as shown in the drawings, and their upper ends, to which the straps (*g*) are connected, are made to recede from the center of the machine by means of the connections (*j*) and levers (*l*) or their equivalents. The action of these straps (*g*), which in width and number may be made to vary to suit the requirements of the shoe or boot to be lasted, is as follows: The levers (*k*) on the opposite side to that part of the projecting vamp which it is desired to pull well up on the last, and over upon the inner sole, are brought over toward the shoe and the couplings (*i*) of the straps (*g*) on the opposite side of these levers are slipped over their ends, then, by the depression of the lever (*l*), the levers (*k*) are thrown backward from the shoe drawing the straps (*g*) over the face of the inner sole. The yield of the spring (*h*) and the hug of the straps (*g*) against the vamp draws the latter over the last toward the sole, to which it is secured by pegs or tacks at the intervals between the straps and in openings which may be made in the straps for that purpose. The vamp on the opposite side is similarly acted upon by the other set of straps, and it will be obvious that the whole of the lasting may be performed all around the shoe, including the toe and heel, by a similar arrangement, but which may not perhaps be so convenient for that purpose as the means described below.

It should be observed that the elastic toe bed (*f*) should be made adjustable toward the last pin (*a*) for the purpose of conforming to different lengths of lasts. This is accomplished by making the piece (*m*), to which (*f*) is fixed, capable of moving backward from, and toward (*a*), like a slide or carriage in ways (*n*), by rotating the screw (*o*). The slides (*p*), which by means of the levers and curved or cam shaped slots and pins, clearly shown in the drawings, are brought forward and toward the center of the toe, crimping or lasting the projecting part of the vamp at this part over and down upon the inner sole, are arranged upon a block (*q*) which is capable of being adjusted in height upon (*m*) by the screw (*r*), thus raising or depressing the slides (*p*) so that they may conform to any thickness of toe whether caused by the varying thickness of the inner sole used, or by the fashion of the last.

The adjustment in height just described I do not apply to the device shown for lasting the heel part of the vamp, (although this might be done) because the height of the heel is easily adjusted by washers under the last around pin (*a*). The detail of the mechanism for crimping or turning over the heel part of the vamp differs from that described for the toe, although its operation upon the leather is the same. The lever (*s*) is so pivoted to the frame work of the machine that it may be swung toward or from the shoe. The pieces (*t*) correspond in purpose to the slides (*p*) and are pivoted to (*s*). Beneath (*t*) and in (*s*) a slide (*u*) is so placed that it will strike against the rear of the shoe, and be stopped thereby, as (*t t*) are brought forward by the movement of (*s*); further movement of (*s*) in the same direction causes a movement of (*w*) relative to (*s*) which causes the pins (*v*) fixed in (*u*) to operate on the inclined end of (*t t*) so as to

close them toward the center of the heel by the continued advance movement of (*s*). When (*t t*) are withdrawn by (*s*) from the shoe, a spiral spring concealed beneath (*w*) returns it to its normal position and leaves (*t t*) free to be spread apart ready for action as before described.

I am aware that movable slides have been, prior to my invention, employed to turn over the projecting part of the vamp upon the inner sole and I am also aware that such slides have been so made as to converge in operating upon the toe and heel parts, therefore I distinctly disclaim the invention of plain or converging slides broadly or their combination with lasting machines, but I am not aware that prior to my invention such slides have been provided with means of adjustability in height or that the peculiar devices employed by me to produce the convergence of the slides have been used.

What I claim as of my invention and desire to secure by Letters Patent of the United States is—

1. The combination in a lasting machine of a holding mechanism for the purpose of holding the last and the materials thereon with the lasting straps (*g*) (*g*) when these are combined with yielding springs (*h*,) (*h*,) or are elastic in themselves and are arranged to operate on the vamp of a boot or shoe substantially as specified.

2. Also the combination and arrangement in a lasting machine of converging toe and heel slides or both with yielding or elastic lasting straps.

3. Also in combination with converging toe or heel slides the block (*q*) carriage (*m*) and screw (*r*) or its equivalent for the purpose set forth.

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Witnesses:
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