2 Sheets—Sheet 1

J. E. CRISP.

Pegging-Machine.

No. 211,651. Patented Jan. 28, 1879.

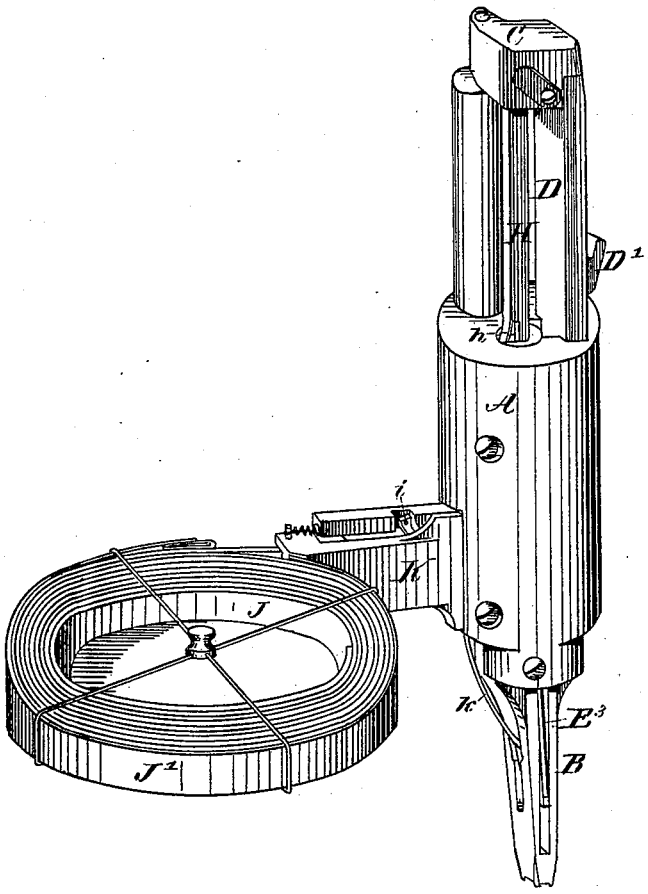

Fig. 1.

WITNESSES

F. F. Raymond 2d

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INVENTOR

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2 Sheets—Sheet 2.

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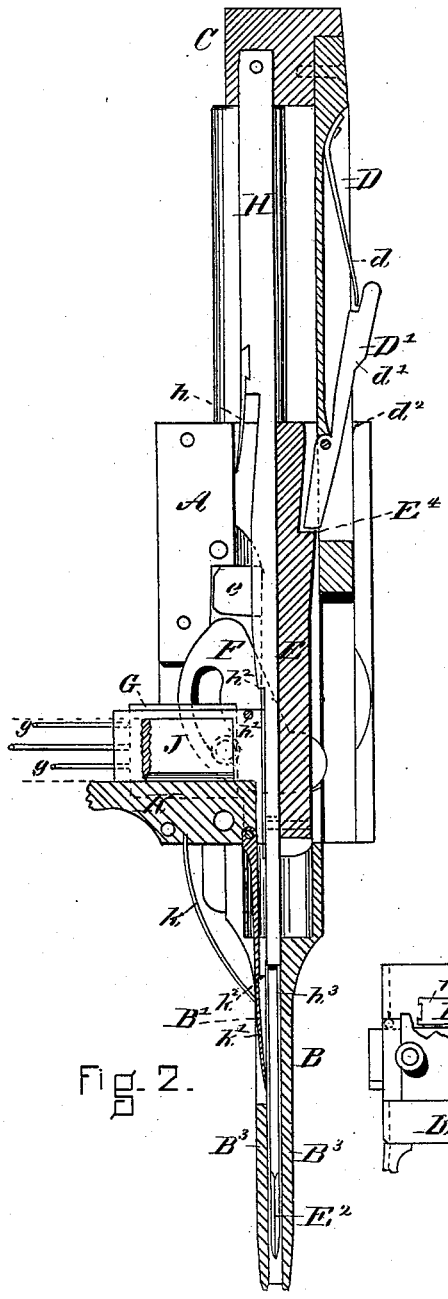

Fig. 2.

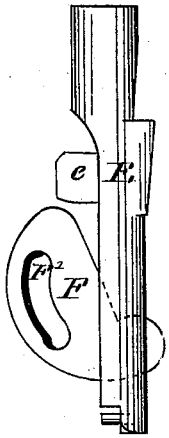

Fig. 5.

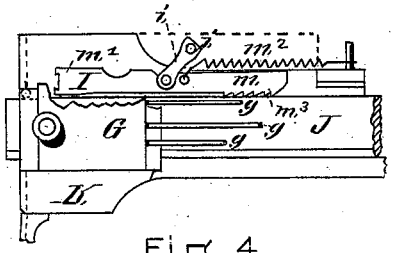

Fig. 4.

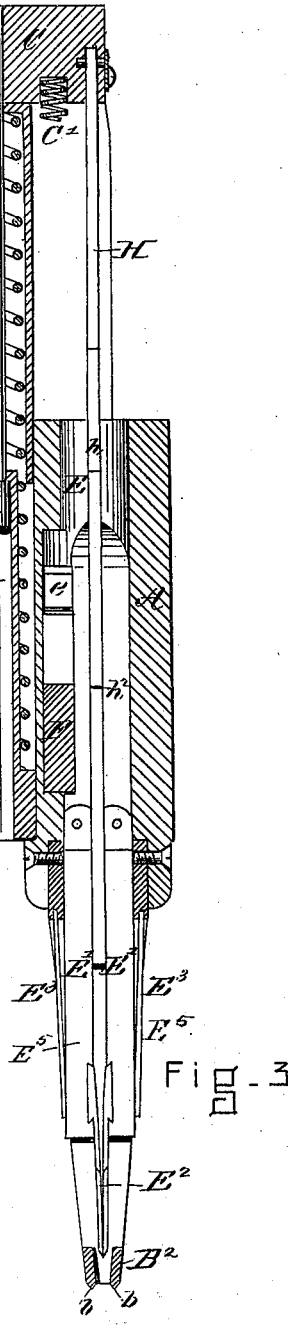

Fig. 3

WITNESSES

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UNITED STATES PATENT OFFICE.

JOSEPH E. CRISP, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE COPELAND LASTING MACHINE COMPANY, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN PEGGING-MACHINES.

Specification forming part of Letters Patent No. **211,651**, dated January 28, 1879; application filed September 21, 1878.

To all whom it may concern:

Be it known that I, JOSEPH E. CRISP, of Boston, in the county of Suffolk, in the Commonwealth of Massachusetts, have invented an Improvement in Pegging-Machines, of which the following is a specification:

This invention has for its object the following-described mechanism for driving pegs, whereby, by the impulse of one blow, or by the descent of the driving-bar, an awl is driven and withdrawn, the peg-strip fed, and a peg severed and driven.

In the drawings, Figure 1 is a perspective view of my machine, showing the relation of the strip-case to the feeding and driving mechanism. Fig. 2 is a vertical central section of my device. Fig. 3 is a vertical central section at right angles to the section shown in Fig. 2. Fig. 4 represents the device employed in feeding the peg-strip. Fig. 5 is a detail view.

Heretofore it has been common in pegging-machines to feed the peg-strip, sever a peg, drive and withdraw the awl, and drive a peg by one stroke of the driving-bar. It has also been common to feed a peg-strip, sever a peg by the upward movement of the driving-bar, drive and withdraw the awl, and to drive the peg at the next downward stroke of the driver. Pegging-machines have also been made which employ a revolving barrel for feeding cut pegs to the driver. The awls have invariably been made in one piece.

My invention consists, first, in mechanism for driving an awl, made in two longitudinal parts, counterparts of each other, withdrawing the awl, feeding the peg-strip, cutting the peg, and driving a peg into the puncture made by the awl with one impulse of the bar carrying the driver; secondly, in an awl made in two equal longitudinal parts, with mechanism for closing or holding the parts together while descending, and for opening the same to permit of the passage of a peg between when withdrawn, whereby the inner surface of the divided awl becomes two walls or sides of the driveway for the distance of their length, as will hereinafter be more fully described; thirdly, in severing a peg and conducting it to a recess on the side of the passage where it is deposited by the descent of the driver, while the preceding peg is being driven by the continued descent of the driver, and from whence it is automatically fed into the driveway upon the upward movement of the driver.

The peg-wood J preferably is coiled within the case J′, from whence it is fed through the feedway in the arm or bracket K, which projects from the barrel A, to support the peg-strip holder or case J′, by means of the hooks *g*, which lay hold of the sides of the peg-strip. These hooks are attached to the sliding plate G, which is itself operated by the cam-groove F′ in the cam F, and the cam is driven by the descent of the awl-driving bar E.

To hold the end of the peg-strip firmly against the side of the driving-rod H, which forms the end of the feedway, and against which the end of the peg-strip abuts after it is fed and while it is being cut, and also to prevent the peg-strip from being thrown back by the outward movement of the hooks *g*, which, although rounded upon their outer end, yet necessarily exert a slight outward force upon the peg-strip as they move outward preparatory to again feeding, the bar I is arranged within the feedway near the top thereof in such a way that the notches or teeth *m* upon one end and its opposite end, m^1, rest upon the top of the peg-strip. This bar I is held in position by the link *i*, which is pivoted to the top of the bracket K, and to the bar I, near its center, projecting downwardly and inwardly from the top of the feedway to the bar, whereby the bar can be lifted only by an inward movement thereof, an outward movement upon it tending to throw the notches or teeth into the top of the peg-strip.

The spring m^2 acts to steady the bar I in its duty. The under side of the bar is recessed from the teeth or notches m^3 to near the opposite end of the bar *m*. The inner end of the bar m^1 rests upon the top edge of the peg-wood, and holds it firmly in position in the feed-way, so that pegs may be cut to the full length of the strip, the pressure upon the top of the peg-wood supporting the end of a piece of peg-wood while a peg is being cut therefrom, which otherwise might become canted or turned in the driveway and clog the machine.

It will therefore be seen that the feeding is accomplished by the reciprocating movement of the hooks upon the side of the peg-strip acting in conjunction with the notched end of the bar *m*, which acts as a detent in holding the peg-strip while the hooks are being moved outwardly, and that the peg is cut by the downward movement of the driving-bar H.

The awl-driving bar E is operated by means of the latch D′, which is pivoted near the lower end of the arm D in such a way that its lower end, when forced inwardly by the action of the spring *d*, shuts upon the awl-driving bar E, and contacts with the shoulder or step E^4. The downward movement of the awl-driving bar E continues until the latch is tripped by the portion d^1 impinging against the inclined surface d^2 upon the upper inner corner of the barrel A. The bar E in its descent, by means of the projection *e*, operates the cam F, and throws the same into the path of the downwardly-projecting arm D. This arm D continues to move downwardly after the bar E has ceased to fall by the tripping of the latch D′, and contacts with the end of cam F, which has been thrown into its path, as above said, and by its continued descent moves the cam back to its original position, and thus causes the edge of the cam which contacts with the projection E^4 to lift the awl-driving bar E and to move outwardly the reciprocating plate J.

Pivoted to the awl-supporting bar E, at its lower end, are the swinging connecting-bars E^1, each of which carries at its lower inner end one-half of the divided awl E^2, preferably secured therein by means of dovetailed projections upon each side of the two parts of the awl at the top, which fit into corresponding recesses at the inner lower end of said connecting-bars.

These connecting-bars E^1 play in guides E^3 in the nozzle B, and each portion of the divided awl is so shaped and secured to these connecting-bars that they converge at their ends to form the point, except when separated by the descent of the peg as it is driven; and it will be observed that the upper inner corner of each section of the awl is somewhat rounded or inclined in order that the interior of the driveway may be continuous and without obstruction; and it will be observed that the speed, length, and incline of each section of the awl is so proportioned to the speed and position of the driver that upon the withdrawal of the end of the awl from the puncture the driver immediately commences to spread the two parts of the awl by contacting or causing the peg to come in contact with the inclines.

The spring-guides E^5 serve to prevent the pivoted connecting-bars from being thrown out any farther than is necessary to secure a passage for the peg between them in its downward movement, and also to center the two parts of the awl as it is being driven, in order that the points may be brought together and held firmly in that position while they are being presented to the work.

The end of the nozzle is preferably provided with short projections *b* for assisting in firmly holding the pegger upon the work when in operation.

The shoulder h^2 on the driving-bar serves to lay hold of and carry the severed peg from the peg-strip to the pocket or recess k^2 upon the arm k^1, where it remains until the driving-bar is lifted, when the action of the spring *k* throws the peg from the chamber into the path of the driver at h^3.

Upon the side of the nozzle is formed a recess, B′, into which fits a pivoted arm, k^1, provided with a groove, which forms one side of the driveway of the nozzle. This arm acts in opposition to the spring *k;* and it will be noticed that the groove in this arm, which forms a portion of the feedway, inclines somewhat inwardly to the point k^2, where a recess is formed of sufficient depth to receive the peg which is forced therein after it is cut, and which remains undriven until the next descent of the driver.

The driver H carries the knife *h*, which may be suitably attached thereto, and which severs from the peg-strip a peg of the desired width upon the descent of the driver.

A stop, h^1, is located just above the point where the peg-strip is fed into the driveway, so that the knife plays between it and the wall of the chamber in its descent, and the cut peg is prevented from being drawn upward by the upward movement of the driving-bar.

The cross-head C acts in opposition to the spiral spring M, which is confined within the cylinders N N′, the cylinder N sliding within the cylinder N′.

To further steady the cross-head in its descent, I inclose within the cylinder N^1 a chamber which acts as a guide for the enlarged portion P upon the rod Q, which is fastened to the cross-head C and is encircled by the said spring.

The cross-head C is further provided with the spring-buffer C′, which also assists the action of the spiral spring in lifting the cross-head at the commencement of the upward movement of the driver.

The driveway from the point where the feedway enters it lies in the awl-driving bar E, which forms three sides of the upper portion thereof, the grooved inner side of the bracket *k* and arm k^1 forming the fourth side. The lower portion of the driveway is between the inner surface of the connecting-bars E and the opposing walls of the awl and the sides of the nozzle; and it will be observed that the lines of division of the various parts of these devices forming the driveway are so arranged as to be in line with the center of the peg.

In some instances, to prevent undue wear of the working parts, the awl may be so arranged in relation to its operating mechanism and the end of the nozzle that its point will

contact, or rest upon, or nearly touch the material before it is driven, in order that there may be no recoil caused by the quick uninterrupted descent of the awl being suddenly broken by entering the material.

The operation of this device is as follows: The peg-strip being presented to the feeding mechanism is seized by the automatically-reciprocating feeding-hooks, which draw the peg-strip through the feedway until the end of the strip abuts against the side of the driving-bar below the shoulder h^2. The notches or teeth on bar I prevent the strip from receding. Upon the descent of the driver or plunger a peg is cut from the end of the peg-strip, and the peg previously cut deposited in a pocket or recess conveniently arranged midway between the point where the peg-strip is cut and the end of the nozzle. The same impulse that causes a peg to be severed and one to be deposited in the pocket also serves to drive the awl into the material to be pegged, to withdraw the same, and to cause a peg previously deposited in the pocket, and from which it has been expelled into the pathway of the driver, to be driven.

It will be seen that the awl consists of two duplicate parts, which, when supported upon the connecting-bars E^3, substantially as shown, converge at their points in driving.

It will be observed that the peg which is severed by the first descent of the driver is deposited by the next descent in the pocket and is driven by the third descent. Of course I do not confine myself to this particular operation by which the peg is fed forward, as the same may be severed from the strip and deposited in the pocket by one descent of the driver with a slight modification of the mechanism.

It will also be observed that upon the descent of the end of the driver carrying the peg which has been deposited in the driveway from the pocket before it that a very slight impulse serves to spread the two parts of the awl apart, causing the opposing sides of each part of the awl to become the sides of the driveway through which the peg passes.

It will be observed, further, that by the principle shown in this device of cutting a peg and carrying it a portion of the way to the foot of the nozzle to be driven by the next descent of the driver, a very long slim nozzle may be employed, and a comparatively small throw given the driver. This construction is of great importance, as it enables the nozzle to be introduced, and therefore a peg to be driven in places inaccessible to the ordinary short-nosed pegger. By coiling the peg-wood within the case a much larger quantity can be fed continuously than with the ordinary pegger using uncoiled strips.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a pegging-machine, the combination of a feeding device for feeding a peg-strip to a severing and driving mechanism, devices for successively advancing the severed peg to a pocket beneath the feedway, automatic means for discharging the peg from the pocket to a position in the driveway beneath the driver, an awl, and a plunger with suitable connecting devices, all operating substantially as described, so that upon the descent of the plunger the awl is driven and withdrawn, a peg severed, and the peg previously severed advanced to the pocket, and a peg driven, and upon its lift a peg previously deposited in the pocket automatically removed therefrom to a position in the driveway under the plunger.

2. The automatically-reciprocating hooks g, for advancing the peg-strip to the action of the peg-severing mechanism, substantially as described.

3. An automatic toothed detent adapted to operate upon the top of the peg-strip and retain the same, in combination with the reciprocating feeding-hooks, adapted to advance the same, substantially as described.

4. The combination of the reciprocating feeding-hooks, positively actuated as described, with an automatic detent for laying hold of the top edge of a peg-strip for preventing the withdrawal of the peg-strip after the feeding upon the outward thrust of the feeding-hooks, substantially as described.

5. The swinging bar I, provided with the extension m^1, which holds a peg-strip by bearing upon its upper edge in close proximity to the path of the knife only, after the same has been fed, and while the knife is operating to sever a peg, substantially as and for the purposes described.

6. The combination of the bar I, provided with the notches or teeth m at one end, and with the extension m^1 at the other, for the purposes set forth, with the link i and spring m^2, substantially as described.

7. In a pegging machine, the combination of the driving-bar H, provided with the shoulder h^2, with the stationary pocket or recess k^2, for receiving a peg, substantially as described.

8. A pegging-machine provided with a pegway, which presents the peg-wood to the knife, a pocket and channel beneath said pegway, to receive the cut peg and forward the same to the driveway, in combination with automatic means of transferring the cut peg through the side of the pocket to the driveway, all substantially as described.

9. The combination, in a pegging-machine, of a feeding device for presenting a peg to the action of the severing mechanism and to the driver, means for severing a peg and conveying a peg previously severed to a pocket, and a driving-bar provided with a lug or shoulder transverse to its axis for depositing a peg in said pocket, substantially as described.

10. The combination of the divided awl E^2, the connecting-bars E^1, and suitable means for reciprocating the same.

11. An awl made in two longitudinal parts, counterparts of each other.

12. In a pegging-machine, an awl divided longitudinally at its center, and attached at its ends to separate bars, each bar being provided with a limited lateral movement, substantially as and for the purposes described.

13. The combination of the awl-supporting bar E^1, pivoted to the bar E, as described, with the guide E^4 and the recess E^3, whereby the two parts of the awl are centered in forming the point before impact with the material, and are separated in the descent of the peg, substantially as described.

14. The combination, with the nose of a pegging machine, provided with the recesses E^3, of guides E^5 and connecting-bars E^1, substantially as described.

15. In a pegging-machine, an awl or other piercing instrument in two parts, in combination with the operating mechanism described and the driving mechanism, whereby the two parts are joined at their points in driving, and when at rest the inner sides of each part of the awl form the walls of a portion of the driveway through which the peg is driven, substantially as described.

16. An awl or other piercing instrument made in two longitudinal parts, as described, and inclined or beveled upon their inner upper surfaces, as set forth, in combination with suitable recesses upon the side of the nozzle of the pegger, whereby by the descent of the peg, after the awl has been lifted, its two parts may be separated and form two walls of the driveway, substantially as described.

17. The combination of the driver H, the awl-driving bar E, provided with the projection *e*, the latch D′, and the cam F, all arranged to operate substantially as described.

18. The combination of the cam F with the reciprocating plate G, carrying the hooks *g*, substantially as described.

19. The combination of the cross-head C, carrying the driver H, a bar, D, carrying the latch D′, and provided with the rod Q and its casing, with the spring M, cylinder O, and case N′, substantially as described.

JOSEPH E. CRISP.

Witnesses:

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A. J. OETTINGER.