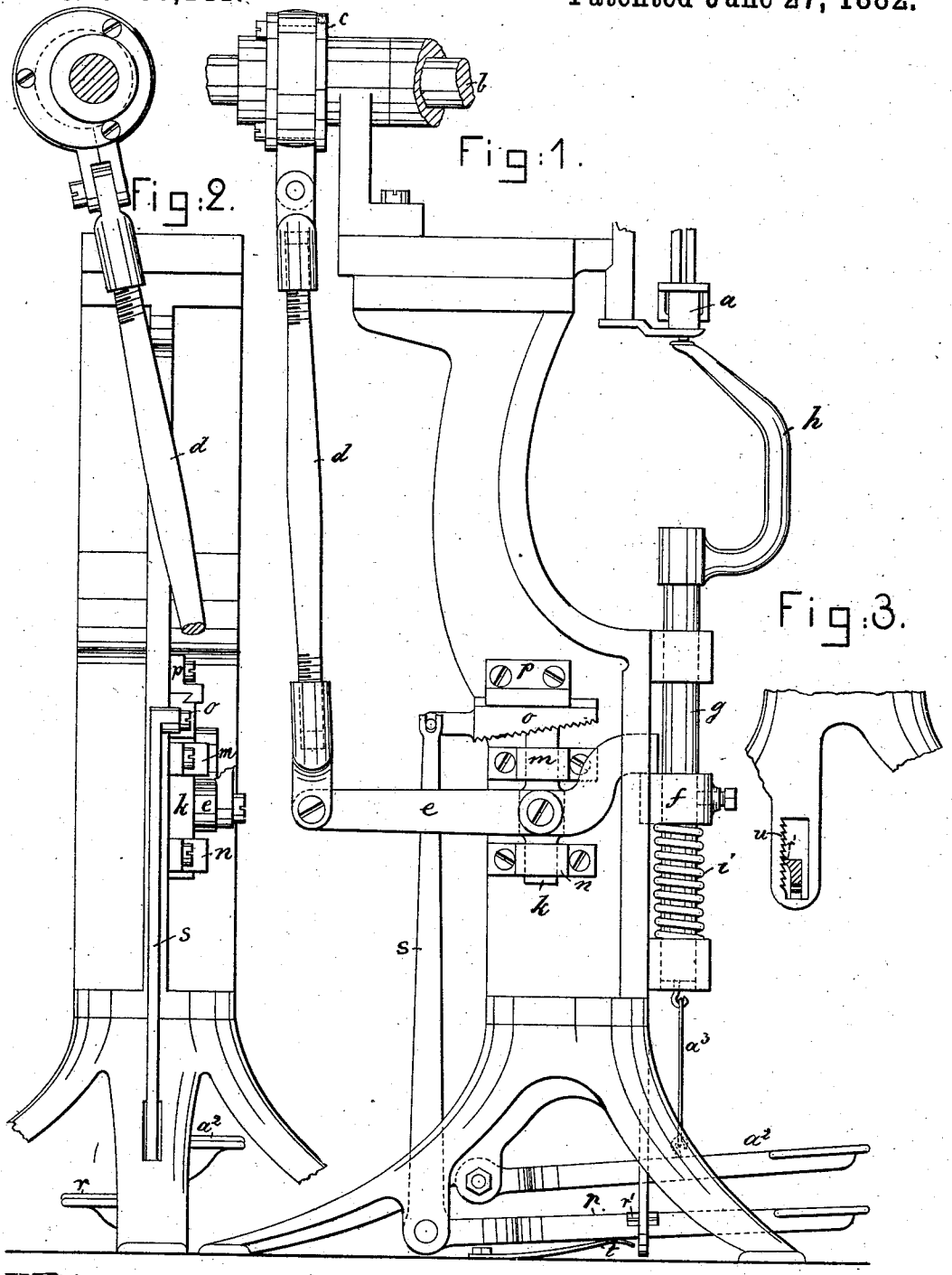
(No Model.)

# A. VAN WAGENEN.

## NAILING MACHINE.

No. 260,141. Patented June 27, 1882.

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# UNITED STATES PATENT OFFICE.

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## NAILING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 260,141, dated June 27, 1882.

Application filed May 5, 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 Nailing-Machines, of which the following description, in connection with the accompanying drawings, is a specification.

My invention relates to nailing-machines for boot and shoe work, and has for its object to enable the operator to control the amount of depression of the horn that takes place for the purpose of releasing the stock between the said horn and nail-driving passage or nose of the nailing-machine, to permit the said stock to be properly moved or fed after a fastening or nail has been driven. In another application I have shown the same object accomplished by the interposition between the horn-supporting mechanism and a horn-depressing device operated by the nail-driving mechanism of a variable intermediate or connecting device controlled by the operator to govern the effect of the said horn-depressing device upon the horn.

In the present embodiment of my invention the horn is shown as supported directly upon a spring, (which might be replaced by a counterweight,) by which it is pressed against the stock between it and the nose. The horn-depressing device consists of a lever mounted on a movable fulcrum and having one arm adapted to act upon the horn, while its other arm is so connected with the usual actuating parts of the nail-driving mechanism that the said lever has a definite movement during each operation of the machine in driving a fastening and feeding the stock to receive another fastening.

The present invention consists in the combination, with the said horn and its depressing device or lever having a movable fulcrum, of mechanism controlled by the operator for governing the position of the said fulcrum, to thereby regulate the effect of the said lever upon and the consequent amount of depression of the horn. The controlling mechanism for the fulcrum of the horn-depressing lever consists in this instance of a wedge interposed between the movable fulcrum and a fixed portion of the frame-work of the machine, it being connected with a treadle or otherwise made movable at the will of the operator, and acting to arrest the movement of the fulcrum, and thus cause the lever to act upon the horn. Before the fulcrum is thus arrested the lever is moved by the nail-driving mechanism upon its point of engagement with the horn as a fulcrum, the horn itself being then unmoved; and it will be seen that the amount of movement of the horn depends upon the point at which the actual operative fulcrum of the lever is arrested, which in turn depends upon the position of the wedge interposed between it and the frame-work.

Figure 1 represents in side elevation a sufficient portion of a nailing-machine to illustrate this invention. Fig. 2 is a rear elevation thereof, and Fig. 3 a detail to be referred to.

The nail passage or nose *a*, the nail-driving mechanism operated by shaft *b*, and the mechanism for supplying the nails or fastenings to be driven and feeding the stock may be of any suitable or usual construction, they forming no part of the present invention, and consequently needing no further description. It is supposed that the stock has a feeding movement once during each rotation of the said main shaft *b*, which is provided with an eccentric, *c*, operating upon a link or connecting-rod, *d*, connected with one arm of the horn-depressing lever *e*, the other arm of which engages a shoulder or projection, *f*, upon the shaft *g*, forming the base or lower portion of the horn proper, *h*, the said horn being pressed upward against the stock interposed between it and the nail passage or nose *a* by the spring *i* or equivalent device.

The horn-depressing lever *e* has its fulcrum on a fulcrum-carriage, *k*, having a sliding movement in the guides *m n*, fixed upon the frame-work of the machine, the said carriage being limited in its upward movement by the variable fulcrum-controlling device *o*, shown as a wedge having a sliding movement in the guide *p*, fixed to the frame-work. The said fulcrum-controlling device *o* is moved in its guide, and its position therein is controlled by a treadle, *r*, having an arm, *s*, connected with the said ful-

crum-controlling device *o*, the said treadle being acted upon by a spring, *t*, tending to move it in the proper direction to bring the narrower part of the controlling device *o* into engagement with the fulcrum-carriage *k*. When the narrower part of the controlling device *o* is thus in engagement with the carriage *k* the movement of the end of the lever *e* attached to the connecting-rod *d* will cause the horn *k* to be depressed a less distance below the nose *a* than the same movement of lever *e* will cause when the fulcrum-carriage rests against the wider portion of the block *o*. When the machine is in operation the horn *h* will be pressed by the full force of the spring *i* against the stock between it and the nail passage or nose *a*, thus holding the stock firmly while the nail is being driven, the end of the lever *e* connected with the rod *d* being at this time depressed so that its other end does not act to depress the horn. After the nail is driven the end of the lever *e* connected with rod *d* rises, and as soon as its fulcrum-carriage *k* is arrested by the controlling device *o* the other end of the lever acts upon the shoulder *f* to depress the horn *h*, thus releasing the stock from between it and the nail passage or nose *a* to permit the said stock to be fed. When working upon thin stock the horn will have to be depressed a less distance below the nose *a* than working upon thick stock, and the operator will, by the treadle *r*, regulate the position of the fulcrum-controlling device *o* so as to cause the proper depression for the stock being worked upon, it usually being necessary to vary the position of the said controlling device *o* while each shoe is being operated upon, owing to the different thickness of different parts of the sole. This can readily be done by the herein-described mechanism while the machine is in operation.

If desired, the treadle *r* may be provided with a projection, *r'*, to engage the teeth of a portion of the frame-work of the machine, as shown at *u*, Fig. 3, to hold the said treadle and the fulcrum-controlling device in one position while stock of uniform thickness is being acted upon.

The engaging-surfaces of the fulcrum-controlling device *o* and carriage *k* are serrated or roughened, preferably as shown, to prevent them from slipping when pressed together.

It is obvious that the position of the fulcrum might be varied in a direction lengthwise of the lever *e* instead of transverse thereto, thus varying the relative lengths of the arms and the consequent throw of the arm that engages the horn. In this case the lever might be slotted and its fulcrum-carriage connected with the treadle, so as to be moved directly thereby, the said treadle then constituting the fulcrum of the controlling device.

To depress the horn, in order to apply or remove a shoe, I have added a second treadle, $a^2$, connected by link or chain $a^3$ with a hook at the lower end of the horn.

I claim—

1. In a nailing-machine, the horn and its depressing-lever having a movable fulcrum and operated by the nailing mechanism, combined with the fulcrum-controlling device and means in connection therewith under control of the operator, whereby the said controlling device may be actuated by the operator independently of the regular mechanism of the machine while the machine is in motion, substantially as described.

2. The horn and its depressing-lever operated by the nailing mechanism, and the movable fulcrum-carriage for the said lever, and its controlling device, combined with an independent lever or treadle under the control of the operator, whereby he may at will vary the position of the controlling device to regulate the amount of depression of 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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