A. C. GALLAHUE.

PEGGING MACHINE.

No. 180,020. Patented July 18, 1876.

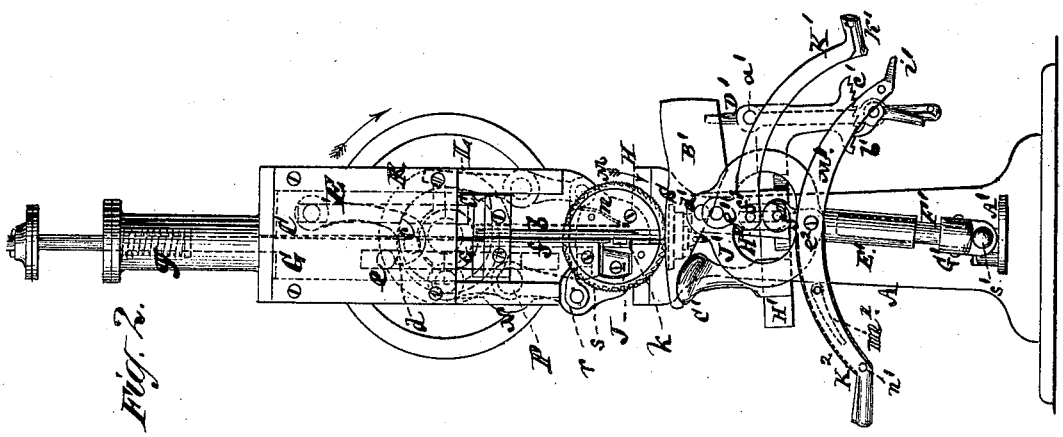

Fig. 2.

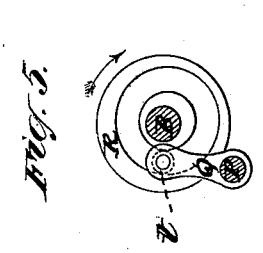

Fig. 5.

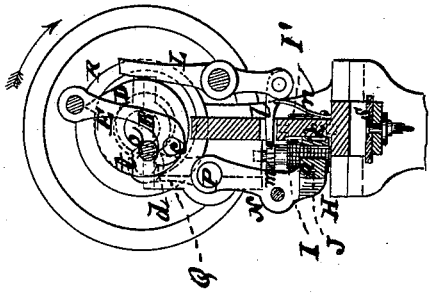

Fig. 3.

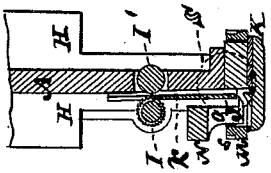

Fig. 4.

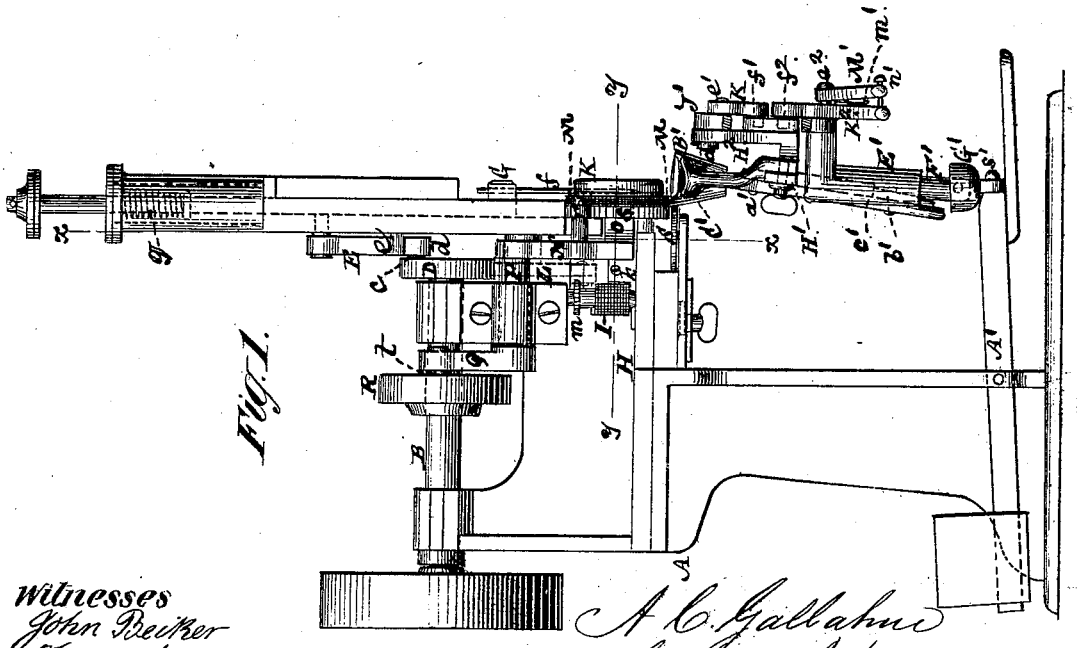

Fig. 1.

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UNITED STATES PATENT OFFICE.

ALPHEUS C. GALLAHUE, OF MORRISANIA, NEW YORK.

IMPROVEMENT IN PEGGING-MACHINES.

Specification forming part of Letters Patent No. **180,020**, dated July 18, 1876; application filed March 16, 1876.

To all whom it may concern:

Be it known that I, ALPHEUS C. GALLAHUE, of Morrisania, in the city, county, and State of New York, have invented certain new and useful Improvements in Machines for Pegging Boots and Shoes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

This invention, like other previous inventions of mine, more particularly relates to machines adapted to effect or perform the whole of the work that relates to the pegging of boots and shoes, including the making of the holes in the shoe to receive the pegs, and the driving of the pegs in the holes; also the cutting of the pegs from the strip; likewise a jack, having throw to it, and being capable of universal motion, together with a feeding-wheel or device for adjusting the boot or shoe to provide for the regular insertion of the pegs in a row or rows at suitable distances apart; and a gage for directing the edge of the sole.

The invention consists in certain novel combinations of parts involving a peculiar construction of the jack or boot and shoe supporter, whereby not only provision is made for turning or otherwise operating the jack to peg all around the sole of the boot or shoe, and to tip the latter as required, but whereby the boot or shoe may be tipped alike from either side or end by the operator without changing his position, and so that in the tipping of it there is no tendency to accelerate or retard the feed, and the sole is vibrated from its point of contact with the feeding wheel or device as a fixed center of motion.

The invention also consists in a novel combination of devices for operating the awl and hammer, whereby a single lip or hook-shaped connecting rod or bar is made to actuate both; also in a combination of devices whereby the same lever is made to actuate the shoe-feeder and the knife for cutting the wooden strip up into pegs; and, furthermore, the invention includes a combination of devices whereby one and the same cam is made to operate both the feeder of the strip from which the pegs are cut and the lipped connecting-rod which actuates the awl and hammer.

In the accompanying drawing, Figure 1 represents a side view of a shoe-pegging machine having my invention applied, and Fig. 2 a front view of the same, with the jack and levers pertaining thereto in a different position. Fig. 3 is a vertical section, in part, on the line $x x$, looking toward the rear, and Fig. 4 a horizontal section, in part, on the line $y y$. Fig. 5 is a face view of a cam and roller arm for actuating the peg-cutting knife and shoe-feeder.

A is the upright frame portion of the machine, and B its revolving main shaft, from which the several automatic movements are derived. The awl *b*, which is projected at regular periods through the sole for reception of the pegs, is attached to a vertical slide, C, which is moved up and down by a wrist-pin, *c*, on a cam, D, fast on the shaft B, by or through the intervention of a connecting rod or bar, E. This rod or bar is formed with a hook or lip, *d*, at its lower end, so that said hooked bar, when rising, catches, as shown in Fig. 3, on a stud, *e*, attached to the slide G, which carries the hammer *f* and lifts said hammer till the hooked connecting-rod E arrives at the extreme of its upstroke, as in Figs. 1 and 2, when the hook or lip *d* of said rod passes from under the stud *e*, and a spring, *g*, acts on the slide G to drive down the hammer with a spring-pressure on the peg, the hammer being arranged to one side of the awl *b* to secure its timely action on the peg inserted in the hole last made by the awl, and the shoe, in the meantime being fed to bring the hole with peg in it under the hammer. Thus the hooked connecting-bar E operates both the awl and hammer.

The strip of wood to be cut up into pegs may be taken from a roll, as usual, and is introduced along or over the table H from back to front, and between feed-rollers I I′, into and through a groove-guide, *k*, through the front end of which it is projected intermittently by the feed, and cut up into pegs, one at a time, by the successive actions, in timely relation with the feed, of a knife, J, each successive feed of the strip driving out a cut peg into a face-plate, K, formed internally with a peg-guiding surface in line with the hammer, which, as well as the awl, works through said

face-plate. As the cut peg is thus expelled by the feed of the strip, the latter is by such act projected forward in front of the guide *k*, to have a fresh peg cut from it in the succeeding cutting-stroke of the knife, which latter and the awl, hammer, and the wood and shoe feeding devices are all arranged to operate in proper relation with each other to insure the automatic performance of the work.

It is an advantage, however, to simplify the pegging mechanism as much as possible, and I not only make the same rod E operate, as hereinbefore described, both the awl and hammer, but also cause the cam D, which actuates, by its wrist-pin *c*, the rod E, to likewise actuate the positive-driven roller I of the strip-feeding rollers I I′ by means of a lever, L, with attached pawl *l*, which works in a ratchet, *m*, on the roller I. This lever L is actuated by the peripherically-toothed cam D as against a spring, *n*, which gives a return motion to the lever, and keeps it in contact with the cam.

Furthermore, I make one and the same lever and a single cam actuate both the knife J, which cuts the strip up into pegs, and the intermittently-rotating feed-wheel M, which automatically feeds the shoe and its last, as carried by the jack under the awl and hammer. Thus the knife J is attached to a projection, *o*, on a lever, N, which is fast on the forward end of a rock-shaft, P, said lever also carrying a feed-pawl, *r*, which works in a ratchet, *s*, on the back of the feed-wheel M. This lever N is worked to and fro, to give to the knife J and pawl *r* their required forward and backward movements, by means of an arm, Q, fast on the back end of the rock-shaft P, and carrying a roller, *t*, which fits within a face-grooved cam, R, on the main shaft B.

S is the roller-gage, which serves to direct the edge of the shoe-sole, or against which the edge of the sole bears. This gage is adjustable in or out, to vary the distance of the pegs from the edge of the sole.

A′ is a weighted treadle, on which the jack is supported, and by which the shoe-sole is borne up against the feed-wheel M, and when the foot is applied to the treadle the pressure of the shoe on the wheel is regulated or removed.

The jack which carries the last B′, with the shoe on it, by means of toe and heel rests C′ D′, is constructed, in part, of a swinging stock, having a base-socket, E′, which receives up within it a pin or stem, F′, which admits of the rotation of the jack around it, and from which the jack may be lifted and removed, when required. This stem F′ is freely inserted or pivoted within a cup or socket, G′, pivoted at *s′* to the treadle, in such manner as to allow of the jack having a universal movement in its jointed connection with the treadle, apart from its rotation around the stem F′.

The toe-rest C′ is made adjustable longitudinally, and the heel-rest D′ is formed of a lever, pivoted at *a′* to a bar, H′, of the jack, and provided with a pawl, *b′*, which bites into a ratchet, *c′*, attached to said bar. This construction provides for the lifting of the shoe and its last from the pivot *a′* as a center of motion, and for the setting and holding of the toe of the shoe down on the rest C′.

The swinging stock of the jack or boot and shoe holder is composed, in part, of a frame, J′, having the socket E′ rigidly attached to or forming a portion of it. The bar H^1, which carries the toe and heel rests, is pendent through an attached arm or bracket, H^2, by an upper pivot, *d′*, on the frame J′ of the swinging stock.

Attached to the back of the frame J^1, by upper and lower pivots e^1 e^2, are two levers, K^1 K^2, in slotted connection above and below by pins f^1 f^2, at suitable distances from the pivots or centers e^1 e^2 of the levers, with the bracket H^2 of the bar H^1. These compound levers extend to opposite sides of the jack, and are provided with handles at their outer ends for the purpose of enabling the operator not only to swing the whole jack, as required, including the turning of it around the stem F′, but also for the purpose of allowing the operator, without changing his position from either side, to tip the shoe alike from either side, by rocking either lever K^1 K^2 on its center e^1 or e^2, to adjust the shank of the shoe, or other depressed or irregular portion of its sole, so that the pegs will be entered straight, as required. Such adjustment has been provided for in other jacks, but not in the same manner, or by compound levers from each side; and by the pivoted connection, as described, of the bracket H^2 of the bar H^1, and the levers K^1 K^2 with the frame G′ of the stock, and the connection of the levers at f^1 f^2 with the bracket H^2, the tipping of the shoe by either lever K^1 K^2 causes the shoe to have little or no forward or backward motion; or, in other words, to work from a fixed center at the contact of the shoe with the feed-wheel. This prevents any acceleration or retardation of the feed when the shoe is being tipped, and, consequently, insures the pegs being inserted at regular distances apart.

When it is not required to tip the shoe by the independent rocking of either lever K K^1, but simply to rotate or swing the jack to peg around the shoe, (commencing at the heel,) then the levers K K^1 are locked or united together, and restrained from rocking on their centers e^1 e^2 by means of a locking-bar, M′, which may be arranged on the pivot e^2 of the lever K^2 outside of said lever, and running in direction of the length of the latter outside of it, and extending throughout the length of the jack, so that said bar may be manipulated from either side of the jack, or outer ends of the levers K^1 K^2, to lock or unlock said levers as required.

The bar M′ locks the levers together by the fitting of its one outer end, *i′*, in a recess, *k′*, in the handle end of the lever K^1 by the action of a spring, *m′*, tending to tip or tilt the

bar M′ sidewise on the pivot c^2, which it fits loosely for the purpose. The spring m' then holds the bar M′ in lock at its end i' with the lever K^1. The other end of the bar M′ is free to slide sidewise on a pin, n', connecting said bar with the lever K^2.

Suitable handles or projections may be provided at either end of the bar M′, to enable the operator, by the pressure of the hand or finger, to liberate the end i' of the locking-bar, against the action of the spring m', from the locking-notch k' in the lever K^1. Fig. 2 of the drawing shows the locking-bar M′ as released.

I claim—

1. The combination, with the swinging stock or boot and shoe holder E′ J′ and its pendent toe and heel rests C′ D′, of the compound levers K^1 K^2, arranged for operation substantially as specified, whereby the boot or shoe may be similarly tipped from opposite sides or ends of the jack without accelerating or retarding the feed of the jack and its boot or shoe.

2. The locking-bar M′, in combination with the compound levers K^1 K^2 of the jack, essentially as and for the purposes herein set forth.

3. The connecting-rod E, formed with a hook or lip, D, in combination with the awl and hammer slides C and G, the revolving wrist-pin c, and the lifting pin or stud e of the slide G, substantially as specified.

4. The combination, with the lever N, of the attached pawl r, which operates the shoe-feeder M, and the attached knife J, which divides the strip into pegs, essentially as described.

5. The cam D, with its attached wrist-pin c, in combination with the hook or lip formed connecting-rod E, the lever L, with its attached pawl l, and strip-feeding roller I, substantially as and for the purposes herein set forth.

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