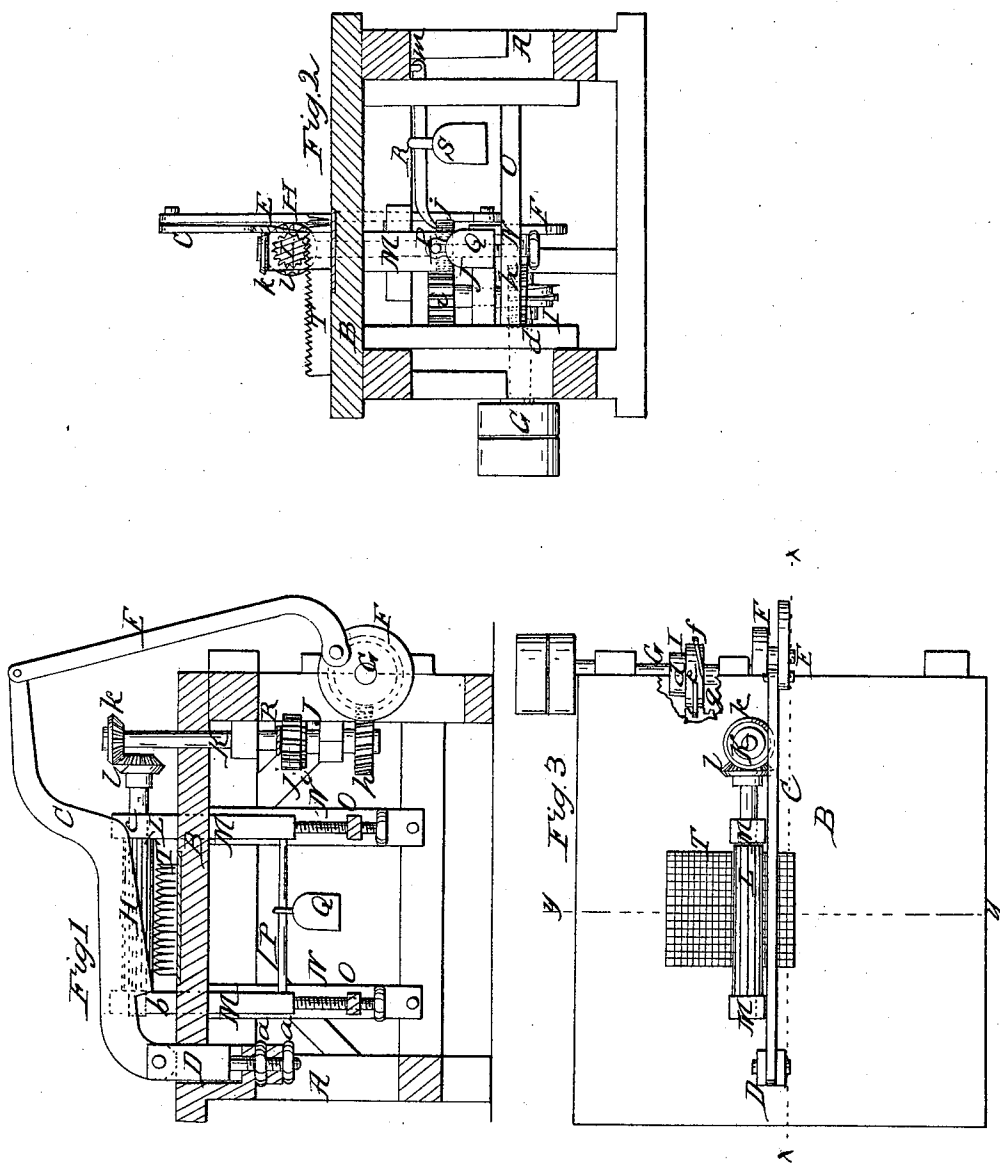


A. Woodward,
Making Shoe Pegs.
No. 19,401. Patented Feb. 23, 1858.



UNITED STATES PATENT OFFICE.

ABIJAH WOODWARD, OF KEENE, NEW HAMPSHIRE.

SHOE-PEG MACHINE.

Specification of Letters Patent No. 19,461, dated February 23, 1858.

To all whom it may concern:

Be it known that I, ABIJAH WOODWARD, of Keene, in the county of Cheshire and State of New Hampshire, have invented a new and Improved Machine for Splitting Boot and Shoe Pegs; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical section of my improvement taken in the line (x) (x) Fig. 3. Fig. 2 is also a vertical section of ditto taken in the line (y) (y) Fig. 3. Fig. 3 is a plan or top view of ditto.

Similar letters of reference indicate corresponding parts in the several figures.

The nature of my invention consists in giving a uniform and arbitrary intermittent rotary motion to the fluted feed roller, whatever may be its adjustment, by means of two bevel wheels, a peculiar screw cam, a worm wheel and two pinions; arranged as follows, one of the bevel wheels being on the upper end of a vertical shaft, and the other, which must always gear with the first, being on the end of the fluted roller, and both being adjustable so as to suit different thicknesses of peg blocks without getting out of gear with one another and with the driving shaft, and the cam being so constructed, and its screw thread arranged in such relation to the eccentric pin which moves the splitting knife, that the feed or movement of the block will always cease or be completed before the knife commences to descend, and again commence just as the knife has completed its ascent; as will be found clearly set forth in the body of the specification.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A represents a rectangular frame on the upper part of which a platform B is placed,— and C is a lever one end of which is pivoted in the upper end of a vertical bar D which passes through the platform B and has a screw at its lower end on which screw nuts (a) are fitted so that said bar B may be adjusted higher or lower as may be required. To the opposite end of the lever C, the upper end of a rod E is attached. The lower end of rod E is attached to a crank pulley F which is placed on the inner end of the driving power shaft G at one end of the frame A.

On the lever C the knife E is formed, the

cutting edge of which extends from (b) to (c) as shown clearly in Fig. 1. On the driving shaft G a cam I is placed. This cam is made by having a flange or thread project circumferentially from a hub (d) on the shaft, said thread being at right angles with the axis of the hub (d) from one of its ends (e) to the point (f) and the portion from the point (f) to the opposite end (g) of the thread has an oblique position relatively with the portion from the end (e) to the point (f). This will be clearly understood by referring to Fig. 3. The thread it will be seen makes rather more than one revolution or turn on the hub (d) and the oblique part from the end (g) to the point (f), is strictly speaking the cam. The thread of the cam gears into a horizontal pinion (h) which is placed on the lower end of a shaft J which has its bearings in the frame A.

The upper end of the shaft J has a pinion (i) placed on it, and this pinion gears into a pinion (j) placed on the lower end of a vertical shaft K which passes through the platform B, and has a bevel pinion (k) on its upper end. The pinion (i) on the upper end of the shaft J, is of considerable depth or thickness compared with its fellow (j) on the lower end of shaft K. This is for the purpose of allowing the shaft K a certain degree of vertical play or adjustment without causing the pinions (i) (j) to be thrown out of gear.

The pinion (k) on the upper end of the shaft K gears into a corresponding pinion (l) at one end of a fluted or corrugated roller L. This roller is parallel with the knife H on the lever C, and its bearings are in the upper ends of vertical bars M, M, which pass through the platform B and rest or bear upon screws N which pass vertically through transverse beams O, O, in the frame A. The lower ends of the bars M, M, are connected by a rod P, which has a weight Q upon it. A lever R is also placed in the frame A one end of said lever being pivoted in the frame or connected to it by a link or staple as shown at (m) Fig. 2 the opposite or inner end of the lever bearing or resting on the pinion (j). The lever R has a weight S upon it, and this weight keeps the pinion (k) in gear with the pinion (l) or permits the shaft K, from rising casually.

The block or bolt from which the pegs are cut, shown in red and designated by T, has one surface creased or grooved as usual

at right angles so as to form points to the
 pegs. The bolt is placed underneath the
 fluted roller L, and each time the knife H
 is moved upward the curved or oblique
 5 portion of the thread forming the cam I
 will actuate or rotate the pinion (*h*) a cer-
 tain distance and motion will be communi-
 cated to the shaft K, by means of pinions
 (*i*) (*j*), and roller L will be rotated in con-
 10 sequence of the bevel wheels (*k*) (*l*). As
 the knife H descends the roller is stationary
 because the portion of the thread on the cam
 included between the end (*e*) and point (*f*)
 works in the pinion (*h*) during the descent
 15 of the knife, and as this portion of the
 thread is at right angles with the axis of the
 hub (*d*) the pinion (*h*) will not be rotated
 as the knife descends. By this means the
 stick will be fed evenly or regularly to the
 20 knife and the block cannot be moved casu-
 ally by the imperfect working of the parts,
 because the intermittent movements of the
 lever C are both given from the shaft G
 by positive mechanical devices having an
 25 arbitrary movement.

It will be seen that by adjusting the
 screws N, N, the fluted roller L may be
 raised or lowered to suit the height of the
 bolt T. The weight Q causes the roller L
 30 to bear upon the block with sufficient pres-
 sure and the weight S on the lever R keeps
 the bevel pinions (*k*) in gear with pinion (*l*).

The bolt T is fed forward or underneath
 the knife K at each upward movement of
 35 the knife a distance equal to the width of
 the spaces between the centers of the grooves
 in the block and each time the knife de-
 scends a strip or slab is split from the bolt
 of corresponding width, the strips or slabs
 40 being held together by an elastic band, and
 when the bolt is all split into slabs in this
 direction, it is turned and fed underneath
 the knife so as to be split in a similar man-
 ner but the latter cuts being at right angles
 45 to the former ones. By the latter cuts it
 will be seen that the slabs cut from the bolt
 at the first operation are recut into pegs.

It may be well known that it is very es-
 sential to have an exact or arbitrary feed
 50 movement given to the bolt because the bolt
 is grooved at right angles in order to form
 the points of the pegs, and it is therefore
 necessary that the knife should descend upon
 the block each time at the center of the
 55 crease or groove, in order that the pegs shall
 be split or rived from the bolt with perfect
 points, for if the knife should descend upon
 the bolt at the center of a space between the
 grooves, the points at least of two rows of
 30 pegs, and quite probably of a whole bolt,
 would be destroyed and the pegs rendered

worthless. By my improvements this can-
 not occur as the block cannot move casually,
 and no inconvenience is experienced as in
 other splitters, in adjusting the feed roller, 65
 as it can be adjusted to suit bolts of varying
 thicknesses without at all affecting the feed
 movement.

I am aware that machines have been de-
 vised for cutting boot and shoe pegs, a 70
 patent having been granted to S. K. Bald-
 win July 16, 1842 in which a fluted roller
 is used for feeding the block underneath
 the knife, but in this machine the roller is
 operated direct from the knife or from its 75
 lever by means of a pawl attached thereto,
 which pawl catches into a ratchet on the
 feed roller. This arrangement is not good
 because the bolt is not moved arbitrarily
 and therefore a liability of the bolt getting 80
 deranged or incidentally moved and the
 work spoiled, exists. Another objection to
 this machine is that the fluted roller cannot
 be lowered or raised to suit bolts of vary-
 ing thicknesses, without changing the rel- 85
 ative position of the pawl and ratchet and
 consequently the feed movement of the
 roller will be more or less affected thereby.

I do not claim a fluted feed roller and
 splitting knife combined, irrespective of the 90
 manner in which the combining is effected,
 nor do I claim the arrangement of the roller
 in an adjustable frame which cannot be ad-
 justed without injuriously effecting the feed
 movement of the roller, but 95

What I do claim as my invention and de-
 sire to secure by Letters Patent, is—

Giving a uniform and arbitrary inter-
 mittent rotary motion to the fluted feed
 roller, whatever may be its adjustment, by 100
 means of two bevel wheels *k*, *l*, peculiar
 screw cam I, worm wheel *h*, and pinions *i*, *j*,
 arranged as follows, one of the bevel wheels
 being on the upper end of a vertical shaft,
 and the other, which must always gear with 105
 the first, being on the end of the fluted
 roller, and both being adjustable so as to
 suit different thicknesses of peg blocks with-
 out getting out of gear with one another,
 and with the driving shaft, the cam being so 110
 constructed, and its screw thread arranged
 in such relation to the eccentric pin which
 moves the splitting knife, that the feed or
 movement of the block will always cease or 115
 be completed before the knife commences to
 descend, and again commence just as the
 knife has completed its ascent; all substan-
 tially as and for the purposes set forth.

ABIJAH WOODWARD.

Witnesses:

G. F. STARKWEATHER,
 S. W. BRADFORD.