TELL-TALE SCREW SPIKE

Inventor

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This invention relates to a screw-threaded fastener for securing into position railway tie-plates or buck-plates, which latter may be associated with said tie-plates, and is a division of my copending application Serial No. 594,636 filed March 34, 1945, now U. S. Patent No. 2,457,180.

As described in my aforesaid copending application, the screw-threaded fastener of the present invention is a screw-spike to be screwed into a railway-tie—preferably, into a performed bore in said tie—in a manner to more firmly secure a tie-plate or a buck-plate thereto and to resist the lateral thrust exerted upon or transmitted to said plate by the passage of trains over the track rail. When installing such plate and screw-spike or during their maintenance, the workmen may, and often do, resort to driving the screw-spikes into the wooden-tie with a maul-hammer instead of screwing the screw-spike into the tie with a wrench, or other tool, that will screw the spike into position. The maul driving of the screw-spikes tears the surrounding fibers of the tie and the efficiency of the screw-spike is lost and its holding properties are ineffective for the purpose for which it is used.

The object of the present invention, therefore, is the provision of a very simple and effective “tell-tale” means on the screw-spike that will reveal at a glance and is discernible under ordinary inspection by an inspector, foreman or track-walker, when proceeding along the railway, whether the screw-spike or spikes have been maul-driven instead of screw-driven.

In the drawings which show the preferred embodiments of the invention as now employed and in which like characters of reference refer to like parts throughout the several views:

Figure 1 is an elevation of a screw-spike showing the “tell-tale” thereon in accordance with the present invention;

Figure 2 is a fragmentary elevation showing the head portion of the screw-spike shown in Fig. 1 smashed or mushroomed after having been maul-driven;

Figure 3 is a plan view of the screw-spike shown in Fig. 2;

Figure 4 is a fragmentary elevation showing the head portion of a screw-spike wherein the tell-tale element is integral with the spike; and

Figure 5 is a similar view of Fig. 3 showing the tell-tale element smashed or mushroomed.

The screw spikes 18, shown in the present drawing, are for the most part a common commercial product and comprise an elongated tapered shank 3 having a deep wood-screw thread 2 on half, or more, of the lower end of the shank and a cylindrical portion 6 between the thread 2 and the circular head flange 7 of the spike head 19. Above the flange 7 is a polygonal projection 8, which forms the head proper of the spike, to receive and cooperate with a wrench or other tool for screwing the spike in position. This description and the drawings show the conventional screw railway spike, but it is to be understood, of course, that the spike, so far as is described, may vary in form, shape and other details, or any similar spike may be employed. These spikes are usually designed to be threaded into bores, which have been previously made and which have a diameter that will fully cooperate with the threaded shank 3 of the spike to provide the best holding and securing characteristics, when the spike is screw-driven into the bore or opening.

In order that it may be determined by ordinary visual inspection and at a glance whether these spikes have been maul-driven or screwed into place, as by wrench, the top end of the spike head 19 is provided with an upstanding projection 23 rising from the top surface of said head 19 a distance about one-quarter of an inch and is, preferably, but not necessarily, of cylindrical form and about one-quarter of an inch in diameter, thus providing a projection of relative sizeable metal content, so that, when the spike 18 is maul-driven, instead of screw-driven, the projection 23 will be mushroomed or crushed flattened by the blows from the maul or otherwise deformed to provide a visible “tell-tale.”

The deformation of the projection 23 may be emphasized to form a tell-tale thereon that will be discernible at a glance—even after rusting or oxidation—by providing the marginal portion of the spike head 19 adjacent the top surface of said head with inwardly and upwardly sloping wall or surface h' extending to, or approximately to, the projection 23 which is, preferably, located in the axial center of the spike 18. By the provision of the surface h' that sloped downwardly from and around the base of the projection 23, the smashing or mushrooming of the projection 23 by a maul causes the material of the projection 23 to escape into the area provided by said sloping surface below the base of said projection and where it forms a splintered, curved spreaded mass with portion extending over the sloping surface h'. Without the provision of the sloping surface h' the material of the projection 23 will, in some cases, be mashed flat.
against the relatively flat top end surface of the head \( h \) of the spike and not produce a splintered, curled rosette type mass that provides a quickly and easily discernible tell-tale except by very close examination, such as bending over and viewing the spike-head at very close range.

The tell-tale projection 23 may be provided from the material integral with the spike, as indicated in Figures 3 and 4, or the projection 23 may be of softer more malleable material than the material of the spike. In the latter case, the upper end of the spike will be provided with a bore \( b \) into which the projection 23 will be swedged or sweat or otherwise inserted as indicated in Figure 1, and the material of said projection 23 may be bright non-rusting metal so as the rosette "tell-tale" will contrast with the metal of the spike.

When the projection 23 is cast or forged with the spike and, therefore, of the same material as the spike, it may not always shatter, splinter and curl to the same degree as when the projection 23 is of a softer material, such as malleable metal as shown in Figures 1, 2 and 3, but in either case it forms a definite tell-tale for track maintenance inspectors and installation foremen that can be readily discerned with only casual inspection in the event that the screw-spike 18 is driven by a maul instead of being screwed therein. Maul-driven screw-spikes tear the adjacent fibers of the wood in such a manner as to lose their efficient holding properties; and, furthermore, the tie prematurely becomes, in a very short time, what is commonly called "spike-killed" or, in other words, the spiking area is so damaged by the maul-driven screw spikes, as to render the tie practically worthless, a new tie having to be prematurely installed.

Having thus described the invention and the manner in which the same is to be performed it is to be understood that the invention is not to be limited to the exact form shown and described herein as the same may be varied and modified in various ways within the scope of the appended claims but without departing from the spirit of the invention.

That which is claimed as new is:

1. A metal screw spike, for use in connection with wooden railway ties, having a head and a threaded shank portion, the upper surface of said head being provided with a relatively slender upstanding malleable straight-sided projection extending about \( \frac{3}{4} \) of an inch from the upper surface of said head and which will crush-flatten over the adjacent upper surface of the head, when the spike is maul-driven instead of screw-driven, providing a visible tell-tale upon the head of the spike.

2. A metal screw spike to be threaded into wood and having a wrench receiving head and a threaded shank portion, a projection inset into the upper surface of said head and being of a more malleable material than that of the spike, said projection deforming into a malleated splintered mass over the adjacent upper surface of the head, when the spike is maul-driven instead of screw-driven, to provide a visible tell-tale upon the head of said spike.

3. A metal screw spike to be threaded into wood and having a wrench receiving head and a threaded shank portion, a projection of malleable material extending upwardly from the upper surface of said head, said projection being substantially straight sided and of less than half the diameter of the shank of the spike, the upper surface of said head having an upwardly inclined marginal surface converging toward the base of said projection and into which area, provided by said inclined surface, the material of said projection is mashed, when the spike is maul-driven instead of screw-driven, into the form of a flattened rosette of less diameter than the diameter of the head of the spike and providing a visible tell-tale in relief at the head of said spike.

4. A screw spike as set forth in claim 3 and in which the malleable projection is formed integral with and of the same material as the remainder of the spike.

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The following references are of record in the file of this patent:

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