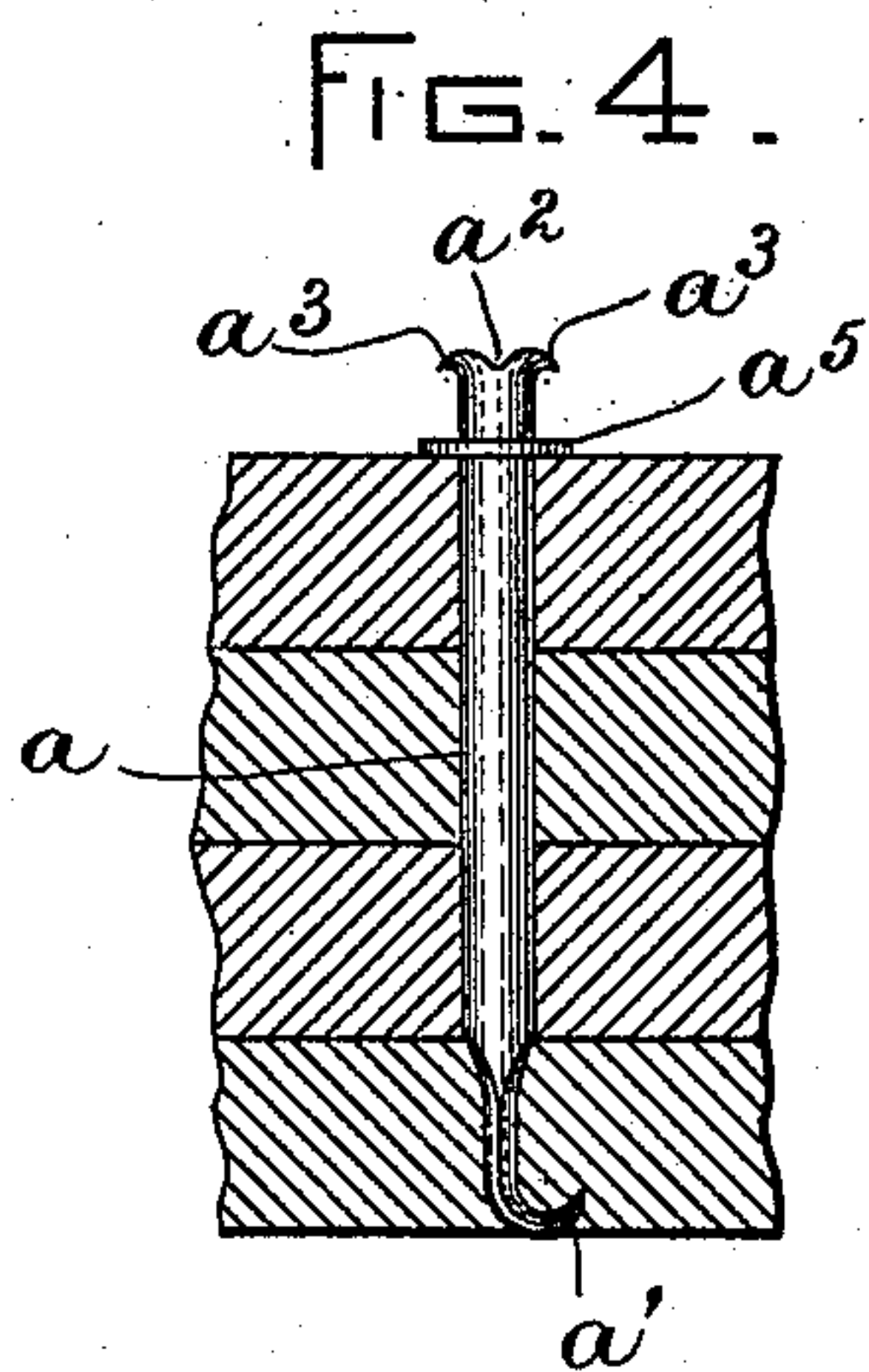
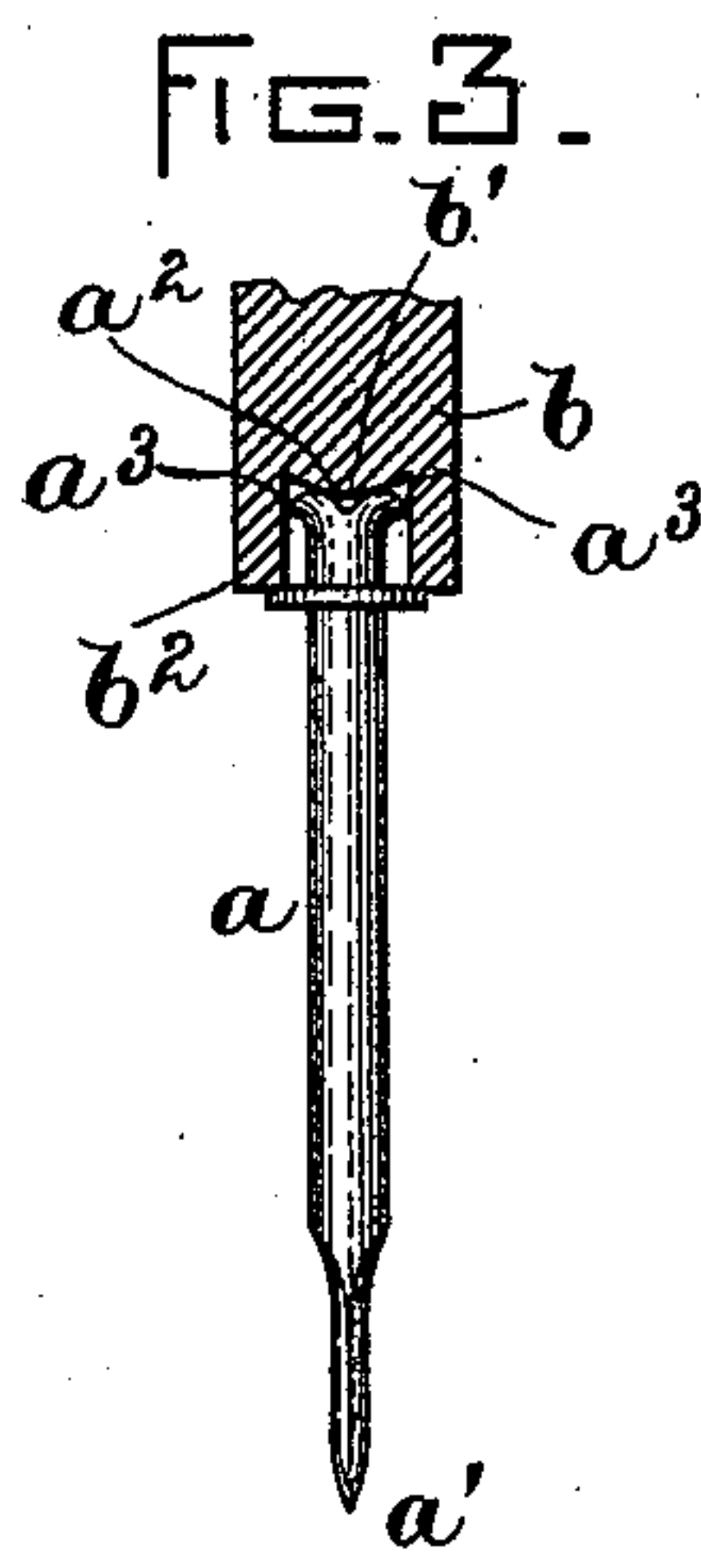
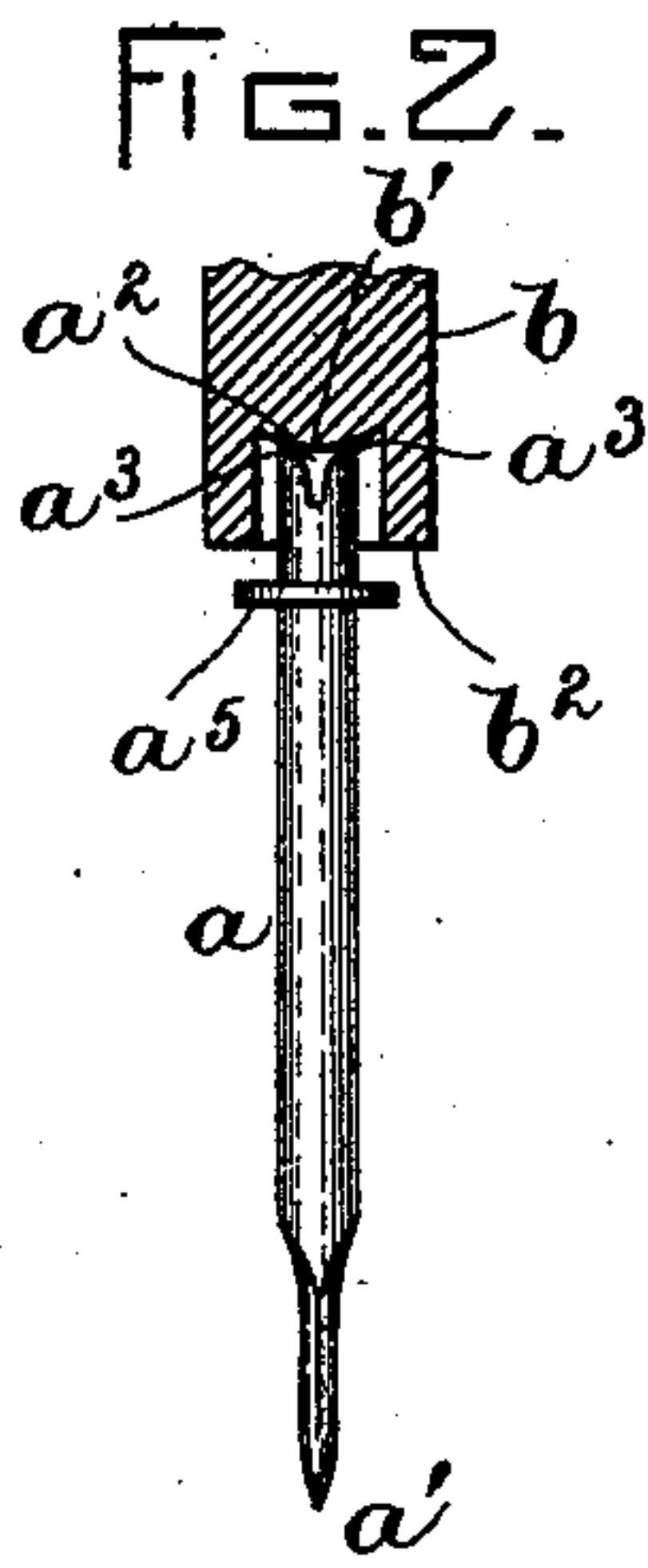
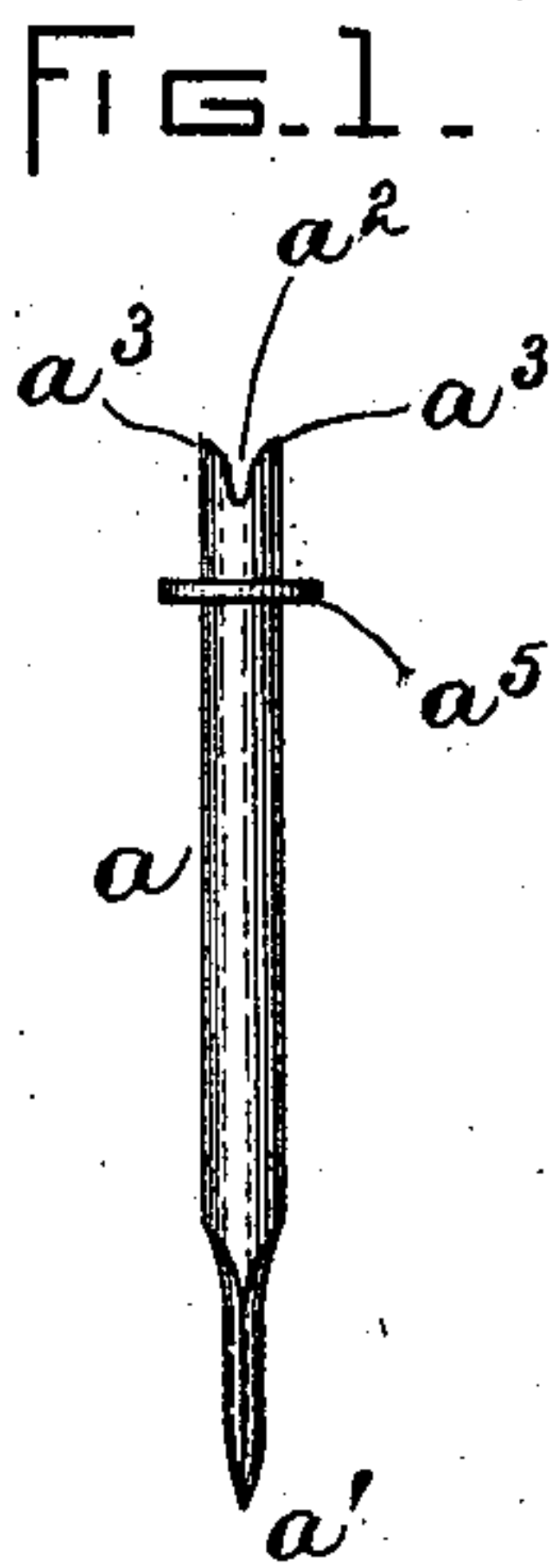


(No Model.)

G. A. CURTIS.
HEEL NAIL.

No. 574,140.

Patented Dec. 29, 1896.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE A. CURTIS, OF MALDEN, MASSACHUSETTS, ASSIGNOR TO CHARLES F. BAKER, OF BOSTON, MASSACHUSETTS.

HEEL-NAIL.

SPECIFICATION forming part of Letters Patent No. 574,140, dated December 29, 1896.

Application filed June 11, 1895. Serial No. 552,426. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. CURTIS, of Malden, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Heel-Nails, of which the following is a specification.

This invention relates to so-called "collar-nails," used in nailing on boot and shoe heels. A collar-nail usually has a clenching-point at one end and a collar or flange near its opposite end adapted to bear on the face of the body of a heel into which the nail is driven prior to the application of the top lift, said collar limiting the depth of penetration of the nail and causing its outer end to stand out from the body of the heel far enough to constitute a spur adapted to penetrate a top lift which is driven or spanked onto the heel after said nails have been driven.

It is the object of my invention to provide a nail of this class adapted to be made from wire and to have its projecting spur portion spread or enlarged while it is being driven to form a head which shall engage the top lift and prevent the latter from being readily pulled off from the nail.

To this end the invention consists in a nail having a clenching-point at one end, a notched or recessed spur at the other end, and an intermediate collar forming the head of the body portion of the nail and the base of the spur, the distance between the said collar and the outer end of the spur being greater than the operative length of the spur, so that the recessed end may be spread to form a head or enlargement and at the same time reduce the spur to its operative length by the action of a suitable driver, the collar serving as a guard to limit the spreading action of the driver and thus determine the operative length of the spur.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of a nail embodying my improvement. Fig. 2 is a similar view showing also in section the driver used to drive the improved nail. Fig. 3 represents a view similar to Fig. 1 after the driver has enlarged or spread the outer end of the spur. Fig. 4 represents a sectional view showing a portion of a heel-body and my improved nail driven into

the same and ready to be engaged with the top lift.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents a nail, which is preferably made of cylindrical wire and is provided at one end with a suitable penetrating and clenching point *a'* and at its other end with a spur having in its outer portion a notch or recess *a²*, adapting the end of the spur to be spread or enlarged, as hereinafter described, to form what may be considered a "head" to engage the top lift.

On the body of the nail I form a collar or flange *a⁵*, the diameter of which is considerably greater than that of the body of the nail. Said collar forms the head of the body portion of the nail and the base of the spur.

The distance between the collar and the extremity of the spur is greater than the operative length of the spur, the sides of the recess constituting surplus stock, which is adapted to be spread or forced outwardly by a suitably-formed driver, as hereinafter described, and form a head or enlargement at the outer end of the spur, the spreading operation reducing the spur to the desired operative length.

The nail above described is adapted to cooperate with the peculiarly-formed driver *b*, (shown in Figs. 2 and 3,) said driver having a cavity the inner end or bottom *b'* of which forms an acting face adapted to spread the recessed end of the spur, as shown in Fig. 3, thus forming the head shown in Figs. 3 and 4. The said driver has also an annular acting face *b²*, which surrounds the said cavity and is formed to bear upon the collar *a⁵*, the cavity being of greater diameter than the spur, so that the recessed end of the spur may be spread within the cavity to form the head. The depth of the cavity is slightly less than the original length of the spur, so that when the driver descends upon the nail the acting face *b'* will strike the recessed end of the nail before the annular acting face *b²* comes to a bearing on the collar *a⁵*. The result is that the spur is spread sufficiently to form the head before the driver comes to a bearing on the collar *a⁵*, further spreading of the spur being prevented by the contact of the driver

with the collar, the latter sustaining the principal pressure required to drive the nail, and thus determining the operative length of the spur. It will be seen, therefore, that by providing a nail with a recessed spur of greater than operative length and a collar at the base of the spur I am enabled to form a head on the spur and at the same time reduce it to its operative length by the act of driving the nail, the collar determining the size of the head, so that it cannot be distorted or made larger than is desirable. It is important that the spreading of the recessed end of the spur be comparatively slight, so that it will not offer too great resistance to the driving or spanking of the top lift onto the spur, and, further, so that the leather of the top lift may contract or close around the spur between the enlarged outer end and the collar. The collar α^5 therefore acts to prevent excessive enlargement of the spur and insures its proper length when the nail is fully driven.

I claim—

As an article of manufacture, a nail having a clenching-point at one end, a notched or recessed spur at the other end, and an intermediate collar forming the head of the body portion of the nail and the base of the spur, the distance between the said collar and the outer end of the spur being greater than the operative length of the spur, so that the recessed end may be spread to form a head or enlargement and at the same time reduce the spur to its operative length, by the action of a suitable driver, the collar serving as a guard to limit the spreading action of the driver and thus determine the operative length of the spur.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 8th day of June, A. D. 1895.

GEORGE A. CURTIS.

Witnesses:

C. F. BROWN,
A. D. HARRISON.