

(Model.)

H. K. JONES.

SCREW NAIL.

No. 355,825.

Patented Jan. 11, 1887.

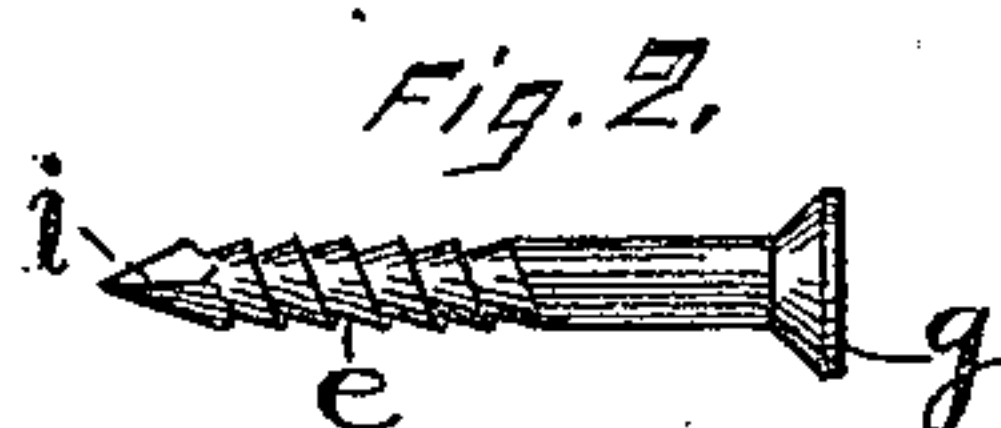
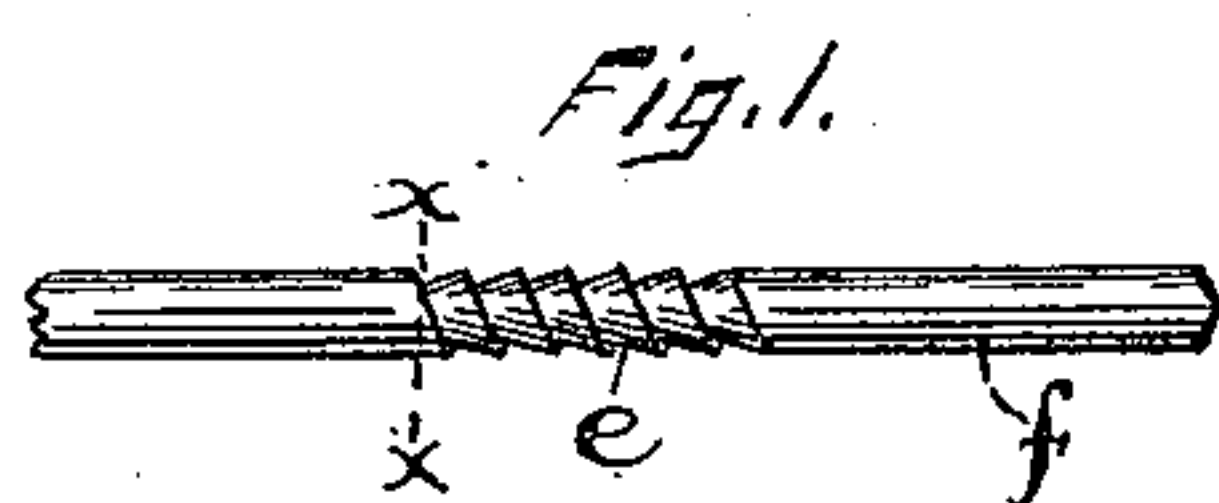


Fig. 3.



Witnesses

John Edwards, Jr.
C. W. Welles

Inventor.

Horace K. Jones.
By James Shepard Atty.

UNITED STATES PATENT OFFICE.

HORACE K. JONES, OF HARTFORD, ASSIGNOR TO THE RUSSELL & ERWIN MANUFACTURING COMPANY, OF NEW BRITAIN, CONNECTICUT.

SCREW-NAIL.

SPECIFICATION forming part of Letters Patent No. 355,825, dated January 11, 1887.

Application filed August 4, 1885. Serial No. 173,499. (Model.)

To all whom it may concern:

Be it known that I, HORACE K. JONES, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Screw-Nails, of which the following is a specification.

My invention relates to improvements in screws or screw-nails of the class which have distinctive and continuous screw-threads, and are also specially adapted for being driven part way into the wood by a hammer and the remainder of the way by a screw-driver or other tool for turning them axially, and the chief object of my improvement is to produce a better screw-nail, and particularly a better head.

In the accompanying drawings, Figure 1 is a side elevation of a portion of the rod or wire from which my screw-nail is formed, that portion of said wire which is on the right of the line $x x$ constituting the blank for a single screw-nail. Fig. 2 is a side elevation of my screw-nail, and Fig. 3 is an end view thereof.

In the manufacture from wire of nails having a thread or spiral barb it has been customary to first barb the wire for at least the whole length of a nail-blank, and form the head by upsetting or heading a portion of the wire which was thus barbed. The several coils of the barbs in the portion thus headed were simply compressed together, leaving the head full of seams. These seams evidently impair the strength of the head and make it very liable to part or break under the action of a screw-driver. In case of heads formed on wire which is very deeply barbed, the defect in the heads will be greater than when they are formed with shallow barbs.

I form my screw-nail from a rod or wire of metal by first forming the barbed portion e on the wire, leaving a contiguous plain portion, f , which is long enough for upsetting to form the head, and also to form such length of unbarbed body of the screw-nail as may be desired. This threaded or barbed portion I form in what is termed a "ratchet-thread"—that is, with the side of the thread which faces the point beveled off or inclined, while the opposite side is practically at right angles to the

axis of the screw-nail. The pitch of the thread is not very sharp, and is not intended to rotate the screw-nail to such an extent as that the thread thereon will follow the thread in the hole made by said screw-nail when it is driven into the wood by a hammer. I form the thread by rolling or cutting a groove, the bottom of which extends below the original surface of the rod or wire, thereby producing what I term a "sunken thread." The plain portion f may, if desired, be only of sufficient length for forming the head, and the barbed portion in that case will extend close up to the head of the finished screw-nail. The plain portion is headed by upsetting in heading-dies. The head g , formed therefrom, will be seamless and solid throughout. It should, however, be provided with the driving-slot h . After the head is formed I cut the screw-nail from the rod or wire at that end of the barbed portion which is farthest from the head—as, for instance, on line $x x$, Fig. 1—and at the same time I form the diamond-point i , said point being of a pyramidal form, preferably square in cross-section.

By my invention I produce a screw-nail having a pyramidal point, a continuous ratchet-thread, and a head of solid stock, which head is seamless, and therefore much stronger than that of the ordinary nail of this class. I am also enabled to thread the screw-nail as deeply as may be desired without in the least impairing the strength of the head, and I produce my screw-nail at a small cost.

In use my screw-nail may be driven into either hard or soft wood for its whole length by a hammer, and, if desired, it may be withdrawn at any time by turning the screw-nail in the direction for unscrewing it from the wood. My screw-nail is, however, principally intended to be used by driving it only part way into the wood with a hammer, and then driving it home with a screw-driver, the pyramidal point and the continuous spiral ratchet barb being found efficient in causing the screw-nail, after first being started, to force its own way into the wood, either hard or soft, without previously preparing a hole for its reception. The pyramidal point parts the wood evenly to prepare the way for the spiral ratchet barb or

thread when the screw-nail is driven fully home by a hand-hammer; but this pyramidal point, in connection with a head provided with means for rotating the screw-nail, is very important when the screw-nail is to be screwed home, the point then acting, like a brad-awl, to prepare the way for the thread.

I am aware that the patent to Bray, No. 289,333, shows a drive-screw having a solid head, a sunken spiral ratchet barb or thread, a conoidal point, and a cylindrical part between the base of the point and the commencement of the thread, and I hereby disclaim the same.

Another patent shows a drive screw or nail having a solid and slotted head, a raised thread, and a conoidal point, while a prior patent to myself shows a nail having a head full of seams, a spiral ratchet-barb, and a pyramidal point; but in this nail the round head was not slotted, and therefore was without means for screwing the screw-nail home.

Another patent shows a nail having a longitudinally-grooved body, a pyramidal point, and a ratchet-thread on the ribs between the grooves; but this nail cannot be screwed home

by reason of the breaks in the thread at the grooves, and the pyramidal point has no boring function. All of said prior art is hereby disclaimed.

I claim as my invention—

1. As a new article of manufacture, the herein-described screw-nail formed of wire and having a head of solid stock, a continuous ratchet-thread, and the pyramidal point extending from the end of said thread, substantially as described, and for the purpose specified.

2. As a new article of manufacture, the herein-described screw-nail formed of wire and having a continuous sunken ratchet-thread, the pyramidal point extending from the end of said thread, and a head adapted to be engaged by a driver for turning the screw-nail axially, all substantially as described, and for the purpose specified.

HORACE K. JONES.

Witnesses:

M. S. WIARD,
W. C. RUSSELL.