J. J. Greenough,

Pegging Machine,

No. 10,427, Patented Jan. 17, 1854.

Fig. 1

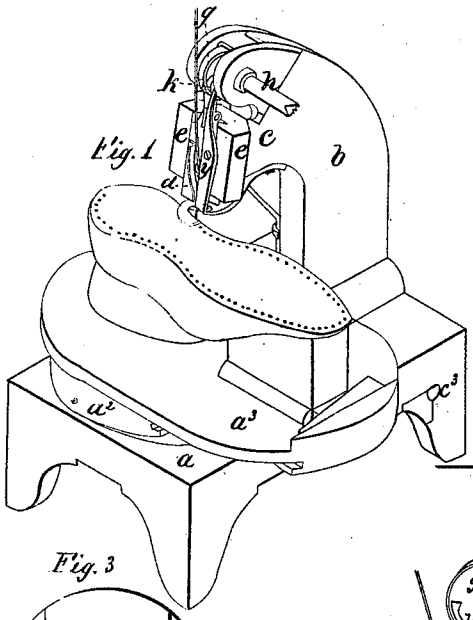


Fig. 2

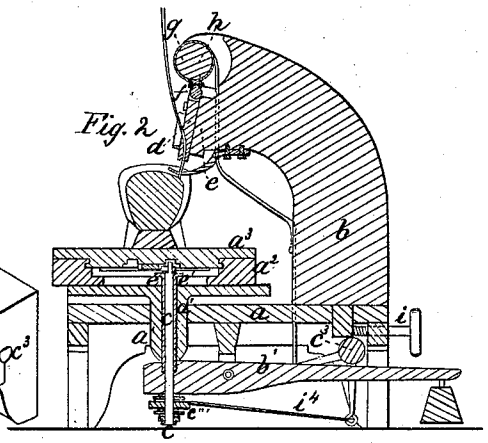


Fig. 3

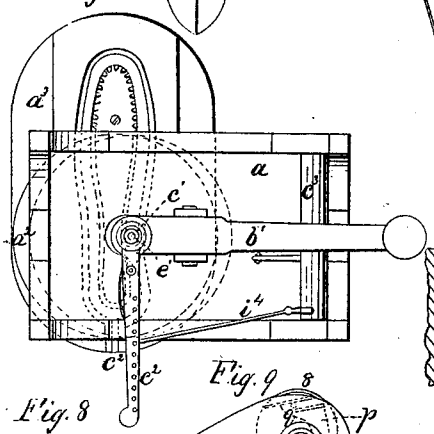


Fig. 4

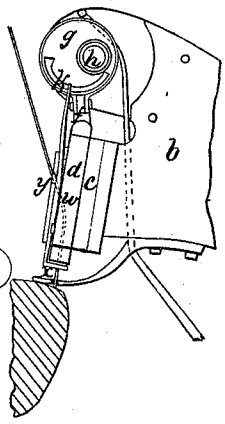


Fig. 5

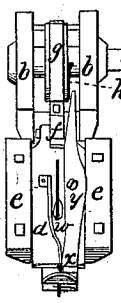


Fig. 6

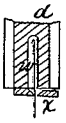


Fig. 7

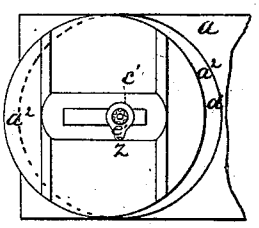


Fig. 8

Fig. 9

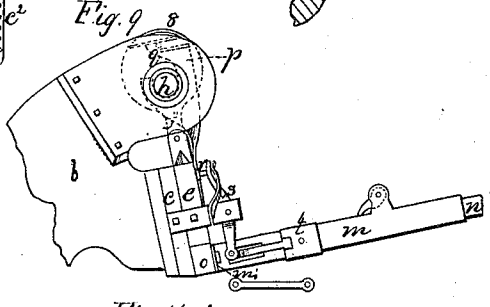


Fig. 10

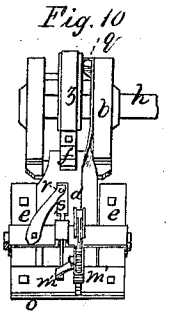


Fig. 11

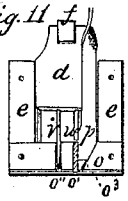


Fig. 12

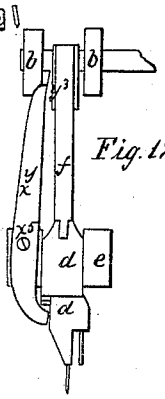
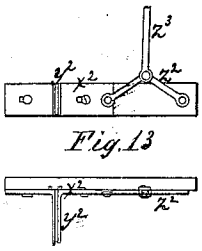


Fig. 13



UNITED STATES PATENT OFFICE.

JOHN JAS. GREENOUGH, OF NEW YORK, N. Y.

MACHINE FOR PEGGING BOOTS AND SHOES.

Specification forming part of Letters Patent No. 10,427, dated January 17, 1854; Reissued July 4, 1854, No. 269.

To all whom it may concern:

Be it known that I, JOHN JAMES GREENOUGH, of New York, in the county of New York and State of New York, have invented a certain new and useful Machine for Pegging Shoes and other Similar Articles, and that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known and of the usual manner of making, modifying, and using the same.

Figure 1, is a perspective view of the machine. Fig. 2, is a vertical section; Fig. 3, plan of underside of the platform; Figs. 4, 5, 6, sections of wire pegger; Fig. 7, carriage with top piece removed; Fig. 8, section of tube and shaft to move and guide the carriage; Figs. 9, 10, and 11, sections of wood pegger; Fig. 12, section of lateral movement awl and pegger; Fig. 13, section of apparatus for cutting metal pegs.

Like letters refer to the same parts in all the figures.

My invention consists of certain parts, hereafter described in detail, which are for the purpose of forming and driving pegs of wood or metal into the soles of shoes, boots, &c., or other similar manufactures, and in moving the work up to the pegging apparatus.

The construction is as follows: The basis, or frame of this machine may be of any convenient form, one of which adopted by me, consists of a plane table, (*a*,) on legs, made of cast iron, say ten inches square, more or less. About the center of this table (*a*,) on the rear side, there is a standard of iron (*b*,) either firmly bolted to the table (*a*,) or made to slide in ways thereon, as hereafter described, and extending up and curving over toward the front. Its upper end is divided into two parts, in which are the bearings of a shaft, (*h*,) by which the parts are moved. An arm (*c*,) projects from the standard below the divided part above named, which supports the ways of the sliding stock of the peg driver. The shaft to which the driving cam is affixed, is in a right line over the stock in the plane of its motion, whether it be perpendicular over the article to be pegged, or at an angle, as shown in the drawings, the purpose of which angle is to drive the pegs inclined inward all the way around the shoe. This stock (*d*,) is an oblong piece of metal; having a U groove in either side to slide on the ways (*e*,) on the end of the arm (*c*,). It is connected by a pitman (*f*,) with an eccentric (*g*,) on the driving shaft (*h*,) above named.

When the shoe soles, &c., are to be pegged with wooden pegs, a long narrow trough is to be attached, just below the stock (*d*,), when at its lowest point, of the following construction, (shown detached in Figs. 9, 10, 11.) The trough part (*m*,) is made of thin sheet metal, its breadth and depth being about equal to the cross section of the wooden peg, so that a strip of wood (*n*), out of which the pegs are formed, will readily slide through it. This trough has two flanches (*m'*,) bent outward on either side at right angles to it, on the inner end, by which it is attached to the steel block (*o*,) or it may be fastened in any other convenient way. This block is an oblong piece of steel, secured by screws to the arm (*c*,), of the stationary standard (*b*). In its face there is a groove (*o'*) cut opposite the opening of the trough, of sufficient breadth and depth to receive a peg; and beside it, at the distance the pegs are to be apart, there is a similar groove (*o''*) for the pegging awl to play in, which is parallel to it. On the opposite side of the peg groove (*o'*,) there is still another groove (*o*^{3},), made at an angle of about thirty degrees, to the peg groove, inclining off at the top, as clearly shown in the drawing. The surface between this inclined groove and the peg groove is reduced the thickness of the knife (*p*,) the back of which is at the same angle with the edge that the groove (*o*^{3},) is. This thick back plays in groove (*o*^{3},), and as it works up and down, forces the edge of the knife across the groove (*o'*,) in its descent, by which the peg is cut off its whole length by a shaving stroke, without splitting out angularly, and the knife remaining in that position after cutting the peg, forms, together with the groove (*o'*,), the tube through which the peg is driven. The shank of the knife extends up, and is worked by a cam on the shaft (*h*,), or pin projecting from the side of the eccentric (*g*,), as shown at (*q*,) (Figs. 9 and 10,). The operation of this part of the machine is as follows: As the stock rises, a small projection thereon at (*r*,) strikes the bent lever (*s*,), which is connected with and moves forward a slide (*t*,) surrounding the tube containing the

peg wood. Two fingers or clamps attached to the slide (t,), enter slots in the sides of the tubes, so that when the slide moves forward, the wood is fed in. In returning they slide over the peg wood. It is obvious any other device for feeding may be substituted. When the peg wood is fed into the groove (o'), the knife is driven forward, and cuts off a peg in the groove, and the piston (u,) attached to the stock, and working up and down in the groove (o',) thrusts the peg down into the shoe sole below, while at the same time the awl (v,) makes a hole for the succeeding peg. The awl and piston are then drawn upward, succeeded by the knife, and a second peg is fed in, and so on till the work is completed. When metal pegs are to be used instead of wooden ones, they may be similarly cut and used from a flat strip, with this difference, that instead of the angular shaving motion with a thin knife, there is attached to one side of the trough, (y^2,) that contains the metal strip a stout piece of steel (x^2) Fig. 13, which with the stationary grooved piece forms a shear. The cutter and trough are moved laterally by the toggle joint (z^2,), worked by a rod (z^3,) connecting with the eccentric.

Sometimes I use a wire drawn to the figure the peg is to be, and then dispensing with the trough and piston, I convey the end of the wire after passing an ordinary straightening apparatus, down through a hole in the stock, at (w,) Figs. 1, 5, and 6, where there is a cutting nipper (x,) attached to the stock, one jaw only of which is movable. The shank extends up to the eccentric, and the fulcrum is at (y). The upper end of the shank being forced outward by a cam (k,) on the side of the eccentric (g,), the action is thus: The stock (a,) being drawn up to its greatest height, the wire projects below it sufficient for a peg; and the cam (k) striking the shank of the cutting nippers, causes them to cut into the wire so as to take firm hold. The stock then descends, carrying the wire down and driving it into the sole, or other material below. At the instant the peg is driven home, the cutters are forced a little farther forward by the shape of the cam (k,) and the peg is cut off. The form of the cutters, shown at Fig. 6, sharpens the end to be driven first into a chisel form. The cutters are then freed from the wire by a spring or otherwise, and rise above the end of it far enough to again seize it for the next peg. It is obvious that the precise mechanisms here described to produce the effect, may have others substituted, which would be equivalent to those described, but these I believe to be as simple as any, and of easy construction.

That portion of the machine which brings the work up to the proper position to receive the peg, is constructed as follows: A hole is made through the table (a,) in front of the standard (b,) through which passes a hollow cylindrical mandrel (a',) on the top of which there is a circular disk that receives a plate (a^2,) that slides from side to side upon it; and upon this plate (a^2,) there is another oblong slide plate (a^3,) that has a sliding motion at right angles to the plate (a^2,). This construction enables the top plate to be moved horizontally in any direction and revolved around. The lower end of the mandrel rests on the end of the short arm of a stout lever (b') below the end of the mandrel, this end being semi-spherical to allow a steady support in any position. The long arm of the lever, (b',) is weighted, to bear up the universal movement carriage, as I denominate this part of the structure, so that it has an up and down motion required in the process. On the upper plate of the universal carriage are proper fastenings for the boot, shoe, or other article; and on its under side there is a groove cut in the form the line of pegs are to be driven; within the groove there is a row of cogs, following the course of the groove, as clearly represented in Fig. 3. A shaft (c',) extends up through the hollow mandrel, and its upper end enters the groove. Upon this shaft, (c',) there is a pinion, the teeth of which gear into the cogs upon the plate, so that by turning the pinion, the shaft will be made to travel along the groove, or the groove over the shaft. At the heel curve at (c^2,), there is an opening, so as to slide off the upper plate readily. A tube, (e',) surrounds the shaft, (c',) and extends from the lever (b',) (to which it is affixed so that it cannot turn) up to the under side of the pinion; there a guide pin (z,) branches off, and projects up outside of the pinions into the groove in the plate above named. This keeps two points of the groove always in the same relative position in relation to the stationary parts of the machine, and causes the mandrel to revolve when the groove curves; I sometimes make a flanch on the lower end of this tube, so that the mandrel bears on it instead of the end of the lever. The shaft, (c',) projects below the lever (b',) in which latter there is an oblong hole for the purpose of giving the parts freedom to perform their offices. On this lower end of the shaft, (c',) there is a ratchet wheel, with pawl and clutch attached to a horizontal lever (c''',), by which the shaft and pinion are worked in one direction, at intervals, by means of the reciprocating motion of the lever produced by its connection with the moving parts, which may be effected in the following way. An axis (c^3,) is placed horizontally under the platform or table (a), to which are affixed two arms at

right angles to each other; the vertical arm is connected by a rod (i^4,) with the lever, while the other arm is connected either with the pegging stock or the eccentric, so that when the stock rises the article will be fed forward by the motion given to the lever and pinion, as above shown, and when the stock descends to drive a peg, the article will be at rest.

A modification of this feed apparatus is, to have no pinion or apparatus of ratchet, lever, or their connections; but instead thereof, to have the guiding groove simply with the two following-pins, to keep the work in the right direction. Then instead of a simple up and down motion of the pegging stock, I propose to divide the pegging stock in two parts, or by moving its ways laterally, to give it a motion in the direction sidewise every time it drives the pegging awl in. This device is shown in one form in Fig. 12, the lower part of the pegging stock is divided from the upper part, so as to slide laterally. The operation is as follows: When the stock has descended and driven home the peg and the pegging awl at the same time, as before described, a side lever (x^4,) extending up beside the stock, and having its fulcrum in the stationary frame at (x^5,) has its upper end struck by a side cam (y^3,) on the eccentric, which causes it to force the pegging awl sidewise while in the work, and thus carries the work along with it, sidewise, the breadth required between the pegs; on rising, the stock slides back to its place again.

The standard (b,) is so attached to the bench that it can be made to slide in a right line to or from the center of revolution of the universal movement carriage, guided by a screw (i) (see Fig. 2), so as to peg with two rows, or vary the size of the shoe to be pegged.

Having thus fully described my invention, and some of the most important modifications thereof, what I claim therein as new, and to secure by Letters Patent, is—

1. Cutting the peg from the peg blank by a lateral motion of the cutter against the side of the blank, the cutter assisting to hold the blank in position while it is driven, substantially as herein described.

2. I also claim the combination of parts, consisting of a revolving plate surmounted by slides moving at right angles to each other, when this is combined with the resting of the axis of the revolving plate upon a weighted lever or its equivalent, so as to rise and fall for producing a universal movement carriage as described.

3. I also claim the center guide for directing the movement of the shoe or other article in the course indicated by the groove or other device substantially the same, for the purpose of keeping the line of the pegs coincident with that of the awl and peg driver.

4. I also claim so constructing arranging and operating the shoe carriage that each point of the sole which is to receive a peg, shall be brought successively to the same point under the stationary pegging standard so that the pegging shall be effected automatically and without interruption entirely around the shoe or other article substantially as herein described.

5. I also claim in combination with the movable carriage, the stationary pegging standard made adjustable so that it can be set at any required distance from the center of motion of the carriage holding the material to be pegged as above set forth so that a second row of pegs may be driven within or without the first row—with the same pattern—as described.

I also claim driving the pegs by a tool having a positive motion as described in both directions.

I wish it distinctly understood that I do not intend by the above claims to secure or have granted to myself, any device or combination contained, either explicitly or substantially, in Letters Patent granted to Joel Robinson dated October 31st, 1848, or in the specifications, drawings or model upon which said patent was granted.

JOHN JAMES GREENOUGH.

Witnesses:

I. CAMPBELL,

WM. GREENOUGH.

[FIRST PRINTED 1913.]