

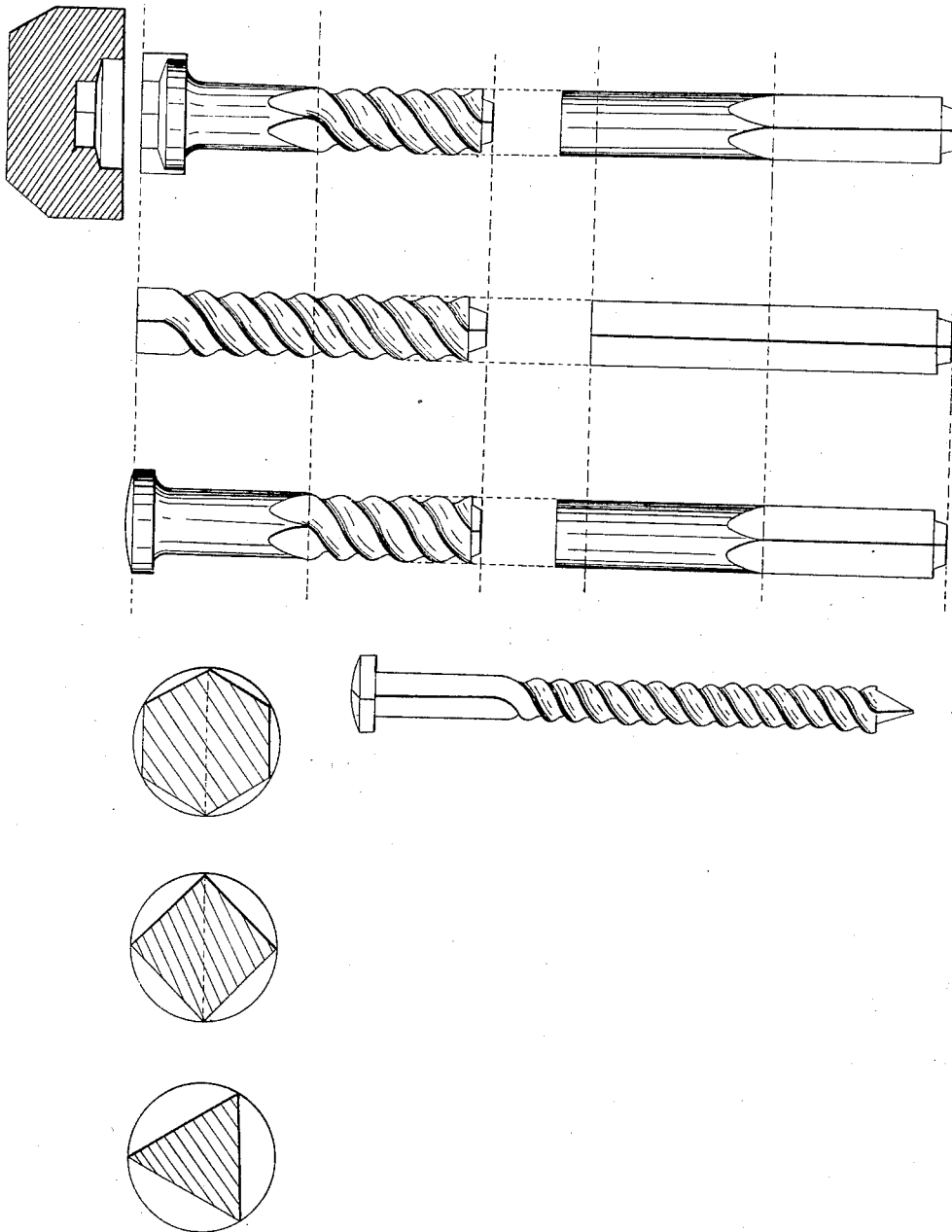
W. T. STEIGER.

2 Sheets—Sheet 1.

Spike and Bolt.

No. 2,417.

Patented Jan. 8, 1842.



Witnesses:  
*W. Thompson*  
*R. H. Williams*

Inventor:  
*Wm. T. Steiger*

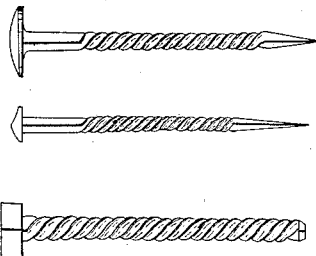
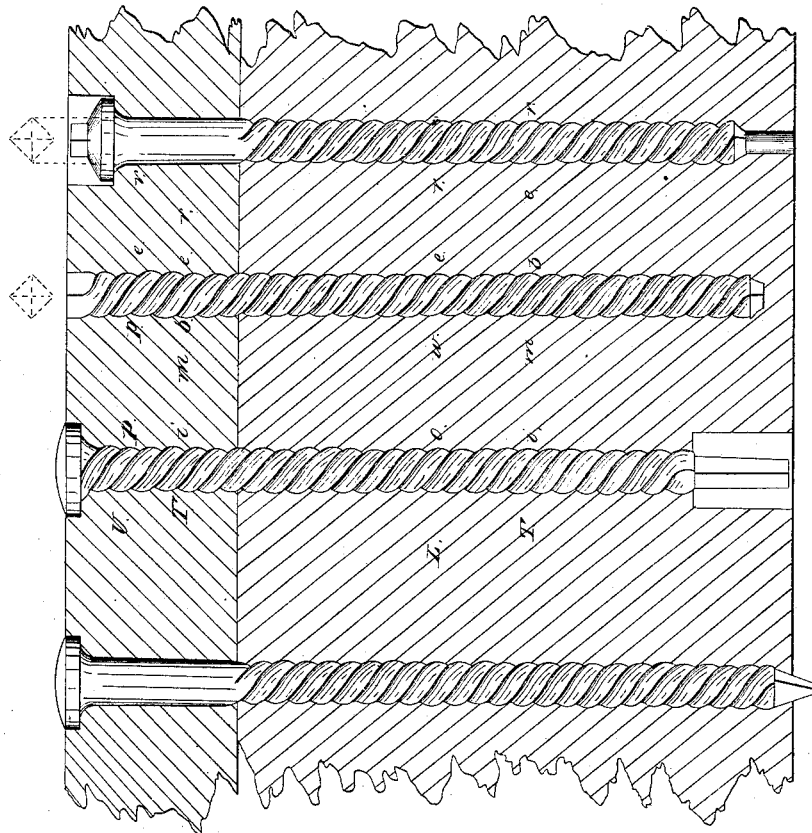
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No. 2,417.

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Witnesses.  
Attest,  
R. H. Williamson

Inventor:  
William T. Steiger

# UNITED STATES PATENT OFFICE.

W. T. STEIGER, OF WASHINGTON, DISTRICT OF COLUMBIA.

CUT AND WROUGHT SPIKES, BOLTS, NAILS, AND BRADS.

Specification of Letters Patent No. 2,417, dated January 8, 1842.

*To all whom it may concern:*

Be it known that I, WILLIAM T. STEIGER, of the city of Washington, in the District of Columbia, have invented a new and useful Improvement in Cut and Wrought Spikes, Bolts, Nails, and Brads; and I hereby declare that the following is a full and exact description of my said improvement.

The spikes, bolts, nails, &c., may be wrought or cut (either of copper or iron) by any of the different methods in common use, the bodies thereof having a triangular, square, hexagonal, or octagonal form, or the section thereof may be any other regular polygon, though the square form is preferred for most purposes. The points instead of being drawn out in the usual way, should be beveled short off, unless they are to be driven without boring for them, in that case the points should be round and conical and their greatest diameter should not exceed the diameter of the inscribed circle of the polygons or sections of their bodies. They are then heated, and taken singly in a pair of tongs, or pincers, or any other convenient tool, by the head or point, and the other end being fastened in a vise or inserted in a square hole or slot of suitable size, made in a stationary iron bar or plate, they are twisted one or more times around; by which simple operation the lines of the angles of the spikes, bolts &c., will form the threads of a screw, having three, four, five, six or more distinct threads according to the number of angles in the body and when such spikes bolts &c. are driven into wood (a suitable hole being first bored as usual for the large spikes and bolts) they enter it with a regular screw motion.

The regularity of the screw or twist is easily preserved in practice, by simply dropping a small quantity of cold water on the parts where, during the operation it appears to twist too fast, which chills the metal and has the effect of retarding the twist in that place. The spikes, bolts &c. should likewise be made of equal thickness from neck to point, and not tapering as they are commonly made. The twisting may be performed without heating them, when the metal is good, and it may be remarked, that the operation whether heat be employed or not will be a fair test of each spike, bolt, &c., it being a means of discovering any flaw or other defects that may exist in the metal, and on account of which they should

be rejected. For the purpose of effecting the twist more perfectly, and at the same time expeditiously, a simple crank of sufficient leverage, and a shaft with a square hole in the end of it to receive either the head or point of the spike, bolt &c. may be substituted for the tongs above described, which will leave one hand of the operator free to apply the water when necessary; keep the axis of the spike, bolt &c. in the true axis of motion, thereby greatly adding to the regularity of the twist; and will give the requisite power, especially when heat is not employed.

These spike, bolts, &c., when properly driven, cut their own thread, and can scarcely be drawn straight out by any force, having nearly the tenacity and grip of screws, while they may be driven with a hammer or sledge like common bolts, spikes, &c., and admit of being taken out by turning them like screws, from which circumstances, and their comparative cheapness, they may be substituted for screws, screw-bolts, &c., and for the spikes, bolts, &c., in common use for building ships, steam and other boats, bridges, fortifications, houses, and all sorts of wooden framework, or for securing the iron rails upon the bearings of railroads, the slates, tiles and shingles on roofs, &c., and would impart at least one half more strength and durability. Their spiral form gives them an elasticity and toughness, which will prevent their breaking under sudden concussions, where common spikes, bolts, &c., would either give way or break; and their tenacity or grip not depending, as in the case of ordinary spikes &c., wholly on the corrosion of the surface, and the pressure of the wood, grease, tallow, oil or any other preventatives against rust, may be freely used on them when they are driven, by which they are not only preserved from decay, but enter more easily, and may be readily taken out after a great lapse of time. The operation of taking them out is performed by punching from the under side against the point, for which purpose the hole bored preparatory to driving them, might be made entirely through the timbers; or by applying to a square projection formed on the head or point of the spike, bolt, &c., a common wrench square key, or other convenient tool with a handle or lever of sufficient length, and turning them back precisely in the manner of drawing a screw. The bolts without heads may be driven down

with a punch, until the screw part is relieved from the upper timber, which latter may then be removed, and the bolt drawn with the wrench or key.

- 5 It is recommended, that the spikes, bolts, &c., should be made much shorter but thicker than those in ordinary use, especially where great strength is required, on account of their superior tenacity or grip, provided the  
10 body is embedded only a moderate distance (say half the length of common smooth spikes &c.) in the under piece or timber, the strength of the connection thus formed between the timbers might, in my opinion, be  
15 safely estimated at the force required to break the spikes &c. (under any of the circumstances to which they are intended to be exposed) at the junction of their necks with the twisted part.

- 20 The annexed drawings and explanations

written thereon, exhibit some of the forms of my improved spikes, bolts, &c., and are deposited as making a part of this specification.

Now what I claim as new and as my in- 25  
vention in the above, for which I ask Letters Patent of the United States, is—

The screw form given to the angles of the body of the spikes, bolts, nails, &c., by twisting them in the manner herein described, or 30  
by any other means producing substantially the same results.

In testimony whereof I have hereunto set my hand this twenty third day of December A. D. 1841.

WILLIAM T. STEIGER.

Witnesses:

M. THOMPSON,

R. H. WILLIAMSON.