

No. 692,763.

Patented Feb. 4, 1902.

S. H. BRACEY.
SPIKE.

(Application filed Mar. 16, 1901.)

(No Model.)

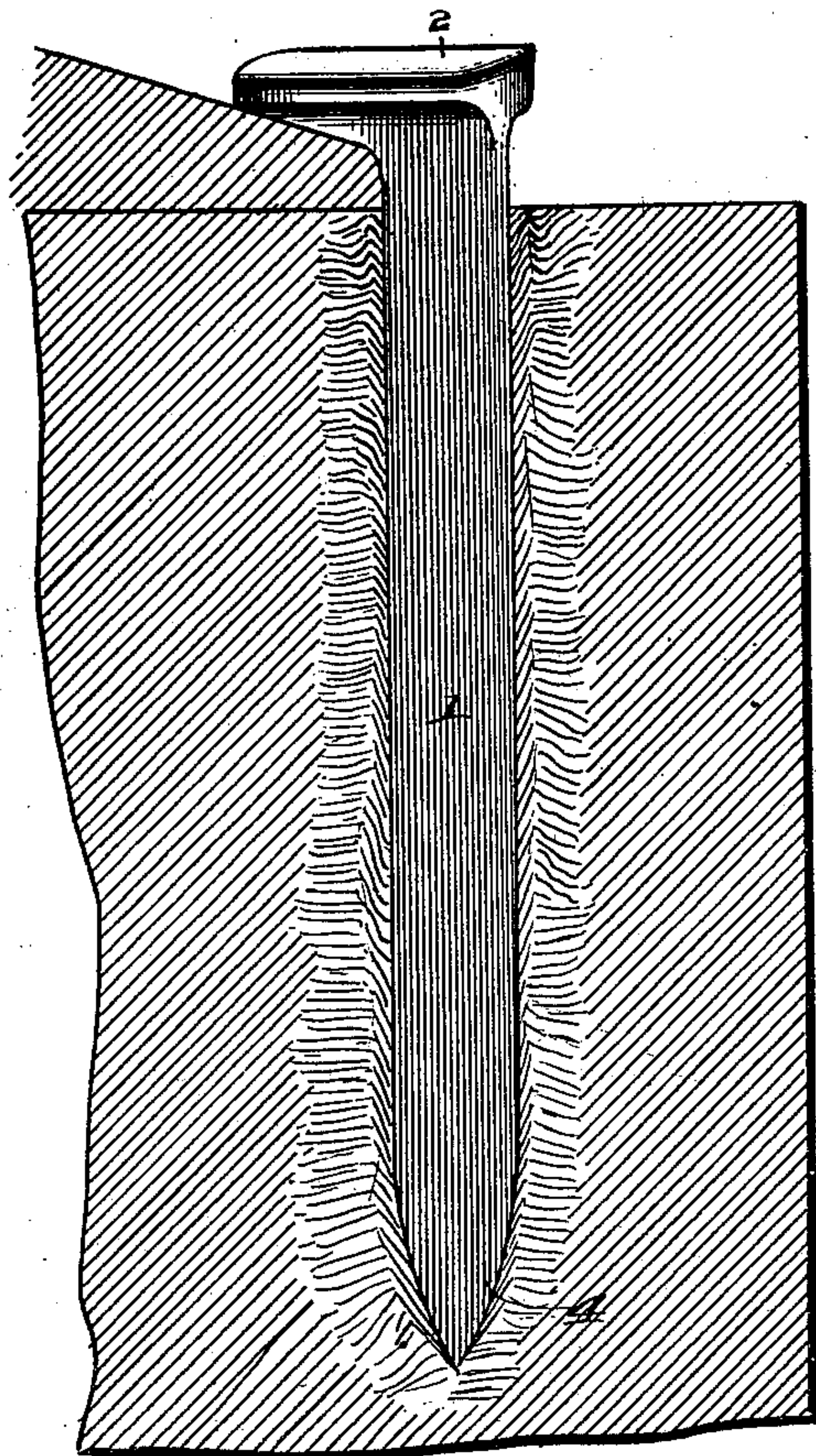


Fig. 1

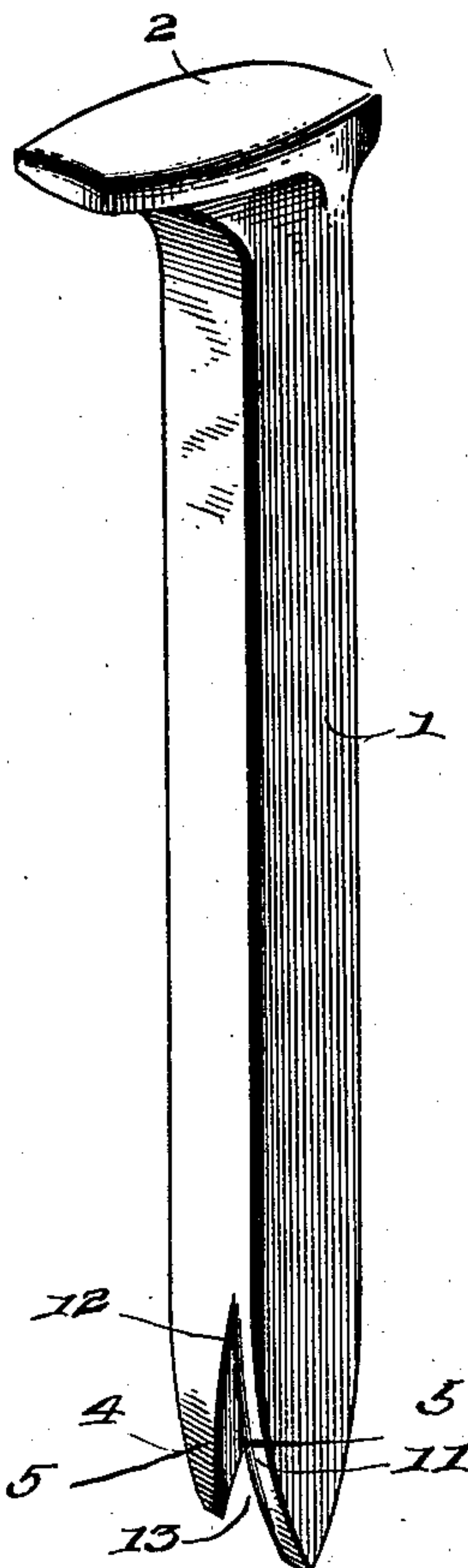


Fig. 2.

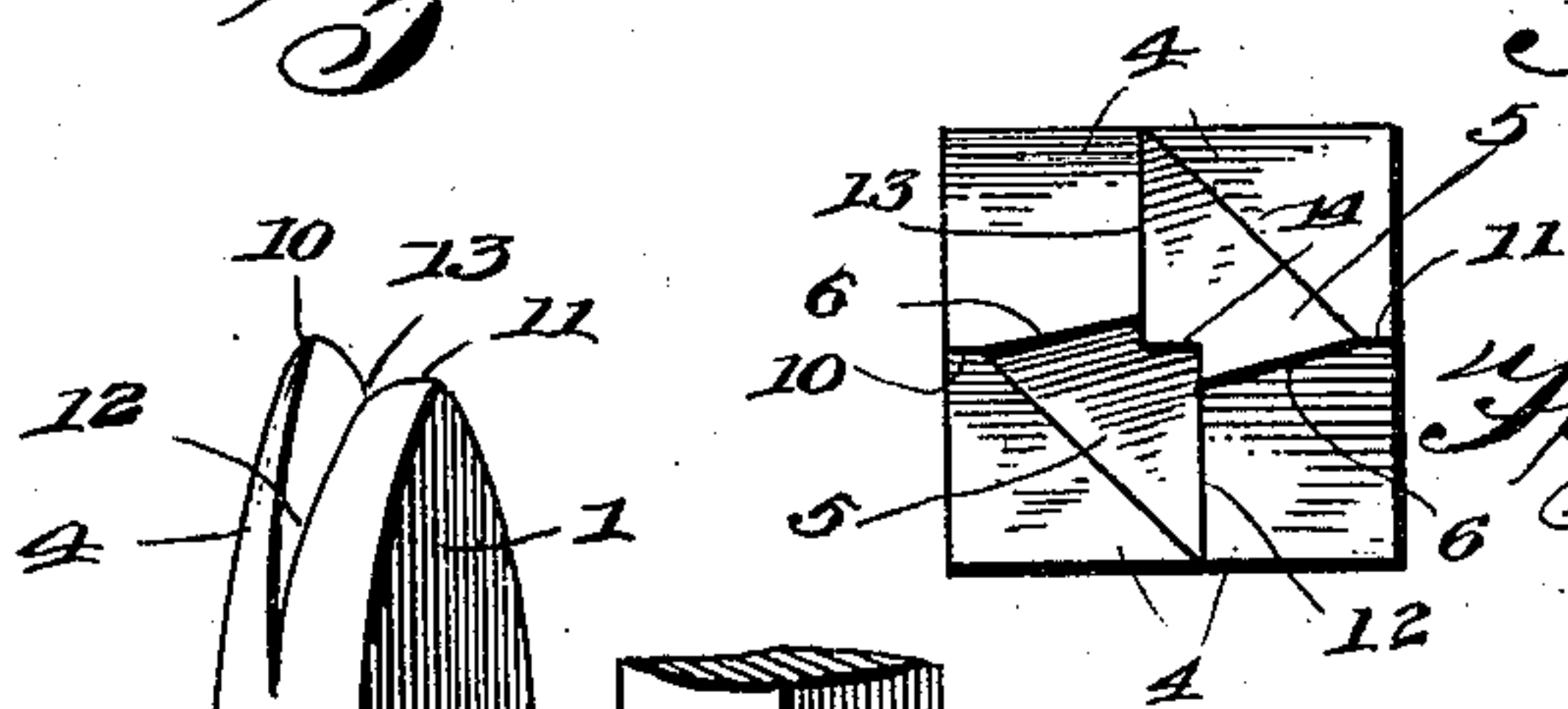


Fig. 3

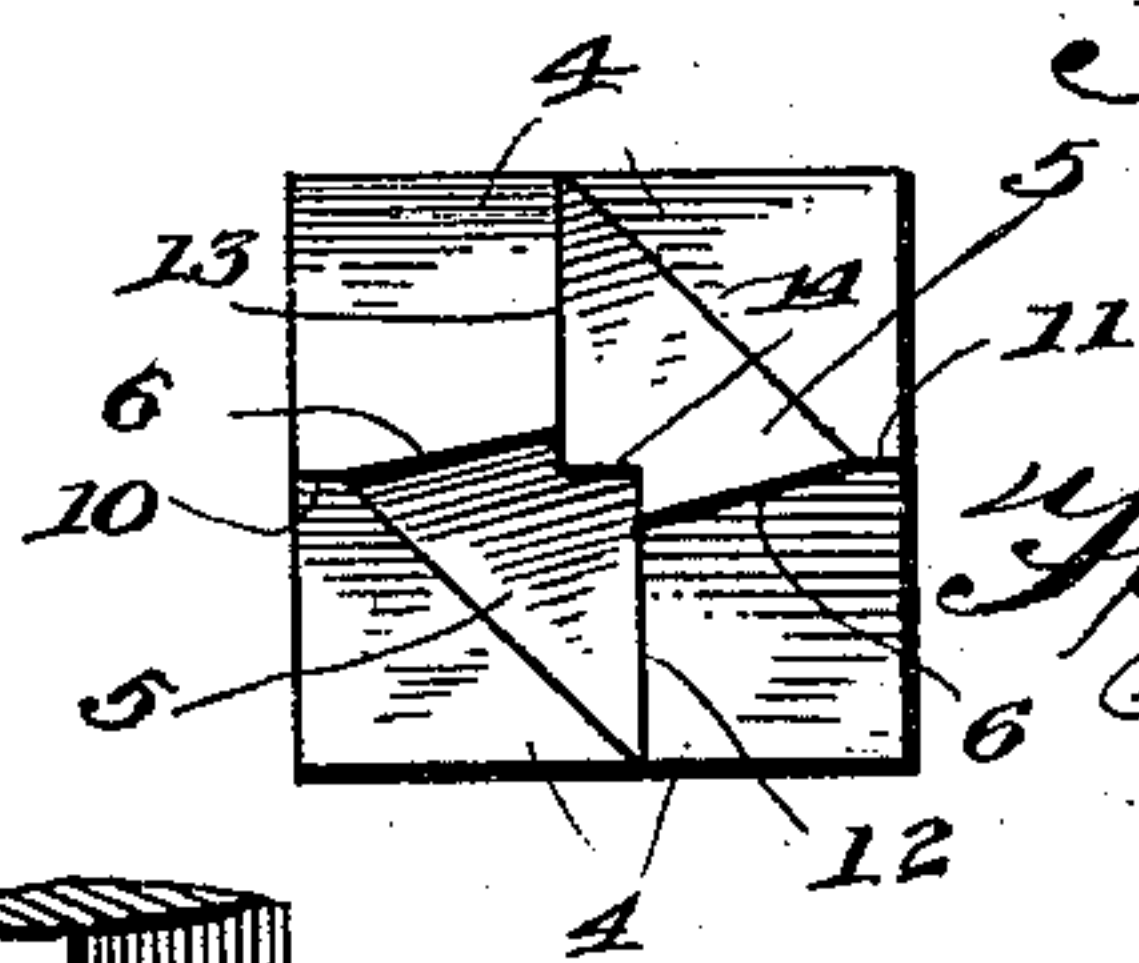


Fig. 4.

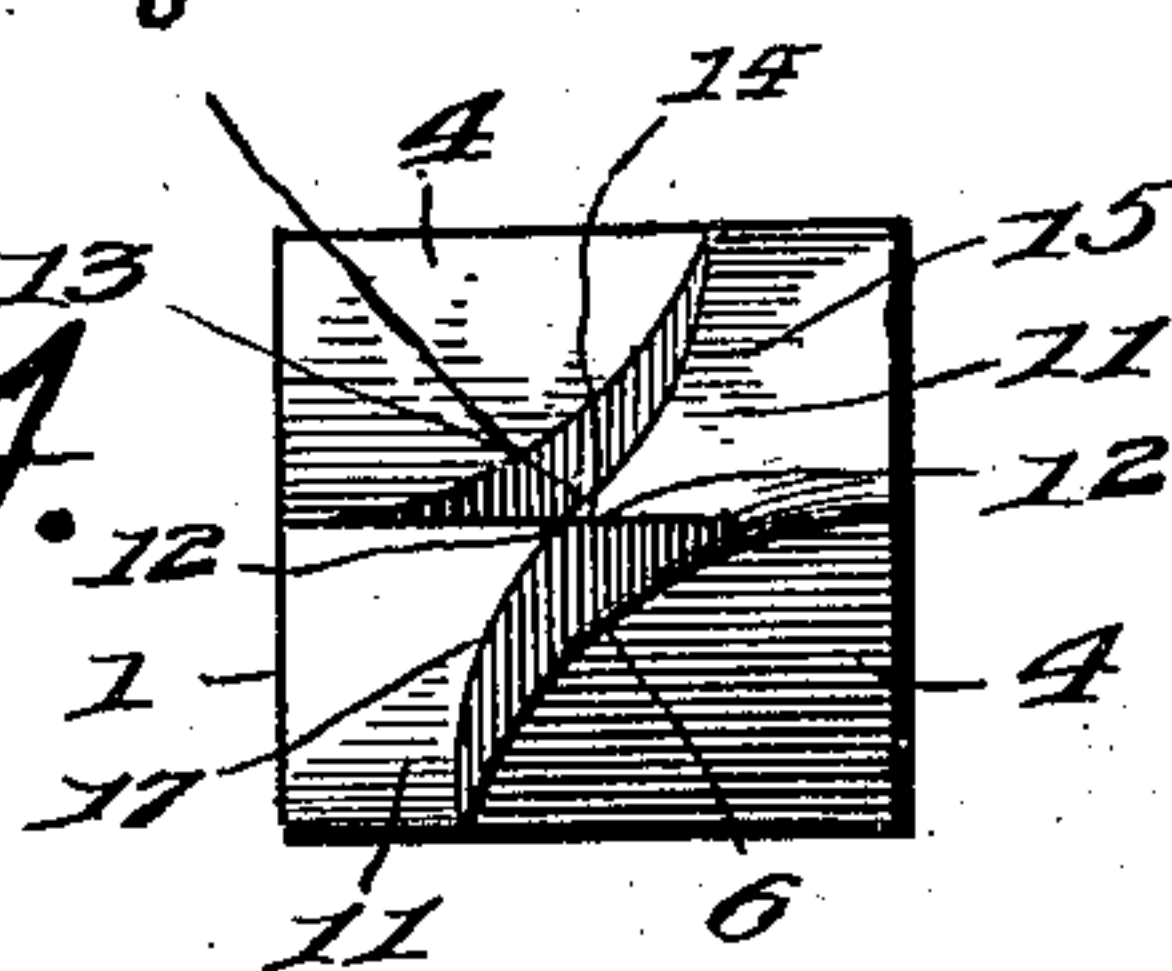


Fig. 5.

Witnesses

Test Dondoro

Chas. S. Hoyer,

S. H. Bracey Inventor

by C. A. Snow & Co.
Attorneys

UNITED STATES PATENT OFFICE.

SMITH H. BRACEY, OF CHICAGO, ILLINOIS.

SPIKE.

SPECIFICATION forming part of Letters Patent No. 692,763, dated February 4, 1902.

Application filed March 16, 1901. Serial No. 51,533. (No model.)

To all whom it may concern:

Be it known that I, SMITH H. BRACEY, a citizen of the United States, residing in the city of Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Spikes, of which the following is a specification.

This invention relates to spikes for securing railroad-rails and the like; and its object is to provide a superior and yet simple and inexpensive device by means of which driving spikes or similar objects into wooden ties and the like is facilitated and by which at the same time injury to the wood or other substance adjacent to the spike is reduced to a minimum.

It is well known that when the ordinary spike is driven into soft wood in particular the straight horizontal chisel-point of the spike, arranged at right angles to the grain of the tie, has a strong tendency to break and crush the grain instead of cutting it, and in view of said chisel-point construction also the ordinary spike is hard to drive. Furthermore, by this breaking and crushing result small hollow spaces are formed in the wood around the spike, especially about its lower end, and thereby the spike becomes less firmly seated in the tie than is desirable, and in addition decomposition of the tie around the spike is hastened. Many accidents occur through loosening of spikes due to these conditions by spreading of rails, &c., the ties used must be more frequently replaced than otherwise would be necessary, and much time and labor have to be spent in watching and repairing. These objections against the common form of spike have been overcome to a certain extent by various devices; but, as far as known, no spike made is as easy to drive, makes as clean a cut, and leaves the wood into which it is driven in as solid condition as the present improved device. This superiority of the improved device is attained principally by the use of slanting main cutting edges, which are formed by the meeting of chisel and supplemental faces at acute angles and which, if the spike is driven in normal position into a wooden tie or the like, will run at oblique angles to the longitudinal direction of the grain or fiber of the wood.

This invention consists in the construction

and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a sectional elevation of a portion of a tie, rail-flange, and spike embodying the features of the invention. Fig. 2 is a detail perspective view of the improved spike. Fig. 3 is a detail perspective view of the penetrating extremity of the spike, shown in inverted position. Fig. 4 is a plan view of the penetrating end of a modified form of the spike. Fig. 5 is a detail perspective view of a spike entrance extremity, showing a further modified construction. Fig. 6 is a top plan view of the spike end shown by Fig. 5, the said end being inverted.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates the shank, and 2 the head, of the spike. They may or may not be similar to the heads and shanks ordinarily used. The penetrating extremity of the spike is formed with the usual converging chisel-faces 4, with this difference, however, that two diagonally-opposed edges of the common chisel-point are replaced by pairs of diagonally-opposed supplemental faces 5, which converge in the direction of the lower end of the spike and which are so arranged that the usual main horizontal cutting edge of the straight chisel-point disposed so as to run at right angles to the grain of the tie is wholly or for the most part replaced by slanting main cutting edges 6, diagonally converging from the lowest points of the side faces 7 of the shank of the spike toward the central portion of the extreme lower end 8 of the spike and so that they will be disposed at oblique angles to the grain of the tie if the spike is driven in the usual normal position.

Figs. 1, 2, 3, and 4 show a curved, and Figs. 5 and 6 a straight, construction. The supplemental faces form the sides or part of the sides of a crotch or cross-cut 9, arranged across the chisel-point of the spike. These forms of spike, therefore, have two extreme lower ends or points 10 and 11 instead of one extreme lower end or point 8, and the supplemental faces 5 diverge downward toward these two ends instead of converging down-

ward toward one central lower end, as in the first form of spike shown. The diagonal crotch 9 in these modified constructions is preferably continued upward into slanting
5 grooves 12 and 13, which, ascending, gradually decrease in width and depth and which form a sharp ridge or edge 14 at the center of the crotch, which is adapted to readily cut wood against which it may be driven.

10 The number of slanting and obliquely-set cutting edges may be multiplied under my invention, and all such and similar alterations are intended to be covered. The confinement of the number of cutting edges to
15 two in lieu of a larger number though not necessary is desirable, as a greater number will increase the difficulties of manufacture and also tend to either enhance the angles at which the cutting edges are formed or reduce
20 the free wedge action of the spike, or both.

Another advantage in the cutting edges as set forth is that they slant from approximately diagonally opposite directions toward the extreme lower point or points of the
25 spike, and a deviation of the spike in driving is more easily prevented, and the construction set forth is desirable for the further reason that the slight twist or turn around its center which this construction
30 tends to give the spike in driving serves to embed it more firmly in the wood.

Having thus described the invention, what is claimed as new is—

1. A spike or the like having a penetrat-

ing extremity provided with two converging 35 chisel-faces and two diagonally-opposed supplemental faces, set at acute angles to said two chisel-faces respectively, and forming with them cutting edges, which slant toward the lower or extreme penetrating end or ends 40 of the spike, and which, if the spike is driven in normal position into a wooden tie or the like, will run at oblique angles to the longitudinal direction of the grain or fiber of the wood.

2. A spike or the like having a penetrating extremity provided with cutting edges of acute angle, said cutting edges slanting from approximately opposite directions toward the lower or extreme penetrating end or ends of 50 the spike, and running, if the spike is driven in normal position into a wooden tie or the like at oblique angles to the longitudinal direction of the grain or fiber of the wood.

3. A spike or the like having a penetrat- 55 ing extremity provided with two cutting edges of acute angle, said cutting edges slanting from approximately diagonally opposite directions toward the lower or extreme penetrating end or ends of the spike, and running, if the spike is driven in normal position into a wooden tie or the like, at oblique 60 angles to the longitudinal direction of the grain or fiber of the wood.

SMITH II. BRACEY.

Witnesses:

JEANNETTE G. MERINBAUM,
ETHEL J. FULLER.