(No Model.)

W. E. SARGENT.

RELASTING MACHINE.

No. 385,376. Patented July 3, 1888.

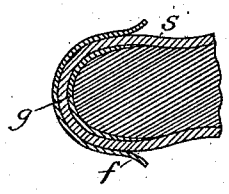


Fig. 2.

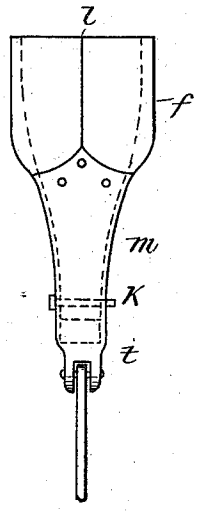


Fig. 3.

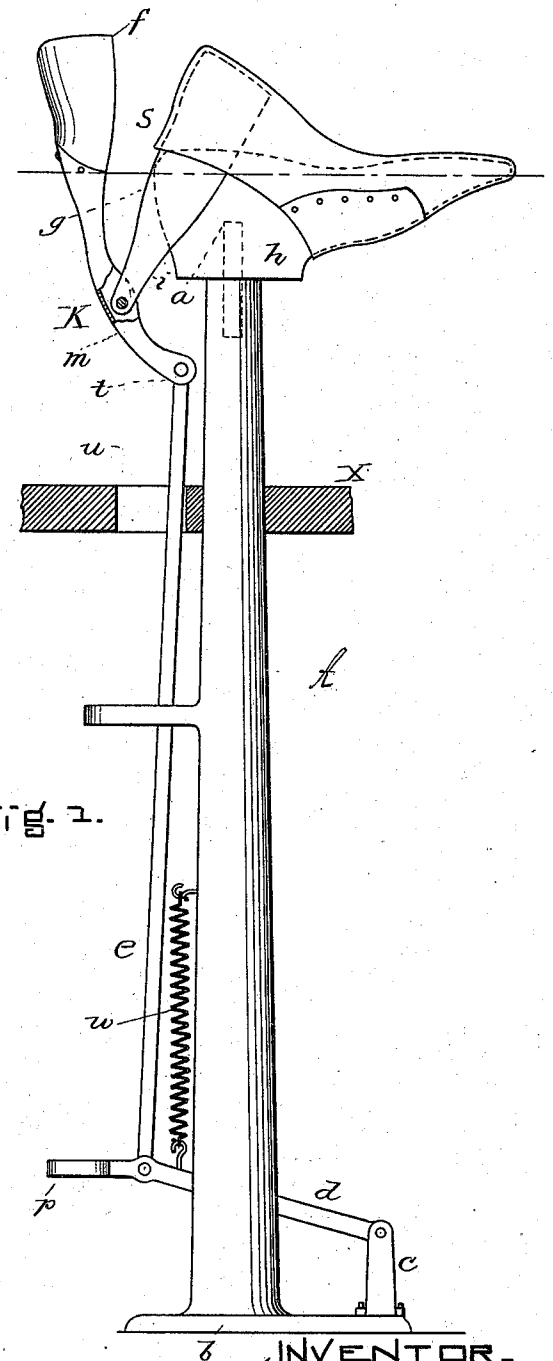


Fig. 1.

WITNESSES.

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UNITED STATES PATENT OFFICE.

WARREN E. SARGENT, OF NEWBURYPORT, MASSACHUSETTS.

RELASTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 385,376, dated July 3, 1888.

Application filed December 2, 1887. Serial No. 256,769. (No model.)

To all whom it may concern:

Be it known that I, WARREN E. SARGENT, a resident of Newburyport, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Relasting Mechanism, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of my invention is to provide a mechanism by the use of which a turned boot or shoe can be relasted with more speed and less damage to the quarters and stiffeners thereof than by the hand process. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the relasting-post, showing the last in position and the shoe in readiness to be drawn thereon by the action of the mechanism; Fig. 2, a sectional top view of the relasting-horn and its auxiliary grasping the heel of the shoe; and Fig. 3 is a view of the outer or convex side of the auxiliary horn, showing the mode of its construction.

Like letters refer to similar parts throughout the different views.

A, Fig. 1, represents a relasting-post provided with a short upright projecting bar, *a*, which keeps the last *h* in position, as shown. Its lower end is fitted in an iron shoe, *b*, which, being secured to the floor, keeps the post A firmly in position. The rear end of the shoe *b* terminates in an upright post, *c*, to which is pivoted the treadle-lever *d*, to which is pivoted, near the front end, the lower end of the upright connecting-bar *e*, the upper end of which is pivoted to the auxiliary horn *f* in such a manner that when the relasting-horn *g* is placed in the shoe *s* for the purpose of drawing it on the last *h* it will be in the position shown at *f*, and when the pressure is applied to the upright connecting-bar *e* to draw the shoe *s* on, it will be brought forward and, in conjunction with the relasting-horn *g*, grip the shoe *s* at the base of the heel-stiffener.

The relasting-horn *g* may be made of sheet-steel or any other suitable material, but must be made in such form that its upper end will fit closely to the heel of the last *h*, its sides extending inward the depth of the heel-stiffener. Its lower end terminates in a straight shank, *i*, the extreme end of which is drilled to receive a pivot, *k*. (See *k*, Figs. 2, 3.) The auxiliary horn *f* is made of the same material and in the same form, except the allowance to be made for the thickness of the stiffener and a slight outward curve of the upper side edges, (see *f*, Fig. 2,) and its inner surface burnished, that it may not chafe the upper of the shoe *s* while being drawn over its exterior surface, and is provided with a central perpendicular slot, *l*, Fig. 3, which reaches from its top end to the tip of the shank *m*, to which it is secured in such a manner that it may be removed, if so required, without affecting the other working parts.

The top end of the shank *m* terminates in a thin flange, to which the auxiliary horn *f* is secured, as explained. Its sides are provided with recesses of such proportion that the shank *i* of the relasting-horn *g* may be pivoted therein, as shown at *k*, Figs. 2, 3. Its lower end curves inward and is pivoted to the upright connecting-bar *e*.

The auxiliary horn *f* is intended to press out the creases in the stiffener and packers in the upper and lining of the heel caused by the turning of the shoe *s* right side out after it has been sewed, for which purpose it retains the pressure of its grip during the withdrawal of the lasting-horn *g*, the resistance of the pressure of the horns *f g* on its inner and outer surfaces tending at the same time to draw the shoe *s* more closely on the last *h*, also to bring the said parts in such close contact that by means of the paste spread over the stiffener they will become as one solid piece, and it must be pivoted to the relasting-horn *g* in such proportion that when closed their top marginal edges will touch, leaving a space of one-quarter of an inch between their lower marginal edges. This is done to insure the heaviest pressure of their grip at the base of the stiffener. The slot *l*, Fig. 3, is intended to increase its pliancy, that it may adapt itself more readily to the different sizes of shoes and that its grip may have the required elasticity to yield to any irregularities in the thickness of the stiffener or upper. It is made removable, because there are some grades of work that do not require its use and others in which it is essential. The pivot *t* must be in-

side of the line *u*, which is drawn through the pivot *k* parallel with the back of the auxiliary horn *f* to insure its grip, as when the pressure is applied it is communicated to the relasting-horn *g* by means of the pivots *t* and *k* and cannot be effective until the auxiliary horn *f* grips the heel, in which position it remains until the relasting-horn *g* is withdrawn, the pressure of the grip being equal to the resistance caused by the withdrawal of the relasting-horn *g*.

The treadle-lever *d* is furnished with a spiral spring, *w*, which is secured to the relasting-post A, and its front end terminates in a treadle, *p*.

In practice when the shoe *s* has been sewed, removed from the last *h*, and turned right side out it is replaced on a last and the stiffener, upper, and sole hammered smoothly into shape, which process is known in the trade as "relasting." To do this by the mechanism herein described, the shoe *s* is drawn over the toe of the last *h*, which is then placed on the projecting bar *a* of the relasting-post A, as shown at *a*, Fig. 1, and the treadle-lever *d* pressed downward, the first thrust of the operator's foot bringing the auxiliary horn *f* forward, as explained, when a further pressure draws the shoe *s* on the last *h* and the relasting-horn *g* out of the shoe *s*, leaving it in position on the relasting-post A for hammering out the sole, which being done, the relasting is completed and the pressure is taken from the treadle *p*, which, by the action of the spiral spring *w*, is lifted to its original position, when the shank *m*, acting as an intermediate link, enables the operator to place the relasting-horn *g* in any required angle necessary for its adjustment in the shoe *s*. To do it by the hand process, when the shoe has been drawn over the toe of the last, the workman, with the aid of a relasting-horn, pries the upper over the tip of the heel, and, holding the shoe in one hand, with a few smart blows of a hammer drives the last in, then with a zigzag movement draws out the relasting-horn, and with a pair of pinchers draws the upper farther over the heel of the last and beats out the creases and puckers, caused as explained, and, placing the shoe on a lasting-jack, hammers the sole to the required form, when it is removed and the upper, stiffener, and lining brought closely together with the aid of a rubbing-stick.

The improvement on this process by mine is that the upper, stiffener, and lining are equally drawn on the last *h* in such a manner as to make all parts of the heel solid, and by the downward drag of the mechanism the shoe *s* is drawn so firmly on the last *h* as to preclude all danger of spreading the base of the stiffener by the process of hammering out, and the relasting-horn *g* is withdrawn by a direct movement, thus avoiding the straining of the shoe *s*, which is left on the relasting-post A in position to be hammered out, thus doing with one thrust of the foot three distinct operations required by the hand process, also doing away with the need of the rubbing-stick.

It will be understood that the herein-described mechanism is exclusively intended and adapted for that class of work known to the trade as "turned" boots and shoes; also, that I do not confine myself to the particular arrangement of the parts forming the devices as herein explained, as there are other ways of arranging them to produce the same results, and also that by putting in connection with the upright bar *e* a properly-timed crank or cam wheel I can substitute mechanical for physical power; but I prefer the within-described as the cheapest, most simple, and least liable to be put out of repair by the usages of a workshop.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The herein-described relasting-machine for turned boots and shoes, which consists of a relasting-horn, *g*, and auxiliary horn *f*, with their co-operating mechanism, in combination with a relasting-post, A, constructed and adapted as and for the purposes specified.

2. In a relasting-machine for turned boots and shoes, the auxiliary horn *f*, with the slot *l* and shank *m*, or its equivalent, constructed and adapted as and for the purposes specified.

3. In a relasting-machine for turned boots and shoes, the relasting-post A, having a projecting shaft, *a*, and iron shoe *l*, with the boss *c* and the treadle-lever *d*, in combination with the spiral spring *w*, the connecting-bar *e*, auxiliary horn *f*, and relasting-horn *g*, constructed and arranged as and for the purposes set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 29th day of November, A. D. 1887.

WARREN E. SARGENT.

Witnesses:
WARREN E. SARGENT, Jr.,
WILLIAM DUCHEMIN.