

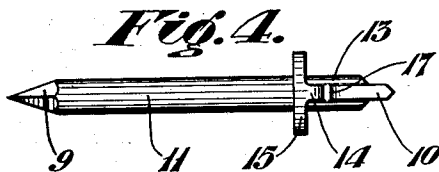
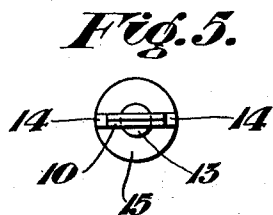
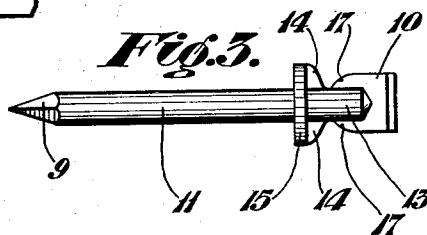
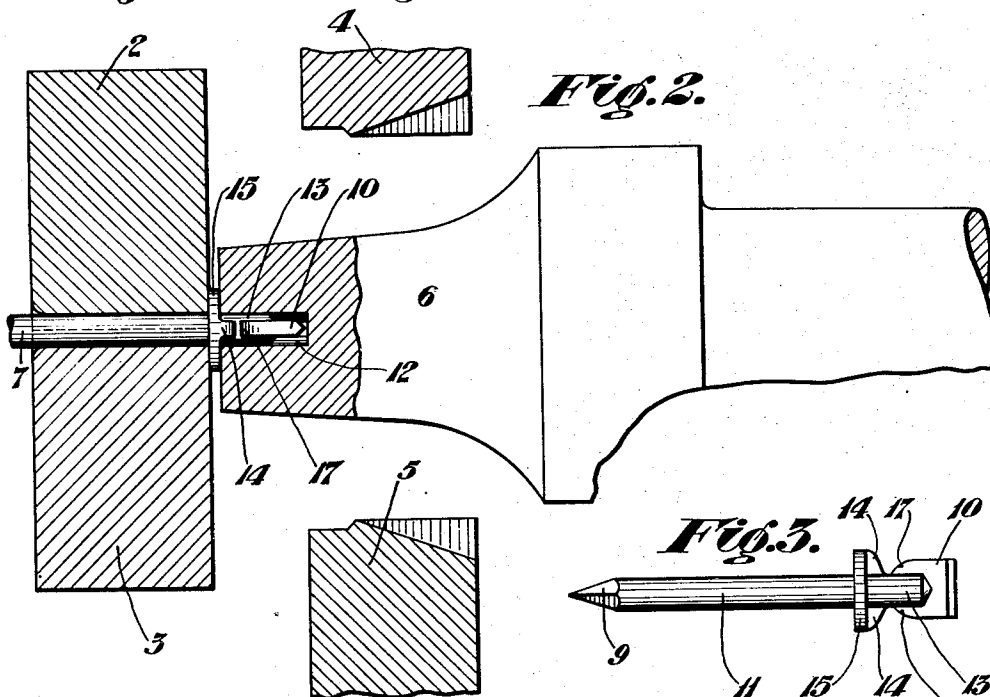
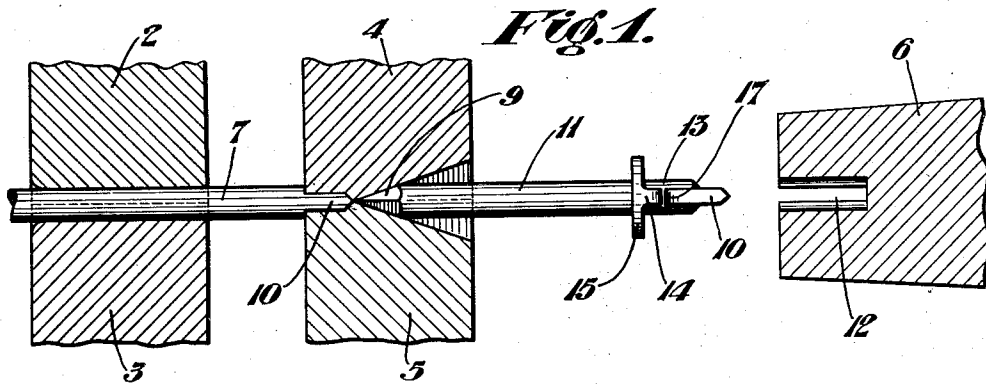
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F. W. LORENZ

NAIL

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UNITED STATES PATENT OFFICE.

FRED W. LORENZ, OF CLEVELAND, OHIO, ASSIGNOR TO THE AMERICAN STEEL AND WIRE COMPANY OF NEW JERSEY, A CORPORATION OF NEW JERSEY.

NAIL.

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This invention relates to nails, and more particularly to that class of nails known as scaffold nails used in the construction of temporary structures such as scaffolds, concrete forms and the like.

When ordinary nails are used in building temporary structures the boards must be forced apart and the nails are then driven part way out so that a tool can be engaged under their heads to withdraw them. When the boards are forced apart they are generally split or broken so that considerable lumber is wasted.

The present invention has for its object the provision of a relatively cheap one-piece nail provided with a head which will project from the surface of the structure after the nail is driven home, so that it may readily be withdrawn from the structure without forcing the boards apart, thus eliminating the waste of lumber caused by breakage in forcing the boards apart as heretofore necessary.

Another object is to provide the novel form of nail described in the following specification and illustrated in the accompanying drawings.

In the drawings:

Figure 1 is a diagrammatic view showing the first forging step in the method of making the nail of this invention.

Figure 2 is a similar view showing the second forging step.

Figure 3 is a side elevation of the finished nail.

Figure 4 is a similar view taken at right angles to Figure 3.

Figure 5 is a plan view of the head end of the nail.

Referring more particularly to the drawings, the numerals 2 and 3 designate the gripping dies, of a standard nail machine, the numerals 4 and 5 designate the cut-off and head forging dies which are substituted for the cut-off dies of the standard nail machine, and the numeral 6 designates the hammer or upsetting die of the standard nail machine, while the numeral 7 designates the wire or rod stock from which the nails are made.

The stock 7 is fed through the gripping dies 2 and 3 a distance equal to the length of the nail to be formed, the dies 2 and 3 then close and grip the stock, and the cut-off and head forging dies 4 and 5 are forced

together to cut-off the preheaded nail and form the point 9 thereon, while at the same time flattening the end of the stock projecting through the gripping dies to form the flattened head portion 10 of the next nail to be completed.

The head portion 10, due to the forging force being applied in a sidewise direction or at right angles to the longitudinal axis of the stock, will extend in a plane parallel with the longitudinal axis of the shank 11 of the nail.

It will be understood, of course, that when the machine is first started the cut-off dies 4 and 5 will cut-off an unheaded length of stock which will be scrapped.

After the dies 4 and 5 have pointed and cut-off the completed nail and formed the head 10 on the stock, said dies are retracted and the hammer die 6, which is cut away at 12 to receive the head 10 and to permit the formation of the reinforcing ribs 13 and 14 moves forwardly and with a single blow upsets the stock to form the ribs 13 and 14 and a circular stop shoulder or second head 15 extending in a plane at right angles to the longitudinal axis of the nail shank 11 and spaced inwardly from the unpointed end of the nail.

The head portion 10 has its side edges beveled inwardly toward the shank at their inner or lower ends to form shoulders 17 against which the claws of a hammer or bar may be engaged to withdraw the nail after the nail has been driven home.

The ribs 13 strengthen and reinforce the head 10 against bending strains during the driving of the nail and the ribs 14 serve to reinforce the shoulder portion 15 and transmit the force of the driving blows over the shoulder 15.

Those skilled in the art will readily appreciate that the method described above involves the same number of steps as used in making ordinary headed nails and may be carried out on the standard nail machines now in use.

The difference in the method of manufacturing the nail of this invention over that of the method of manufacturing ordinary nails lies in the combining of a head-forming forging step with the cut-off and pointing operation, and only necessitates the changing of the form of the cut-off dies and hammer in the standard nail machine.

While I have illustrated and described specific details of my invention, it will be understood that I do not wish to be limited thereto since various modifications in details may be made without departing from the scope of my invention as defined in the appended claims.

I claim:

1. A scaffold nail comprising a pointed shank, an integral circular stop shoulder on said shank extending in a plane at right angles to the longitudinal axis of said shank and spaced inwardly from the unpointed end of said nail, a flattened head on the unpointed end of said shank, said head extending on a plane parallel with the longitudinal axis of said shank, and having its side edges beveled inwardly toward said shank to permit the engagement of a tool for withdrawing the nail, and means for reinforcing said head against bending strains.

2. A scaffold nail comprising a pointed shank, an integral circular stop shoulder on said shank extending in a plane at right angles to the longitudinal axis of said shank and spaced inwardly from the unpointed end of said nail, a flattened head on the unpointed end of said shank, said head extending on a plane parallel with the longitudinal axis of said shank, and having its side

edges beveled inwardly toward said shank to permit the engagement of a tool for withdrawing the nail, and reinforcing ribs extending upwardly from said circular head along each side face of said flattened head to reinforce said head against bending strains.

3. A scaffold nail comprising a pointed shank, an integral circular stop shoulder on said shank extending in a plane at right angles to the longitudinal axis of said shank and spaced inwardly from the unpointed end of said nail, a flattened head on the unpointed end of said shank, said head extending on a plane parallel with the longitudinal axis of said shank, and having its side edges beveled inwardly toward said shank to permit the engagement of a tool for withdrawing the nail, reinforcing ribs extending upwardly along said shank from said circular head to a point adjacent the lower end of said flattened head, and other reenforcing ribs extending upwardly from said circular head along each side face of said flattened head to reinforce said head against bending strains.

In testimony whereof, I have hereunto set my hand.

FRED W. LORENZ.