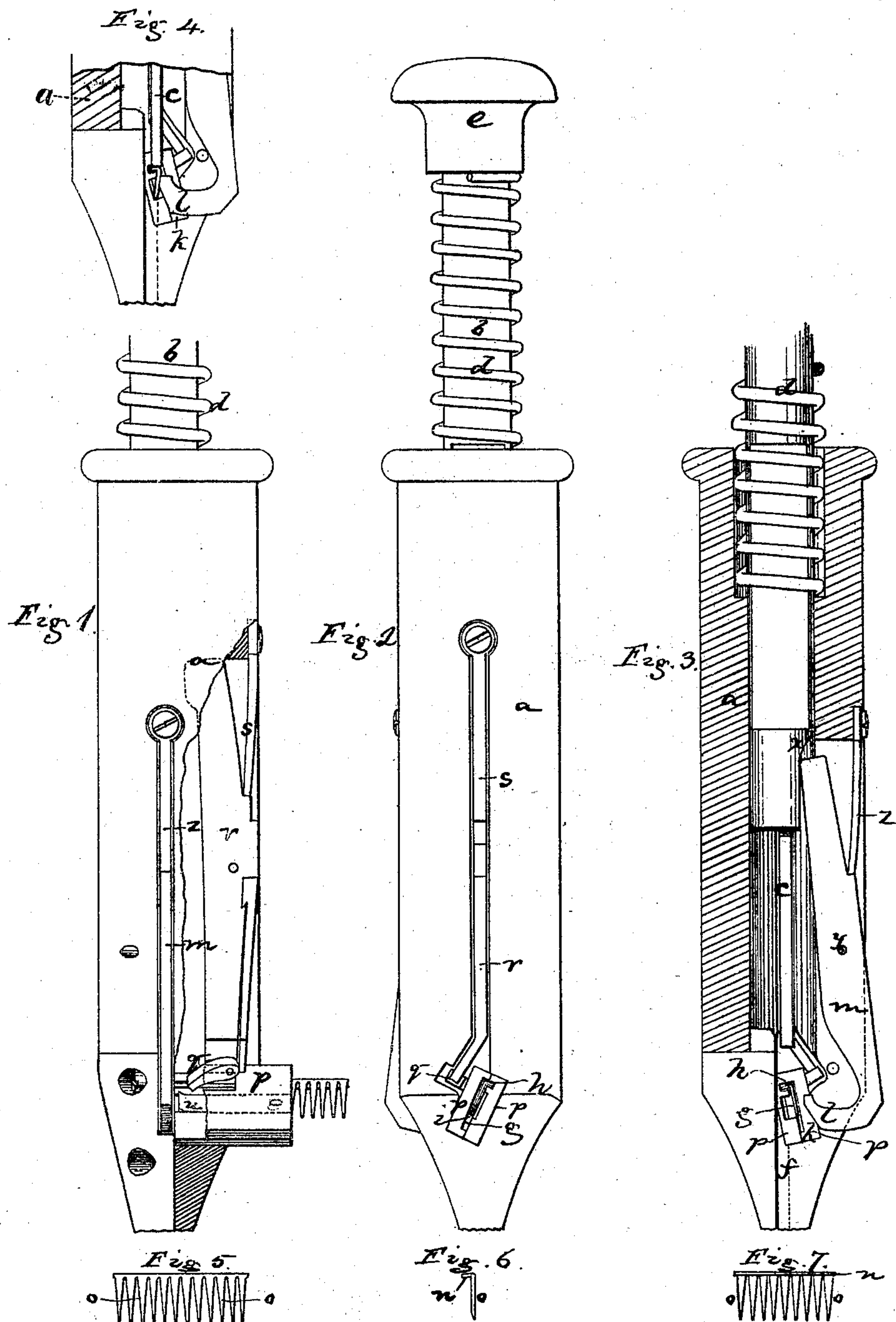


L. R. BLAKE.
Lasting Mechanisms.

No. 143,322.

Patented September 30, 1873.



Witnesses.
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UNITED STATES PATENT OFFICE.

LYMAN R. BLAKE, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN LASTING MECHANISMS.

Specification forming part of Letters Patent No. 143,322, dated September 30, 1873; application filed September 3, 1873.

To all whom it may concern:

Be it known that I, LYMAN R. BLAKE, of Brooklyn, in the county of Kings and State of New York, have invented an Improved Lasting Mechanism; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

United States Letters Patent No. 90,650, dated June 1, 1869, were granted to W. E. Fischer for an improved lasting-tool, which Letters Patent have been reissued, the reissue being dated July 1, 1873, and covering a comb-like nail-blank, and a tool designed to cut nails one by one from a comb-like blank, and to drive each nail by the blow that cuts it.

My present invention relates to a blank and a tool embodying, to a greater or less extent, the invention shown in such Fischer patent, my construction of the blank and of the tool having reference to such simplification thereof as to render the invention more practical, particularly in lasting boots and shoes. To this end, I make the blank with a head or flange, formed by simply bending one edge of the nail-plate to a right-angular position to the tooth-forming portion thereof, thereby securing a head for the nail (which, in practice, it must have, to be of much value) without upsetting the metal, as is shown in the patent No. 131,080, granted to me September 3, 1872. Not only does the blank thus formed make a better nail than the Fischer nail, and a simpler nail than the Blake nail, (as made from the specific blanks shown in the said patents,) but it also enables me to separate each nail in turn from the blank and drive it with greater certainty than by the other constructions, a peculiar construction of my driving-tool designed for the peculiar construction of my blank insuring this result. For this purpose I form the tool with a roadway or guideway for the blank, standing at an angle to the axial driver-tube, the head or top part of said roadway being in line with the axis of the driver-tube and the tooth-passage, inclining therefrom. When the end of the blank passes under the driver the inclined tooth or nail shank at such end stands in front of a bender, which is driven forward

as the driver descends, and bends the shank to vertical, or approximately vertical, position, so that it not only stands away from the rest of the blank-teeth, but is in such position under the driver that the descent of the driver severs the head, and drives the nail vertically into the surface against which the nose of the tool is held, the absence of a head on one side of the nail enabling it to glide by the end of the bender, which acts as a guide until the severed nail has passed by it. My invention consists, primarily, in the construction of the nail-severing and driving tool to thus bend, and sever, and drive the nail, and in the blank made with a bent head-forming flange.

The drawing represents the tool and blank embodying my invention.

Figure 1 shows the tool in front elevation. Fig. 2 is a side elevation of it. Fig. 3 is a sectional elevation. Fig. 4 shows the position of the bender and driver just after the nail-shank has been bent.

a denotes the main tube, containing the sliding piston *b*, from which extends the driver *c*. The piston is raised by a spring, *d*, and driven down by a blow upon the cap *e*. In normal position, the foot of the driver stands in or just above the top of a nail-tube, *f*, and into one side of this tube extends the lateral passage *g*, through which the nail-blank is fed.

The top part *h* of this passage opens directly into the nail-tube beneath the driver, but the other part *i* extends back therefrom, opening into a space or chamber, *k*, and in front of an inclined bender, *l*, at the foot of a lever, *m*. The blank, as shown in Figs. 1, 2, 3, and 4, and also as shown in the special Figs. 5, 6, and 7, is made from a plate of uniform thickness, having one edge bent over to form a flange or head, *n*, the part below this flange being cut out to form the teeth or nail-shanks *o*. There is therefore a head projection only on one side of the plate, the shape of each nail being an inverted L, the head being readily formed by a simple bending or flanging operation. The blank-passage or guideway is correspondingly shaped to receive this formation, and the plates *p*, in or by which the blank-passage is made, are inclined, as seen in Fig. 1. The end of the blank being thrust into the outer end of the passage *g*, passes by a feed-pawl, *q*, jointed to a lever,

r, and pressed against the blank by a suitable spring. The pawl end of the lever is pressed back normally by the action of a spring, *s*, and is pressed forward to feed the blank by a projection or shoulder on the piston *b*, which acts against the upper arm of the lever (to press it back and the lower arm inward) as the piston rises. The blank is thereby fed forward the width of one nail at each rise of the piston, and the pawl is moved back to normal position by the spring *s* as the piston descends. The blank is held in position as the feed-pawl moves back by a detainer-pawl or spring, *u*, placed between the plates *p* and fastened at *v*, the front end of the spring being bent, and extending between the teeth of the blank, in such position as to permit the blank to move forward, and to prevent it from moving back. The blank being fed forward, its end, embracing one tooth, extends beyond the inner end of the guide-plates *p* and under the driver, the bender being in the position shown in Fig. 3. The bender is at the foot of a lever, *m*, pivoted at *y*, and having an upper arm held normally under a shoulder, or incline, *x*, of the driver by a spring, *z*. As the driver descends the shoulder *x* forces the bender forward, and the bender, striking the blank tooth, throws it forward, as shown in Fig. 4, the continued descent of the driver severing the head, and the nail, guided by the walls of the nail-tube, is driven down and into the surface beneath the tool.

It will be observed by inspection of the drawing that the only movable agent in cutting and driving the nail is the driver *c*, the driver acting as one member of the shears, and the other shear-blade being the end of the stationary roadway-plates *p*.

In the Fischer and Blake patents, 90,650 and 131,080, a blade is brought between the nail to be severed and the next nail, the blank-head resting on the edge of this blade for the action of the driver in severing the nail, and to insure the cutting of one nail only; but in my present invention I dispense entirely with such intervening blade, insuring the separation of the teeth (so that one nail and one alone shall be cut) by bending the shank to be cut off from the line of the rest of the blank, as described.

A T-shaped blank may be used with a tool embodying more or less of my present improvements, but I consider the F-shaped blank to be in every way preferable.

I claim—

1. A lasting tool or nailer having a guide-passage for the blank set at an inclination to the driver, substantially as shown and described.
2. A lasting tool or nailer having, in combination with the driver, a bender for forcing forward the nail-shank to be severed, substantially as described.
3. A lasting tool or nailer, in which the end of the comb-like blank enters the nail-tube at one angle and is brought to another angle to be severed, substantially as described.
4. The feed-pawl *q*, and detainer-pawl *u*, jointed to the levers *r* and *w*, and operated substantially as described.
5. A comb-like nail-blank, having its head formed by bending one edge of the plate, substantially as shown and described.

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Witnesses:

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