(No Model.)

# W. Z. BEAN.

## NAIL.

No. 391,773. Patented Oct. 30, 1888.

Fig. 1.

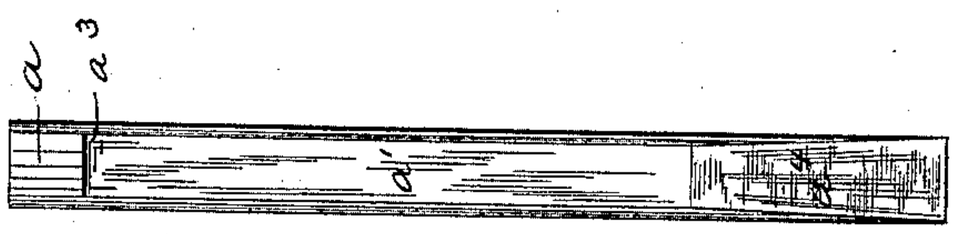



Fig. 2.

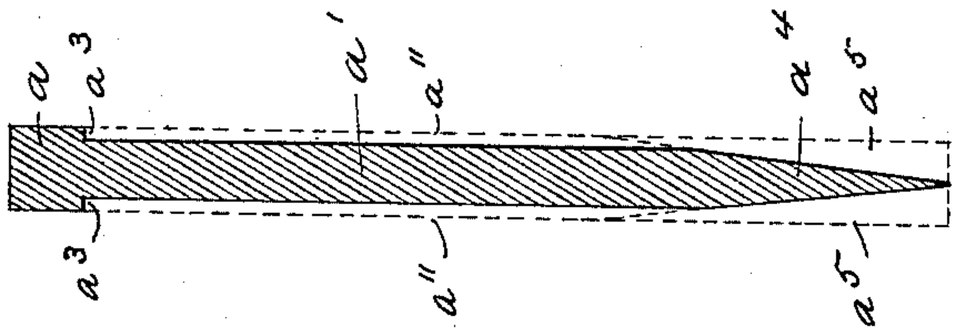



Fig. 3.

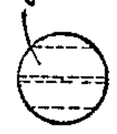



Fig. 4.

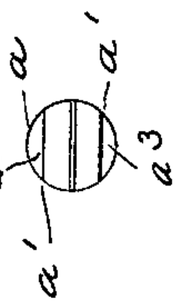



Fig. 5.

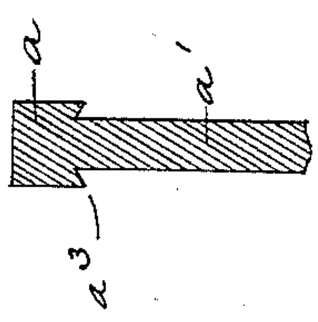



Fig. 6.

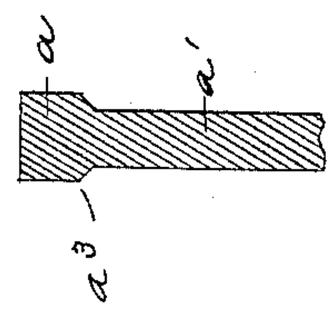



Fig. 7.

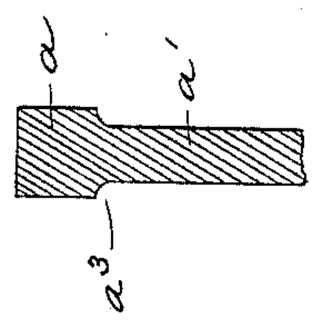



Fig. 8.

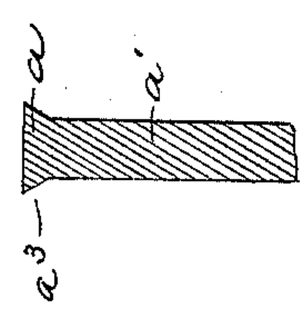
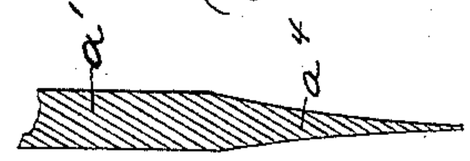



Fig. 9.




Witnesses.
Karl A. Andrén,
Charles H. Fogg.

Inventor.
William Z. Bean.
by Albert Andrén.
his atty.

# UNITED STATES PATENT OFFICE.

WILLIAM Z. BEAN, OF WEST MEDFORD, MASSACHUSETTS, ASSIGNOR TO THE BAY STATE SHOE FASTENING COMPANY, OF NASHUA, NEW HAMPSHIRE.

## NAIL.

SPECIFICATION forming part of Letters Patent No. 391,773, dated October 30, 1888.

Application filed April 30, 1888. Serial No. 272,228. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM Z. BEAN, a citizen of the United States, and a resident of West Medford, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Nails, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements on the patent granted to me August 7, 1883, No. 282,603, for wire nails, and it is carried out as follows, reference being had to the accompanying drawings, wherein—

Figure 1 represents a side elevation of the improved nail. Fig. 2 represents a central longitudinal section of it. Fig. 3 represents a top view, and Fig. 4 represents a bottom view, of it. Figs. 5, 6, 7, and 8 represent modifications of the head of the improved nail, and Fig. 9 represents a modification of the point of the nail.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

In my previous patent I showed and described a wire nail formed from a circular wire by the removal of a portion of two opposite sides of the wire, by which a tapering shank was produced, with a head left remaining in the upper end of a shape equal to the original section of the wire; but for many purposes it is essential to have the shank of equal thickness throughout its length, with a tapering clinching-point in its lower end. This is particularly essential when the nails are to be used in uniting leather, such as soles of boots and shoes, which require that the nails should be clinched in their lower ends.

*a* in the drawings represents the circular head of the nail, and it represents the size of the continuous circular wire from which the nails are made.

*a'* is the parallel shank, which is made by removing or cutting away a portion from two opposite sides of the wire, as shown at *a'' a''* by dotted lines in Fig. 2.

$a^3$ $a^3$ are shoulders on two opposite sides at the junction of the under side of the head *a* and the upper end of the parallel shank *a'*, as shown in the drawings. The lower end of the shank *a'* is made tapering or wedge-shaped, as shown at $a^4$ in Figs. 1 and 2, and its lower end is made knife-edged, or nearly so, according to the purpose for which it is intended, and said tapering or wedge-shaped lower clinching end is made by removing or cutting away a portion from two opposite sides of the wire, as shown at $a^5$ $a^5$ by dotted lines in Fig. 2.

As in my previous patent, I do not wish to confine myself to any particular manner or means for removing a portion of the two opposite sides of the wire for the formation of the shank and the tapering clinching end, as this may be done in any desired manner without departing from the essence of my invention.

I prefer in making the nail first to remove or cut away the portions $a^5$ $a^5$, for forming the tapering clinching end, and to sever one nail from the next one in the series, and then to form the shank by the removal or cutting away of the portions *a'' a''*; but this is not essential, as the shank may first be formed and afterward the clinching end, or the shank and tapering clinching end may be formed simultaneously by the removal of the parts *a'' a''* $a^5$ $a^5$ at one single operation.

I do not wish to confine myself to any particular shape of the shoulders on the under side of the head of the nail, as these may be made in any of the forms represented in Figs. 5, 6, 7, and 8, or equivalent or well-known forms. The tapering clinching portion $a^4$ may, if so desired, be made curved slightly on its sides, concave, as shown in Fig. 9, or in an equivalent manner, without departing from the essence of my invention.

What I wish to secure by Letters Patent and claim is—

A nail or peg made from a wire and having two of its opposite sides flat to form the shank *a'*, and having a tapering or wedge-shaped clinching end, *a''*, and a head the cross-section of which is equal to that of the wire from which the nail or peg is made, substantially in a manner and for the purpose as specified.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 24th day of April, A. D. 1888.

WILLIAM Z. BEAN.

Witnesses:

HENRY CHADBOURN,

HERBERT L. CHAPIN.