(No Model.)

A. NEWTON.

Shoe Nail.

No. 243,602. Patented June 28, 1881.

Fig. 1.

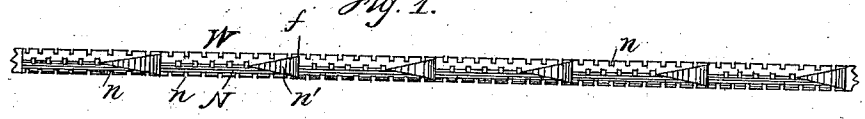
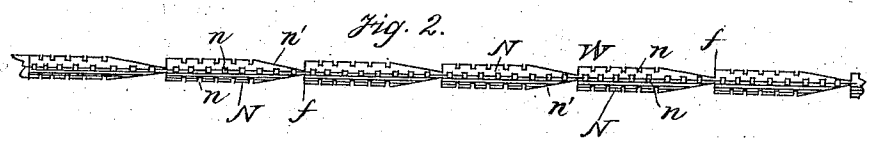


Fig. 2.



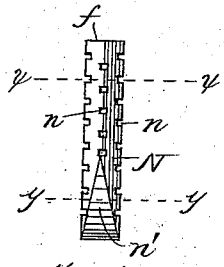


Fig. 3.

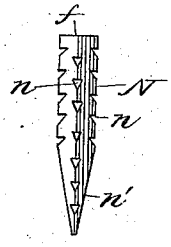


Fig. 4.

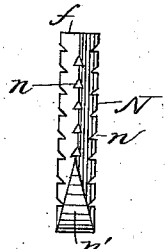


Fig. 5.

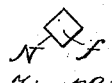


Fig. 3a.

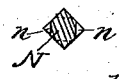


Fig. 3b.



Fig. 3c.

Witnesses:
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W. Elmo.

Inventor:
Arthur Newton
by Wright & Brown
Attys

UNITED STATES PATENT OFFICE.

ARTHUR NEWTON, OF BOSTON, MASSACHUSETTS.

SHOE-NAIL.

SPECIFICATION forming part of Letters Patent No. 243,602, dated June 28, 1881.

Application filed February 4, 1881. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR NEWTON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Shoe-Nails, of which the following is a specification.

This invention relates to chisel-pointed nails for fastening the soles of boots and shoes, and it has for its object to provide a nail which may be readily formed from a continuous length of wire, and embodying certain improvements rendering said nail less liable to be loosened after it has been driven than is the case with the nails or sole-fastenings in use. To accomplish this object I have devised a nail of the form I will now proceed to describe, reference being had to the accompanying drawings, forming part of this specification, in which—

Figures 1 and 2 represent a continuous length of wire having formed thereon nails embodying my invention. Figs. 3, 4, and 5 represent completed nails detached from the wire. Fig. 3^a represents a top view of a nail. Fig. 3^b represents a section on line *x x;* and Fig. 3^c a section on line *y y*, Fig. 3. All the foregoing figures are considerably enlarged.

The same letters of reference indicate the same parts throughout.

In carrying out my invention I subject a continuous length of wire, W, (said wire being square in transverse section) to the action of suitable notching mechanism, forming a series of notches or indentations, *n*, on the angles of the wire. The wire W is afterward fed through proper guides and subjected to the action of reciprocating knives or cutters, by means of which I form elongated notches *n'* diagonally with the main body of the wire at intervals corresponding to the required length of a nail, thereby forming diagonal chisel-points on each nail N, and at the same time forming the head or driving-surface *f* of the succeeding nail. The cutters in forming the notches *n'* do not entirely sever the wire, but leave a small portion of its center intact, thus adapting the wire to be afterward readily separated, forming independent nails, as shown in Figs. 2, 3, and 4. The indentations *n* formed upon the angles of the wire may be either square, V-shaped, or of any desired form, three different patterns being shown in the drawings; and I prefer to form these indentations so that the indentations on two of the opposite angles of the wire will alternate with those on the other two opposite angles thereof, as by forming the indentations in this manner the nail afterward formed from the wire is rendered less liable to turn or work loose than if said indentations were opposite to each other entirely around the nail.

By forming the chisel-points diagonally with the main body of the nail I produce a greater number of angles and resisting-surfaces on the nail than would be the case if the point were formed on the sides of the nail, inasmuch as the lower part of the nail is rendered hexagonal, while the upper part retains its square form; and by forming the points diagonally it is possible to carry the indentations on two of the opposite angles of the nail entirely to the point thereof. These advantages cannot be obtained in the ordinary chisel-pointed or round-pointed nail.

Each series of notches *n* is separated from the adjacent series by the intervening smooth surface or sides of the nail, the notches *n* extending only partially across the sides, as shown. By thus separating the series of notches by intervening smooth surfaces the leather adjacent to the sides of the nail is left undisturbed in driving, and the nail is less likely to become loosened or turned than is the ordinary square nail corrugated all around, or the threaded nail, as in driving such nails the leather is more or less torn entirely around the nail.

In operation, as the nail is driven the leather displaced by the nail settles into the indentations *n* formed upon the angles thereof, and the solid portion of the nail over each set of indentations acts as a head, preventing the nail from working loose, the nail being prevented from turning or suffering displacement sidewise by the leather adjacent to each side remaining undisturbed, as previously described, and the same end being rendered more certain of attainment by the alternating rows of indentations on the angles of the nail and the increased number of resisting angles and surfaces formed by pointing the nail diagonally, as set forth.

While all the advantages of a headed nail are secured by my invention, the entire nail

is homogeneous, its substance being left intact in forming the nail, which is not the case when metal is carried down from the point of one nail to form the head of the next, or when an enlargement is formed on the wire to produce the head of a nail.

In another application for Letters Patent now pending I have described and claimed a nail angular in transverse section, having a series of indentations or notches formed in each of its corners or angles, each series of notches being separated from the adjacent series by intervening smooth surfaces of the nail; hence I do not claim such a nail, broadly, in this application.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A nail or sole-fastening composed of wire angular in transverse section, having a series of indentations or notches formed in each of its corners or angles, (each series of notches being separated from the adjacent series by intervening smooth surfaces or sides of the wire,) and a chisel-point formed diagonally with the body of the nail, substantially as shown and described.

2. A continuous length or rod of nails or sole-fastenings composed of wire angular in transverse section, having a series of indentations or notches formed in each of its corners or angles, (each series of notches being separated from the adjacent series by intervening smooth surfaces or sides of the wire,) and chisel-points formed diagonally with the body of the nail, substantially as shown and described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 2d day of February, A. D. 1881.

ARTHUR NEWTON.

Witnesses:
C. F. BROWN,
H. G. WADLIN.