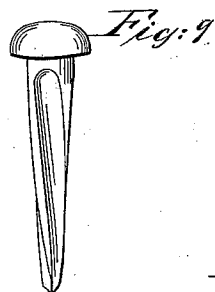
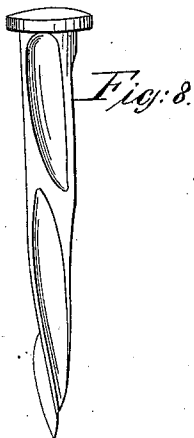
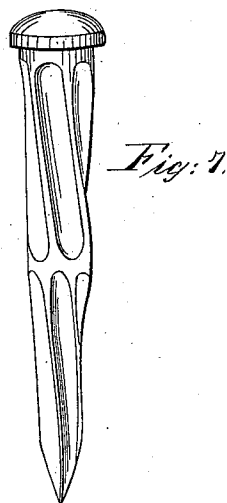
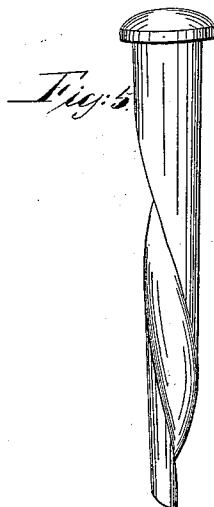
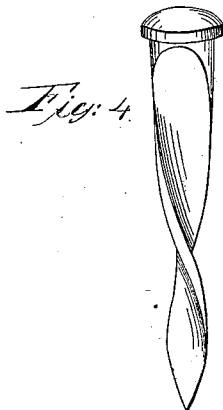


*Watts, Willcox & Tompkins,
Spike and Nail.*

N^o 42,054.

Patented Mar. 22, 1864.



Witnesses:

Inventors:
William Watts
Jenn Willcox
(Daniel F. Tompkins)

UNITED STATES PATENT OFFICE.

WILLIAM WATTS, FENN WILLCOX, AND DANIEL F. TOMPKINS, OF NEWARK,
NEW JERSEY.

IMPROVEMENT IN SPIKES AND NAILS.

Specification forming part of Letters Patent No. 42,054, dated March 22, 1864.

To all whom it may concern:

Be it known that we, WILLIAM WATTS, FENN WILLCOX, and DANIEL F. TOMPKINS, of the city of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Spikes and Nails; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figures 1, 2, and 3 are perspective views of three several elementary forms or shapes of our said invention, and the remaining figures are substantially the same as Figs. 1, 2, and 3, or combinations or modifications thereof.

The nature of our invention and the object thereof consists in forming a spike or nail in such a form or shape as that when the same is driven into the wood it will compel itself to turn around more or less in such a way as that when the spike is driven home it will take a greater hold of the wood than the ordinary spike or nail, and will act upon the same principle substantially as the screw. To accomplish this object, the spike or nail may be variously formed or shaped, without, however, affecting the character of our invention. For example, as in Fig. 1, it may be formed straight with any number of sides (with or without flanges, fluted or grooved) and then twisted bodily, the whole material of the spike being subjected to the twist.

In Fig. 1 the spike is fluted and twisted, as represented. In addition to this it has the short flanges *a a* near the head. The object of the flanges *a a* is to prevent the spike from turning when it is drawn upon. For example, suppose that two pieces of wood are spiked together by the spike, Fig. 1—viz., a plank to the rib of a ship—the flanges *a a* will then be buried in the plank. If now the plank is pried upon, the tendency of the spike will be to turn in its head, as it is being drawn out. This tendency to turn the short flanges *a a* will counteract and prevent, so that the spike

will be drawn out in a straight line, tearing the wood before it, substantially as a screw would do. In Fig. 2 the spike is formed by first having a straight center piece, *b*, around which is placed in a spiral direction one or more flanges, *c c c*. In Fig. 3 the spike or nail is first formed straight and of any number of sides, and then wound upon a mandrel, producing a cork-screw shape, as represented. All of these different forms may, by the use of proper appliances and machinery, be manufactured for the market either by casting or forging. Fig. 4 is the same, substantially, as Fig. 1. Fig. 5 is the same, substantially, as Fig. 3. Fig. 6 is the same, substantially, as Fig. 2. Figs. 7, 8, and 9 are modifications and combinations substantially the same as Figs. 1, 2, and 3.

The short flanges *a a*, Fig. 1, may be used upon any of the shapes shown. All the figures have the same nature and object, viz: First, they can all be driven by a hammer into wood; second, they will all turn when being driven; third, they will all have a tendency to turn when being drawn out, which tendency, if counteracted, (as it is and will be when they are used to spike two pieces together,) will cause the sides of the spikes or nails to take hold of the wood next to them and tear it out before the spike or nail can be released, thus holding better than the common spike or nail.

What we claim as our invention, and desire to secure by Letters Patent of the United States, is—

The combination of the flanges *a a a* in Fig. 1 with the twisted spikes, Figs. 1, 2, and 3, substantially in the manner and for the purposes described.

WILLIAM WATTS.
FENN WILLCOX.
DANIEL F. TOMPKINS.

Witnesses:

MARY E. BALDWIN,
SARAH L. TOMPKINS.