

A. HEATH.
RAILROAD TIE.
APPLICATION FILED MAR. 21, 1908.

911,979.

Patented Feb. 9, 1909.

Fig. 1.

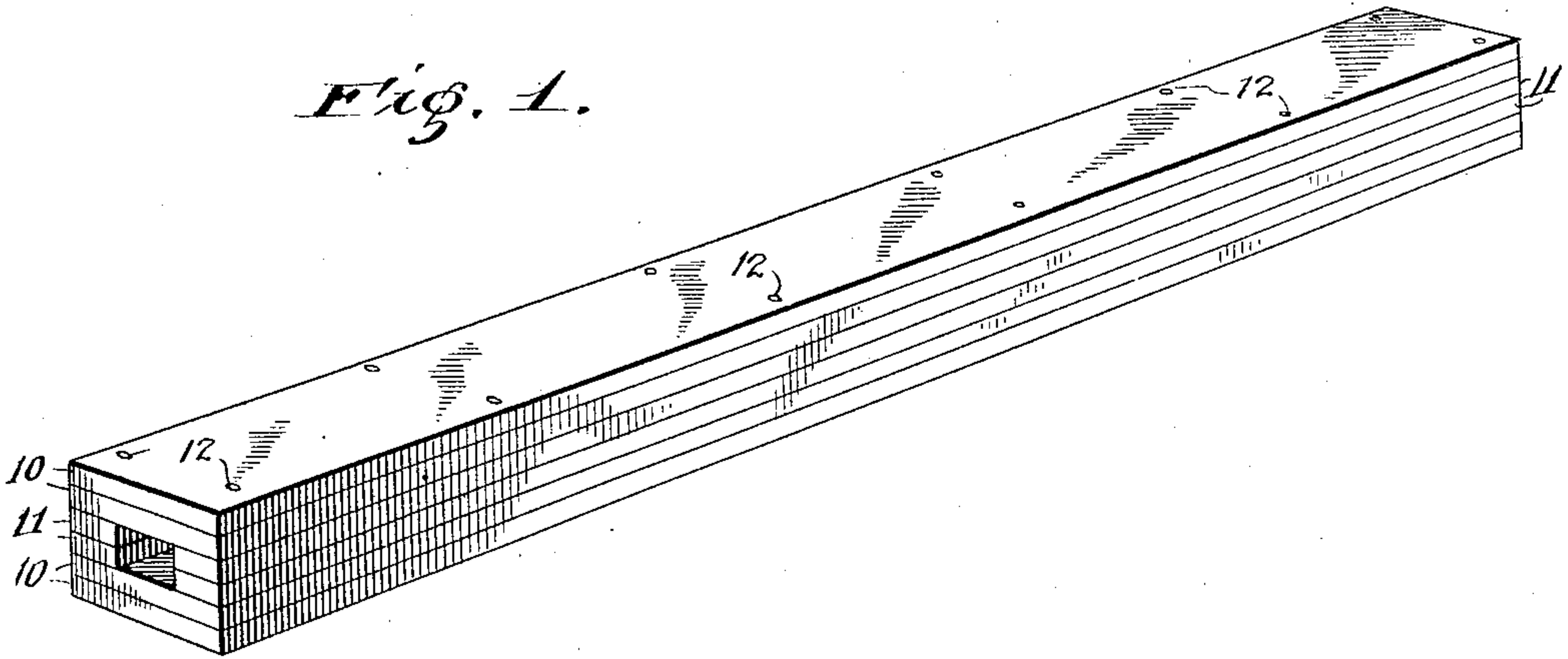


Fig. 2.

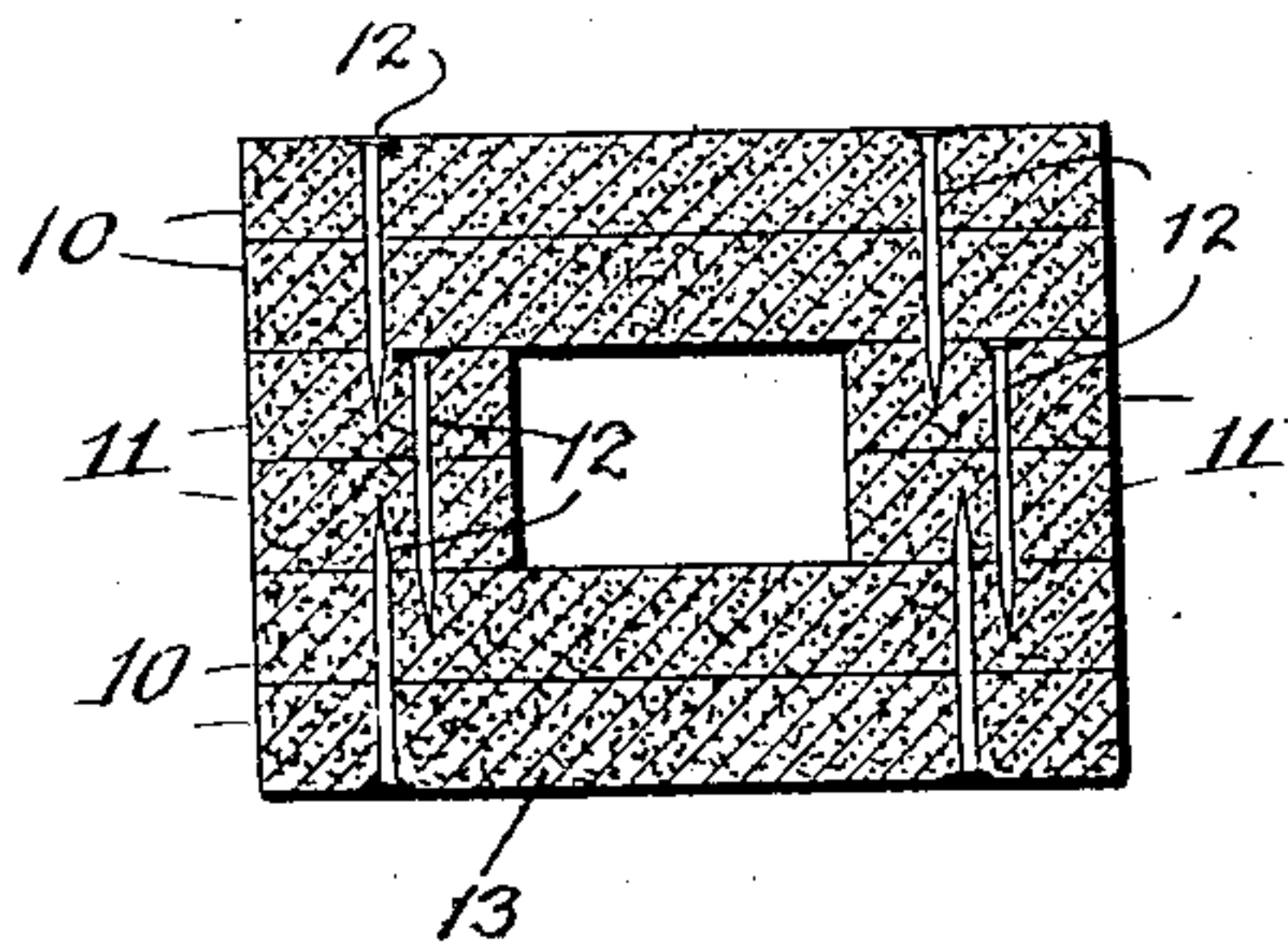


Fig. 3.

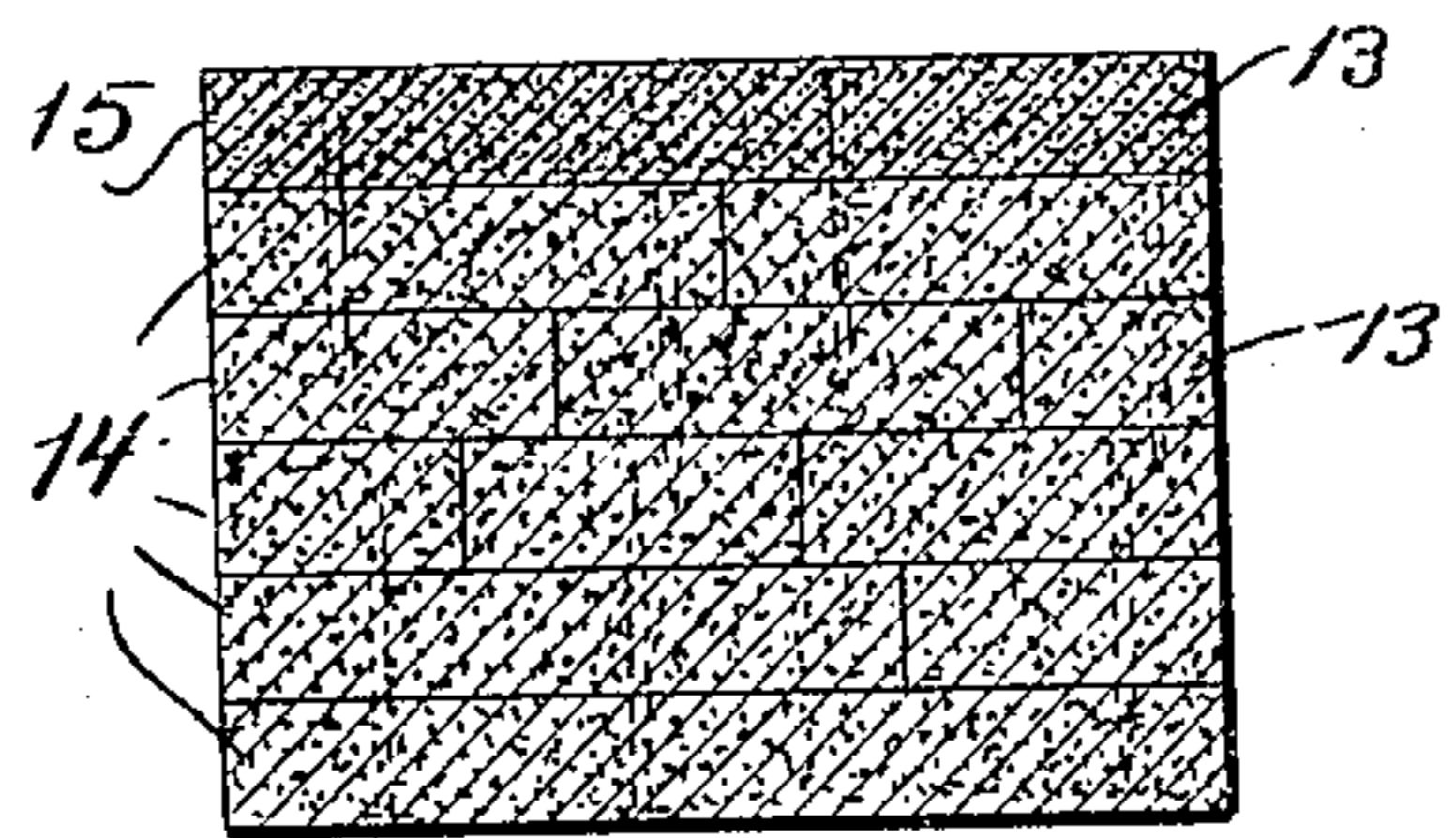
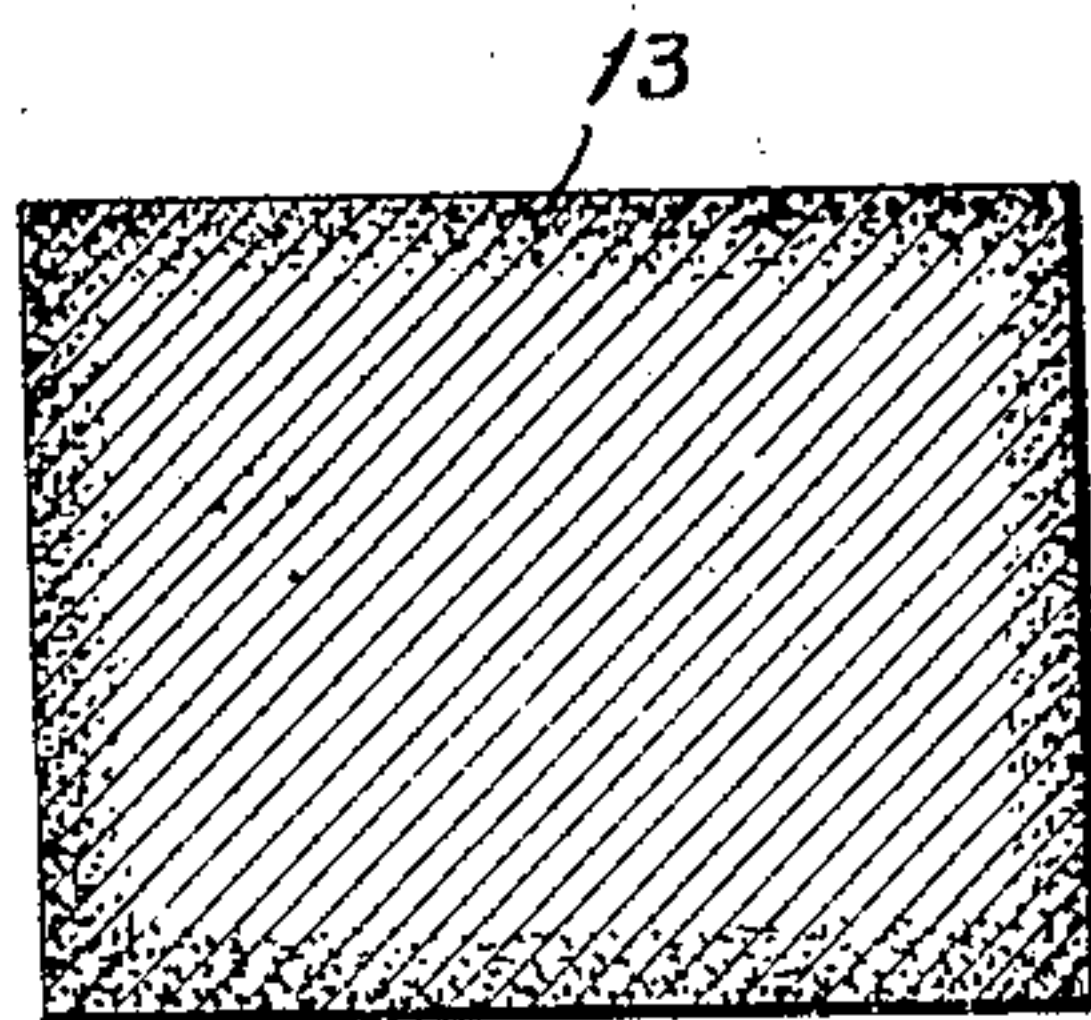


Fig. 4.



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UNITED STATES PATENT OFFICE.

ALBERT HEATH, OF HARRIS, MICHIGAN.

RAILROAD-TIE.

No. 911,979.

Specification of Letters Patent.

Patented Feb. 9, 1909.

Application filed March 21, 1908. Serial No. 422,390.

To all whom it may concern:

Be it known that I, ALBERT HEATH, a citizen of the United States, residing at Harris, in the county of Menominee and State of Michigan, have invented a new and useful Improvement in Railroad - Ties, of which the following is a specification.

My invention relates to improvements in railroad ties; and designs to provide a tie of improved construction.

The ordinary tie employed in the construction of railroads is composed of a bar or log of wood hewn or sawed into shape and usually impregnated with a preservative for protecting the tie from the ravages of the weather and thus prolonging its usefulness beyond a period which it would naturally have, were it not for the treatment to which it is subjected.

While many efforts have been made to perfect and improve the method of impregnating ties, with suitable preservative substances, yet it is a practical impossibility to completely saturate the tie throughout, the very heart or center thereof being so far removed from the surface that the preservative substance does not reach this spot. For this reason moisture creeps into the middle of the tie, causing it to expand, whereas the surface, being impregnated by the substance, and exposed to the sun and light is not affected in the same manner, hence on account of the unequal expansion the wood "checks" or cracks thereby destroying, or at least greatly impairing the usefulness of the tie. These "checks" or cracks frequently extend clear through the body of the tie. Another objection to the ordinary wood tie is its cost, due to the necessity of using material of a certain size and shape, the result being that great waste of material is occasioned in the production of the ties.

The purpose of my invention is to provide a tie of greater resiliency than the ordinary wood tie, to reduce the cost of production, and to provide a tie which is impregnated throughout, with a suitable preservative substance.

To such end this invention consists in a tie, the body of which is made up of a number of sections or layers, of such character that they may be impregnated throughout with a preservative substance and suitably fastened together into one mass.

It further consists in the several novel

features hereinafter more fully set forth and particularly defined in the claims.

The invention is clearly illustrated in the drawings accompanying this specification, in which—

Figure 1 is a perspective view of a tie constructed in accordance with my improved method. Fig. 2 is a cross section thereof. Fig. 3 is a cross section of a modified form of construction, and Fig. 4 is a cross section of the ordinary wood tie now in use.

In Figs. 1 to 3 inclusive, the body of the tie will be seen to consist in a plurality of superimposed layers of planks or boards 10, 11, of such length and width as to produce a tie of the ordinary size. The thickness of the boards depends upon the desired thickness of the tie and the number of boards which it is desired to employ in constructing the tie. The size of the ties varies according to certain requirements, but it is obvious that any sized tie can be built up in accordance with my improved method.

In the preferred form shown in Figs. 1 and 2, an opening is left in the center of the tie and this is formed by employing one or more narrow boards 11, at the sides of the body, which boards do not reach to the center. All of the boards are rigidly secured together. This may be done in any suitable manner, here shown, as by nailing them together with nails 12. Each board is impregnated with a preservative substance 13 (illustrated graphically by the dots in Figs. 2, 3 and 4). This is done before the boards are built up into a tie, so that when the several boards are secured together the preservative substances will reach and extend throughout the entire body of the tie. Any well known form of preservative may be used, certain of which are known as "creosote" and "zinc" preservatives.

Fig. 3 shows a tie built up of a plurality of soft wood boards 14, and a top board 15 of hard wood all suitably fastened together. In this form a solid body is provided which consists of comparatively cheap lumber, covered by a top piece of more substantial material. The wear and tear being on the upper surface of the tie it may be found preferable to employ a harder and more durable top layer. In this case also each board or strip is impregnated with a preservative substance so that the tie is saturated throughout its entire body.

In impregnating the comparatively thin, sawed boards with any preservative substance, no difficulty is encountered in thoroughly saturating them throughout, as the substance enters not only from the ends but through the sides and edges as well. This is for the reason that the boards are sawed into shape, and as the grain of the wood does not run in a perfectly straight line, the grain is crossed more or less, thus affording access to the interior of the board. When the tie is hewn into shape, the several directions of the grain are followed, and the grain is not, therefore, severed in the same manner as it is when it is sawed into boards. When the ordinary tie is impregnated, the preservative enters the tie from the ends, for a distance of about 15 to 20 inches, while practically none of the preservative enters for any considerable distance from the sides, and the center is therefore unaffected by the preservative. This is illustrated graphically in Fig. 4, where the edges only are shown as affected by the preservative.

The advantages of my improved construction are apparent. The tie being impregnated throughout will withstand the effects of the weather for a great length of time, the danger of "checking" or cracking is minimized and the construction is greatly cheapened. The danger of "checking" or splitting is also lessened from driving spikes into the tie, inasmuch as each board is independent of its adjacent one, and while one board may split, when the spike enters it, the one below may remain intact. For this reason the spikes obtain a firmer grip in the tie than

they do in the ordinary solid wood tie. The channel or aperture through the tie provides an air passage for preventing the accumulation of moisture in the center of the tie, and affording means for its escape.

While I have shown and described two forms of construction and arrangement, it is obvious that various other alterations and modifications are possible without departing from the spirit of my invention, and I do not, therefore, desire to limit myself to the particular forms shown and described, except as may be necessary by the state of the art to which this invention pertains.

I claim as new and desire to secure by Letters Patent:

1. A tie comprising top and bottom layers of wide boards and intermediate layers of narrower boards placed at the outer edges of said wide boards to leave an opening through the tie, all of said boards being nailed together and each of said boards being impregnated with a suitable preservative substance.

2. A tie comprising top and bottom layers of wide boards and intermediate layers of narrower boards placed at the outer edges of said wide boards to leave an opening through the tie, all of said boards being secured together to form a solid structure.

In witness whereof I have executed the above application at Chicago, Illinois, this 18th day of March, 1908.

ALBERT HEATH.

Witnesses:

JOHN HEATH,
CHARLES O. SHERVEY.