O. WEISS.

RAILROAD SPIKE.

APPLICATION FILED FEB. 9, 1915.

1,162,266.

Patented Nov. 30, 1915.

Fig. 1.

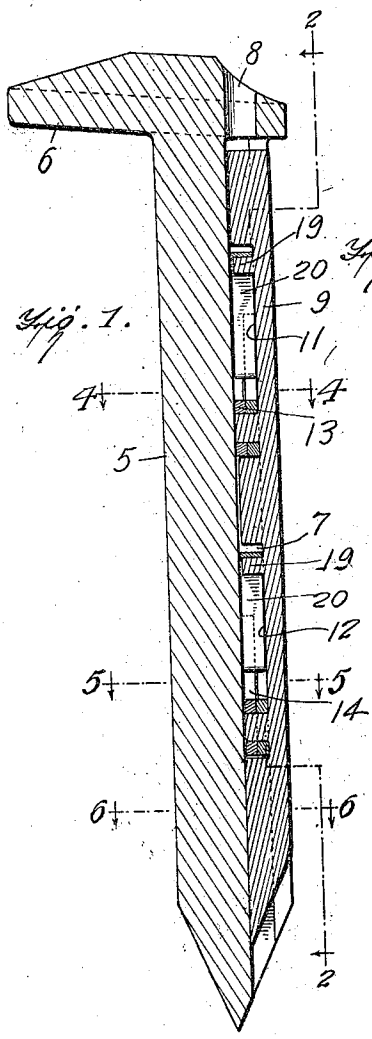


Fig. 2.

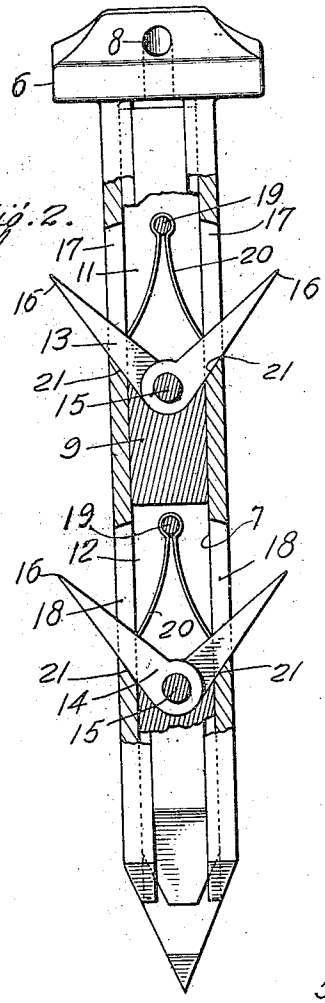


Fig. 3.

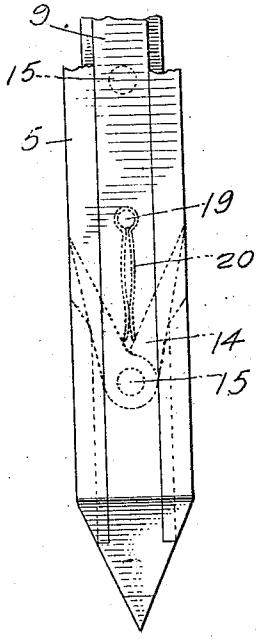


Fig. 6.

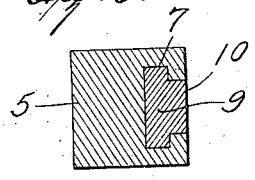


Fig. 4.

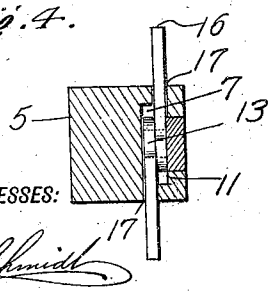
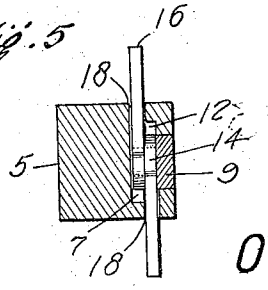


Fig. 5



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RAILROAD-SPIKE.

1,162,266. Specification of Letters Patent. Patented Nov. 30, 1915.

Application filed February 9, 1915. Serial No. 7,025.

To all whom it may concern:

Be it known that I, OTTO WEISS, a subject of the Emperor of Germany, and a resident of Salt Lake City, in the county of Salt Lake and State of Utah, have invented an Improvement in Railroad-Spikes, of which the following is a specification.

This invention relates to an improvement in rail road spikes, and more particularly to an improvement in self-locking spikes.

One of the principal objects of the invention is to provide a spike embodying improved means whereby the spike may be retained against accidental disengagement from a sleeper or tie after having been driven into the same.

Still another object of the invention is to provide a spike having an improved locking means, which is capable of being operated in such manner as to allow removal of the spike at will without mutilation of the same.

Still another object of the invention is to provide an improved spike including a bar slidable within a groove or slot in the spike and carrying spring operated prongs controllable at will whereby to engage within the material of the sleeper, or to be housed within the spike to allow removal of the latter.

A still further object is to provide an improved spike of the class described, which will be extremely simple, durable, efficient in operation, and inexpensive to manufacture.

With these and other objects in view which will become apparent as the description proceeds, the invention resides in the construction, combination and arrangement of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawing, in which like characters of reference indicate like parts throughout the several figures, of which—

Figure 1 represents a view in section taken centrally and longitudinally through a spike constructed according to my invention. Fig. 2 represents a view in elevation looking at the spike from the rear side thereof, the view being shown partially in section on the plane indicated by the line 2—2 of Fig. 1. Fig. 3 represents a fragmentary view in rear elevation showing the position of parts when the spike is ready to be withdrawn. Fig. 4 represents a view in horizontal section taken on the plane indicated by the line 4—4 of Fig. 1. Fig. 5 represents a view in horizontal section taken on the line 5—5 of Fig. 1. Fig. 6 represents a view in horizontal section taken on the plane indicated by the line 6—6 of Fig. 1.

In carrying out my invention I provide a spike including a body portion 5 and a head 6. The rear face of body 5 is provided with a longitudinally extending T-shaped channel or slot indicated at 7. This channel, slot, or groove as it may be termed, extends from the lower end of the spike upwardly and terminates at the rear portion of head 6. Extending through the head in alinement with the channel is an opening 8.

A bar 9 is provided and is slidably disposed within channel 7. The bar is substantially T-shaped in cross section to conform with the shape of the channel. The outer face 10 of the bar lies flush with the rear face of spike 5. The inner face of bar 9 is provided with an upper recess 11 and a lower recess 12 for the reception respectively of an upper pair of prongs 13 and a lower pair 14. These pairs of prongs are pivoted at their inner ends upon lugs or pins 15 provided on bar 9, and at their outer ends are sharpened as at 16. The prongs comprising each pair are disposed one upon the other, and the total thickness of each pair of prongs is substantially equal to the depth of the recess in which they are disposed.

The spike 5 is provided in both sides with slots 17 communicating with the channel adjacent the upper recess 11 and with slots 18 communicating with the channel adjacent the lower recess 12. Each slot is provided for the reception of one of the prongs whereby the latter, when in proper position, may extend outwardly through the slot so as to project laterally of the spike in position to engage the material of the sleeper or other element in which the spike is driven.

Formed near the upper ends of recesses 11 and 12 in bar 9, are lugs or pins 19. These pins or lugs serve as anchoring means for double leaf springs 20. At their free ends these springs bear against the inner edges of the prongs in such manner as to normally

tend to force the prongs apart. From Fig. 2 it will be noted that the prongs of the upper and lower pairs nearest the observer extend in opposite directions, and the same is true of the prongs farther away from the observer. Thus the prongs on each side of the spike are arranged in staggered relation. From Figs. 4 and 5 it will be noted that the lower set of slots 18 in the sides of the spike are arranged in staggered relation with the upper set 17. From this construction it follows that in initially disposing the bar within the slot, the pairs of prongs having been forced together by hand, the upper prongs 13 will be out of alinement with the lower slots 18 and will not engage them in passing, so that the movement of the bar into the channel will not be prevented or retarded. The lower prongs, however, will come into registration with the lower slots when the bar is shoved home.

After the bar is inserted the prongs are pressed outwardly by means of the springs through their respective slots into the position indicated in Fig. 2. The spike is then ready for use. Upon driving the spike into a cross tie or other element in which it is desired that the spike be retained, the prongs which it will be noted are inclined upwardly will rest within their slots 17 and 18 respectively against the tension of springs 20 and in such position that upon a tendency of the spike to become loosened or move upwardly, the biting ends 16 of the prongs will sink within the material of the element in which the spike is driven, and will prevent the withdrawal of said spike. When, however, it is desired that the spike be withdrawn, a metallic rod or nail may be inserted through the opening 8 in the spike head 6 and may be driven against the upper end of bar 9 whereby to shift the latter downwardly relatively to the spike. This operation will cause the prongs by engagement with the lower beveled edges 21 of the slots 17 and 18 to be returned within those slots into the position indicated in Fig. 3, whereupon the spike may be withdrawn in the usual manner.

In manufacturing the spikes, they will be properly tempered and treated so as to render them strong and rust-proof.

Such a spike as I have provided may be very readily and without extra force or exertion driven home, and when in position will be maintained against any loosening tendency incident to the passage of rolling stock over the rails. The spike may be, as set out above, readily withdrawn at will, and without mutilation of the spike, so that it may be used over again as many times as desired.

Although I have described the preferred embodiment of my invention, I may desire to make such changes in the construction, combination and arrangement of parts thereof as to not depart from the spirit of the invention and the scope of the appended claims.

I claim:—

1. The combination with a spike provided with a T-shaped channel in its rear face, of a bar slidably disposed within the channel and provided with prong receiving recesses, the outer face of said bar lying flush with the rear face of the spike, upper and lower pairs of prongs pivotally disposed within the recesses, double leaf springs carried within said recesses and bearing at their ends against said prongs and normally tending to maintain the latter in separated position, said spike being provided with a plurality of slots adapted each for the reception of one of the prongs, the prongs being disposed in staggered relation, and the slots in the spike being disposed in staggered relation for receiving the prongs, substantially as described.

2. A device of the class described, including a spike having a channel in one face thereof, and having a plurality of slots in its sides and communicating with the channel, a bar slidably disposed within the channel, pairs of prongs pivotally disposed upon the bar and adapted to extend each through one of the slots in the spike, resilient means for normally maintaining said prongs in separated position relatively to each other whereby to maintain the free ends of the prongs without the spike, said prongs being inclined toward the head of the spike, means being provided to permit shifting of the bar relatively to the spike when the spike is in position in the tie for retracting the prongs within the slots, substantially as described.

3. A device of the class described, including a spike having a head provided at one end, said spike being provided longitudinally on one side with a channel, the head being provided with an opening alining with said channel, a bar slidably disposed within the channel and provided with a plurality of pivoted prongs adapted normally to extend outwardly beyond the sides of the spike through slots therein, and means for normally maintaining the prongs in outward position, substantially as described.

4. The combination with a spike having a body portion provided with a longitudinally extending channel, of a bar slidably disposed within the channel and provided with a plurality of pivoted prongs adapted to normally extend outwardly beyond the sides of the spike through slots in said spike, and means whereby an element may be engaged against said bar when the spike is in position in the tie for shifting the same relatively to the spike whereby to withdraw the prongs within the slots.

5. The combination with a spike of a bar

movable relatively thereto and provided with a plurality of pivoted prongs adapted to normally extend beyond the opposite sides of the spike and be inclined toward the head of the spike, resilient means for normally maintaining said prongs in outwardly extending position, said bar adapted to be shifted relatively to the spike whereby to withdraw the prongs from beyond the sides of the spike.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."