(No Model.)

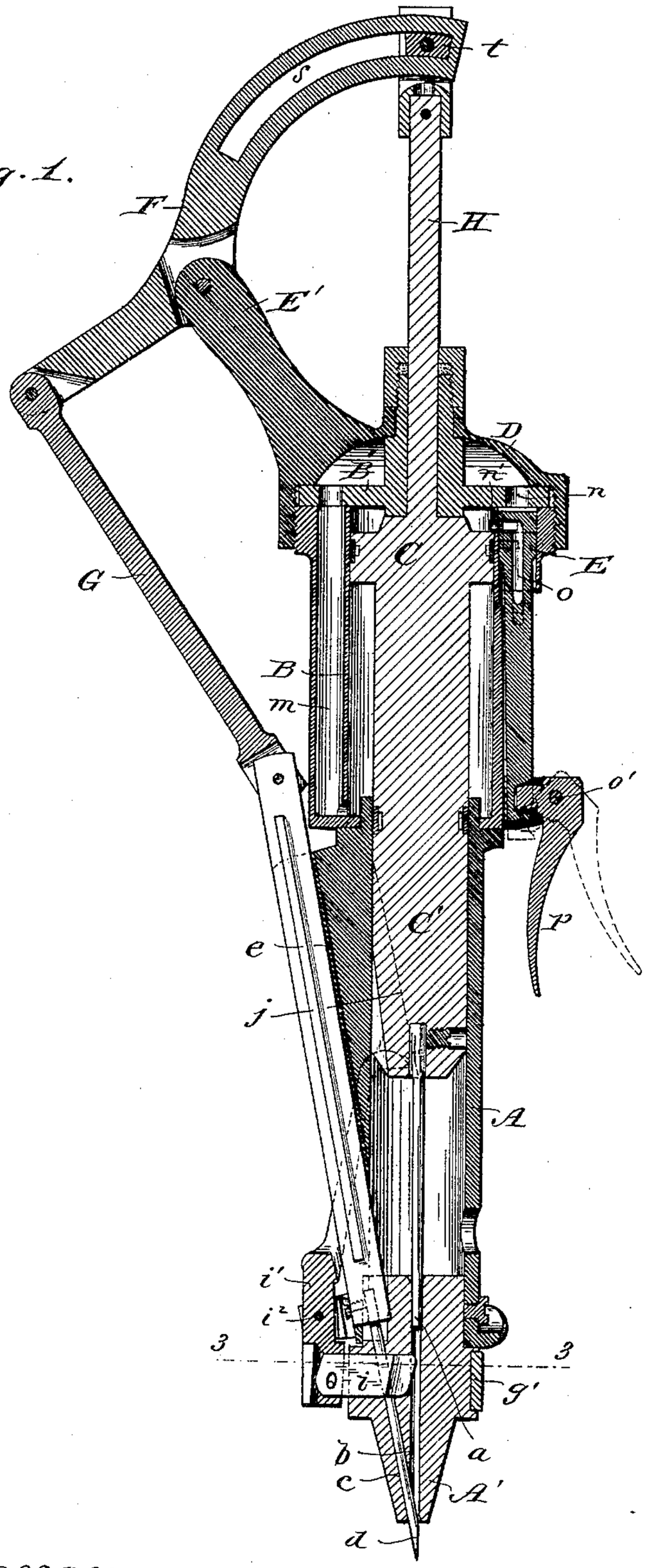
2 Sheets—Sheet 1.

F. CHASE.

PEGGING MACHINE.

No. 338,930. Patented Mar. 30, 1886.

Fig. 1.



Witnesses:
N. A. Low
E. F. Dick

Inventor:
Frank Chase
by Marcellus Bailey
his attorney

(No Model.)

2 Sheets—Sheet 2.

F. CHASE.

PEGGING MACHINE.

No. 338,930. Patented Mar. 30, 1886.

Fig. 2.

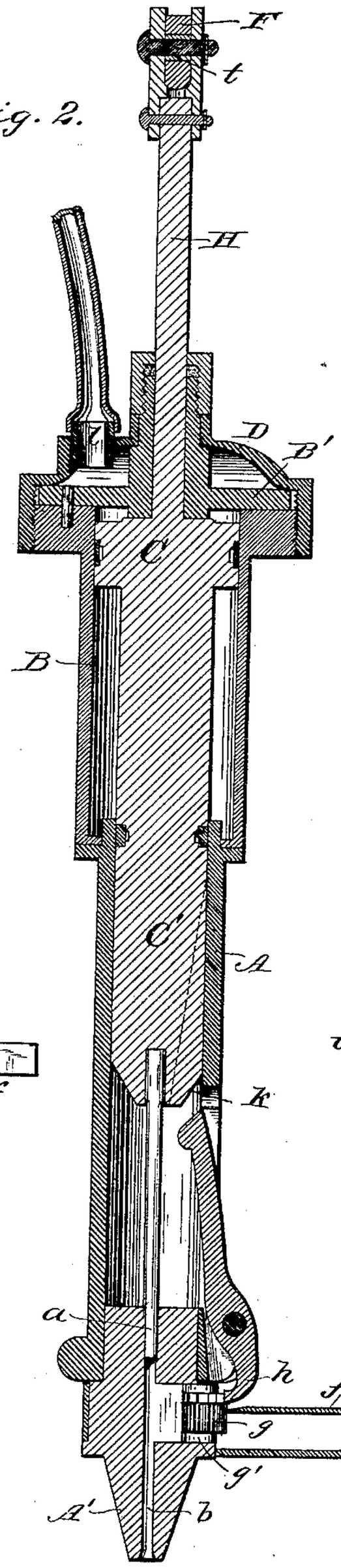


Fig. 3.

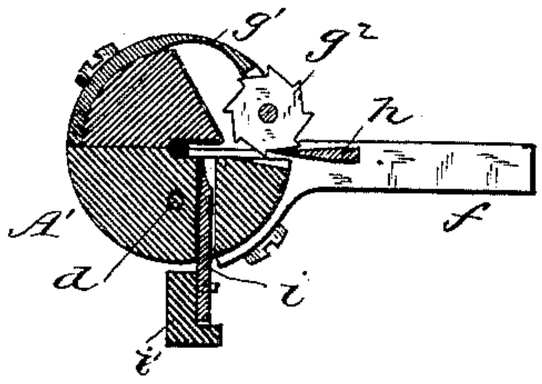
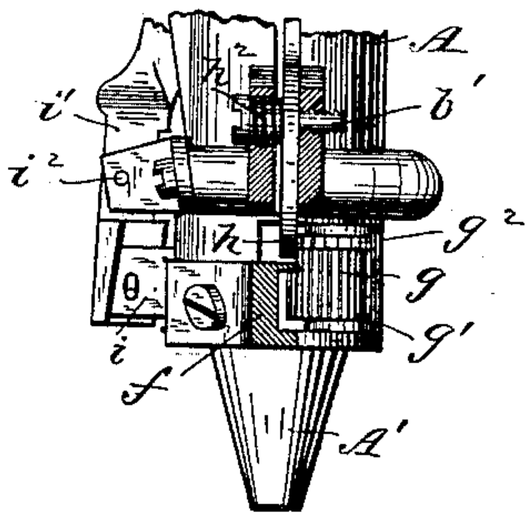


Fig. 4.



Witnesses:
A. N. Low
E. F. Dick

Inventor:
Frank Chase
by Munn & Co Bailey
his attorneys

UNITED STATES PATENT OFFICE.

FRANK CHASE, OF BOSTON, MASSACHUSETTS.

PEGGING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 338,930, dated March 30, 1886.

Application filed December 10, 1885. Serial No. 185,301. (No model.)

To all whom it may concern:

Be it known that I, FRANK CHASE, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Pegging-Machines, of which the following is a specification.

My invention has more particular reference to that kind of pegging-machine which is moved by hand over the last on which is held the shoe or boot to be pegged.

The object is to furnish for the purpose of appropriately actuating the several operative parts of the pegger a power mechanism which shall be under the entire and convenient control of the operator, and which shall act efficiently to impart the requisite movement to the several operative parts of the machine.

It has heretofore been proposed to combine with a pegger a small engine operated by steam, air, or other fluid, for the purpose of actuating the parts. This feature is involved in my invention. Hitherto, however, so far as I am informed, the piston of the engine has had an invariable length of stroke, being provided with a valve and valve-operating mechanism operated to shift the valve at each extreme of movement of the piston. Such an arrangement manifestly is disadvantageous on many accounts, particularly when the driver and awl are connected with and operated by the piston or some part moving in unison therewith. Under these circumstances it is difficult, if not impracticable, to vary the stroke of the awl and driver as they should vary to accord with variations in the thickness of stock operated on, as well as in the shape of the last. The consequence is, that the awl and driver are liable at times to descend not far enough, and at other times to descend too far, which frequently results in damage to the stock, and also the awl and driver themselves, particularly if the last on which the work is mounted has an iron bottom. By my invention these and other disadvantages are avoided in great measure, if not altogether. The motor which forms part of the pegging-machine, and which directly actuates the awl or driver, or both, is so arranged as to be directly under control of the workman, who can check it at any part of the stroke in either direction, and can again put it in operation whenever he so desires.

The nature of the invention and the manner in which the same is or may be carried into effect will be readily understood by reference to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical central section of a machine embodying my invention in the plane of the awl and its system of actuating-levers, the awl slide or carrier and the peg-cutter being shown in elevation. Fig. 2 is a like section in a plane at right angles to the plane of section in Fig. 1. Fig. 3 is a cross-section on line 3 3, Fig. 1. Fig. 4 is a side elevation of the lower end of the machine, looking at that side on which the guideway for the peg-wood is situated, both the guideway and the ears or bearings in which the feed-lever is pivoted being shown in section.

A is a tubular stock, in or on which are mounted the operative parts of the pegging mechanism, and which constitutes a handle by which the machine can be held in the hand of the workman. In the lower part of this stock is the bearing-piece or nozzle A′, having a central aperture, *b*, in which the driver *a* is guided and moves. Leading into the lower end of this aperture is a slanting aperture, *c*, in which is the awl *d*, mounted on and carried by a slide or carrier which moves in a slanting guideway, *e*, on the exterior of the stock A.

The guideway for the peg-wood is shown at *f*; the feed-wheel at *g*, carried by a spring-strip, *g′*, so as to exercise yielding pressure on the peg-wood.

The feed pawl or lever is shown at *h*, arranged to operate on the ratchet g^2, with which the feed-roll is provided.

The knife for severing the peg-wood into pegs is shown at *i*, arranged to slide to and fro in a suitable guide-slot in the nozzle A, and operated so as to move at appropriate times by the lever *i′*, pivoted at i^2 to the lower end of the stock. Both the feed-lever and the knife-lever project at their upper ends into the interior of the stock through suitable slots in the same. They are operated to move in one direction by the piston or piston-rod hereinafter described, and in the other direction by suitable springs, which act when the piston with-

draws from said levers. The feed-lever *h* is made spring-yielding laterally, so that it may ride over the teeth of the ratchet, and for this purpose it is capable of lateral movement on its pivot *b'*, and is held up in position to engage the ratchet by a spring, *h²*; or, in lieu of this, the lower end of said lever may be a spring-strip capable of yielding laterally.

There is nothing essentially new in the parts thus far described or in the manner of grouping the same. They also co-operate together in the customary way. The awl rises when the driver descends. The feed and peg cutter or knife operates before the driver descends far enough to reach the point where it finds the peg, the feed carrying forward the inner end of the peg-wood strip into the channel or aperture *b*, and the knife then advancing and severing this end from the body of the strip, thus leaving in the channel *b* a peg, which is carried down by the driver and forced into the hole previously formed in the shoe by the awl.

I proceed now to a description of the means whereby movement is imparted to the operative pegging devices. Surmounting the stock A is a cylinder, B, communicating at its lower end with the interior of the tubular stock, and closed at its upper end by a head, B'. Within said cylinder is a suitably-packed piston, C, which at bottom is prolonged into a stem, C', that extends into and fits the interior of the tubular stock A, and forms the carrier, to which the driver *a* is attached. It also constitutes the means whereby the knife-lever *i* and feed-lever *h* are operated, being for this purpose provided with cams or inclines *j k*, which at the time the piston descends act to impart appropriate movement to the knife-lever and feed-lever, respectively. The stem C' is of course provided with a suitable packing for preventing the motor-fluid in the cylinder from escaping into and through the stock. Surmounting the head of the cylinder is a dome, D, forming a chamber, which, during the time the machine is operating, is continuously supplied through the opening *l* with compressed air or other motor-fluid from some convenient source of supply. I prefer to employ compressed air. The chamber D is in continuous and uninterrupted communication with the interior of the cylinder below the piston C, through a passage, *m*, and is in communication with the cylinder-space above the piston through the passage *n*, opening laterally into the cylinder, said lateral opening or port *n'* being controlled by a valve, E, which can be moved so as to put this port *n'* in communication either with the supply-passage *n*, or with an exhaust port or passage, as the case may be, said exhaust port or passage being shown at *o* as formed in the valve itself. It of course communicates at its outer end with the external atmosphere. The valve is operated to move by a latch or finger lever, *p*, pivoted at *o'* to ears on the exterior of the cylinder and engaging the valve-stem, as shown in Fig. 1. This finger-lever is in a position convenient to the hand of the workman, so that whenever desired it may be pressed by hand to the position shown in full lines in Fig. 1, by which movement the valve is brought to a position in which the supply-passage *n* is closed, and the port *n'* is in communication with the exhaust port or passage *o* in the valve. The moment pressure on the lever *p* is released the pressure of the motor-fluid through the passage *n* on the head of the valve will depress the latter, so as to open communication between the dome and port *n'*, bringing the lever *p* to the position shown by dotted lines in Fig. 1. The piston C has faces of different areas, its upper face having a considerably greater area than its lower face. Consequently, although the compressed air or other motor-fluid is constantly admitted to the under side of the piston, yet whenever it is admitted above the piston it will, by reason of the greater area of pressure of that side or face, force the piston down against the inferior pressure below, the air or fluid thus displaced and driven out from below the piston returning up into the dome D through the passage *m*. Whenever the driver meets with an obstruction—as, for instance, by bringing up against the bottom of the last—this resistance will check the movement of the piston, even though it has not completed its full stroke, thus enabling the parts to adapt themselves to the varying conditions of the work, and then by pressing the lever *p* the pressure above the piston is relieved, and the pressure from below acts to at once drive the piston upwardly. The piston has the same capacity for making a more or less complete upward stroke also, and thus the awl can also adapt itself to the varying requirements of the work. Pivoted to a bracket, E', on the upper end of the cylinder or the dome is a lever, F, jointed at one end to the connecting rod or link G, which is jointed to the awl carrier or slide, and provided in its other end with a curved slot, *s*, in which works the slide-block *t*, which is pinned to the upper end of the piston-rod H, which extends up through a suitable stuffing-box in the dome and cylinder-head. The reciprocations of the piston-rod cause corresponding vibratory movement of the lever F, and in this way appropriate movement is imparted to the awl, the arrangement being such that the awl rises when the driver descends, and vice versa.

The mode of operation of the machine has been sufficiently indicated already in the course of this specification, and therefore need not be again set forth here.

Having now described my invention and the best way known to me of carrying the same into effect, I desire to be understood that I do not restrict myself to the details of construction hereinbefore shown and described, for the same may be widely varied without departure from the principle of the invention; but

What I claim as new and of my own invention is—

1. The combination, with the stem or handle of the pegging-machine, of the motor-cylinder, the piston having heads of different areas, the continuously open passage for conducting the motor-fluid to that head of the piston which has the smaller area, the passage or port for conducting said fluid to the other head of the piston, the valve controlling said last-named passage, and means, substantially as described, for controlling at will the movement of the valve, all substantially as hereinbefore shown and set forth.

2. The combination of the stem or handle, the motor-cylinder, the differential piston, the ports for conducting the motor-fluid to the opposite side or head of said piston, the valve and its controlling hand or finger lever, and the reciprocatory awl and driver connected to and operated from the piston, substantially in the manner and for the purposes hereinbefore set forth.

3. The combination, with the motor and the handle or stem of the pegger, cutter, and feed-levers, and the piston-extension C′, provided with cams or inclines for operating said levers, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand this 5th day of November, 1885.

FRANK CHASE.

Witnesses:
EWELL A. DICK,
MARVIN A. CUSTIS.