

(No Model.)

H. A. HARVEY.
SCREW.

No. 248,164.

Patented Oct. 11, 1881.

Figure 1.

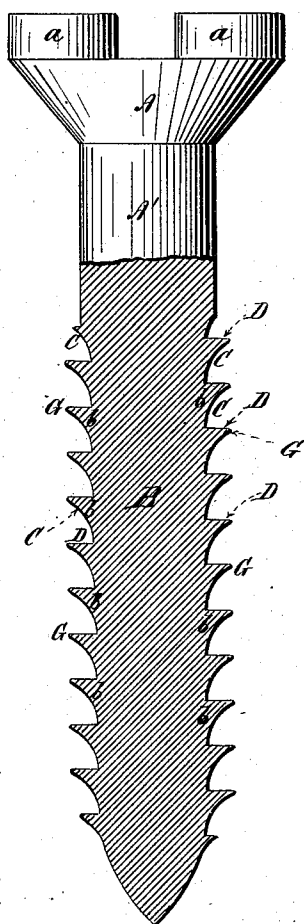
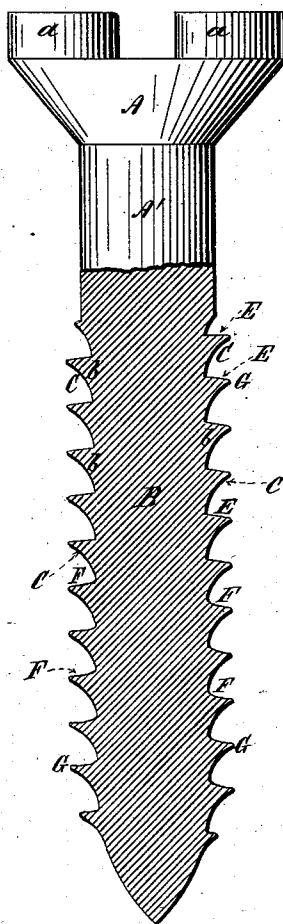


Figure 2.



Witnesses:

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SCREW.

SPECIFICATION forming part of Letters Patent No. 248,164, dated October 11, 1881.

Application filed June 22, 1881. (No model.)

To all whom it may concern:

Be it known that I, HAYWARD A. HARVEY, of Orange, New Jersey, have invented a certain Improvement in Rolled Screw-Nails, of which the following is a specification.

My improvement, which relates to the shape in cross-section of the thread of a rolled screw-nail, is especially intended for application to the screw-nail shown and described in Letters Patent of the United States No. 221,729, granted to me November 18, 1879.

Screw-nails, or screws which are intended for insertion by driving, are provided preferably with ratchet-threads. It is desirable that the edges of the threads shall project transversely outward beyond the body of the shank of the blank, and to this end I employ in the formation of the thread the mechanism shown and described in Letters Patent of the United States No. 223,730, granted to me January 20, 1880, for an improvement in machines for rolling threads of screws or bolts.

By the use of this mechanism the threads are formed partly by abrasion and partly by the displacement of the metal and its rearrangement in the form of a rib extending spirally around the body of the blank.

I have found that by making the longer side of the thread—that is, the side toward the point of the screw-nail—concave, which, as will be obvious, is effected by making the ribs of the dies correspondingly convex, the metal displaced by the impress of the die flows more easily outward, and the rolled thread not only acquires a sharp edge, but its edge is thrown farther outward from the body of the blank.

The side of the thread toward the head of the screw-nail may be a spiral plane, which in cross-section is at, or nearly at, a right angle with the axis of the screw; or, if desired, it may be slightly concave in cross-section. In either case the concavity of the under side of the thread, or, in other words, the corresponding convexity of the rib or die which impresses that part of the thread, is the principal factor in inducing the outward flow of the metal, and the complete filling of the depressions in the die, and thus the foundation of a sharp-edged projecting thread.

In the accompanying drawings, representing rolled screw-nails containing my improvement, Figure 1 is an elevation of a ratchet-threaded screw-nail, showing the threaded portion of the body in central longitudinal section. Fig. 2 is a similar representation of a screw-nail, illustrating the application of my improvement to those forms of ratchet-threads in which the upper side of the thread is either outwardly and downwardly inclined or is slightly concave in cross-section.

For the purposes of the present case either of the forms of thread illustrated in the drawings may be called "ratchet-threads," the distinguishing characteristic of the class of threads to which my invention applies being that their lower sides form a more acute angle with the side of the body than their upper sides.

It will be seen on reference to the drawings that the heads A of the screw-nails are provided with the projections or nipples *a*, which are intended to receive the impact of the hammer by which the screw-nail is driven into an object, and which serve to engage the screw-driver employed to withdraw the screw-nail.

The body B is provided with a projecting spiral thread, *b*, the distinguishing characteristic of which is that its under side, C, is concave in cross-section.

The upper side, D, of the thread may, in cross-section, occupy a plane at right angles to the axis of the screw-nail, as shown in Fig. 1, or the thread may be provided with an outwardly and downwardly inclined upper face, E, as shown in the upper portion of the body in Fig. 2, or the thread may be provided with a concave upper face, F, as shown in the lower portion of the body in Fig. 2. In either case it will be seen that the edges G of each convolution of the thread have such an outward projection that the diameter, measuring from the edge of the thread on one side to a point in line with the edges of the thread on the other side, is considerably greater than the diameter of the shank A' of the blank.

Driven screw-nails are held in position by the swelling or springing of the wood into the depressions in the periphery of the body, and it has heretofore been proposed to turn down

the upper part of the shank of a wood-screw to make room for such swelling or springing of the wood.

I do not therefore claim, broadly, a screw
5 having the unthreaded portion of its shank of less diameter than the diameter of a cylinder capable of containing the threaded portion of the body; but

What I do claim as my invention is—

A rolled screw-nail provided with a sharp- 10
edged thread projecting beyond the unthreaded portion of the body, one or both sides of the thread being concave in cross-section, substantially as set forth.

H. A. HARVEY.

Witnesses:

M. L. ADAMS,
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