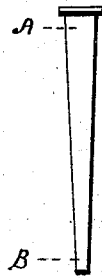
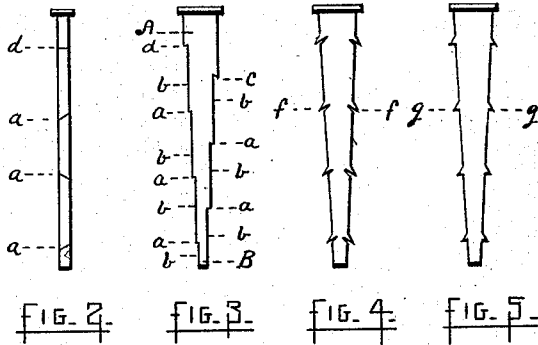
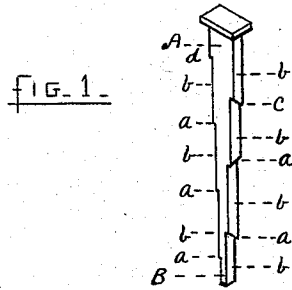


(No Model.)

E. K. PAGE.  
NAIL.

No. 325,859.

Patented Sept. 8, 1885.



WITNESSES-

Rufus B. Fowler  
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INVENTOR-

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# UNITED STATES PATENT OFFICE.

EDWIN K. PAGE, OF WORCESTER, MASSACHUSETTS.

## NAIL.

SPECIFICATION forming part of Letters Patent No. 325,859, dated September 8, 1885.

Application filed October 25, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN K. PAGE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Nails, of which the following is a specification containing a full, clear, and exact description of the same, accompanied by drawings, in which—

Figure 1 represents a perspective view of a nail embodying my invention. Figs. 2 and 3 are elevations showing adjacent sides of the nail. Figs. 4 and 5 are views showing modifications in the form of the teeth, and Fig. 6 shows an elevation of the nail in common use.

Similar letters refer to similar parts in the several views.

My invention relates to the wedge-shaped nail in common use by builders, ordinarily cut from a plate, and two of its sides parallel, with the other two sides slightly tapering; and it has for its object to produce a nail which may be driven indiscriminately with either its parallel or tapering sides at right angles with the grain of the wood without splitting; and it consists in forming a series of cutting-teeth on the two opposite and tapering sides of the nail, so that when the nail is driven with these sides parallel with the grain, the cutting-teeth will sever the grain and form a passage for the nail, preventing the splitting of the wood; and my invention further consists in the formation of the nail with such cutting-teeth and with parallel sides between the cutting-teeth, so that the back of the teeth may be supported, and so the wood will press more closely against the sides of the nail after it has been driven.

In Figs. 4 and 5 are shown forms of teeth *f* *g*, which may be made by swaging or by cutting with a sharp cutting-tool in a similar way to that by which the teeth are cut on files. Figs. 1, 2, and 3, however, represent a nail having what I deem a preferable form of cutting-tooth, and embodying both the first and second parts of my invention, and in which the increased thickness of the nail at *A* is obtained by a series of steps, *a*, forming the cutting-teeth, the sides *b b* between each of the steps *a* being parallel, the increase in the thickness of the nail between the point at *B* and the section beneath the head or at *A* be-

ing formed by regular graduations instead of by continuous and tapering sides, as shown in Fig. 6, which is the method now employed in the cut nails in common use. These "steps" *a* may be made at right angles to the parallel sides *b*, or they may be cut under, as shown at *c c*. In either case, whether the angle formed be an acute or a right angle, it will serve, when the nail is driven, to cut off the grain resting against the serrated side of the nail and form a passage for the nail and removing the strain caused by driving a wedge-shaped nail, as in Fig. 6, which is liable to result in splitting the wood.

As the teeth *a* do not project beyond the parallel sides *b*, immediately behind and above them, the wood is allowed to rest against the sides *b* and hold the nail more firmly than when the teeth are formed as shown in Fig. 5. The sides *b* also support the cutting-edges and prevent their being broken off by the resistance of the wood.

The cutting-edges may be formed at right angles to the nail, as shown at *d*, but I prefer to form them at an angle thereto, as at *a*, every alternate tooth being placed at an opposite angle, so that the action of the tooth upon the wood as the nail is driven will be a "drawing cut;" and I also form the teeth *a* so a tooth will be brought opposite to one of the parallel sides *b*, instead of bringing the teeth opposite each other, which increases the strength of the nail.

I am aware that nails have been heretofore made with corrugations or projections to cause them to hold more firmly in the wood; also that barbs have been formed upon the sides of nails for the same purpose; also that projections have been formed arranged spirally to the axial line of the nail for the purpose of producing a spiral motion to the nail while it was being driven. I do not claim any of these features, broadly.

I am aware of the Patent No. 243,603, to Newton, but the nail shown in that patent, instead of cutting-teeth adapted to sever the grain of the wood when the nail is driven, has a series of notches at the corners only, which do not project beyond the plain surfaces of the nail and consequently cannot act as cutting-teeth. I am also aware of Patent No. 206,515, to Wires, in which a nail is shown in

circular cross-section and having a series of shoulders extending entirely around the nail, with the sides of the nail between the shoulders parallel, while in my improved form of nail the shoulders are only formed on the tapering sides of the nail, the remaining two sides of the nail being straight or parallel to each other, allowing the wood to press closely against them and the nail to be more firmly held in the wood. Nails are also shown in said patent to Wires having shoulders formed on two opposite and tapering sides of the nail, but these shoulders are formed for the purpose of compressing the material into which the nail may be driven in order to prevent the nail, after it has once been driven, from working inward. The invention is an improvement in shoe-nails, and the shoulders perform the function of the head in ordinary nails, which in the shoe-nail is omitted, and the shoulders are so formed as to compress the leather. Neither do I claim, broadly, the formation of shoulders upon the side of a nail, but

What I do claim, and desire to secure by Letters Patent, is—

1. A nail substantially rectangular in its cross-section, having two of its opposite sides parallel and the remaining two sides tapering or wedge-shaped, and having on said tapering sides teeth so formed as to present cutting-edges in the direction of the point of the tooth for severing the grain of the wood

and prevent splitting, substantially as described, and for the purpose set forth.

2. A nail substantially rectangular in its cross-section, having two of its opposite sides straight and parallel, and the remaining two sides having a series of cutting-teeth formed thereon, presenting their cutting-edges toward the point of the tooth, the thickness of said nail being increased at each tooth, and the spaces between the cutting-teeth forming parallel sides, substantially as described, and for the purpose set forth.

3. A nail having a series of steps or shoulders whereby the thickness of the nail is increased by gradations from the point to the head, forming steps or shoulders on the side of the nail, the spaces between the shoulders being placed opposite the shoulders upon the opposite side of the nail, as and for the purpose set forth.

4. A nail having a series of shoulders or steps whereby the thickness of the nail is increased by gradations from the point to the head, each step or shoulder forming a cutting-tooth for severing the grain of the wood, and each of said teeth placed obliquely across the sides of the nail, as and for the purpose set forth.

EDWIN K. PAGE.

Witnesses:

RUFUS B. FOWLER,  
K. H. ELLIS.