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E. WOODWARD & M. BROCK.

Pegging-Machines.

No. 218,354. Patented Aug. 5, 1879.

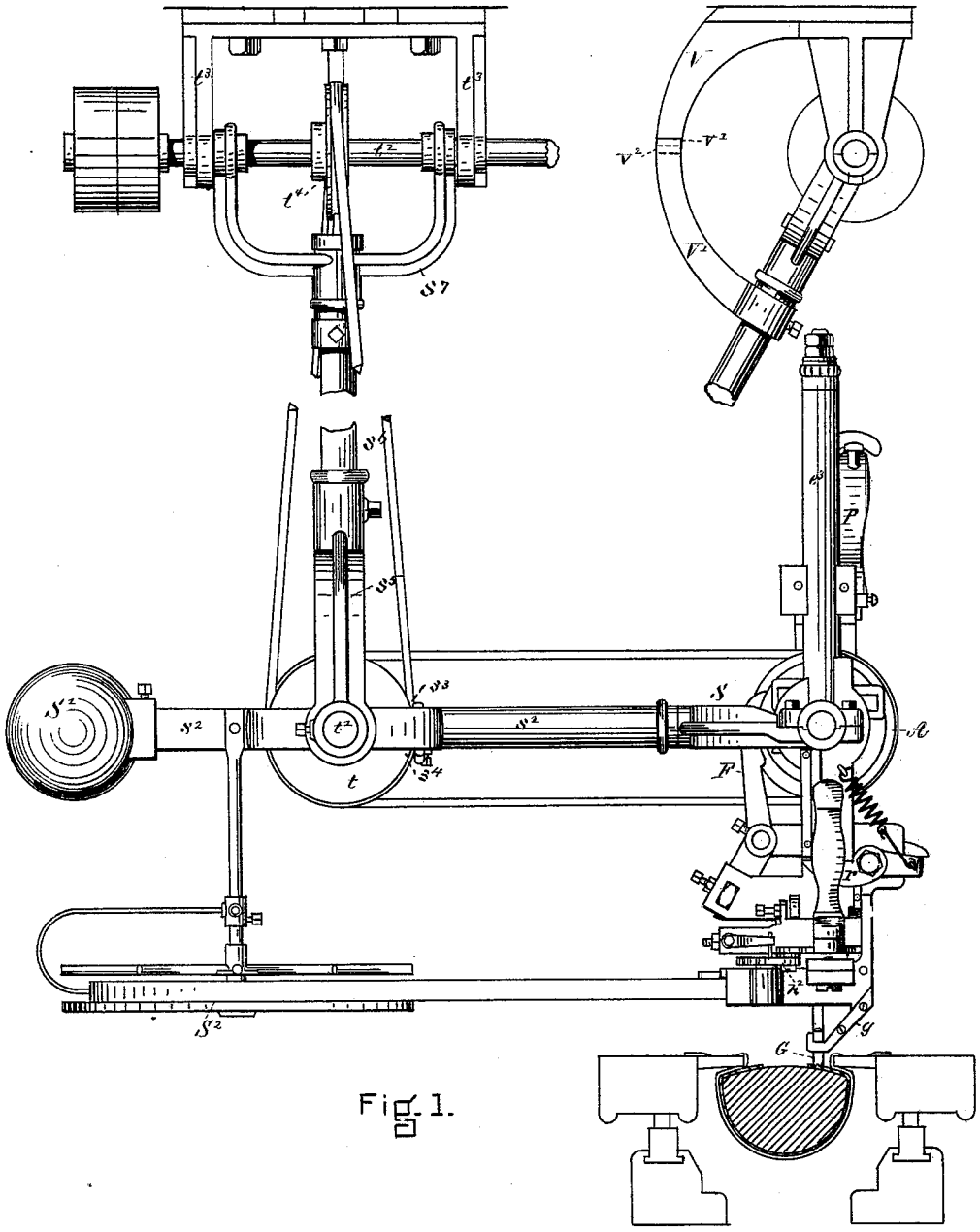

Fig. 1.

WITNESSES.

Frank G. Parker

C. F. Raymond 2d

INVENTORS.

Eastus Woodward

Matthias Brock

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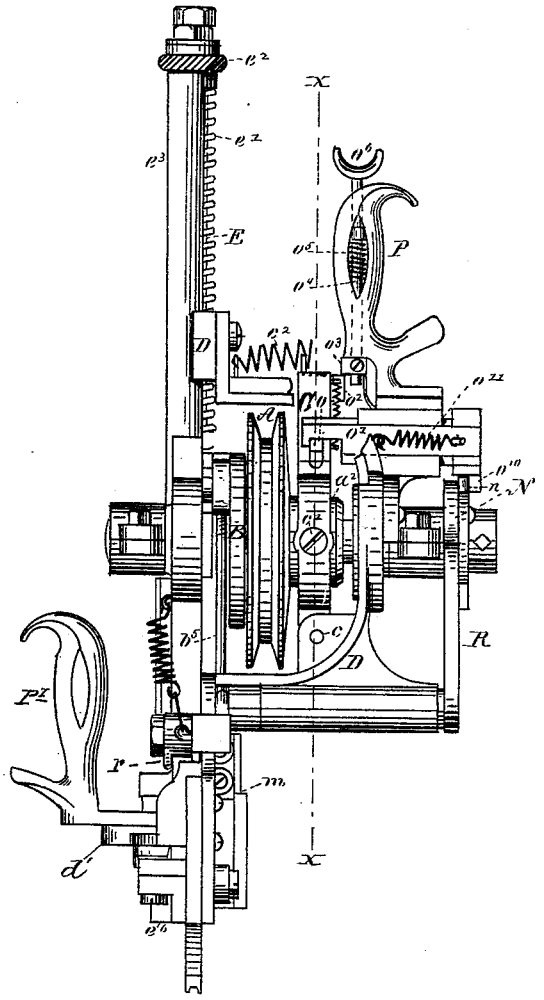

Fig. 2.

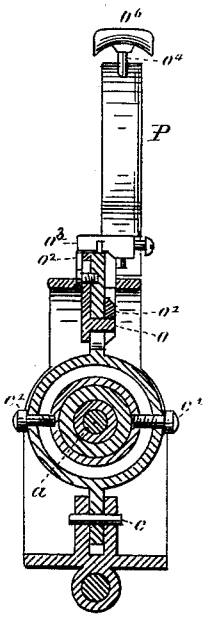

Fig. 3.

WITNESSES.

Frank G. Parker

F. F. Raymond 2d

INVENTORS.

Erastus Woodward

Matthias Brock

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E. WOODWARD & M. BROCK.

Pegging-Machines.

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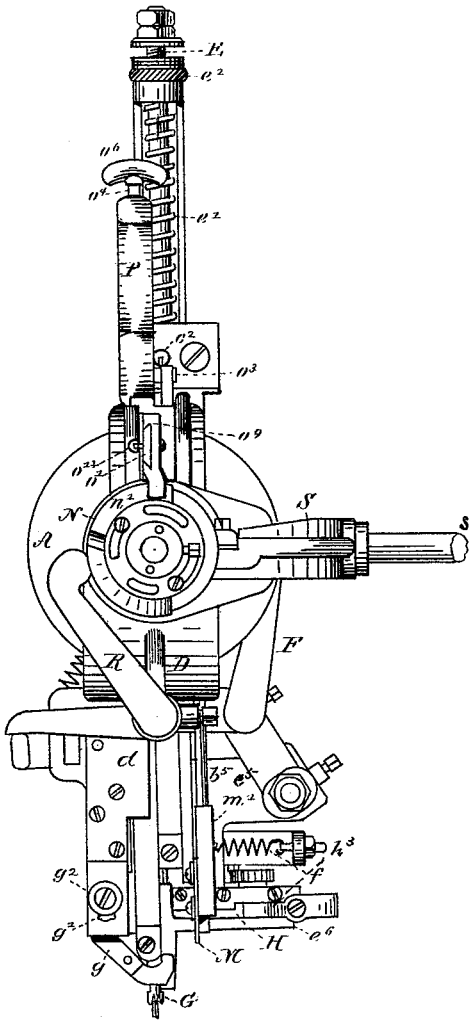

Fig 4

WITNESSES.

Frank G. Parker

A. G. Raymond 2d

INVENTORS.

Austin Woodward

Matthias Brock

5 Sheets—Sheet 4.

E. WOODWARD & M. BROCK.

Pegging-Machines.

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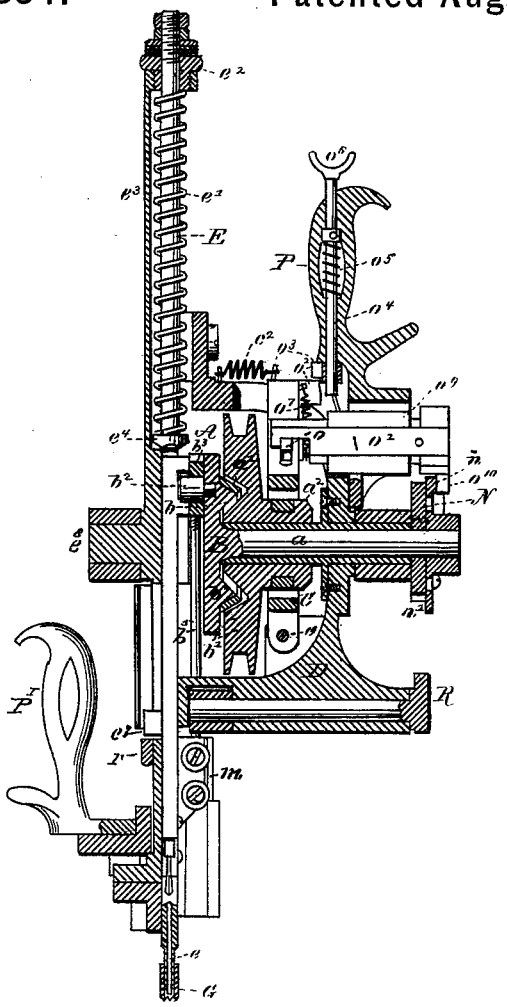

Fig. 5.

WITNESSES.

Frank G. Parker.

F. F. Raymond 2d

INVENTORS.

Erastus Woodward

Matthias Brock

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E. WOODWARD & M. BROCK.

Pegging-Machines.

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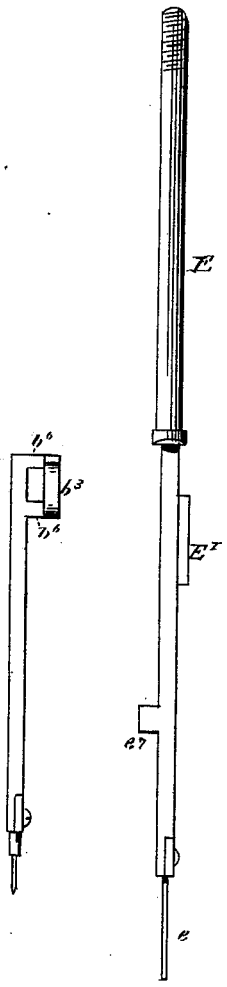

Fig. 8.

Fig. 9.

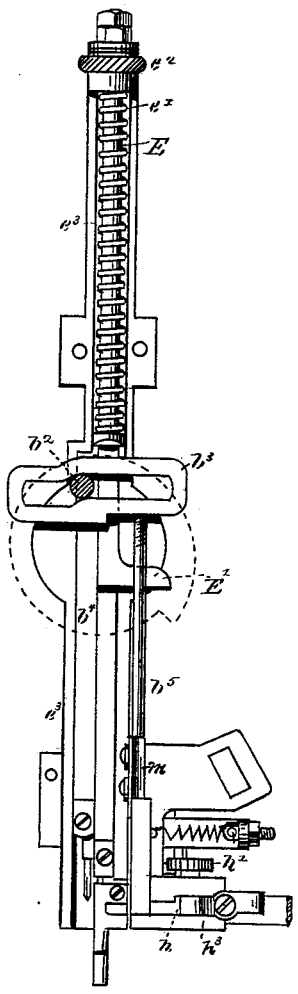

Fig. 6.

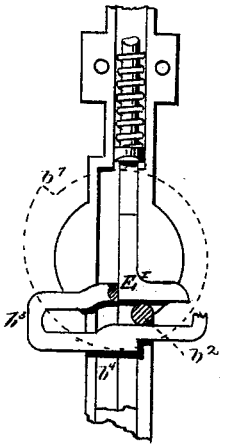

Fig. 7.

WITNESSES.

Frank G. Parker.

C. F. Raymond 2d

INVENTORS.

Austus Woodward

Matthias Brock

UNITED STATES PATENT OFFICE.

ERASTUS WOODWARD AND MATTHIAS BROCK, OF BOSTON, MASSACHUSETTS, ASSIGNORS TO THE COPELAND LASTING MACHINE COMPANY, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN PEGGING-MACHINES.

Specification forming part of Letters Patent No. **218,354**, dated August 5, 1879; application filed April 21, 1879.

To all whom it may concern:

Be it known that we, ERASTUS WOODWARD and MATTHIAS BROCK, both of Boston, in the county of Suffolk and 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 within-described pegging-machine and means for supporting the same in relation to the work upon which it is to be used, for providing it with all necessary adjustments in relation thereto required in presenting it to the work, and in placing and removing it for each peg driven.

Power pegging-machines have generally been made stationary, and the work to be pegged has been fed to the driving mechanism. We believe this is the first instance in which a power pegging-machine is suspended above the work-support, so that it can be easily and freely placed and moved in operation. A machine of this nature is very desirable for use in connection with the process of uniting the uppers of boots and shoes to the insole in the lasting process, as with most of the lasting-machines now employed it would be impossible to feed the work to a stationary peg-driving mechanism. We have therefore represented it in Fig. 1 in connection with a portion of a lasting-machine.

In the drawings Figure 1 is a side elevation of the lower portion of the supporting devices and driving mechanism and a front elevation of the upper part. Fig. 2 is a front elevation of the pegging-machines. Fig. 3 is a cross-section thereof on the line X X of Fig. 2. Fig. 4 is a vertical elevation of the machine. Fig. 5 is a vertical central section thereof. Figs. 6 and 7 are detail views, representing the construction of the mechanism driving the awl and driving-bar. Figs. 8 and 9 are detail views of the awl and awl-supporting bar, and of the driver and the bar supporting the same.

The driven pulley A has a bearing on the shaft a and a movement to and from the cam-disk B, with which it has a clutch-connection. Its face is provided with a V-shaped recess, a^1, the upper wall of which is adapted to engage with the upper side of the projection b on the cam-disk B. The pulley is provided with a hub-extension, a^2, which is laid hold of by the clutch-lever C, pivoted at c to the frame D, straddling the hub, and connected therewith by the pivots c^1, which enter a circumferential recess therein. A spring, c^2, extending from the edge of the frame to the end of this lever, serves to keep the clutch in contact with the cam when it is not held therefrom by mechanism hereinafter described.

The disk B is fastened to the end of the shaft a. It is provided with the edge-cam b^1, which operates the transferring mechanism, and the cam-pin b^2, which actuates the slotted cross-head b^3, to which the awl-supporting bar b^4 and the rod b^5, carrying the peg-severing knife, are attached. The cam-pin also lifts the driving-bar E, carrying the driver e, by contact with the extension E′, which projects from the driving-rod into the upward path of the cam-pin against the tension of the driving-spring e^1, which surrounds the driving-rod and bears against the adjusting-nut e^2 upon the standard e^3 and the shoulder e^4 on the driving-bar.

The cross-head b^3 is rigidly fastened to the awl-driving bar by the studs or portions b^6, and the awl-driving bar is reciprocated vertically in the standard e^3 parallel with the wall of the standard on one side and the driving-bar on the other.

The edge-cam b^1 operates through the rock-lever F, which lays hold of the projection e^5 to move the standard e^3 laterally sufficient to cause the transfer of the awl and driver at the requisite interval.

The frame D is provided with the downwardly-projecting portion d, to which the bracket g, carrying the throat G, is adjustably secured by means of the slot g^1 and set-screw g^2. Attached to the lower end of the standard e^3 is the bracket e^6, in which is the feed-way H. This feed-way opens into the driveway, in which the peg-driver e reciprocates, and which is supported by the bracket e^6.

The feeding mechanism consists in a vertical corrugated feed-wheel, h, which is arranged to project into the feed-way from the inner side, and is intermittently revolved by means of

the pinion h^1 and pawl h^2. The adjustable presser h^3 is arranged opposite the feed-wheel, and provides the requisite pressure for holding the peg-strip against the feed-wheel.

The knife M is fastened to the head m, having suitable bearing in the block m', and is operated by the rod b^5 to reciprocate across the feedway.

The shaft a is provided with bearing in the frame D, and carries at its end the disk N, provided with face and edge cams, which operate the mechanism for disengaging the driven pulley from the cam-disk B after the driving of each peg, and also a device for lifting the driving-bar immediately before the transfer of the awl, for the purpose of relieving the throat and other parts against which the driving-rod bears from the stress of the driving-spring while the transfer is taking place.

The catch o projects from a slot of the same width in the lever C, which allows a vertical movement in relation to the latch o^1. It is fastened to the plate o^2, which is arranged to engage with the projection o^3 on the end of the rod o^4 in the handle P. This rod is depressed against the tension of the spring o^5, which surrounds the same, and is provided with the thumb-piece o^6. A spring, o^7, serves to keep the plate o^2 in contact with the projection o^3.

The latch o^1 is provided with a horizontal movement in the block o^9 by means of the face-cam n, against which the piece o^{10}, projecting downwardly from the latch-bar, contacts.

A spring, o^{11}, maintains the contact between the cam and the piece o^{10}. The cam serves to disengage the pulley from the driving-cam disk B, after the driving of each peg, by causing the latch o^1 to move away from the pulley, thereby moving the lever C in the same direction, and causing it to move the driven pulley from contact with the cam-disk. This allows the pulley to revolve freely until the clutch on its side again engages with the cam-disk. This is effected by tripping the catch and allowing the spring c^2 to draw the clutch-lever toward the pulley, thereby causing the pulley-clutch to engage with the cam-disk B. After the latch is tripped it is returned by the spring o^{11} to a position to again engage with the catch, and it remains stationary until the descent of the driving-rod, when the cam causes it to disengage the driven pulley in the manner indicated.

The edge-cam n' operates, through rock-lever R, lever r, which engages with a projection, e^7, upon the side of the driving-bar, and serves to elevate the same preparatory to a transfer of the awl and driving mechanism in relation to the stationary throat.

The standard e^3, which supports the awl-carrying bar, the driving-bar, and the feeding and severing devices, is pivoted at e^8 to one arm of the yoke S, and the other arm of the yoke lays hold of and furnishes a bearing for the shaft a just beyond its bearing in the frame D. A bracket, d', is fastened to the frame D, and supports the handle P', as well as the pawl actuating the pinion on the feed-wheel shaft.

A spring, f, is fastened to the end of this bracket and to the lower end of the standard e^3, and it serves to keep the lever F in contact with its actuating-cam, and moves the end of the standard e^3 and the mechanism held thereby in effecting the transfer when the shoulder b on the operating-cam b^1 has passed beyond the end of the lever.

The yoke S is provided with a rod which fits in the sleeve s^1 upon the bar s^2 and swivels therein. The extent of this motion may be regulated by the stop s^3 upon the end of the rod, which is a metal piece provided with a V-shaped recess, so arranged in relation to the projection s^4 upon the hanger s^5 that its inner faces alternate by contact therewith.

The bar s^2 is arranged to straddle the pulley t, and is provided with a pivotal bearing on the shaft supporting said pulley, and it carries at its opposite end the adjustable counter-balance S^1 and the reel S^2, carrying the peg-strip. The hanger s^5 supports the shaft t^1, and is connected by the rod s^6 and hanger s^7 to the shaft t^2, upon which the hanger s^7 swings. This shaft t^2 is supported by the brackets t^3, fastened to any sufficient support. The shaft t^2 carries the driving-pulley t^4.

Power is communicated to the machine by means of belts extending from the driving-pulley t^4 to the intermediary pulley t, and from thence to the driven pulley A.

The supporting-rod s^6 is arranged to swivel in its hanger s^7.

When not in use the machine may be moved away from its work, and supported by means of the arm V, projecting downwardly from the bracket t^3, provided at its end with a lug, v^1, and the arm V', projecting upwardly from the supporting-rod s^6, having a lug, v^2, so arranged as to lap upon the lug v^1 when brought in line therewith and moved thereon.

It will be seen that by this construction of support the pegging-machine is provided with every necessary adjustment in relation to the last or other work-support; that by the swinging connection of the hanger carrying the supporting-bar with the driving-shaft a lateral movement is provided the machine; that by the swiveling connection of the supporting-rod in the hanger a circular movement is allowed the pegging-machine; and that by the combination of these two adjustments the pegging-machine can be placed at any point within the reach of the supporting mechanism.

By the transverse supporting-bar, which carries the counter-balance, the weight of the pegging-machine is not only balanced, but provision for its vertical adjustment provided.

The oscillating movement of the yoke S in the sleeve s^1 provides the machine with adjustment as to its inclination in relation to the work.

In order to conveniently place and remove the machine in relation to the work, the han-

dle P′ should be placed in close proximity to the throat of the machine, and preferably upon its left side, and the handle P placed upon the other side of the throat, and preferably above the line of the first handle. By thus locating the handle P′ the nozzle of the machine is under control to a greater extent than if the handle were placed in any other position in relation to it. This is obvious from the fact that the nozzle or throat is the part of the machine which must be quickly moved and be accurately placed, and that the machine is so suspended that the nearer the hand is to this point the easier it is for the operator to place the nozzle upon the transfer of the machine.

To operate the machine, the handle P′ is held in the left hand and the handle P by the right hand, with the thumb bearing upon the thumb-piece. The machine is then placed, its throat resting upon the spot where the tack is to be driven. The thumb-piece is then depressed, thereby operating the tripping mechanism and allowing the driven pulley to engage with the driving-cam disk. The awl is then driven and a peg severed and fed. As the awl-bar is lifted the driving-bar is also raised against the driving-spring until the cam-pin, having revolved sufficiently, releases the same and allows the spring to operate the driver.

Immediately before the driving-rod descends the transfer of the driveway to the position occupied by the awl in line with the throat is effected in the manner herein indicated, and by this movement the spur-wheel is revolved sufficiently to feed the peg-strip the necessary distance by its movement in relation to the pawl.

Immediately before the descent of the awl the transferring mechanism automatically moves the awl to its original position in the manner indicated.

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

1. In a pegging-machine, the combination of the driven pulley A, having a loose bearing upon the shaft *a* and a movement thereon to and from the cam-disk B, and adapted to engage therewith, with said cam-disk B, all arranged to operate substantially as described.

2. In a pegging-machine, the combination of the driven pulley A, the cam-disk B, operating the awl-driving, peg-severing, and peg-driving mechanism, as described, and disengaging mechanism, whereby, after the driving of each peg, the said pulley is disengaged from the said cam-disk, substantially as described, for the purpose specified.

3. The combination of the standard e^3, pivoted at e^8 to one end of the yoke S, and supporting the awl-driving, peg driving, feeding, and severing mechanism, with the edge-cam b^1 on the disk B, and suitable connecting mechanism, and the spring *f*, all adapted to operate in affecting the alternate transfers of the awl and peg driver in relation to the foot G, substantially as described.

4. The combination of the feed-wheel *b*, presser h^3, and the pinion b^1, all provided with a lateral movement upon the end of the standard e^3, with a pawl, h^2, pivoted to the stationary bracket *d*, whereby, by the movement of the standard in effecting a transfer, the peg-strip is fed to the severing mechanism and a peg to a position in the feedway under the driver by the movement of the pinion in relation to the pawl, substantially as described.

5. The combination of the driven pulley A, the clutch-lever C, the latch o^1, and the cam *n*, all arranged to operate substantially as described in unshipping the driven pulley from the operating-disk.

6. In a pegging-machine, the combination of the driven pulley A, adapted to engage with the cam operating the awl and peg driver mechanism for automatically disengaging said pulley from said operating-cam disk at stated intervals, and a tripping device for disengaging said mechanism from said pulley, all adapted to operate substantially as described, for the purposes set forth.

7. In a pegging-machine, the combination of the cam *n*, the latch o^1 and the spring o^{11} with the clutch-lever C, spring o^3, catch *o*, tripped by the thumb-piece o^6, and suitable connecting mechanism, all arranged to operate substantially as described.

8. In a pegging-machine, the combination of the pulley A and the clutch-lever C, provided with a catch, with the cam *n* and spring o^{11}, all arranged to operate substantially as described.

9. In a pegging-machine, the combination of the thumb-piece o^6, the latch o^1, and suitable connecting mechanism for tripping the same, all arranged to operate substantially as described.

10. In a pegging-machine, the combination of the constantly-revolving driven pulley A, adapted to engage with and to operate the cam-disk B, which actuates the awl, the driver, the peg feeding and severing mechanism, and transferring devices, as described, with the mechanism set forth for automatically disengaging said pulley from the said disk after the driving of each peg, all arranged to operate as specified.

11. The combination of the cam *n′*, the projection e^7 upon the driving-bar, and suitable connecting mechanism, whereby the said driving-bar is slightly lifted before the movement of standard e^3 is effected, substantially as and for the purposes described.

12. As a means for suspending a pegging-machine, the combination of the yoke S, adapted to be attached at one end to a suitable support, with said support, and with the pegging mechanism supported at its other end, as described, all for the purposes set forth.

13. A suspended pegging-machine having

the two handles P P′, one of which supports the device for operating the peg-driving mechanism, substantially as described.

14. In combination with a power pegging-machine, the described means for suspending the same in relation to the work-support, whereby the machine is provided with universal adjustment in relation to the work-support while in operation, consisting of the yoke S, adapted to lay hold of the pegging mechanism, as described, its supporting counterbalanced tilting bar S^1, the supporting-rod s^6, and the hanger s^7, all arranged in relation to each other substantially as described, and for the purposes set forth.

15. In a suspended power pegging-machine, the combination of the yoke S, provided with a swiveling connection in its support, said support, and said pegging-machine, whereby the said machine is provided with oscillating movement at right angles to the longitudinal axis of the yoke, substantially as described, and for the purposes set forth.

16. The combination of a tilting bar supporting at one end a pegging-machine and at its other end a counter-balance with a swinging frame arranged to lay hold of said bar and support the same in the manner indicated, whereby the pegging-machine is provided with vertical adjustment in relation to its work-support, all substantially as described.

17. As a means for providing a power pegging-machine with movement to and from its work-support, the hanger s^7, the rod s^6, and the bar s^2, one end of which bears a counter-balance, and the other end of which supports the yoke carrying the pegging-machine, all substantially as described.

18. As a means for suspending a power pegging-machine, the combination of the swinging hanger s^7, the rod s^6, having a swiveling connection with said hanger, a balanced bar, s^2, supported by said rod and arranged to swing upon its support, and a yoke carrying the power pegging-machine, having a swiveling connection within the end of the bar s^2, all arranged to operate substantially as described.

19. As a means of communicating power to a suspended power pegging-machine, the combination of the driven pulley t^4 on the shaft t^2, the intermediary pulley t, supported by the hanger s^6, as described, the movable driven pulley A on the shaft a of the pegging-machine, and their connecting-belts, all arranged in relation to each other to operate substantially as set forth.

20. As a means for supporting the peg-wood in a suspended power pegging-machine, the peg-reel S^2, suspended from the tilting bar s^2, as described.

21. The combination of the swinging rod s^6, arm V′, attached thereto, and provided with a lug, r^2, with the downwardly-projecting arm V, and its lug r^1, all arranged to support the pegging-machine when removed from its work, substantially as described.

ERASTUS WOODWARD.
MATTHIAS BROCK.

Witnesses:
FRANK G. PARKER,
F. F. RAYMOND, 2d.