

(No Model.)

A. VAN WAGENEN.

NAILING MACHINE.

No. 260,142.

Patented June 27, 1882.

Fig. 1

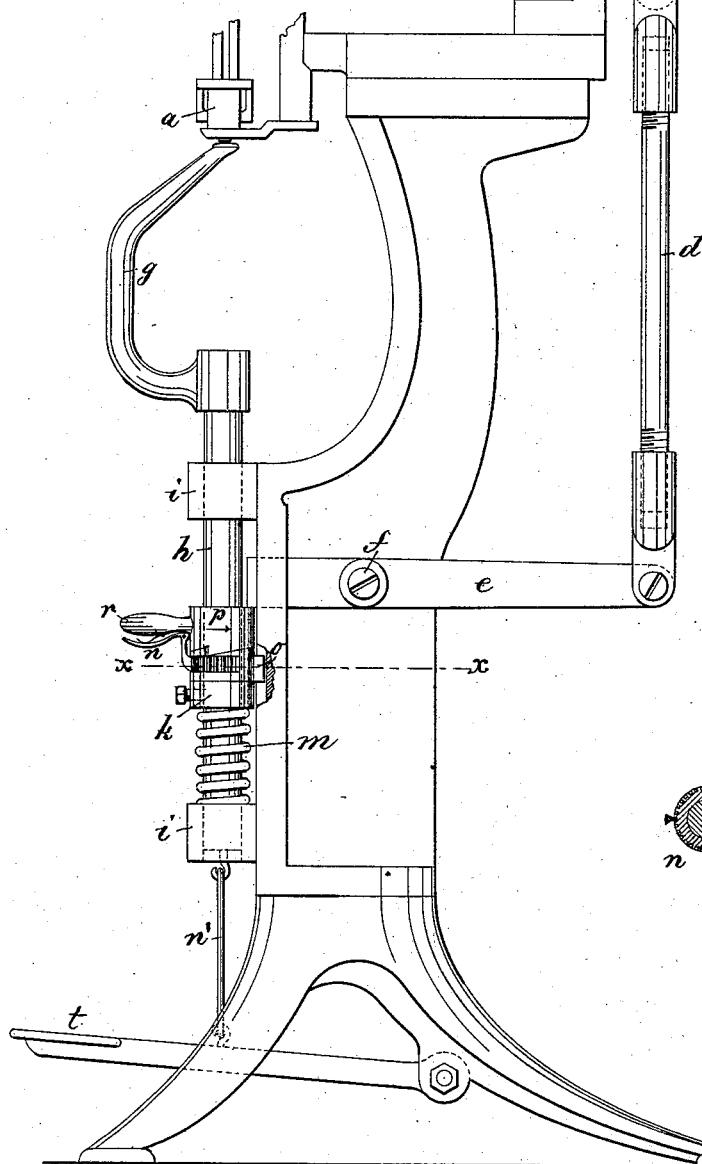
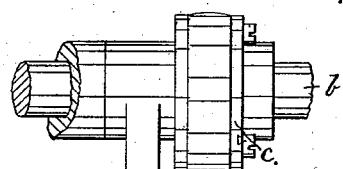
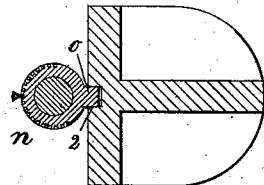


Fig: 2.



Witnesses

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UNITED STATES PATENT OFFICE.

ALBERT VAN WAGENEN, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO GORDON MCKAY, OF NEWPORT, RHODE ISLAND, AND JAMES W. BROOKS, OF CAMBRIDGE, MASSACHUSETTS, TRUSTEES.

NAILING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 260,142, dated June 27, 1882.

Application filed May 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALBERT VAN WAGENEN, of Boston, Suffolk county, State of Massachusetts, have invented an Improvement in 5 Nailing-Machines, of which the following description, in connection with the accompanying drawings, is a specification.

My invention, relating to a nailing-machine for boot and shoe work, is embodied in a nailing-machine in which the horn or support for the stock being nailed is depressed by the action 10 of the nailing mechanism after a nail or fastening has been driven, so as to permit the stock thus released from between the nose or nail-driving passage and horn to be fed into 15 proper position to receive another fastening; and the invention has for its object to enable the amount of depression of the horn to be controlled by the operator, as is necessary in 20 operating upon stock of different thickness. In another application I have shown the result accomplished by a variable intermediate device between the horn-depressing mechanism and the horn or its supporting mechanism, the 25 said intermediate device consisting of a wedge-shaped block actuated by the foot of the operator by means of a treadle connected with it.

In this present invention the mechanism which automatically depresses the horn while 30 the feed of the boot or shoe takes place is shown as a lever actuated from a suitable cam or eccentric on the main shaft, which also actuates the nail-driving, stock-feeding, and other mechanisms by which the fastening is properly introduced into the stock; and the invention consists in the combination, with the said horn, and also with it and the said depressing mechanism, of an annular cam surrounding the 35 said horn or its supporting-shaft, the said cam being adapted to be rotated by the operator 40 when it is desired to vary the distance that the tip of the horn is to be depressed below the nose or nail-driving passage.

As herein shown, the base or supporting-shaft of the horn is provided with a collar or shoulder fixed thereon, and acted upon by a spring or counter-weight to press the horn against the stock. An annular cam-seat hav-

ing an inclined surface is mounted upon the said collar so as to be free to move longitudinally with the horn, but be prevented from rotating therewith. The said cam-seat has a spiral or inclined surface co-operating with a corresponding surface of an annular cam loose upon the said horn-supporting shaft, and provided with a suitable handle to enable it to be rotated about the said horn relatively to the said seat, and also with a locking device to hold the cam in adjustable position. By rotating the said cam on its seat the top of the 55 cam which is engaged or struck by the horn-depressing device is raised or lowered with relation to the collar fixed upon the horn, owing to the spiral or inclined engaging surfaces of the cam and seat.

The horn-depressing device, which acts upon the horn through the intervention of the said annular cam or cams carried directly by the horn-shaft, has a uniform movement derived from the nail-driving mechanism, and it will 60 be seen that its effect upon the horn, or the actual distance that it will depress the horn from the nose or nail-driving passage, will depend upon the distance of the top of the said cam from the fixed collar or shoulder on the 65 horn, and consequently upon the position of the said cam on its seat, which will be regulated by the operator from time to time, as required.

Figure 1 shows, in side elevation, a sufficient portion of a nailing-machine to illustrate 70 this invention; and Fig. 2 a, sectional detail on line *x x*, Fig. 1.

The nail-passage or nose *a* and the mechanism for supplying and driving the fastenings and feeding the stock, all operated by the 75 main shaft *b*, may be of any suitable or usual construction, they forming no part of the present invention.

In the operation of the machine the stock has a feeding movement once at each rotation 80 of the main shaft *b*, which is provided with an eccentric, *c*, or equivalent, acting through the connecting-rod *d* upon one arm of a lever, *e*, pivoted at *f* upon the frame-work of the machine, the said parts constituting the horn-depressing mechanism, and being operated once 85 90 95

at each rotation of the shaft *b* to depress the horn, so as to release the stock from between it and the nose *a*, and thus permit the stock to be fed by the proper mechanism.

5 The horn proper, *g*, mounted upon a base portion or shaft, *h*, having a longitudinal and rotary movement in guides *i* upon the framework, is provided with a collar or shoulder, *k*, fixed thereon at the proper point, which is acted upon by a spring, *m*, or equivalent, tending to press the horn toward the stock between it and the nose *a*.

15 Upon the collar *k* is mounted an annular cam-seat, *n*, provided with a projection, *o*, (see Fig. 2,) which engages a slot, 2, in the framework, thus preventing the said cam-seat from rotating with the horn, but permitting it to accompany the said horn in its longitudinal movement. The upper surface of the said cam-seat

20 is made spiral or inclined, as shown, and receives upon it the cam *p*, having a corresponding spiral surface, and provided with a handle, *r*, to enable the operator to rotate it upon the shaft *h* and seat *n*. By rotating the cam *p* in the direction of the arrow thereon the height of its top above the collar *h* will be increased.

25 The horn-depressing lever *e* acts upon the top of the said cam *p*, and through it upon the seat *n* and collar *k*, to depress the horn. The said lever *e* always derives the same amount of movement from the main shaft *b*; so it will be seen that to vary the distance which the horn *g* is to be depressed below the nose *a* the operator has to depend upon the position of the top of the cam *p*. The farther the said cam is moved in the direction of the arrow the higher its surface and the greater the extent of depression of the horn.

30 The engaging surfaces of the cam *p* and its seat *n* may be serrated or roughened to prevent the rotary movement of the former when the lever *e* is acting upon it. The cam-seat is shown as toothed or serrated at its periphery, to be engaged by a locking device, *n*, shown

35 as a lever acted upon by a spring, shown just above it.

40 The spring *m* acts to press the horn against the stock when the end of lever *e* is raised from cam *p*, and at such time the operator can 45 rotate the cam *p* by means of the handle *r*, the machine being then in motion.

The cam *p* will be moved in the direction of the arrow (see Fig. 1) when it is desired to depress the horn to a lower point when the machine is working upon thick stock, and in the opposite direction when the machine is to work on thinner stock, the operator being able to judge from the action of the machine the proper position for the said cam.

55 It is obvious that a suitable rod or bar, actuated by the shaft *b* or other portion of the driving mechanism, may operate directly upon the cam *p* without the interposition of the lever, such a bar then constituting the horn-depressing mechanism.

A treadle, *t*, connected with the horn by a link or chain, *n'*, serves to depress the said horn for the purpose of applying or removing a shoe, but is independent in operation of the horn-depressing mechanism before described.

I claim—

1. In a nailing-machine, the combination, with the horn and horn-depressing mechanism, of a rotary cam interposed between the said horn and its depressing mechanism, and adapted by its change of position to regulate the extent to which the horn is depressed below the nail-tube, substantially as described.

2. The horn and annular cam-seat thereon, combined with the annular rotary cam co-operating with the said seat, substantially as and for the purpose described.

3. The horn, guides to direct it in its vertical movement, the cam-seat and movable cam adapted to rise and fall with the said horn, and a locking device to hold the cam and cam-seat in adjusted position, substantially as and for the purpose set forth.

4. The horn having vertical motions, and the annular cam-seat, and the annular cam *p*, mounted thereon, combined with projection *o*, to prevent the rotation of the cam-seat with the horn, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT VAN WAGENEN.

Witnesses:

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