L. Lackey,

Pegging Machine,

No. 21,051, Patented July 27, 1858.

Fig. 1

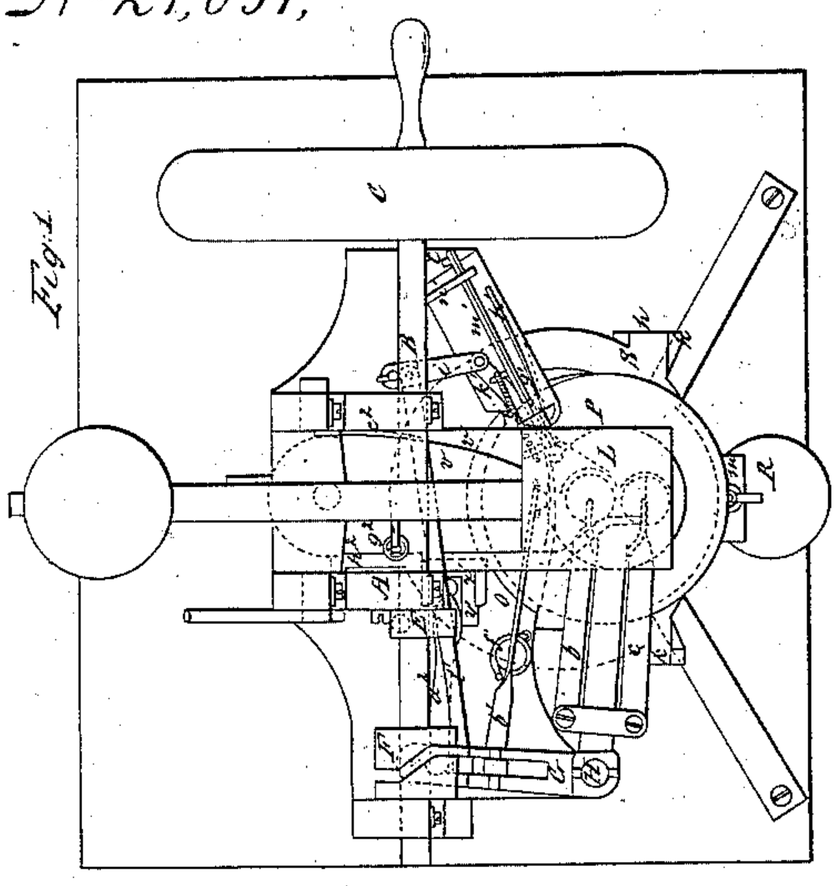


Fig. 5

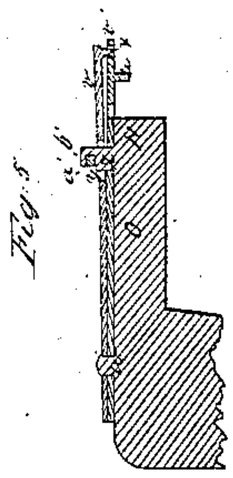


Fig. 9

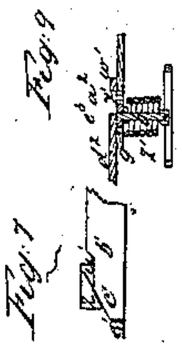


Fig. 8

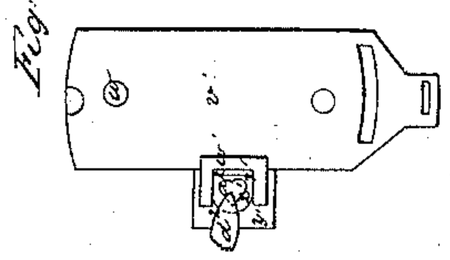


Fig. 7

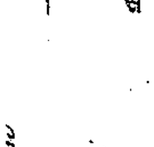


Fig. 4

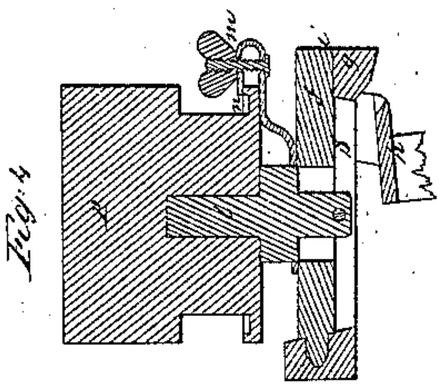


Fig. 6

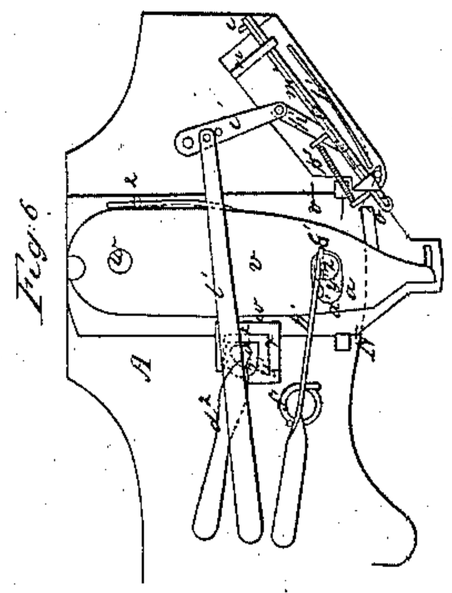


Fig. 3

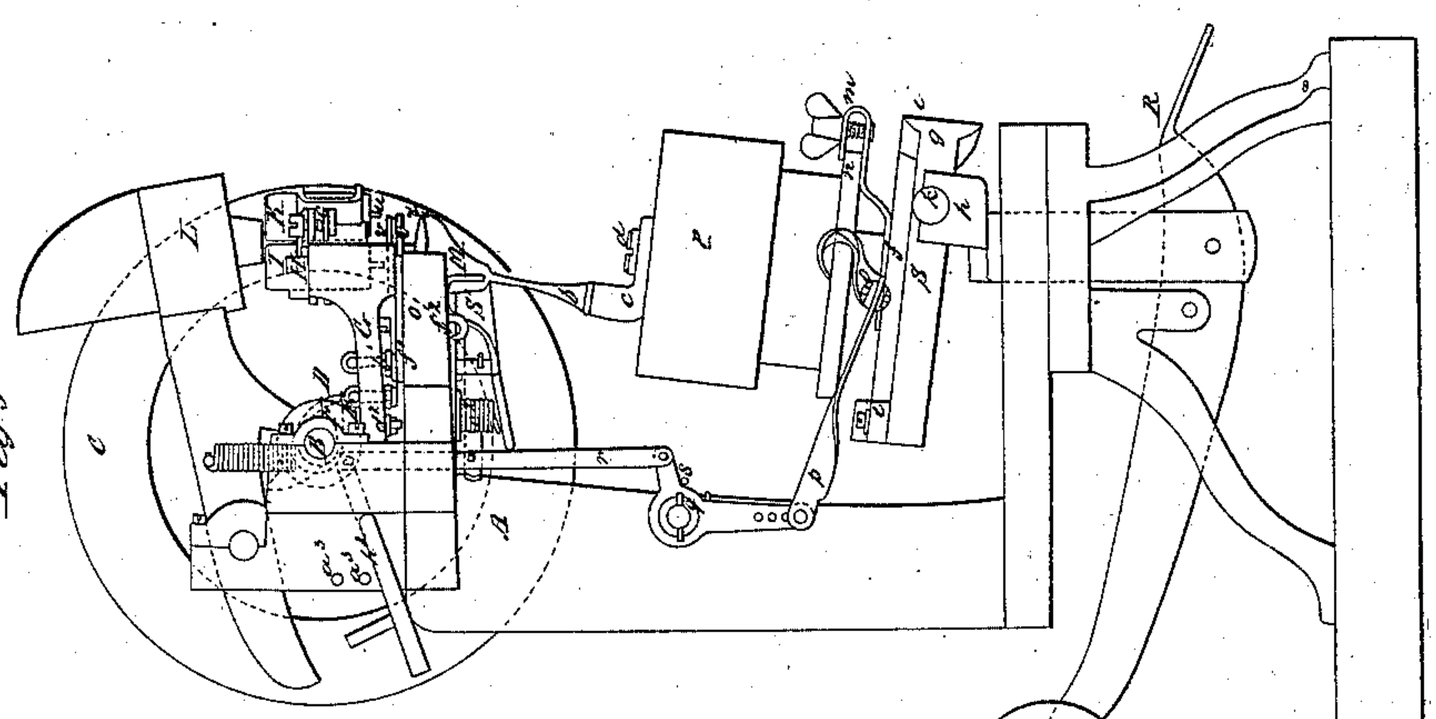
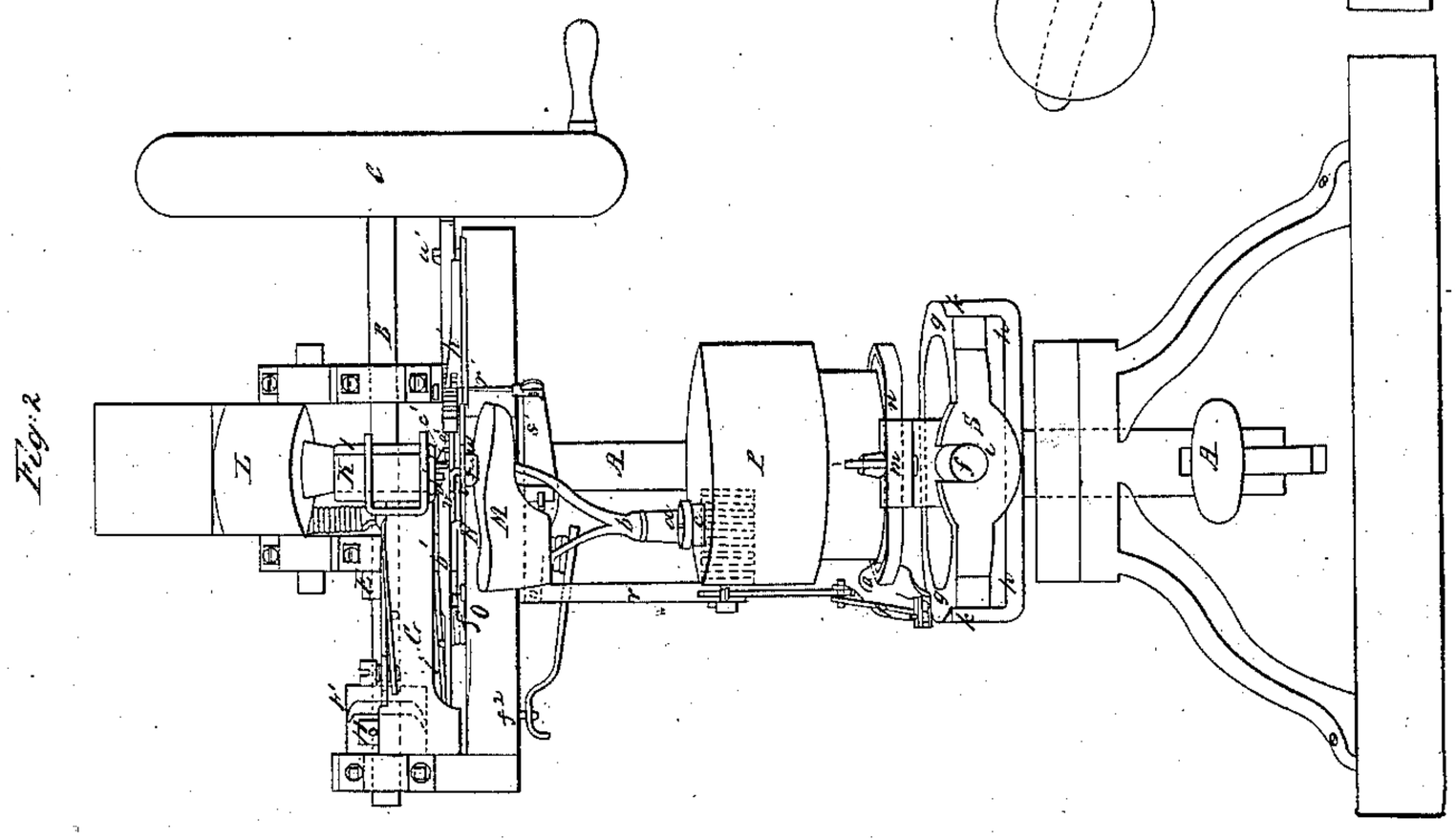


Fig. 2



UNITED STATES PATENT OFFICE.

L. LACKEY, OF SUTTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF, AND ELMER TOWNSEND, OF BOSTON, MASSACHUSETTS.

MACHINE FOR PEGGING SHOES.

Specification of Letters Patent No. 21,051, dated July 27, 1858.

To all whom it may concern:

Be it known that I, LEANDER LACKEY, of Sutton, in the county of Worcester and State of Massachusetts, have invented an Improved Machine for Pegging Shoes; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1, denotes a top view of such machine; Fig. 2, a front elevation of it; Fig. 3, a side elevation of it.

In this machine, the awl and peg driver are alternately presented to the action of a tilting or trip hammer, and for this purpose, both the peg driver and the awl are supported in one arm of a horizontal bent lever.

In the drawings, A denotes the frame or stand of the machine; B, is the driving shaft carrying a fly wheel C, and three cams D, E, F, the former of which is placed at the middle of the shaft, while the latter is a grooved cam, is arranged across one end of the shaft and operates the lever G, which turns on a fulcrum H, and carries the awl holder I, and the peg driver K. A projection from the rear arm of the lever G, enters a groove of the cam F. A spring *b* or *c*, is applied to the awl holder as well as to the peg driver, in order to elevate such after each blow of the trip hammer. This trip hammer is shown at L, it being operated in the usual way by the cam or wiper D.

The last for supporting the shoe to be pegged is seen at M, as pressed up against a rest or plate N, which projects from the bed or table, O, of the machine. The last is supported by a forked standard b^4, provided with a foot c^4, extended from it as shown in the drawings. This foot is placed on the top surface of a heavy block of iron or metal, P, which I term the "inertia block." In arranging the said foot on the inertia block, it is disposed between the center and the circumference of the same and is confined thereto by a screw *d*, extended through the foot and screwed into the block. By turning the foot on the screw, the standard b^4, may be made either to approach toward or depart from the center of the top surface of the block. This mode of applying the standard to the inertia block enables the slant or inclination of the pegs with respect to the surface of the sole of the shoe to be varied more or less as circumstances may require.

The inertia block is connected with a weighted treadle or lever R, by means of a universal joint S, and also with such joint in such manner as to enable the block to be rotated around its vertical axes.

Fig. 4, denotes a transverse section of the inertia block and the universal joint, this latter being formed in three parts *f*, *g*, *h*.

The upper part, *f*, consists of a shaft turning in bearings *i i*, projecting upward from the middle part *g*, which is a ring supported by journals, *k*, *k*, arranged aside of and some distance from the center of the said ring. These journals are supported by the third part, *h*. The axes of the two sets of journals are arranged at right angles to each other. From the middle of the part or shaft, *f*, a spindle, *l*, extends upward into the inertia block, P, the latter, when the machine is in operation being made to revolve on the spindle and to turn completely around twice while the outer sole of the shoe is being pegged.

The inertia block P is furnished with mechanism for rotating it with an intermittent rotary motion, and also with a friction brake to prevent it from being rotated too far at each movement. This brake is shown at *m*, as applied to a circular lip or flange *n*, extending from and around the inertia block.

A friction gripper *o*, works on the flange *n*, and is jointed to a pitman *p*, which is jointed to one arm of a bent lever *q*, arranged as shown in Figs. 2, and 3. From the other arm of the lever *q*, a pitman *r*, projects upward and against the periphery of the cam E. During each revolution of the said cam, the pitman, *r*, will be depressed and made to turn the lever *q*, such lever being moved in the opposite direction by a spring *s*. By means of the said cam E, the pitman, *r*, the lever, *q*, the spring, *s*, the pitman *p*, and the gripper, *o*, the inertia block will be turned with an intermittent rotary motion, the gripper being so formed and applied as to grip the flange when such gripper is moved forward and to slip on the flange, when the gripper is moved backward.

By means of the inertia block, the machinery, below it is protected from injury by the blows of the tilt hammer. Other ad-

vantages are also secured. By the peculiar arrangement of the inertia block with reference to the upper journals of the universal joint, that is so that a vertical line passing through the center of gravity of the block, shall pass inside of and at a distance from the common axis of such journals, the shoe last will be pressed firmly and laterally against a bearing or stud *u*, (see Fig. 5, which is a vertical section of the table and the feeder) and with a force sufficient to keep it there against the blows of the tilt hammer.

The object of imparting to the inertia block an intermittent rotary motion is to change the inclination of the sole as may be required in order that the pegs may be driven into it in the proper direction, while the shoe is revolved, the slant of the peg being obtained by the adjustable forked standard hereinbefore described.

The feeder consists of a spring *v*, which lies upon a slide plate *v'*, placed on top of the table, turns on a pin or fulcrum *w*, at its rear part and carries a point or spur, *x*, at its front end. The spring is bent upward a little so as to stand a short distance above the plate *v'*. It has a passage or slot, *y*, made through it as seen in Fig. 5, and also in Fig. 6, the latter being a top view of the feeder and its operative mechanism and all the parts, which lie on or just above the table.

Fig. 7, is a rear elevation of the feeding mechanism. A post *z*, extends up from the table and through the slot, *y*, and is formed with a notch *a'*, to receive a pitman *b'*, which has its end beveled, as shown at *c'*, and is furnished with a cam *d'*, which is placed on its front side. This pitman is jointed at its other end to the inner arm of the lever G. Extending upward from the feeder and at the end of the pitman *b'*, is a projection *e'*. By the movement of the lever, G, the pitman, *b'*, will be forced against the projection *e'*, so as to push it and the feeder forward. At the same time, the feeder will be depressed by the action of the bevel *c'*. As the pitman advances farther, the cam *d'* will bear against the post, *z*, and throw the pitman out of the notch and away from the stud, *e'*, so as not only to allow the feeder to spring upward off the sole but to permit it to be moved backward by a spring e^2. These operations of the feeding mechanism cause it to feed or move the shoe along a short distance immediately after each peg is driven into it. A spring, *f'*, serves to press the pitman toward the notch of the post.

The next parts of the machine are those for feeding the strip of peg wood along toward the peg driver, for separating the pegs from the strip and compressing each, preparatory to its being driven into the sole. The peg wood carrier or slider, is shown at *g'*, Fig. 6. It is a notched bar applied to the table so as to be capable of sliding longitudinally. In front of it is an impeller or spring *h'*, which forces the strip of peg-wood against the slider and operates to advance it on the slider when the latter is retracted. The carrier, *g'*, is moved by toggles, *i'*, *k'*, and a pitman *l'*, jointed to one toggle and the lever G. Along the inner side of the carrier, *g'*, is a slide bar, *m'*, having its inner end bent in the form of a hook and made to extend about the inner end of the carrier *g'*, as seen in Fig. 6, such end of the carrier being constructed with an angular notch or recess *o'*. A spring, *p'*, serves to draw the hook of the carrier toward the notch *o'*.

The peg cutter or chisel is shown at, *r'*, as carried by a lever, *s'*, whose fulcrum is at or near its middle, such lever at its rear end being jointed to the pitman, *r*, before described.

By the operation of the peg wood feeder and cutter, the peg wood will be split vertically by the cutter prior to the advance of the carrier. As the pegs are severed, each in succession will pass into the notch *o'*, and be held in the same by the hook, the latter serving to guide the peg into the notch while the peg wood carrier is being retracted. Just before the feeder completes its forward movement, the slide bar *m'*, has its forward motion arrested by a stud *t'*, (extending from it) being carried against a stop *u'*. The carrier continuing to advance, and being carried toward the hook of the bar *m'*, will compress or condense the peg prior to its introduction into the sole. The toggles at the time of the greatest compression of the peg should be in a straight line with each other and immediately be drawn into an obtuse angle with one another so as to release the hold of the peg carrier on the peg in order that the peg may be forced below the carrier and into the sole.

The slide plate *v'*, before mentioned, and the mechanism by which it is operated are shown in top view in Fig. 8. This slide plate carries the feeder *v*, and the stud *u*, against which the shoe rests. In pegging two rows of pegs, the slide plate is to have an intermittent reciprocating and longitudinal movement so as to carry the shoe laterally first in one direction and next in the other, the distance from the middle of one row to that of the other row of pegs—and for this purpose, the slide plate, *v'*, has a mechanism applied to it to move it. Extending from the plate *v'*, is a projection *w'*, furnished with a notch *x'*. Beside the plate *v'*, is a plate *y'*, which is affixed to the top of the table and furnished with an opening or recess, *z'*. Within this recess, *z'*, is a heart shaped cam a^2, which is fixed on the

top of a vertical arbor b^2, (see Figs. 2, and 3,) from which a spring lever c^2, extends as shown in such figures.

Fig. 9, is a vertical section of the heart shaped cam and the mechanism for operating the slide plate, v'. A pitman, d^2, is jointed to the lever, G, and has its front and wedge shaped end to work in the notch, x'. A stud, e^3 extends from this pitman and against the edge of the heart cam. When the pitman is moved forward, the stud e^3 will be moved against one edge of the heart cam and by it will be moved laterally so as to move the pitman against one side of the notch x' in a manner to move the plate, v', longitudinally forward. This action of the friction stud at the same time will so turn the heart cam around a little as to put it in a position to cause the pitman stud during its next advance movement to act against the opposite edge of the heart cam and force the pitman against the opposite side of the notch, x', and so as to create a longitudinal backward movement of the plate v'. By turning the cam around a little and setting its lever back of a stud or catch f^2, extended down from the table, the pitman will cease to move the plate v', so that while such is the case, only one row of pegs will be driven into the sole.

In order to vary the strength of the blow of the tilt hammer, it is furnished with a spring g^2 whose lower end is attached to the shorter arm of a lever, h^2. By raising the longer arm of the lever, the power or tension of the spring will be increased, and by having studs a^3, a^3, or some means of retaining the longer arm at any desirable elevation within the limits of its motion, we can adjust the retractive force of the spring to such a degree as may be desirable, whereby we can adapt the machine to driving either long or short pegs.

I do not claim holding the last or shoe up to the pegging mechanism by means of a weighted lever and a standard connected together by a universal joint, but

What I do claim is—

1. The combination of the heavy inertia block, P, with the weighted lever R, and either the last of the standard for supporting the last, the same being for the purpose as specified.

2. I also claim the arrangement of the inertia block with reference to the lower bearings k, k, of the universal joint, that is so that a vertical line passing through the center of gravity of the inertia block shall fall on one side of and at a distance from the axis of such bearings, the same being for the purpose as set forth.

3. I also claim combining with the inertia block and its universal joint, a mechanism for revolving the inertia block twice, while a sole on the shoe last is being pegged, such a mechanism as shown in the drawings consisting of the flange, n, the gripper o, the connection bar, p, the lever, q, the pitman, r, and the cam, E.

4. I also claim so arranging and applying the last standard on the inertia block, that the position of the standard may be varied on the block in order to change the inclination or slant of the pegs as described.

5. I also claim arranging and combining with the peg feeding mechanism substantially as described, a mechanism for receiving each peg and condensing or compressing it just prior to its being driven into the sole; such a mechanism is shown in the drawing consisting of the slider, g', the hook slide bar m', the toggles i', k', the pitman b', and the mechanism for actuating the said pitman as described.

6. I also claim the combination of the wedged pitman b', its side cam d', the recessed post z, and the stud of the feeder c, the same being the mechanism for feeding the shoe along.

7. I also claim combining with the feeding mechanism, a mechanism substantially as described for imparting to the shoe last an intermittent, reciprocating lateral motion such as will cause the machine when in operation to insert two rows of pegs in the sole, such a mechanism as shown in the drawings consisting of the pitman d^2, the notch x', the recess, z', the stud, e^3, the heart cam a^2, and the plate, v'.

In testimony whereof I have hereunto set my signature.

LEANDER LACKEY.

Witnesses:

HORACE LELAND,

CHARLES F. HARTWELL.