No. 5,063.

PATENTED APR. 17, 1847.

B. LIVERMORE & N. F. ENGLISH.

MACHINE FOR BOOT LASTING.

Fig. 5

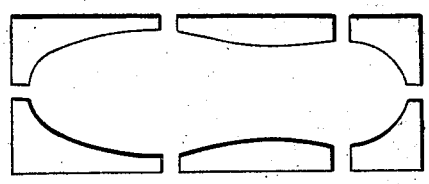


Fig. 4.

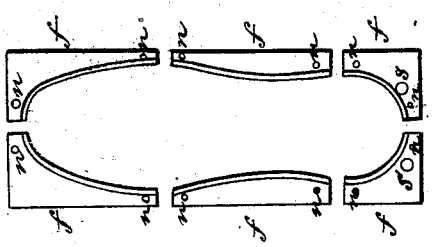


Fig. 3

Fig. 2

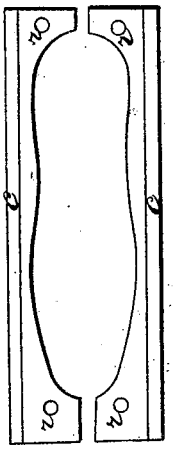
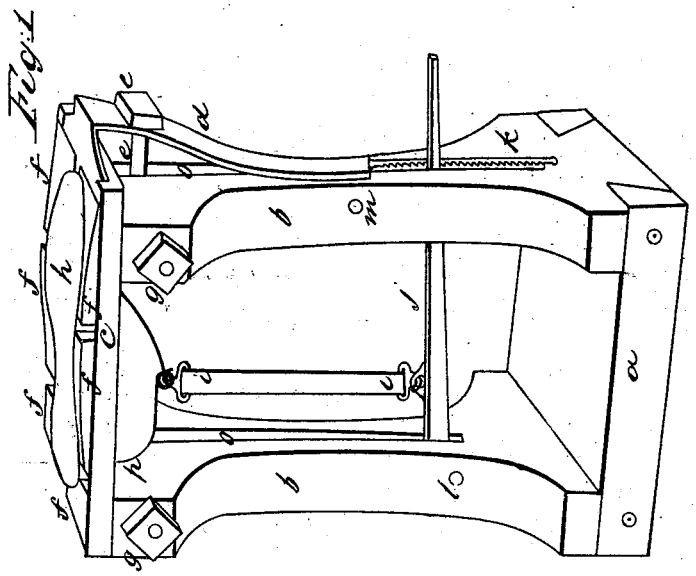


Fig. 1



UNITED STATES PATENT OFFICE.

BENJAMIN LIVERMORE AND NATHAN F. ENGLISH, OF HARTLAND, VERMONT.

MACHINE FOR BOOT-LASTING.

Specification of Letters Patent No. 5,063, dated April 17, 1847.

To all whom it may concern:

Be it known that we, BENJAMIN LIVERMORE and NATHAN F. ENGLISH, both of Hartland, in the county of Windsor and State of Vermont, have invented a new and useful machine for lasting boots and shoes and for adjusting the outer sole and heel-taps of the same to their proper places, respectively, and for retaining the outer sole and heel-taps in their proper places for pegging, called a "Lasting-Machine"; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the machine. Fig. 2, is a top view of two cast-iron plates attached to the standards *b*, *b*, Fig. 1 by screws passing through said plates at the points marked *r*, into the standards *b*, *b*, Fig. 1, and designed to contain the lasting form represented by Fig. 4. These plates same as *c* Fig. 1. Fig. 3 represents an end view of the same two cast iron plates showing the side grooves used to confine the shank and toe pieces of the lasting form in their proper places. Fig. 4 represents a top view of the lasting form, which is composed of six cast-iron pieces. These, when in place, are held in their places by the two cast-iron plates *c*, *c*, Fig. 2. The heel pieces of this form should be firmly fixed in their places respectively on the heel end of the plate *c*, *c*, Fig. 2, by wood screws passing through them at the points marked *s*, *s*, and the cast-iron plates *c c* Fig. 2 into the standards of machine, marked *b b*, Fig. 1. The shank and toe pieces of this form are made each with a tongue on the outer edge to fit the side grooves in the plates *c*, *c*, Fig. 2, in which they should move freely. This lasting form is marked *f f f f f f* in Fig. 1, where it is represented in its place. The inside of the lasting form is so shaped as to fit the sides of the last, and the top surface of the lasting form is so shaped as to correspond with the bottom of the last, and so that when the last is drawn into its place the inner edges of the lasting form and the outer edges of the bottom of the last, correspond. Fig. 5, represents a top view of the sole and heel form, composed also of six cast-iron pieces, and intended to be placed on the lasting form, and the pieces of the sole and heel form, are held in their places respectively, on the lasting form by dowels or steady pins, not represented in drawing but projecting from the under side of the pieces of the sole and heel form, and in position corresponding to the holes marked *n*, in the lasting form Fig. 4.

In Fig. 1, the letter *a*, represents the base of the machine. *b*, *b*, represents the standards, on which the cast-iron plates *c*, *c*, Fig. 2, are placed and firmly fastened by wood screws passing through said plates into each division of each standard. These standards are made of convenient height, of wood, and are firmly framed into the base *a*. In each standard there is an opening or slot extending from the top to near the base, this opening, is marked *o*, and divides each standard into two parts, or divisions. This opening should be at the top somewhat wider than the difference in width of lasts used in machine, and the divisions in each standard are so cut away on their outer edges respectively and as represented in drawing Fig. 1, as to be made sufficiently elastic to be easily bent or sprung inward toward each other, by action of nuts or thumb screws *g*, *g*, Fig. 1, thus contracting the width of space between plates *c*, *c*, and consequently the width of the lasting form to the width of last required.

d, represents a spring so bent or curved, that while the lower end, being wider than the opening or slot in standard, lies flat on the standard, to which it is firmly attached, the upper end, in its natural position, recedes from the standard, outward, about three inches. This spring is attached to the standard by a pin marked *m*, passing through the standard, and a tenon extending from the spring into the opening or slot *o*. This spring at its upper end and at a point on a level with the lasting form is bent into a horizontal position and is made as wide at the end as the ends of the two toe pieces of the lasting form, against which it is made to press by action of the screw *e*, *e*, for the purpose of pressing inward the toe pieces of the lasting form, moving easily in the side grooves of the plates *c*, *c*, thus contracting the length of the lasting form to the length of last required.

e, *e*, represents a screw, with head passing through the spring *d*, near its upper end, through the opening or slot in the standard into the bolt *g*. This screw is used

to draw inward the upper end of the spring *d*, and thus to contract the length of the lasting form, (against which the spring presses,) to the length of last required.

f, *f*, *f*, *f*, *f*, *f*, represent the lasting form in its place on, and within, the plates *c c*, within which the shank and toe pieces of the lasting form are held in their places by the tongues on their outer edges moving freely lengthwise in the side grooves of the plates *c c*. The pieces of the lasting form should be in length such, that when pressed together the length of the lasting form, will correspond with that of the shortest last used in the machine.

g, *g*, represent bolts passing through the standards. These bolts have each a nut or thumb screw on each end by means of which the parts or divisions of each standard are drawn together in the manner and for the purpose herein before described, that is to say, for the purpose of adjusting the width of the lasting form, to the width of last required.

h, represents the last in its place, in the lasting form. The heel of the last rests firmly in a niche cut into its corresponding standard at *p*, for this purpose.

i, *i*, represent a strap long enough to reach from the last, *h*, to the lever, *j*, to each of which it is attached by a hook and eye.

j represents a lever fixed at one end in the opening of the standard at the heel of the last by the pin, *l*. The other end of the lever should play freely up and down in the opening or slot of the other standard.

k represents a ratchet screwed firmly to the standard, and so that the teeth extend partly over the opening or slot, and is used to hold the lever at any point of depression to which it may be forced.

The machine being constructed as before described, and as represented by the annexed drawings, see Figs. 1, 2, 3 and 4, and put together as represented by the drawings in Fig. 1 the width of the lasting form is adjusted to the width of the last to be used by the nuts or thumb screws, *g*, *g*, and the length of the lasting form is adjusted to the length of the last to be used by the screw, *e*, *e*, and both in relation to width and length of last. The lasting form is to be adjusted so closely to the last as to allow the upper leather of the boot or shoe (to be lasted) to fit tightly between last and the lasting form. Then the upper leather of the boot or shoe, to be lasted, being wet, is placed on the last and fixed in its place on the same at the heel by a tack. The last is then placed in the lasting form, and by means of the lever and light rapping with a hammer it is forced down into its place in the lasting form and thus the upper leather of the boot or shoe, to be lasted, is drawn tightly on to the last by means of friction between the leather and the lasting form, and thus the boot or shoe is lasted tightly and smoothly. The edges of the upper leather are then hammered down on the inner sole flatly, and the sole and heel form, being of shape and size of sole of the boot or shoe, lasted, and forming as it were a mold for it, is then put into its place on the lasting form, where it is firmly held and retained by means of dowels or steady pins, extending from its lower side into corresponding holes in the lasting form. The outer sole being cut into proper shape is placed within the sole and heel form by which the sole is adjusted to, and held in, its proper place in perfect readiness for pegging. The heel taps or lifts, being also cut into proper shape are placed in their places and there held, in a manner similar to that of the sole, by the heel part of the sole and heel form, and in readiness for pegging.

What we claim as our invention is—

The adjustable frame for lasting boots and shoes, consisting of the sliding adjustable plates and the frame upon which they slide and in combination therewith the adjusting spring and cross piece attached thereto, the whole being operated and employed substantially in the manner described.

BENJAMIN LIVERMORE.
NATHAN F. ENGLISH.

Signed in presence of—
SAM. H. PRICE,
J. M. THORNDIKE.