(No Model.)

J. A. MATHIEU.

APPARATUS FOR PRESERVING RAILWAY TIES.

No. 332,097. Patented Dec. 8, 1885.

Fig. 1.

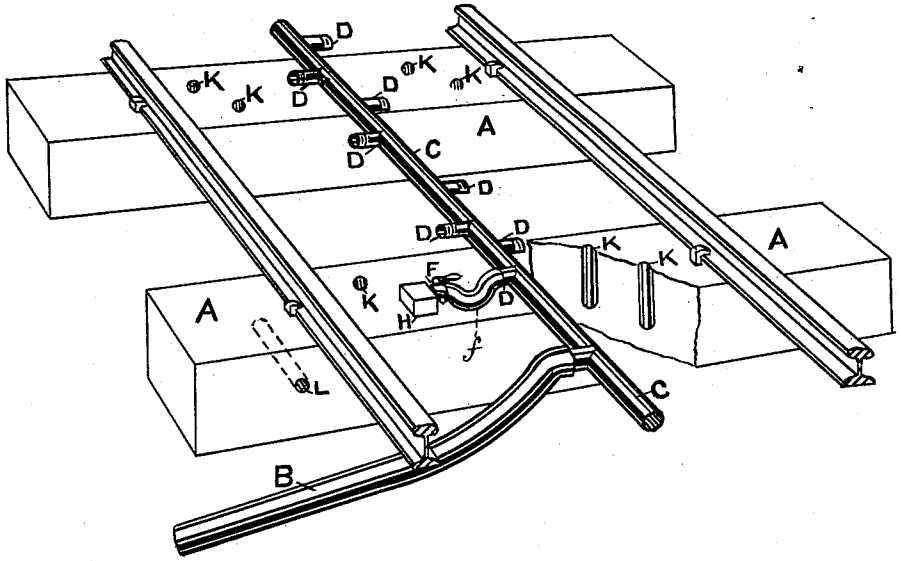


Fig. 2.

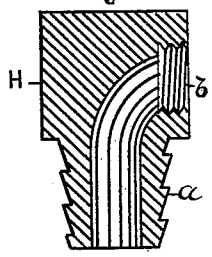
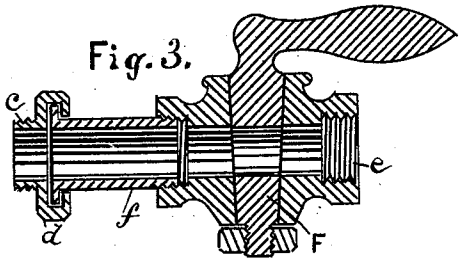


Fig. 3.



WITNESSES

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JEAN A. MATHIEU, OF DETROIT, MICHIGAN.

APPARATUS FOR PRESERVING RAILWAY-TIES.

SPECIFICATION forming part of Letters Patent No. 332,097, dated December 8, 1885.

Application filed February 28, 1885. Serial No. 157,357. (No model.)

To all whom it may concern:

Be it known that I, JEAN A. MATHIEU, a citizen of the Republic of France, residing at Detroit, Wayne county, Michigan, have invented new and useful Improvements in Apparatus for Forcing Hardening and Preserving Solutions into Railway-Ties, &c., of which the following is a specification.

This invention has for its object to provide novel means for introducing a fluid under pressure into railway-ties, while in position under the rails, whereby the ties are hardened, preserved, and increased in weight, to render them strong, durable, and efficient in use.

The object of my invention I accomplish in the manner and by the means hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a perspective view showing portion of a railway and my improved apparatus in position for use; Fig. 2, a longitudinal central sectional view of the hollow plug, and Fig. 3 a similar view of the valved tube or coupling.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, reference being made to the drawings, where the letters A A indicate two wooden railway-ties; B, a main pipe extending under one of the rails and connected with a distributing-pipe, C, extending across the ties between the two rails. The distributing-pipe C is furnished on opposite sides with alternating nipples D, adapted to be closed air and liquid tight by means of suitable stoppers, which can be removed and replaced at will. The ties A are bored, drilled, or otherwise provided with one or more holes or openings, K, which do not extend entirely through the timber, and into the open end of such hole or opening is fitted a plug, H, which is tubular or hollow, and furnished at one end with exterior teeth, serrations, or screw-threads *a*, by which it is securely held within the hole or opening in the tie, the other end of the tubular plug being furnished with a screw-threaded socket, *b*, to receive the screw-threaded stem *c* of a coupling, *d*, loosely connected with a tube or coupling, *f*. This tube or coupling at the other end is attached to a valve-casing containing a valve or plug, F, and the casing is furnished with a screw-threaded socket, *e*, to connect with any one of the nipples D on the distributing-pipe C.

I may provide a series of the tubular plugs and valved tubes or couplings for operating in a series of the holes, K, simultaneously, or for operating on two or more of the ties at the same time. The connections being made, as described, the pipe B, which is preferably flexible, is connected with a reservoir containing the solution to be forced into the tie.

I prefer to employ the following method of treating the ties: The pipe B is first connected with a reservoir or tank containing a solution of tannin under a pressure of about one hundred pounds. The valve or cock F is then opened, when the tannin solution will be forced to and through the tubular plug into the timber. The apparatus is retained under this pressure until the solution holding tannin appears at the end of the tie. The cock F is now closed and pipe B disconnected from the reservoir or tank containing the tannin solution and connected with a reservoir or tank containing a solution of three parts of pyrolignite of iron and one part of pyrolignite of lead. The cock F is then opened and the apparatus retained under the aforesaid pressure until the liquid appears at the end of the tie without containing a large percentage of the pyrolignite of iron. The apparatus is now disconnected and the holes or openings K stopped through the medium of wooden plugs.

The operation may be repeated as frequently as occasion demands.

I may form the holes K either vertically or horizontally in the ties, and I may use the apparatus for hardening and preserving timber other than railway-ties. I may also employ hardening and preserving solutions other than those described.

Having thus described my invention, what I claim is—

1. The combination of a plug, adapted to fit an opening formed in the timber to be hardened and preserved, with a distributing-pipe, and a tube or coupling having a valve and having a detachable screw and socket

connection with a lateral opening in one side of the plug, substantially as described.

2. The combination of the pipe B and the distributing-pipe C, having a series of nipples, D, with the tube or coupling *f*, having the valve F and the tubular plug H, connected with the tube or coupling, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JEAN A. MATHIEU.

Witnesses:
JOS. L. COOMBS,
ALBERT H. NORRIS.