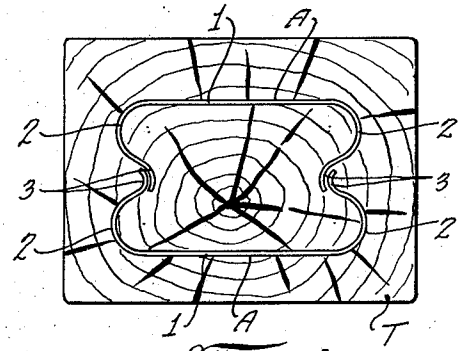
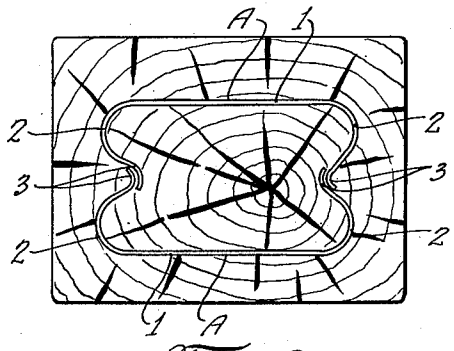
Aug. 31, 1937. H. M. YOUNG 2,091,776

SPLIT CHECKING IRON

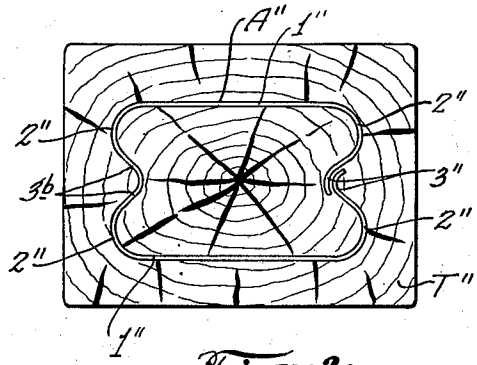
Filed Nov. 21, 1936



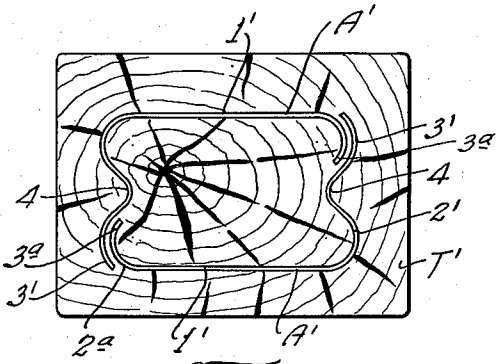
Fig·1·



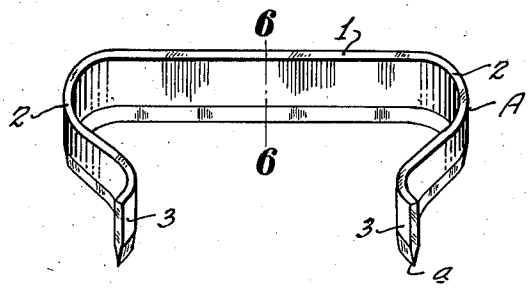
Fig·2·



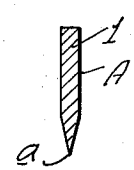
Fig·3·



Fig·4·



Fig·5·



Fig·6·

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SPLIT-CHECKING IRON

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7 Claims. (Cl. 85—11)

This invention relates to a certain new and useful improvement in split-checking irons for railway-ties and the like, and has for its object the provision of an iron of the type and for the purpose stated which may be readily driven into the tie for completely enclosing the central portion or so-called "heart" of the end grain, which may be cheaply and economically manufactured, which, when driven into the tie, is automatically self-anchored against endwise movement, and which is exceedingly efficient in the performance of its intended functions.

And with the above and other objects in view, my invention resides in the novel features of form, construction, arrangement, and combination of parts presently described and pointed out in the claims.

In the accompanying drawing,—

Figure 1 is an end elevational view of a railway-tie equipped with a sectional split-checking iron embodying the present invention;

Figure 2 is a similar view, illustrating a slightly different co-operable arrangement of the iron-sections;

Figures 3 and 4 are views similar to Figure 1, illustrating, however, modified forms of split-checking irons embodying the present invention;

Figure 5 is a perspective view of one of the sections of the split-checking iron of Figure 1; and

Figure 6 is a vertical sectional view of the split-checking iron-section, taken approximately on the line 6—6, Figure 5.

Referring now more in detail and by reference characters to the drawing, which illustrates practical embodiments of my invention, the iron is constructed of suitable strip metal of suitable gauge for strength and rigidity and reduced in thickness along a side margin and thereby provided with a relatively sharp edge, as at *a*, whereby the iron may be edgewise conveniently driven into the end of a wooden railway-tie or the like.

Preferably, as best seen in Figures 1 and 5, the iron comprises a pair of complementary or companion sections A, each substantially of C-shape or configuration, and each accordingly comprising a body-portion or so-called shank 1 and opposed arcuate arms 2, 2, extending laterally from the opposite ends of the shank 1 and provided at their respective extremities with oppositely outwardly presented arcuate terminal portions or so-called tongues 3, 3, each of the arms 2 and its terminal tongue 3 being in the form of what may be termed a doubly involuted curve.

In use, the sections A are in pairs and in opposed relation edgewise driven into the end of the tie T to embrace the heart, as it is called, of the grain and with their respective arms 2 and tongues 3 in various or selected overlapping or interlocking relation and co-operation, as best seen in Figures 1 and 2, to meet any particular requirements or tie conditions that may be presented, a slight springing of the arms 2 of one section A being sufficient to obtain the co-operative overlapping formation illustrated in Figure 1, and it being understood, of course, that the sections A may be either successively or simultaneously driven into the tie. As so disposed in the tie, it will be seen that the one section A is substantially throughout its contour opposed to the other section A with the arms 2 and tongues 3 of both sections presented inwardly of the opposite ends of and intermediate the respective shanks 1. Thus, not only do the so driven and interlocked sections A enclose the so-called heart of the tie T, but the sections A resist and most positively and efficiently prevent in every direction and at any point within the tie-end any splitting, cracking, and the like.

If desired, the iron-sections may have the modified co-operable configuration best seen in Figure 4. In such form, each section A′ includes a straight shank 1′ having at one end a laterally extending double curved arm 2′ equipped at its free end with an arcuate tongue 3′ and at its other end with a single reduced arcuate arm 2^a likewise equipped at its free end with an arcuate tongue 3^a, the combined arm and tongue 2^a, 3^a, co-operably interlocking with the tongue 3′ when the sections A′ are driven into and disposed in the tie T′, as illustrated in Figure 4.

Preferably, for convenience in driving, the iron is constructed, as I have described, in companion or co-operable sections. However, the iron may comprise a pair of so-called sections A″, each similarly including a shank 1″, arcuate arms 2″, and tongues 3″, 3^b, the tongues 3^b being endwise integrally joined and the tongues 3′ co-operably interlocking or overlapping when the iron is in driven position in the tie T″, as shown in Figure 3.

In each instance, the driven iron has the configuration or shape, as it may be described, of an opened-out partially distended and endwise flattened figure 8, and, in each instance, the overlapping or interlocking tongues of the respective sections A and A″, as well as also the arcuate portions 4 of the sections A′, are presented inwardly of and intermediate the respective shanks,

the respective iron functioning not only in enclosing the heart of the grain of the tie-end, but also in most efficiently preventing splitting in any direction.

Further, the iron-sections, acting in opposition the one to the other, engage the tie, as shown, and most securely anchor the iron in its driven position within the tie against any endwise slippage, movement, or deformation.

As has been described, the iron conforms in shape or outline substantially to an opened out flattened figure 8, and I may add that to this unique configuration the unusual and exceptional results obtained in actual tests and uses of the present iron are largely due. By reason of the arcuate arms and tongues being disposed intermediate the relatively long flat shanks, there is no straight non-resilient stress member across the intermediate section of the tie. Thus, normally non-disruptive forces impressed upon the tie will not produce shear strains along the face of the iron. Further, it will be apparent by reference to the drawing that the shape of the iron is such that, as has been stated, it is substantially normal to all possible lines of cross-grain splitting or cracking.

It is to be understood that changes and modifications in the form, construction, arrangement, and combination of the several parts of the iron may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:—

1. In a split-checking iron, a metallic member having a substantially rigid straight shank, arms presented laterally from the same side, and arcuately extending inwardly from the opposite ends, of the shank, and arcuate tongues presented outwardly in opposed relation from the extremities of said arms.

2. A split-checking iron comprising laterally spaced shanks, arcuate arms projecting in opposed relation from the ends of the shanks, and co-operably engageable tongues projecting in opposed relation from the extremities of the arms.

3. A split-checking iron comprising laterally spaced shanks, arcuate arms projecting in opposed relation from the ends of the shanks, and co-operably engageable tongues projecting in opposed relation from the extremities of the arms, said arms and shanks being disposed inwardly of and intermediate said shanks.

4. A split-checking iron having two laterally spaced approximately parallel substantially rigid straight portions mutually interconnected widely spaced at their respective ends by doubly involuted arcuate end-portions.

5. A split-checking iron having two laterally spaced approximately parallel straight portions mutually interconnected at their respective ends by doubly involuted arcuate end portions, each of said end portions being integral at one of its ends with a selected end of a straight portion.

6. A split-checking iron comprising laterally spaced shanks, widely spaced and disconnected arcuate arms projecting in opposed relation from the ends of the shanks, and co-operably engageable tongues projecting in opposed relation from the extremities of the arms.

7. A split-checking iron comprising laterally spaced shanks, widely spaced and disconnected arcuate arms projecting in opposed relation from the ends of the shanks, and co-operably engageable arcuate outwardly presented tongues projecting in opposed relation from and positioned inwardly of the extremities of the arms.

HARRY M. YOUNG.