(No Model.) 2 Sheets—Sheet 1.

T. O'BOLGER.

LASTING MACHINE.

No. 489,031. Patented Jan. 3, 1893.

Fig. 1.

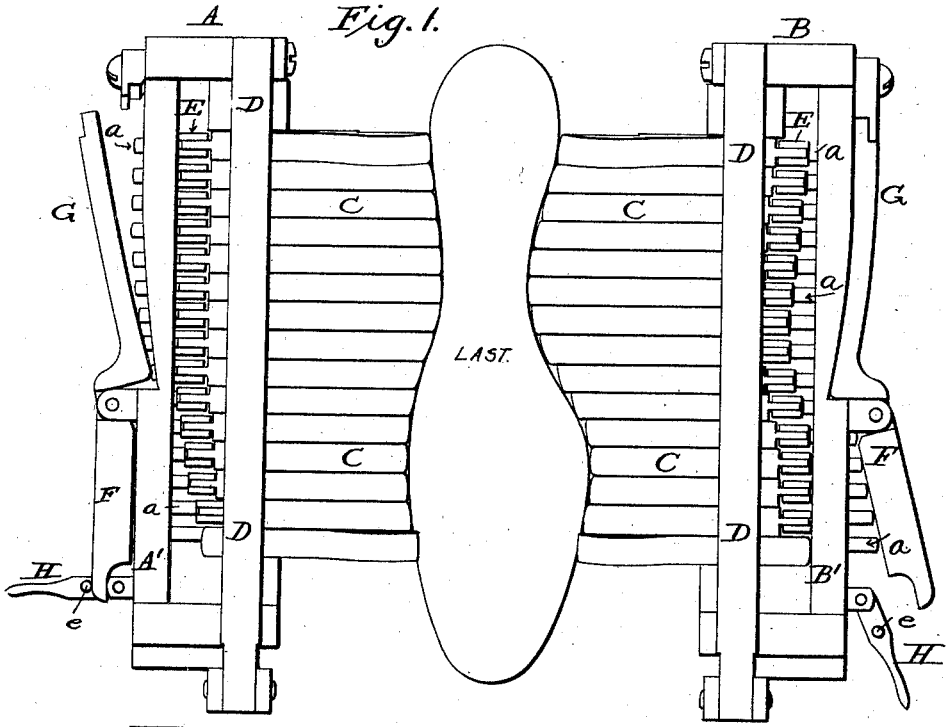
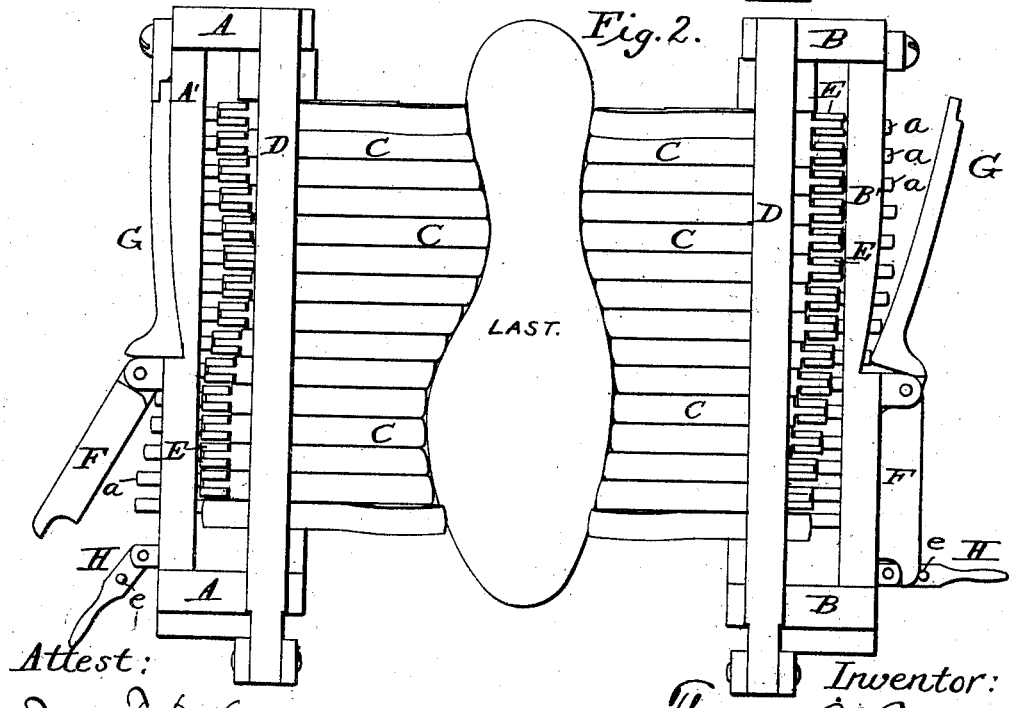


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

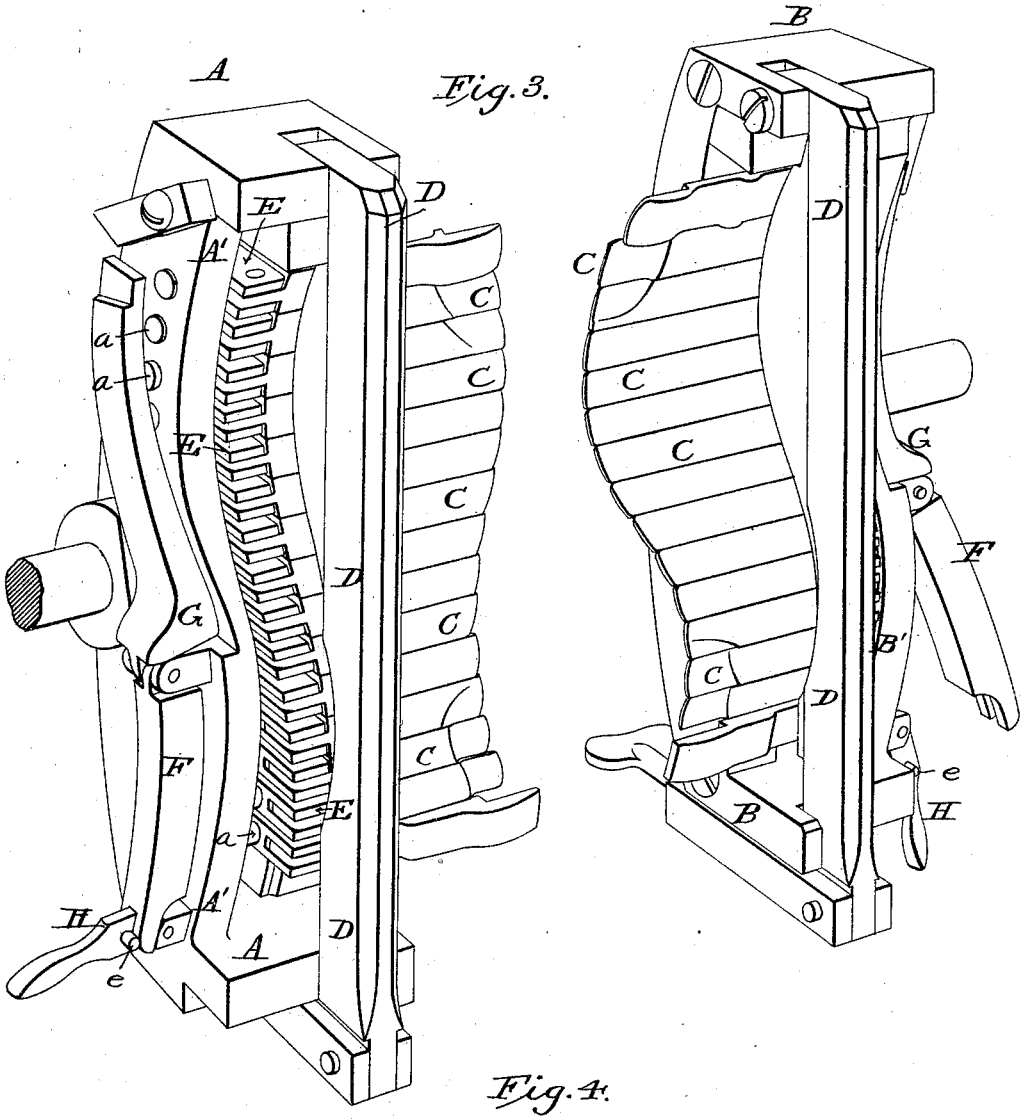
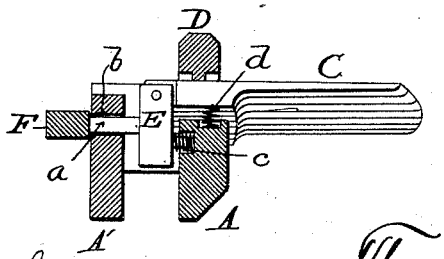


Fig. 4.



Attest:
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Inventor:
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UNITED STATES PATENT OFFICE.

THOMAS O'BOLGER, OF ROCHESTER, NEW YORK, ASSIGNOR TO WILLIAM S. KING, OF MINNEAPOLIS, MINNESOTA.

LASTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 489,031, dated January 3, 1893.

Application filed August 6, 1888. Serial No. 282,029. (No model.)

To all whom it may concern:

Be it known that I, THOMAS O'BOLGER, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Lasting-Machines, of which the following is a specification.

My invention relates to that class of lasting machines in which jaws provided with blades or fingers are caused to advance toward the last and to lay or fold the edges of the upper inward upon the last or upon the sole or insole placed thereon, according to the class of work being performed.

The invention consists in a jaw having longitudinally adjustable blades or fingers, which by reason of such adjustment may be quickly set to operate in connection with a right or a left last as required.

It further consists in various features and details of construction designed for the more effective and convenient attainment of the object stated, as hereinafter set forth.

In the accompanying drawings,—Figures 1 and 2 are face views illustrating the general construction and mode of adjustment of my improved jaws; Fig. 3 a perspective view of the jaws; Fig. 4, a cross section showing certain details of construction.

Under all prior constructions of machines of this class, so far as I am aware, it has been necessary when changing from a right to a left, or from a left to a right last, to make a like change of the jaws by which the upper is folded over and laid upon the sole or insole. My purpose is to obviate this necessity which I do by so constructing the jaws that the folding blades or fingers may be adjusted in each jaw to act upon either a right or a left last as required,—and the construction by which this desirable result is attained is so simple and the adjustment is so quickly and easily effected that a very considerable saving in time results, as well as a material reduction in cost. The extra jaws hitherto necessary are dispensed with and the space required for storing them is no longer required.

The essential feature of the invention consists in constructing the blades or fingers to move longitudinally so that the outline described by their outer extremities may be varied to conform to the contour of the particular last to be used,—and so long as this feature of construction is retained the other details of construction may be varied considerably. Thus, while it is preferred to employ levers to move and hold the blades or fingers to and in their different positions, screws, wedges, or other equivalent devices may be employed for the purpose.

Referring again to the drawings I will describe the embodiment of my invention therein illustrated, which is the preferred form.

A, B, indicate the usual stock or bodies of the jaws constituting the ordinary pair,—C the blades or fingers carried thereby, which serve to fold or lay the upper upon the sole or insole on the last, and D formers, bearing upon the fingers and serving to bring them to and retain them in proper adjustment or position to conform to the curvature of the last in a vertical plane, assuming the last to be resting with its sole upon the floor. This former *per se*, is not herein claimed as it is, broadly considered, the invention of another,—but in its combination with longitudinally adjustable fingers or blades it is believed to be new and is so claimed by me.

E indicates a metal block, of which I provide a series, and each of which carries one of the blades or fingers C, said blades being preferably but not necessarily pivoted or jointed to the blocks, as shown. When not thus jointed, the fingers or blades are to be made elastic, as it is important to provide for the yielding thereof separately and independently. Each block E is formed with a stem or tang *a*, which is advisably of cylindrical form as shown in Fig. 3, to permit the blocks and consequently the blades or fingers to rock or tip laterally and thus to adapt themselves more perfectly and readily to the contour of the last. Each stem or tang *a* passes freely through a hole *b* in its stock or body A or B, and is free to move longitudinally and to turn about its axis therein, springs *c* being advantageously interposed between the front or inner face of the block and a fixed bar A′ or B′ of the stock, as illustrated in Fig. 4, to urge the block with their blades or fingers backward or away from the last. When, as is ordinarily the case, the fingers or blades are

joined or hinged to the blocks E, springs *d* are placed beneath them, their lower ends resting upon the bar A′ or B′, and their upper ends bearing against the blades or fingers and serving to hold them up in contact with the depressing former D. The particular form and construction of the blades or fingers themselves may vary, being entirely immaterial to the present invention. The stems or tangs *a* of the several blocks E are of a length sufficient to project through the holes *b* and some distance beyond the outer face of the stock or body in which said holes are made, being normally forced and held back to such protruding position by the springs *c* above mentioned.

Pivoted to suitable lugs or supports on the outer face or the stock or body A′ or B′ is a lever, one or more, which may be moved inward against the stems *a* or any number thereof, to move forward said stems and the blades or fingers which they carry.

In the drawings I have shown, and in practice I prefer to use two such levers F and G for each jaw, the lever F to control those blades or fingers which act upon the upper at the ball and forward part of the last, and the lever G to control those which act upon the upper at the hollow or arch of the last. The purpose and effect of these levers will be readily understood upon referring to Figs. 1 and 2,—Fig. 1 showing the blades adjusted for a left hand last, and Fig. 2, showing them adjusted for a right hand last. In the first of said figures the lever G of jaw A is shown released and thrown back, leaving the blades or fingers controlled by it free to recede and thereby to adapt themselves to the comparatively straight line of the outer side of the last, and the lever F of said jaw A is thrown in and locked to set and hold the blades or fingers which act upon the forward part of the outer side of the last, up to their proper working position. The levers F and G of jaw B, are set in just the reverse way from those of jaw A, that is to say lever F is released and thrown outward, while lever G is thrown inward and locked, thereby setting and holding the fingers or blades to act properly upon the last along the sharply curved inner side.

Any simple and convenient device may be employed to hold the levers F, G, when thrown inward; thus I have shown a swinging lever H to enter a slot in the end of lever F and furnished with a cross-pin *e* to pass over its top or outer face,—while for lever G I have shown a simple turn button. As before stated, one, two or more levers may be used with each jaw. It will also be apparent that the two levers F, G, may be combined into one and the adjustment of the blades thereby simplified, because when one lever is thrown inward the other is (under ordinary circumstances) to be thrown outward, and if the two be made integral the rocking of the double lever will move one end inward as the other is moved outward, and vice versa. It will also be seen that sliding wedges, cams, screws and other well-known equivalents of the levers may be substituted therefor, but this cannot be done advantageously. On the contrary I deem such devices the inferior mechanical substitutes for the levers.

I am aware that the fingers or blades of lasting jaws have been made independently adjustable, longitudinally vertically and laterally, and provided with set screws for holding them at the desired longitudinal and vertical adjustments. I however believe myself to be the first to conceive the idea of instantly and simultaneously shifting a group or series of such fingers or blades from one definite adjustment to another, and the first to devise any means of accomplishing such result.

Having thus described my invention what I claim is,—

1. In combination with the stock or body of a side jaw of a lasting machine, a series of folding blades or fingers each capable of longitudinal adjustment independently of the others, and levers (one or more) located in rear of the blades or fingers and serving to advance them and to hold them in their advanced positions.

2. The combination with the stock or body of a lasting-machine jaw, of a series of longitudinally adjustable fingers or blades carried by said jaw, and independent springs acting directly upon the fingers and serving to recede each finger when released or made free to recede.

3. In combination with the stock or body of a lasting-machine-jaw, a series of longitudinally adjustable fingers or blades having stems or shanks extending through said stock or body, and a lever pivoted to the stock or body in line with the protruding rear ends of the fingers and adapted to be moved toward or from the same and thereby to advance, or to permit the recession of the blades or fingers, whereby their forward ends are caused to form a curved line conforming to the curvature of one or the other side of a last.

4. In combination with the stock or body of a lasting-machine jaw, a series of longitudinally movable fingers or blades carried thereby, springs serving to move the fingers or blades in one direction, and levers serving to move them in the reverse direction.

5. In combination with the stock or body of a lasting-machine jaw, a series of longitudinally-adjustable blades or fingers, a lever or levers for moving said blades or fingers, and locking devices for holding said levers in a determinate position.

6. In combination with the stock or body of a lasting-machine jaw, a series of yielding and longitudinally adjustable fingers or blades means for so adjusting the blades and a continuous former bearing upon said blades and serving to bring them simultaneously and instantly to proper adjustment.

7. The combination with the stock or body of a lasting-machine-jaw, of a series of blades

or fingers each free to turn laterally and also capable of independent longitudinal adjustment, means for so adjusting the blades and a former bearing upon the blades or fingers and serving to bring them into conformity with the curvature of the sole of a last.

8. In a lasting-machine jaw, the combination with the stock or body, of a series of blades or fingers adapted to rock or turn independently in a lateral direction and a continuous former extending over and bearing upon the several blades or fingers and serving to bring them to proper adjustment.

9. In combination with the stock or body of a lasting-machine jaw, a series of blocks mounted and free to turn therein, a series of yielding blades or fingers carried by said blocks, springs *d* bearing against said blocks and tending to hold them back, a former bearing upon the blades or fingers, and a lever or levers bearing upon the rear ends of the fingers and serving to move a portion of them forward.

10. A pair of lasting-machine jaws, each jaw provided with a series of fingers capable of independent longitudinal adjustment, levers for advancing the blades or fingers, and locking devices for holding said levers in their adjusted position; whereby said jaws may be readily adjusted to operate upon a right or a left last at will.

In witness whereof I hereunto set my hand in the presence of two witnesses.

THOMAS O'BOLGER.

Witnesses:
E. S. COMBS,
H. M. GOODHUE.