

(No Model.)

W. O. TAYLOR.
TACK OR NAIL.

No. 565,397.

Patented Aug. 4, 1896.

Fig. 1.

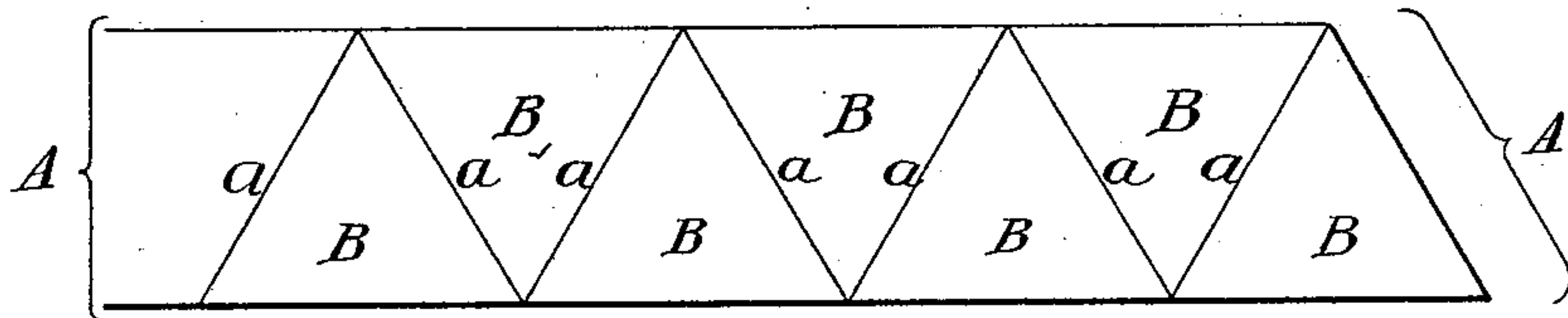


Fig. 4.

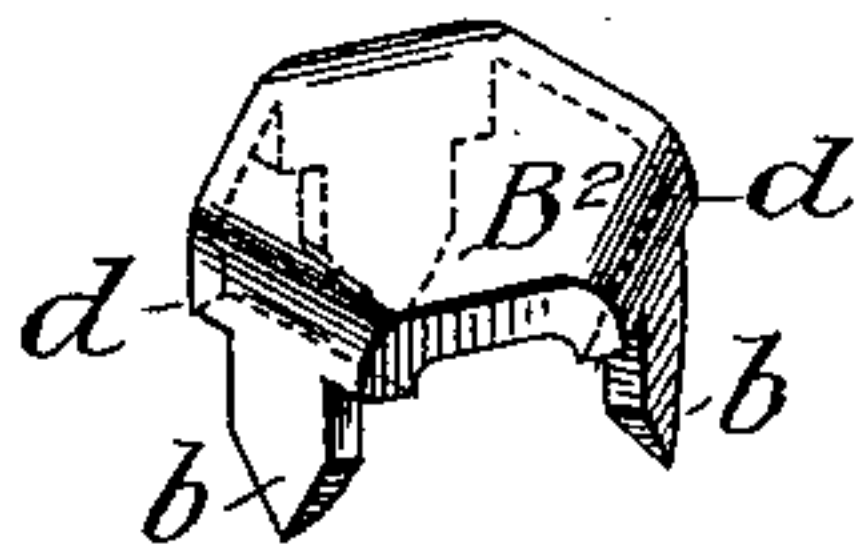


Fig. 2.

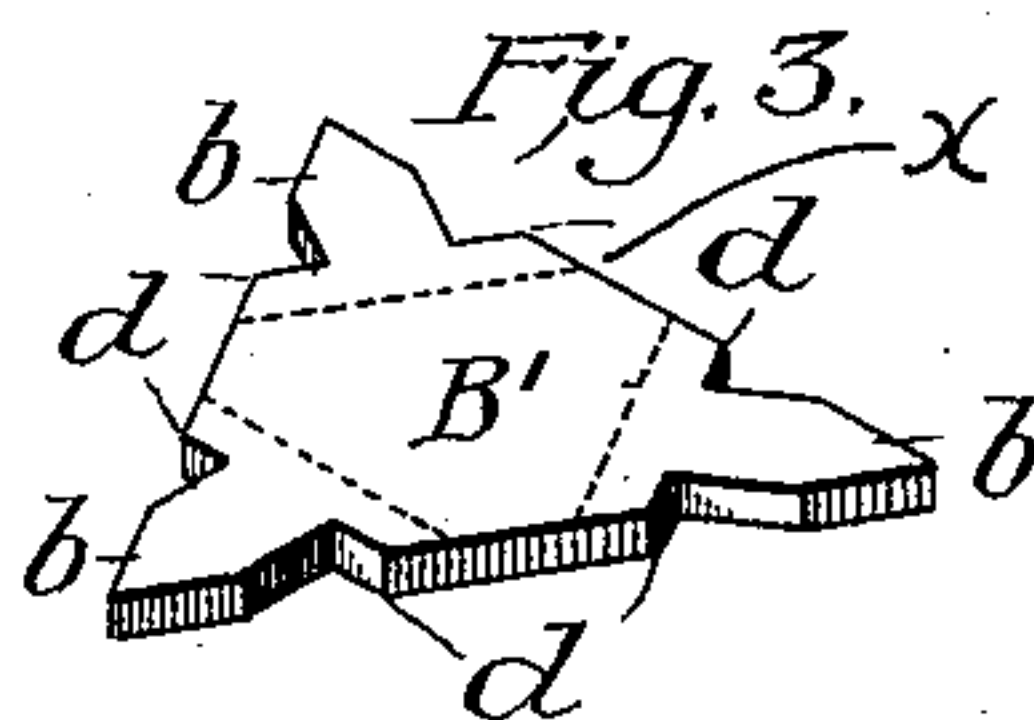
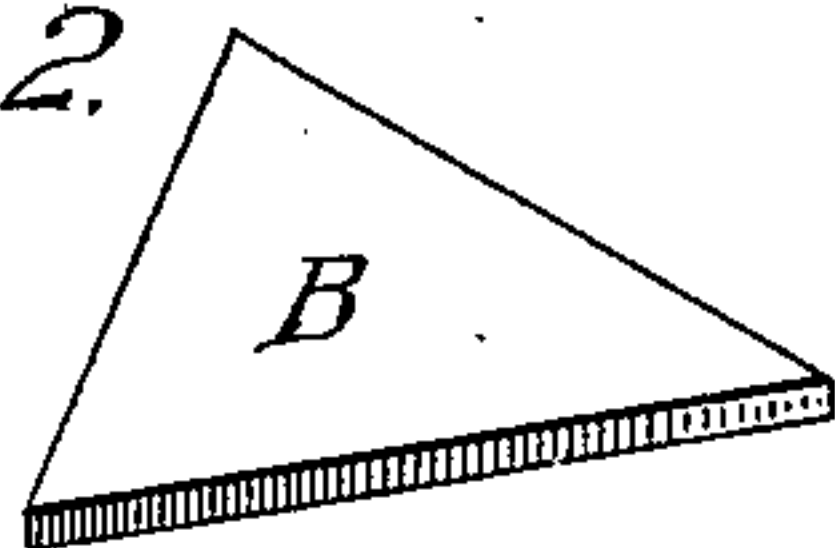


Fig. 5.

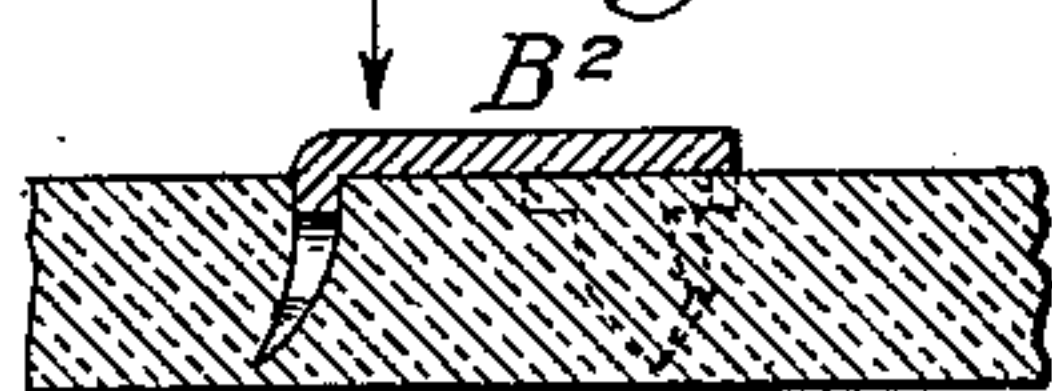


Fig. 6.

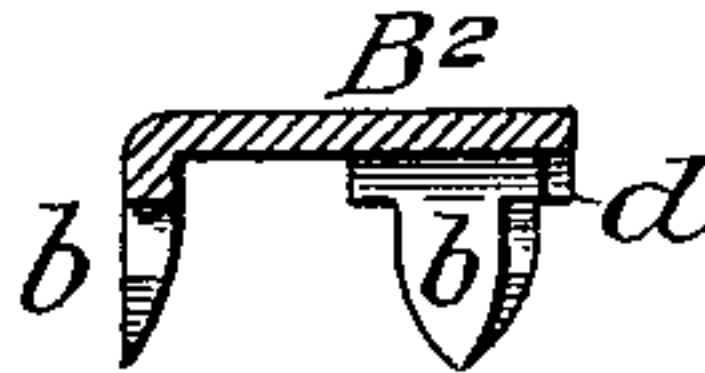


Fig. 7.

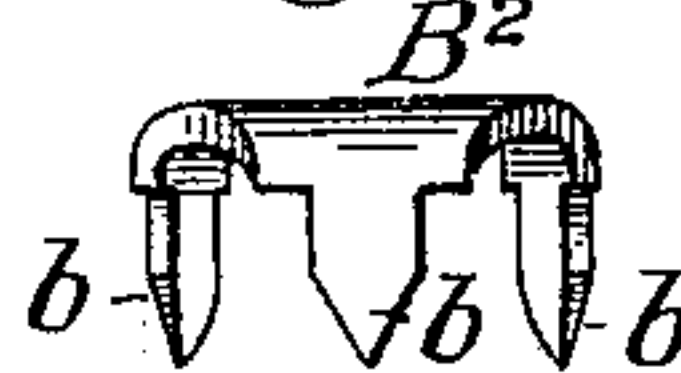


Fig. 8.

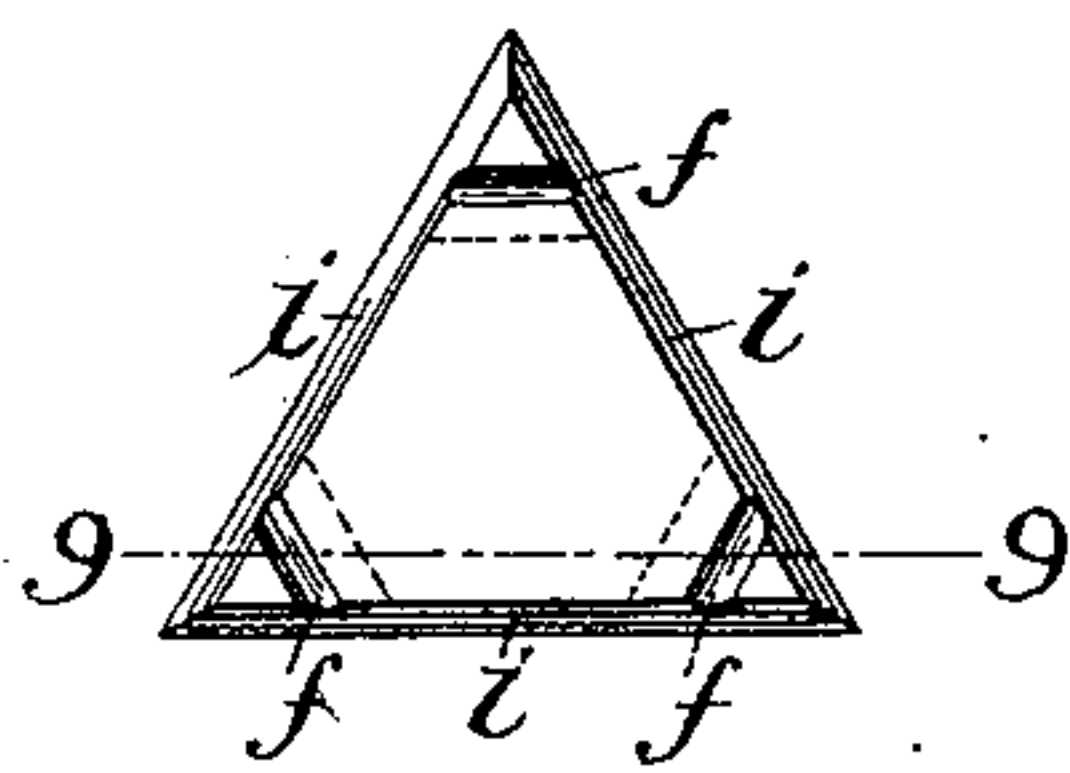


Fig. 9.



Fig. 10.



Fig. 11.



Witnesses.

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UNITED STATES PATENT OFFICE.

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TACK OR NAIL.

SPECIFICATION forming part of Letters Patent No. 565,397, dated August 4, 1896.

Application filed February 23, 1895. Serial No. 539,428. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM O. TAYLOR, a citizen of the United States, residing at Philadelphia, Pennsylvania, have invented certain Improvements in Tacks or Nails and in the Mode of Making Same, of which the following is a specification.

My invention relates to tacks or nails, such, for instance as are employed for hob-nailing boots and shoes, and to the method of manufacturing such tacks or nails, one of the objects of my invention being to produce such tacks or nails from a strip or bar of sheet metal with extreme rapidity by a connected series of operations in the same machine and without material waste, and a further object being to insure the proper spreading of the prongs of the tack or nail in order to clinch the same without necessarily passing them through the body of material into which they are inserted. These objects I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a view of the strip or bar of sheet metal from which the tacks or nails are to be made, the diagonal lines crossing said strip representing the successive incisions whereby the strip is cut into the required blanks. Fig. 2 is a perspective view of one of said blanks. Fig. 3 is a perspective view of the blank after being subjected to the second stage of the operation. Fig. 4 is a perspective view of the completed tack or nail. Fig. 5 is a sectional view showing the same driven into a piece of leather or other material. Fig. 6 is a transverse sectional view of the tack or nail. Fig. 7 is a side view of the same. Fig. 8 is a view illustrating a blank for making another form of my improved tack or nail. Fig. 9 is a transverse section of the same on the line 9 9, Fig. 8. Fig. 10 is a side view of the tack or nail made from said blank, and Fig. 11 is a transverse sectional view of the same.

In Fig. 1, A represents a strip of metal of appropriate width, which can be severed by a succession of reversely-inclined diagonal incisions *a* into a series of triangular blanks B, the latter being thus produced without waste, except that of the small triangular

pieces at the ends of the strip, supposing the latter in the first instance to have been square-ended. The projecting point of each blank is then swaged, so as to reduce the same in width, this reduction in width resulting in the production of a blank having a head B' with fingers *b* projecting therefrom on three sides, these fingers having straight sides and pointed ends, and the lateral swaging also resulting in the formation of lateral shoulders *d* where the fingers join the head B' of the blank. Each blank is then bent on the dotted lines *x*, Fig. 3, so as to produce a tack or nail with head B² and downwardly-bent prongs, the upper portion of each prong consisting of the downwardly-bent portions of the body B' of the blank, Fig. 3, and the lower portion of each prong consisting of one of the fingers *b*.

At the same time that the prongs are bent they are swaged, so as to be reduced in thickness at and near the point, this swaging operation serving to impart to the inner side of each finger the curved or beveled contour shown in Figs. 4, 5, and 6, that is, a gradual reduction in thickness from the inner end or base of the finger, or a point adjacent thereto, to the outer or pointed end of the finger.

When the prongs of the tack are driven into a piece of leather or other material by force exerted in the direction of the arrow, Fig. 5, the prongs are bent outwardly, so as to clench into the material, owing to the fact that the inner side of each prong presents a surface inclined or beveled at other than a right angle in respect to the head of the tack, and hence in respect to the direction of force exerted in driving the tack. Therefore the resistance offered by the material into which the prongs are driven causes a wedging action upon said prongs and forces the points of the same outwardly, the outward bend of each prong being in the prong itself and not a partial straightening of the downward bend whereby the prong was formed on the head of the tack, for the reduction in the width of the prong in the formation of the finger *b* so weakens that portion of the prong adjacent to the base of the finger that the outward bend of the prong takes place from about the

base of the finger, the top part of the prong retaining substantially the right-angled bend given it in forming the tack.

If desired, the prongs may be caused to
5 clench inwardly instead of outwardly by beveling the outer faces instead of the inner faces of the fingers *b*.

The embedding of the shoulders *d* in the surface of the leather or other material increases the hold of the tack thereon and assists the clenched prongs in preventing the removal of the tack from the material. Hence I prefer to form the tack with these shouldered prongs, although this is not absolutely
15 necessary to the proper attainment of the main object of my invention. For instance, in the tack shown in Fig. 10 the prongs are weakened at a point below the bend by the formation of transverse grooves or recesses *f*
20 in the outer faces of the prongs, so as to insure the outward clenching of each prong by a bend below that whereby the prong itself is formed, the clench being, as desired, either inwardly or outwardly, depending upon the
25 location of the beveled face of the prong.

If the displacing of the metal by swaging in forming the fingers *b* fails to weaken the latter to the desired or any extent at the point where the clenching-bend is to be formed,
30 I may in this case also form recesses in the inner or outer faces of the fingers, so as to effect the desired weakening of the same at the proper points.

The blank shown in Fig. 8 for the production of the tack shown in Fig. 10 has chamfered edges *i*. Hence that portion of the head of the tack which projects above the material when the tack is driven presents either rounded or beveled edges, and as the
40 chamfer extends around the edges of the prongs the latter are sharpened, so as to cut into the leather or other material and prevent that spreading of the same which the tapered form of the prong might otherwise
45 have a tendency to cause.

Although I have shown both forms of my improved tack as made from blanks of triangular form, and although this form is preferred, it will be evident that the blanks can
50 be square, pentagonal, hexagonal, or of any other desired angular form, as circumstances may determine to be the most appropriate,

and in the claims I have used the general term "polygonal" as covering either the triangular or other many-sided forms of blank. 55

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

1. A tack or nail, comprising a head with prongs bent downwardly therefrom, said tack 60 or nail being adapted to be driven into the supporting-body so that the prongs are completely embedded therein, and said prongs being weakened at a point below the bend and being flared or beveled on the inner or 65 outer sides, whereby when driven they will be caused to spread or clench within the supporting-body, the clenching-bends being formed at the point where the prongs are weakened, substantially as specified. 70

2. A tack or nail comprising a head with prongs bent downward therefrom, said tack or nail being adapted to be driven into the supporting-body so that the prongs are completely embedded therein, each of said prongs 75 being reduced in width from each edge at a point below the bend so as to weaken the same and form lateral shoulders at that point, and each prong being flared or beveled on the inner or outer side whereby when the 80 prongs are driven into the supporting-body they will be caused to spread or clench therein, the clenching-bend of each prong being formed at the point where the same is laterally reduced, substantially as specified. 85

3. A tack or nail, comprising a head with prongs bent downwardly therefrom, said tack or nail being adapted to be driven into the supporting-body so that the prongs are completely embedded therein, said prongs being 90 weakened at a point below the bend, the edges of the prongs and the intervening portions of the periphery of the head being chamfered or beveled so that the edges of both head and prongs flare laterally from the outer 95 to the inner face, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM O. TAYLOR.

Witnesses:

WILL. A. BARR,
JOSEPH H. KLEIN.