G. GODDU.

NAIL.

APPLICATION FILED JAN. 25, 1915.

1,282,215. Patented Oct. 22, 1918.

Fig. 1.

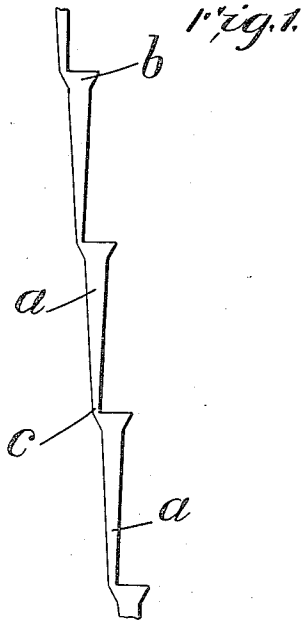


Fig. 2.



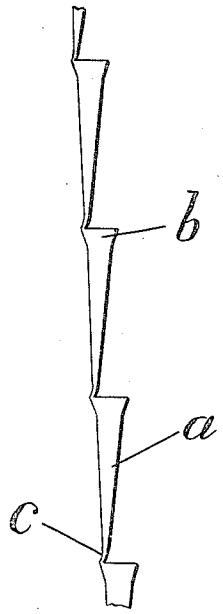


Fig. 3.

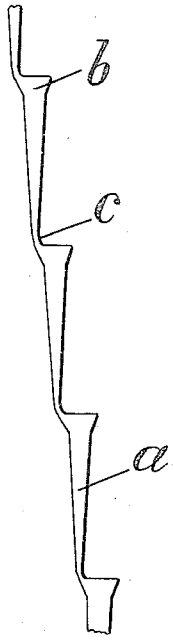


Fig. 4.

WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE GODDU, OF WINCHESTER, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNITED SHOE MACHINERY CORPORATION, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW YORK.

NAIL.

1,282,215. Specification of Letters Patent. Patented Oct. 22, 1918.

Original application filed August 24, 1914, Serial No. 858,214. Divided and this application filed January 25, 1915. Serial No. 4,363.

To all whom it may concern:

Be it known that I, GEORGE GODDU, a citizen of the United States, residing at Winchester, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Nails, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to the manufacture of nails and particularly to the manufacture of what are known as string nails which comprise a plurality of individual nails connected in series end to end in a long string which is usually coiled and is supplied thus to one type of nailing machine wherein the nails are severed in turn from the string and driven.

One form of nail string in extensive use, particularly in the manufacture of boots and shoes, comprises a series of nails connected head to point, with the sides of the nails substantially straight and in alinement at one side of the string and the defined heads, if any, forming projections at the opposite side of the string. Such a nail string has advantages in use in that the nails may be disconnected by means of a single cutter operating against a support at the other side of the string from that on which the cutter operates; and moreover in the process of manufacture the nails may be formed conveniently and economically from the metal strip or wire by cutting or upsetting the material at one side only of the strip. Such nails, however, are deficient in holding power at one side, and because of their unsymmetrical character are difficult to drive with accuracy and precision.

An object of this invention is to provide an improved form of nail string having advantageous features including those of previous forms without the disadvantages above referred to.

In accordance with a feature of this invention the points of the nails are connected to the heads adjacent to the sides of the heads for convenience in disconnecting the nails, and the heads form defined projections at that side of the string at which the points are located, as well as at the opposite side of the string, and preferably project symmetrically at both these sides. In accordance with a further improvement embodied in one form of the invention, the nails in the string are each formed so as to clench on a certain side of the nail when driven, and the nails are arranged in the nail string with the sides of the nails on which they are to be clenched on the same side of the nail string to the end that the points of the nails will all be clenched in the same direction when they are inserted into the work.

The invention will be more fully explained in the following detailed description with reference to the accompanying drawings which illustrate the improved nail string, and will then be pointed out in the claims.

In the drawings,—

Figure 1 shows an unfinished nail string,

Fig. 2 shows a finished nail string of the present invention,

Figs. 3 and 4 illustrate different forms of nail string in which the nails are bent slightly at the point.

The novel process of making the string nail herein described is not herein claimed but is made the subject matter of my co-pending application Serial No. 858,214 filed Aug. 24, 1914, of which the present application is a division.

By reference to Figs. 2, 3 and 4 it will be seen that each of the nails is provided with a head which forms defined projections, preferably of equal extent, at opposite sides of the nail, and the points of the nails are all located at the same side of the nail string and are connected with the projecting portions of the heads contiguous to the edges of the heads. As thus constructed the nails may be readily severed from the string in the usual manner, and by reason of the form of the head may be driven accurately in the direction desired and when driven serve to hold the material effectively at opposite sides. The shanks of the nails are preferably tapered, as shown, and the longitudinal axes of the nails are substantially parallel. In the form of the invention shown in Fig. 1 the points *c* of the nails are straight with the shanks, while in Figs. 3 and 4 alternative forms are shown in which each of the nails in the nail string is so formed as to clench on a certain side of the nail when driven and in the illustrated embodiment of the invention, the points *c* of the nails are to this end slightly deflected laterally adjacent to their connections with the heads by an amount sufficient

to predetermine the direction of their clench, the deflection, however, not being sufficient to affect the direction of drive of the nail. The nails are arranged in the nail string with the sides of the nails on which they clench on the same side of the nail string so that by reason of the fact that the nail string is positively controlled in the nail inserting machine, the points of the nails are all clenched in the same direction when they are driven into the work. Accordingly, in the embodiment of the invention illustrated in Figs. 3 and 4, the points of the nails are all bent in the same direction with reference to the string, the two figures, however, illustrating respectively opposite directions of bend, one or the other of which may be adopted as choice or necessity demands. It is advantageous for various purposes, to control the direction of clench of nails and particularly in sole securing operations in the manufacture of certain types of shoes as pointed out, for example in the United States patent to Dobyne, No. 1,072,212, granted September 2, 1913. The present invention provides a novel nail string including nails of this form ready for use in nailing machines, and requiring only that the nails be severed and driven in the usual manner.

It is within the province of the invention to make the nails from material of various forms as, for example, from round wire or from flat metal strips. According to the preferred practice a flat strip is first formed to provide nail blanks shaped as shown in Fig. 1. This is effected by cutting away material at one side only of the strip, leaving the blanks *a* with head portions *b* projecting and inclined downwardly toward the tapered shanks at the cut side, the blanks on their opposite sides being substantially straight, that is, free from defined projections at the head ends. The blanks as thus formed are connected head to point with their straight sides in substantial alinement. This operation may be performed by the use of any suitable cutting or punching mechanism which may constitute a part of a machine which operates subsequently to shape the blanks in the manner to be described, or may be a separate machine in which the entire strip or coil is first treated. In either case the blanks may be next operated upon by mechanism such as fully shown and described in the above mentioned co-pending application, and which operates to bend over the material at the head of the blank, thereby straightening the head *b* with reference to the shank and rendering its projecting portions symmetrical at opposite sides.

In the forms of nails shown in Figs. 3 and 4, as hereinbefore pointed out, the points of the nails are deflected adjacent to their connections with the heads. This operation may be performed simultaneously with that of forming the head of a blank through the provision of dies suitably shaped to bend and form the point of a blank during the shaping of the head of the next blank to which this point is connected.

Having explained the nature of the invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. As an article of manufacture, a nail string comprising a plurality of nails connected in series head to point, the heads of the nails projecting laterally from the shank portions a substantially equal amount at opposite sides of the nails and the points being connected to the laterally projecting portions of the heads.

2. As an article of manufacture, a nail string comprising a plurality of nails connected in series head to point, the heads of the nails projecting symmetrically at opposite sides from their shank portions, and the points being connected to the laterally projecting portions of the heads upon the same side of the string and contiguous to the edges of the heads.

3. As an article of manufacture, a nail string of the form from which nails are severed and driven by a string nailing machine in which the nail string is positively controlled comprising a plurality of nails connected in series head to point, each nail being formed so as to clench on a certain side of the nail when driven and the nails being arranged in the string with the sides of the nails on which they are clenched lying on the same side of the nail string so that the points of the nails are all clenched in the same direction when the nails are inserted into the work.

4. As an article of manufacture, a nail string comprising a plurality of nails connected in series head to point, the heads of the nails projecting laterally from the shank portions and the points being connected to the laterally projecting portions of the heads contiguous to the edges of the heads and deflected adjacent to their connections with the heads.

5. As an article of manufacture, a nail string comprising a plurality of nails connected in series head to point, the heads of the nails projecting laterally from the shank portions and the points being connected to the laterally projecting portions of the heads upon the same side of the string and all bent in the same direction with reference to the string adjacent to their connections with the heads.

6. As an article of manufacture, a nail string comprising a plurality of nails having tapered shanks and connected in series head to point with their longitudinal axes

in substantially parallel relation and their points deflected in the same direction adjacent to their connections with the heads.

7. As an article of manufacture, a nail string comprising a plurality of nails each having a tapered shank and a head disposed symmetrically on the shank, the nails being connected in series head to point with their longitudinal axes in substantially parallel relation and their points deflected in the same direction adjacent to their connections with the heads.

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

GEORGE GODDU.

Witnesses:
HARRY KAHLMERGER,
WILLIAM B. KING.