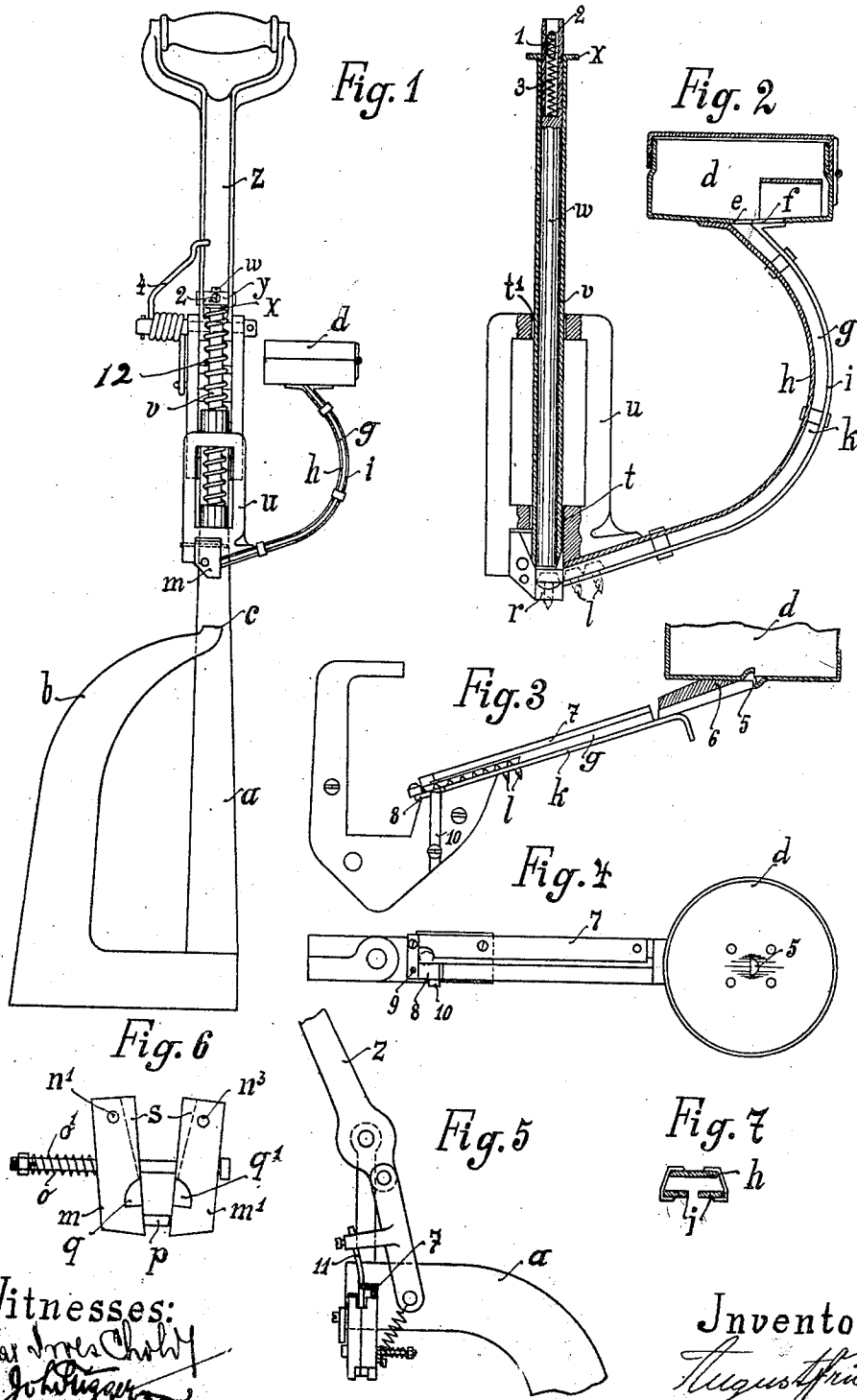


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 NAILING MACHINE FOR BOOTS AND LIKE ARTICLES.  
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Patented Mar. 4, 1913.



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# UNITED STATES PATENT OFFICE.

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NAILING-MACHINE FOR BOOTS AND LIKE ARTICLES.

1,054,684.

Specification of Letters Patent.

Patented Mar. 4, 1913.

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*To all whom it may concern:*

Be it known that I, AUGUST FRICKE, a subject of the Emperor of Germany, residing at Ohligs, Rhineland, Germany, have invented certain Improvements in Nailing-Machines for Boots and Like Articles, of which the following is a specification.

The present invention relates to a nailing machine for boots and the like and consists in the provision, at the end of the race-way along which loose nails are fed by their own gravity, of resilient elements adapted to retain the nails, such elements being acted upon by the nail driver for releasing each nail separately. A safe delivery of the nails is thus insured.

In one construction of the device the nails are delivered by the race-way into a throat-block which is divided into two resiliently connected parts, the nails being released from the block by the driver which passes between the parts and separates them. According to another construction, which is adapted for use in connection with old arrangements, one part of the race-way is formed of a pivoted element which turns aside when the lowermost nail is engaged by a plunger connected to the actuating lever of an ordinary nail-driver, the nail being pushed by the plunger into the driver passage.

In the accompanying drawings the invention is illustrated by way of example, Figure 1 representing a front view of the machine, according to the first construction. Fig. 2, a sectional view on an enlarged scale, of the race-way and of the nail-driver, Fig. 3, a sectional view of the race-way for the second construction, Fig. 4, a plan of the same, Fig. 5, a side view of the lower part of the driver of the second construction, the race-way being shown in section. Fig. 6, a side view of the throat-block of the first construction, and Fig. 7, a cross-sectional view of the race-way.

A machine frame *a* carries a work support *b* against the upper end *c* of which the nailing is effected. The nails *l* are fed from a hopper *d* through a race-way *g* which according to Figs. 1 and 2 is curved to form a semi-circle. The race-way communicates with the hopper by means of a round aperture *e* and an elongated, sheltered slot *f*, the nail-heads passing foremost through the aperture *e* and the bills through the slot *f*. Spaced walls *h* and *i* form the race-

way, the wall *i* being slotted throughout its length to admit the bills of the nails. At the end of the race-way a throat-block is provided for the reception of the nails. This block is composed of the parts *m* and *m*<sup>1</sup> which are pivoted at *n*<sup>1</sup> and *n*<sup>2</sup> respectively and which are controlled by a bolt *o* passing through the block-parts at right angles to their pivots. A helical spring *o*<sup>1</sup> encircles the bolt *o* and tends to press the lower ends of the parts together, the distance between them being determined by a pin *p* connected to one part and abutting against the other. The parts are normally inclined away from the vertical in opposite directions and are fitted on their inner sides with conical grooves *s* forming together an upwardly flaring throat *r*. At that side of the parts which faces the race-way notches *q* and *q*<sup>1</sup> are made which coincide with the nail-head and which admit the nails into the throat.

The nail-driver is disposed above the throat-block and is slidably guided in slots *t* and *t*<sup>1</sup> in a bracket *u*. It is composed of a sleeve *v* in which a rod *w* is slidably arranged. A flange *x*, at the upper end of the sleeve, supports a collar *y* which is acted upon by a hand-lever *z* for depressing the driver. A spring 4 supports the lever *z*, and a spring 12 abuts against the flange *x* for raising the driver. The upper end of the rod *w* is projected through the collar *y* and is hollowed to receive a spring 3. This spring abuts against the rod *w* and against a cross-pin 2 which is connected to the collar *y* and guided in a slot 1 in the hollow part of the rod.

When the nail-driver is depressed, the lower end of the rod *w* is first applied to the nail-head which, since it is held in the recesses *q* *q*<sup>1</sup>, causes a displacement of the rod relative to the sleeve and to the collar *y* and a compression of the spring 3. The sleeve, which continues to descend, enters the throat *r* and presses the lower ends of the block-parts apart. This causes the recesses to release the head of the nail which is then driven into the work by the rod *w* under the influence of the spring 3. As soon as the driver is withdrawn the throat-block assumes its normal position and a fresh nail is put into position in the recesses *q* *q*<sup>1</sup>.

In the construction shown in Figs. 3 to 5 the hopper *d* has a discharge aperture 5

which is formed by making a slit in the bottom plate and bending the lips in opposite directions. This aperture communicates with the race-way *g* by means of a duct 6 which is slotted to allow the bills of the nails to protrude. The race-way is formed of two parallel, straight bars *k* placed in an inclined position and adapted to guide the nails between them. An L-sectioned bar 7 or any equivalent element, is so arranged along the race-way as to project over the heads of the nails and retain the latter within the race. A portion is cut away from the lower end of one of the bars *k*, said portion being replaced by a piece 8 which is pivoted at 9 and controlled by a spring 10. The nail-driver has in this case the ordinary construction, its actuating lever *z* being, however, so connected to a plunger 11 as to raise the same when the driver is depressed and thrust it downward when the lever returns to its starting position. When the plunger is thus thrust downward it engages the head of the lowermost nail in the race-way and forces it down into the driver passage, this being possible owing to the yielding of the piece 8 in opposition to the spring 10. The remaining nails are retained in the race-way, and a fresh nail is pushed into

engaging position as soon as the plunger is withdrawn.

I claim:—

In a nailing machine, the combination with a race-way for loose nails, of a throat-block arranged at the end of said race-way and divided into two pivotally supported parts, said parts having lateral recesses adapted to admit the lowermost nail into the throat, a spring tending to hold the lower ends of the block-parts together so as to retain the nail-head within the recesses, an axially movable sleeve arranged so as to pass through the throat-block, a spring-actuated rod slidably arranged in said sleeve so as to protrude through the lower end of the same and be arrested by the nail in the throat-block, in opposition to its spring, while the sleeve is moved into the block, the block-parts being adapted to be pressed apart by the intervention of the sleeve so as to release the nail and allow it to be driven into the work by the spring-pressed rod, substantially as set forth.

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Witnesses:

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