

L. SOULE.

Machine for Making Shoe-Nails.

No. 159,852.

Patented Feb. 16, 1875.

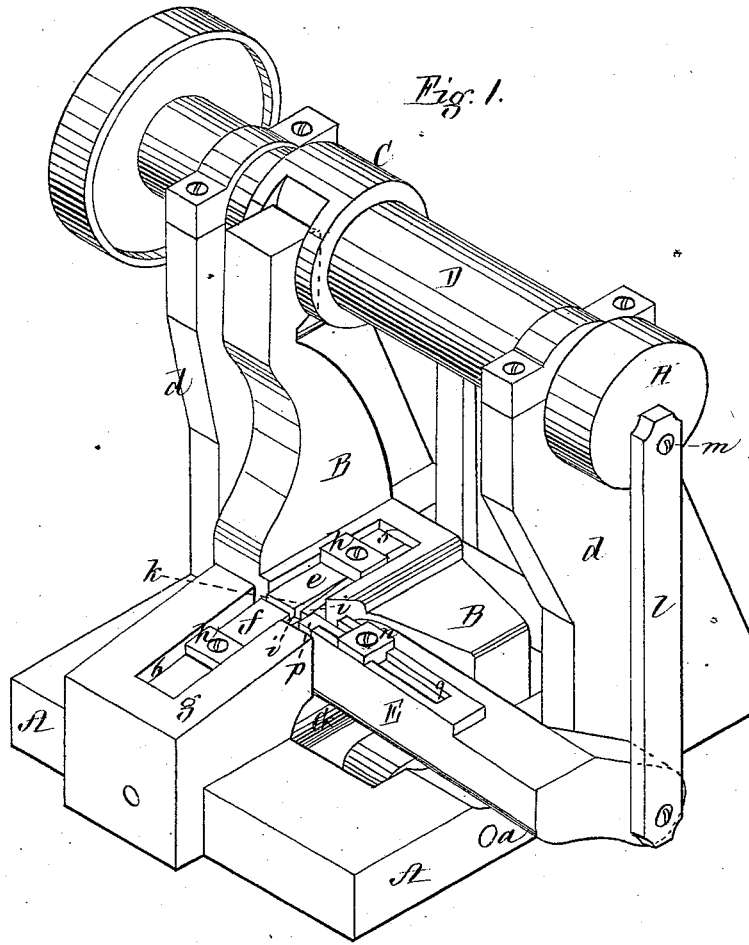


Fig. 1.

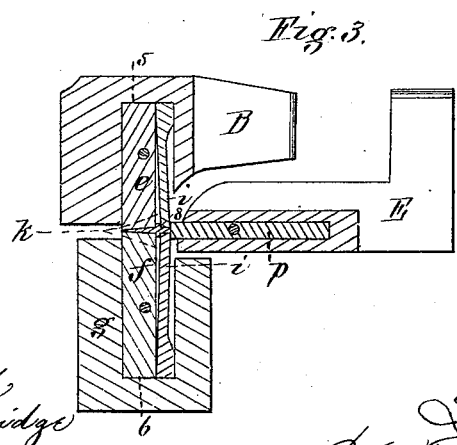


Fig. 3.

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 W. Stehnmacher & Stearns  
 Atty's

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Fig. 2.

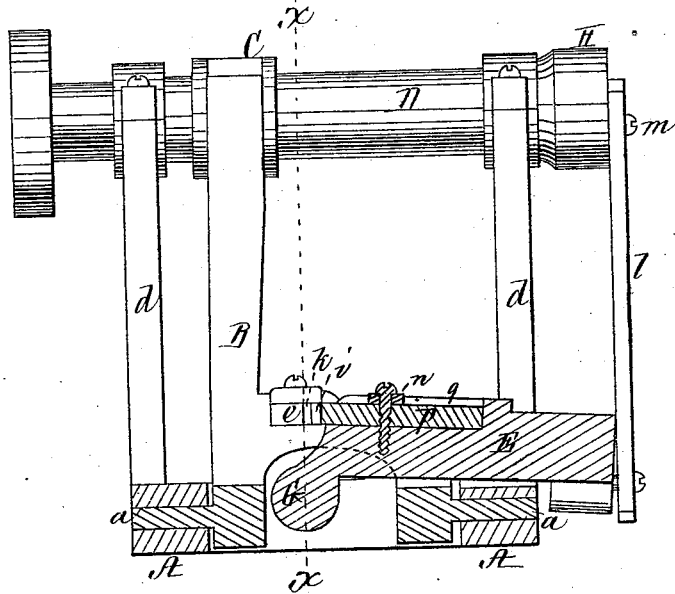
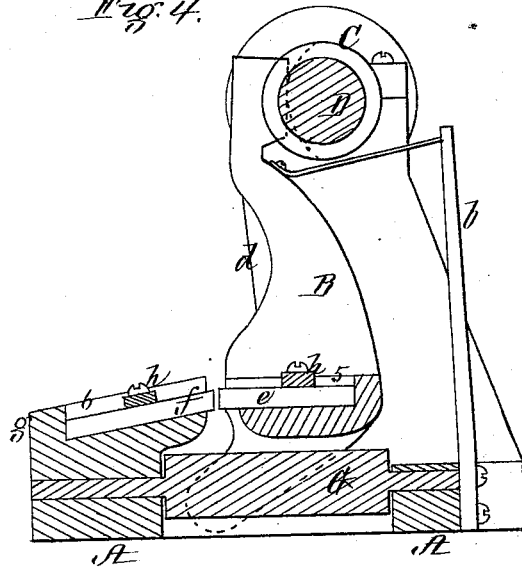


Fig. 4.



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# UNITED STATES PATENT OFFICE.

LEANDER SOULE, OF TAUNTON, MASSACHUSETTS.

## IMPROVEMENT IN MACHINES FOR MAKING SHOE-NAILS.

Specification forming part of Letters Patent No. **159,852**, dated February 16, 1875; application filed August 7, 1874.

*To all whom it may concern:*

Be it known that I, LEANDER SOULE, of Taunton, in the county of Bristol and State of Massachusetts, have invented a new and Improved Machine for Making Shoe and Dowel Nails, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of my improved machine. Fig. 2 is a transverse vertical section through the same. Fig. 3 is a horizontal section through a portion of the same, taken in a plane passing through the center of the dies. Fig. 4 is a vertical section on the line *x x* of Fig. 2.

My invention relates to a machine for making nails, such as are used for securing heels to boots and shoes, and also as dowel-pins, each nail being provided with a collar; and my invention consists in the combination of a pair of auxiliary dies with the main dies of a nail-machine, a space being left between the main and auxiliary dies, so that as the blank is griped a collar will be formed by the spreading of the metal into the space so left, this space being afterward contracted by forcing one pair of dies laterally toward the other pair, so as to reduce the thickness and increase the diameter of the collar to give it the required form.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A represents the bed of the machine, to which is pivoted, at *a a*, the gripping-lever B, which is advanced against the resistance of a spring, *b*, by a cam, C, on the driving-shaft D, which runs in bearings in standards *d*, rising from the bed A. *e f* are the main dies, the movable one, *e*, being secured in a groove, 5, in the gripping-lever B, and the stationary one, *f*, in a similar groove, 6, in a block, *g*, rising from the bed A, the dies being held in place by clamps *h*. At the side of each of the main dies *e f* is placed a narrow auxiliary die *i*, these dies *i* being opposite each other, and secured in

the grooves 5 6 by the same clamps which hold the main dies. The auxiliary dies *i* are formed of spring-metal, and diverge from the main dies, so as to leave a space, *k*, between them, and thus, as the blank is griped between the dies *e f i i*, a collar, 8, will be formed on the nail by the spreading of the metal into the space *k*.

The collar so formed, although it will answer a good purpose, is, however, thick and clumsy, and in order to give it a better shape and increase its size the following device is employed:

E is a lever, one end of which is attached to a rock-shaft, G, and to its other end is pivoted a connecting-rod, *l*, the upper end of which is attached to a crank-pin, *m*, on a disk, H, secured to one end of the shaft D. Within a groove, 9, in the upper side of the lever E, is secured, by means of a clamp, *n*, a bar or compressor, *p*, which, as the lever E is raised by the connecting-rod *l*, is brought up against the auxiliary dies *i*, and forces them in toward the main dies *e f*, thus contracting the width of the space *k*, which compresses the collar on the nail, reducing its thickness and increasing its diameter, as desired, to give it the proper form. This forward movement of the compressor *p* takes place as soon as the nail has been griped between the dies, and on the withdrawal of the compressor the spring of the auxiliary dies causes them to assume their original position, as seen in Fig. 1.

By adjusting the compressor *p* in its groove 9, the amount of lateral movement of the dies *i* may be varied, and the thickness of the collar correspondingly changed.

The collar 8 may be formed at any desired point between the ends of the nail by varying the relative width of the main and auxiliary dies.

The shears for cutting the blank from the plate, and the feeding mechanism for delivering the blank to the dies, forming no part of my invention, are not shown or described.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The auxiliary spring-dies *i i*, diverging

from and in combination with the main dies *e f*, and constructed substantially as and for the purpose described.

2. In combination with the dies *e f i i*, having a space between them, the compressor *p*, for forcing one pair of dies laterally toward the other pair while the nail is gripped between them, substantially as and for the purpose set forth.

Witness my hand this 29th day of July, A.  
D. 1874.

LEANDER SOULE.

In presence of—

P. E. TESCHEMACHER,  
W. J. CAMBRIDGE.