Aug. 4, 1942. J. H. DOOLING 2,291,611

RAILWAY TIE RENOVATING PAD

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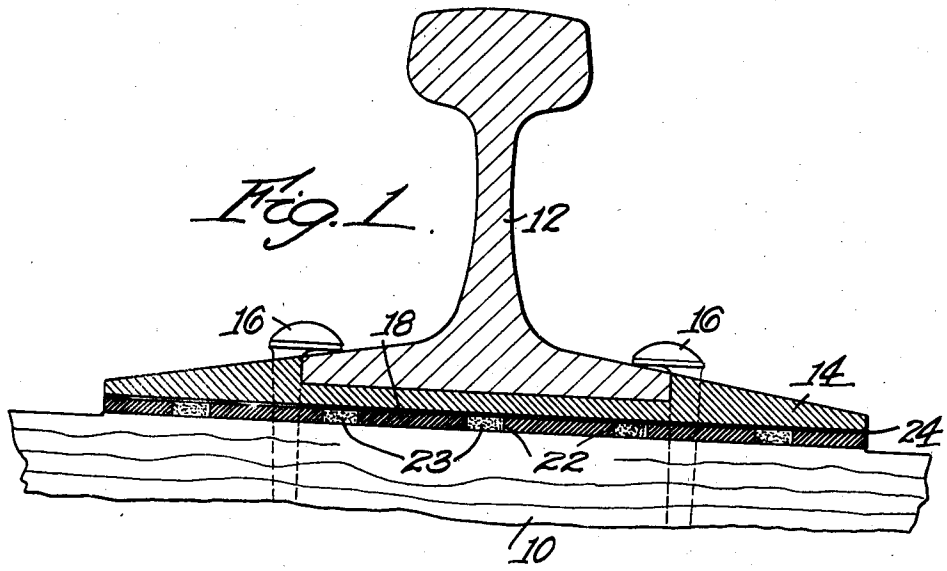


Fig. 1.

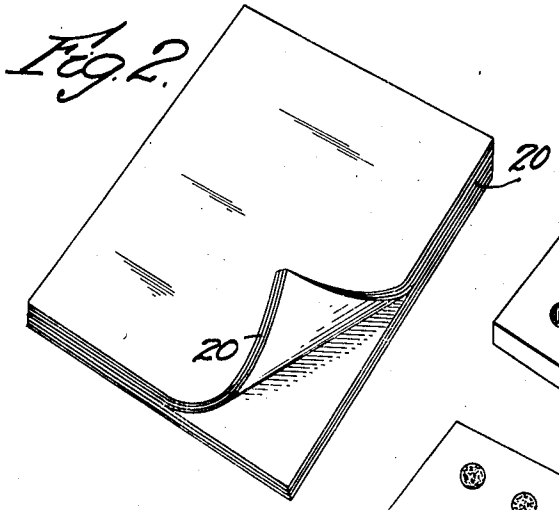


Fig. 2.

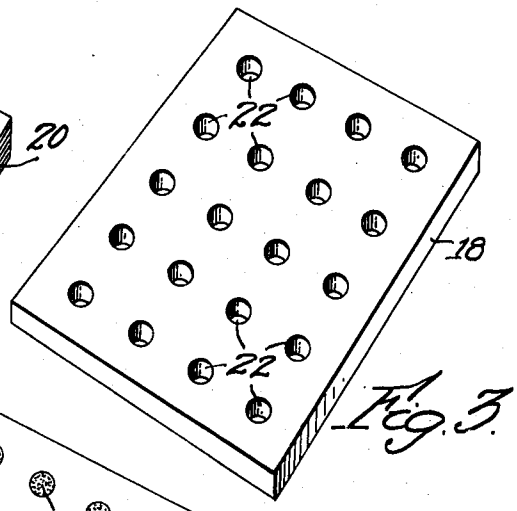


Fig. 3.

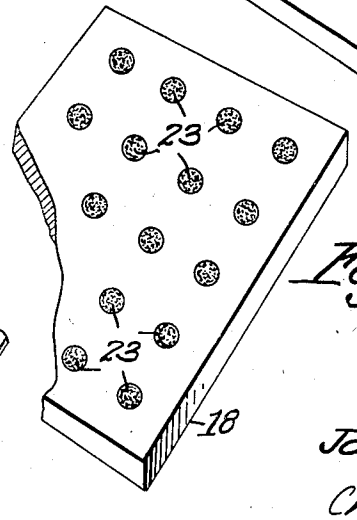


Fig. 4.

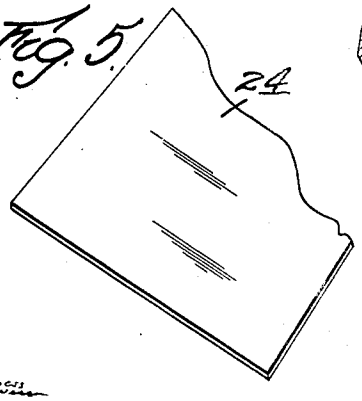


Fig. 5.

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RAILWAY TIE RENOVATING PAD

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12 Claims. (Cl. 238—283)

This invention relates in general to railway tie plate pads having means for renewing the protective material for the ties.

Objects of the invention include the provision of means in a tie plate pad to substantially lengthen the life of the tie by constantly renovating the same and renewing the protective material which is used to seal the pores in a wooden tie; the provision of a renovating pad containing reservoirs for protective material whereby the greater the pressure on the rail, and consequent greater wear on the tie, the more protective material will be spread on and forced into the tie under the plate; the provision of pad means for decreasing the wear on a railway tie by constantly supplying protective material to the tie at the wearing points; the provision of means to renew tie protecting materials which tend to evaporate and otherwise lose their protecting function, such means being incorporated in a pad for a tie plate; the provision of a railway tie renovating pad having reservoirs for tie protecting material, such reservoirs being constructed and arranged in a manner to be effective to constantly supply fresh protecting material to a tie, and wherein the pressure on the rail is utilized to aid in distributing and spreading the protective material; and the provision of a railway tie plate pad as aforesaid which is simple in construction and easy and economical of manufacture and utilization.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawing, in which:

Fig. 1 is a section thru a railway tie plate and rail, and showing the new pad mounted between the plate and tie;

Fig. 2 is an isometric view showing an initial step in its manufacture;

Fig. 3 is an isometric view of the pad after compression and punching;

Fig. 4 is an isometric view of the complete pad; and

Fig. 5 illustrates a cover sheet for the pad.

Railway ties are ordinarily treated with creosote, pitch, asphalt, or other protective materials, which are forced into the surface of the wood, sealing and pores and preventing decay and destruction by vermin. This treatment is by no means permanent, as the protective materials gradually evaporate and otherwise become useless. The ties can be painted and re-coated at exposed portions, but in order to accomplish this under the tie plates, the rail must be removed. This invention contemplates an automatic renewing of the protective materials without attention at the tie plate area. Also, due to vibration in the rails and tie plates, dirt, sand, and other deleterious and abrasive substances will creep in between the plates and the ties, resulting in mechanical wear to the ties, and deeper "seating" of the plates. When the treated surface of the tie has been broken, bacteriological decay also sets in, adding to more rapid deterioration of the tie. This invention contemplates a tie plate pad which will keep out the dirt by self-sealing and cementing to the tie and constantly renewing the protective treatment to thereby lengthen the life of the ties to a very great degree.

With the foregoing consideration in mind, attention is directed to Fig. 1 of the drawing, showing a tie **10**, a rail **12**, tie plate **14** having provision for reception of railway tie spikes **16**, and the new and improved pad indicated generally at **18**, located just under the plate and coextensive therewith. This pad may be secured in place in the usual manner, or by any desired means.

The renovating and renewing pad is illustrated in detail in Figs. 2–5, showing a preferred embodiment of the invention. A plurality of laminations **20** of fabric or the like sheet material are impregnated with a wood tie preserving material such as pitch, asphalt of any kind, or the like. The laminations are superimposed one on the other and compressed under great pressure, as for instance 250 tons. This operation makes the laminations adhere together in a relatively stiff but still bendable unitary, compressed mass, which in itself may be used as a tie plate pad.

Preferably after the compression operation, but not necessarily so, a plurality of holes **22** are punched in and thru the assembled laminations. These holes are about one-half an inch in diameter, but may of course be of any size desired or convenient, and the spacing of the holes may be about that shown in the drawing, but here again the spacing used may be varied to suit different conditions.

The punched holes are adapted to receive and retain a preserving and protective preparation **23** for wooden ties, this material being the same or different from that used to impregnate the fabric laminations. Preferably a Trinidad asphalt material is utilized, but it is wished to particularly point out that this invention is not limited to any special or particular material. However, in order to be retained, the protective material should desirably be pitchy such as to form a solid

but flowable mass in the holes, so that the pad may be complete in itself, and capable of manufacture at a distance from the track where it is to be used. Also, by using an asphaltic substance, it will be seen that as pressure on the rail **12** is transmitted thru the plate **14** and therefore uniformly to the pad, the protective material will be "mushed" or flowed out over the entire tie surface under the plate, and the pressure is found to be great enough to actually force the protective material into the pores of the tie. In addition, the protective substance, being sticky and flowable, will keep the pad itself from drying out, hence the pad will not deteriorate throughout its life.

A layer of fabric **24** may be used between plate **14** and the pad to tend to prevent the protective material in the reservoir holes from flowing upwards. This layer may be of any material desired, and may or may not be attached to the pad. However, the tie plate itself tends to prevent the material from rising, and therefore layer **24** is not necessary, but may be desirable.

Best results are found to be obtained when the laminations are made of heavy canvas duck and asphalt is used to impregnate the pad and to fill reservoir holes **22**. The pad will conform under wheel pressure to any tie surface and to the tie plate, and therefore the tie surface under the plate will be sealed against entrance of dirt, sand, moisture, etc., and preventing bacteriological decay, and the wheel pressure on the rail will continuously keep the pad pressed to the tie and likewise will continuously act on the protective material **23** to flow it slowly outwards over the tie surface.

It will be seen from the above that a new type pad has been produced by the present invention, and that this pad will carry out its purposes in the manner indicated.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A railway tie renovating and renewing pad comprising a body, an open reservoir in said body, and tie preserving and protecting material in said reservoir, said pad being impregnated with like material.

2. As an article of manufacture, a pad adapted to be located on a railway tie beneath a tie plate, said pad having means forming an aperture therein, a tie protective material in said aperture, and like material impregnating said pad.

3. As an article of manufacture, a pad adapted to be mounted on a railway tie beneath a tie plate, a series of openings in said pad, said openings communicating with the side of the pad next to the tie and adapted to receive a tie preserving and cementing material.

4. As an article of manufacture, a pad adapted to be mounted between a tie and a tie plate and comprising a plurality of laminations secured together in close contact, a hole in said pad thru at least some of said laminations, and a tie preservative in said hole, said preservative being of a nature substantially to cause cementing of the pad to the tie.

5. As an article of manufacture, a pad comprising a plurality of sheets of fabric, a series of apertures extending thru at least some of said sheets to one side of said pad, and a flowable pitchy material in said apertures.

6. As an article of manufacture, a tie plate pad, a series of openings of substantial volume in said pad extending to at least one surface thereof, said openings being adapted to contain a tie preserving material.

7. As an article of manufacture, a tie plate pad, a series of openings through said pad, and a pitchy substance located in said openings, said pad being impregnated with a similar substance.

8. As an article of manufacture, a tie plate pad comprising a series of laminations impregnated with an asphaltic substance or the like, a plurality of openings thru said pad, and tie preservative located in said openings.

9. As an article of manufacture, a tie plate pad comprising a laminated body impregnated with an asphaltic material or the like, a series of openings thru said pad, and an asphaltic material or the like in said openings.

10. An article of manufacture as recited in claim 9, including a continuous sheet of material on one side of said pad.

11. A railway tie renovating and renewing pad comprising a laminated fabric body, each lamination being impregnated with an asphaltic material, said body being highly compressed to render said laminations adherent, a series of apertures extending thru said pad to one side surface thereof, said apertures being filled with an asphaltic, tie preserving material.

12. A process of making railway tie renovating and renewing pads comprising impregnating strips of fabric with a tie preserving material, superimposing the strips to form a laminated pad, exerting pressure on the pad to compress the same, forming openings through at least a plurality of said strips, and filling said openings with a flowable tie preservative material.

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