

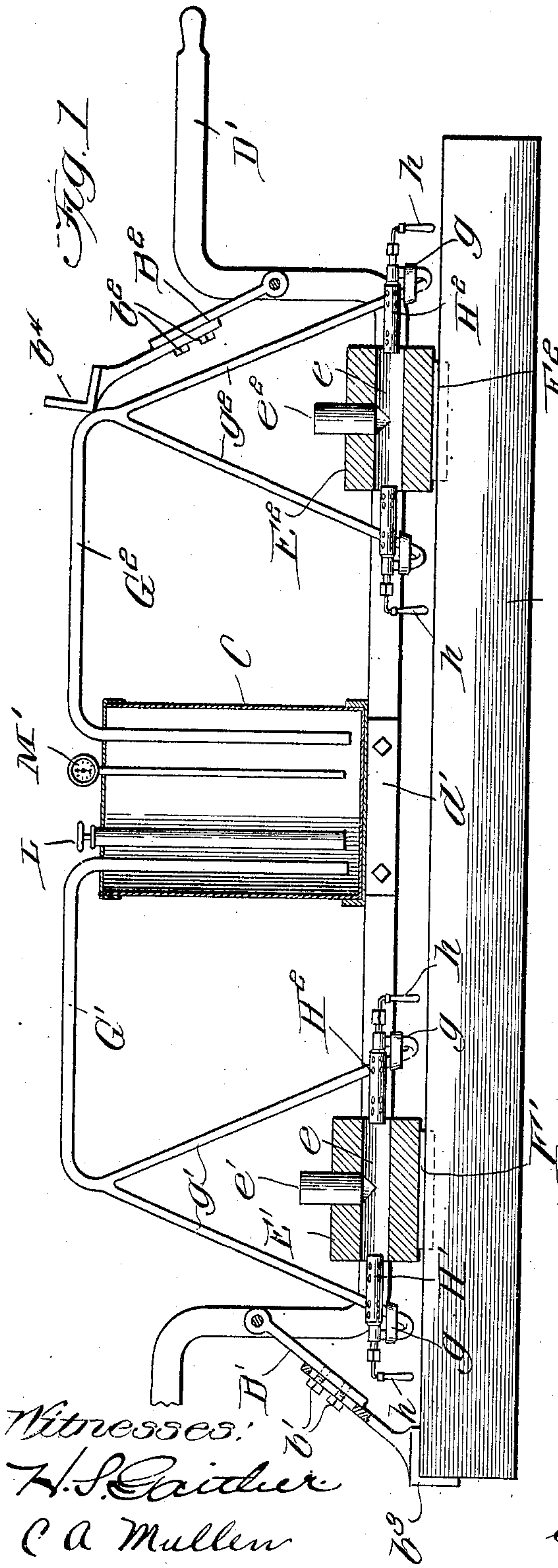
No. 832,333.

PATENTED OCT. 2, 1906.

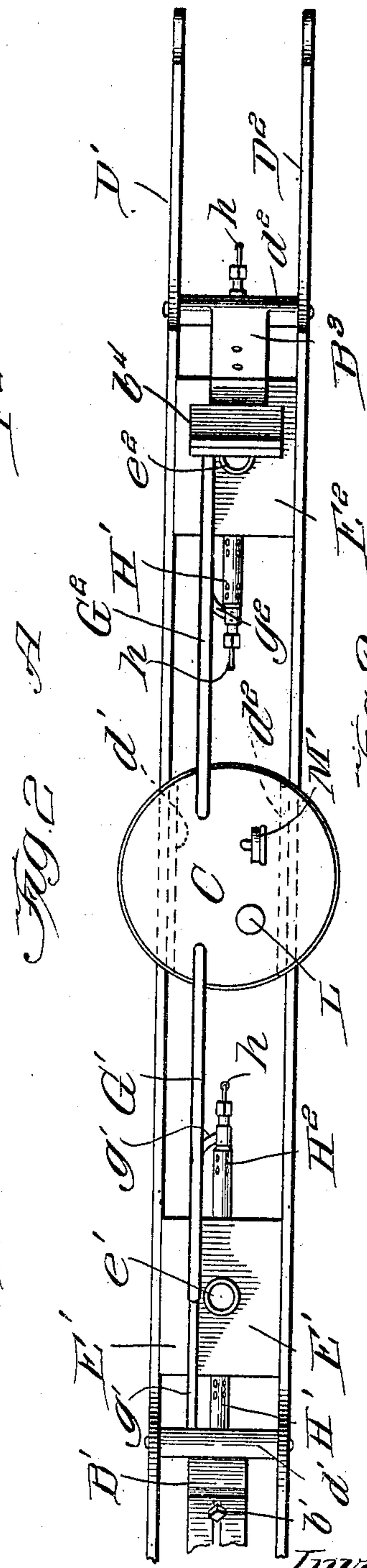
W. C. McCONNELL.

APPARATUS FOR APPLYING TIE PLATES TO TIES.

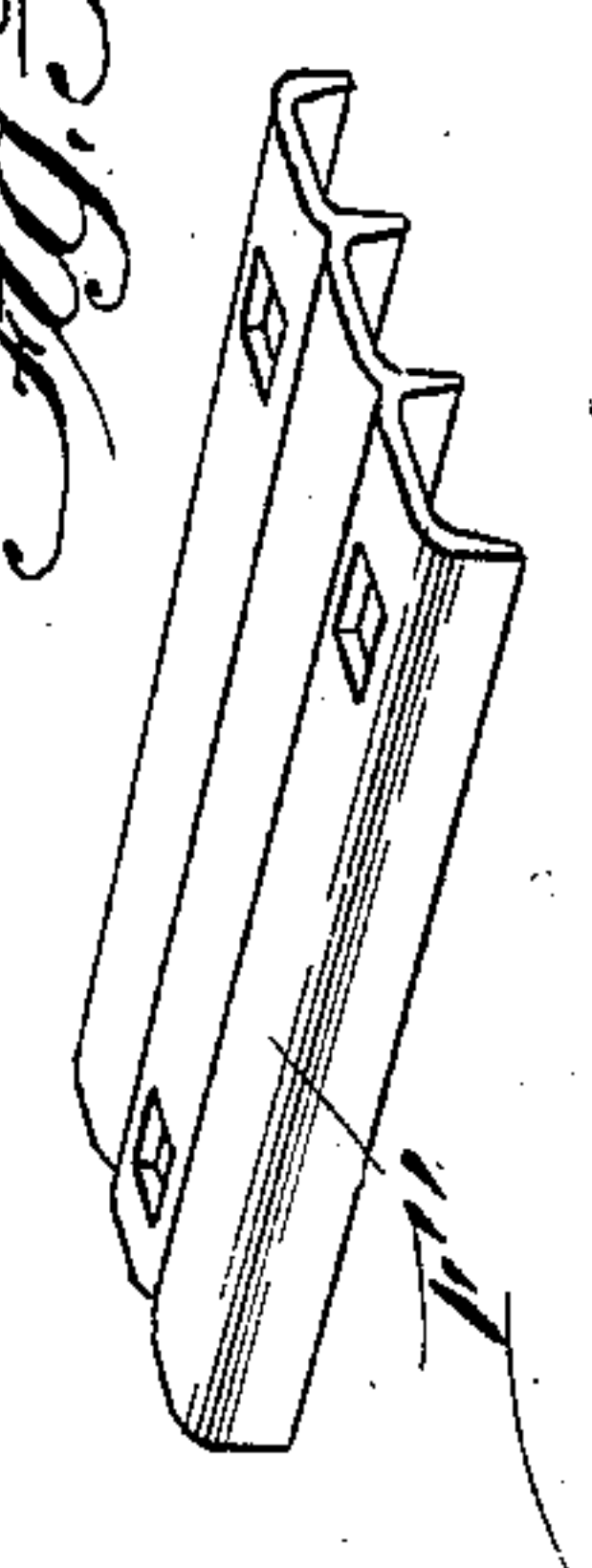
APPLICATION FILED FEB. 23, 1906.



Witnesses:
H. S. Gaither
C. A. Mullen



Inventor:
William C. McConnell
by *Lambert M. Wilson*
Attys.



UNITED STATES PATENT OFFICE.

WILLIAM C. McCONNELL, OF CHICAGO, ILLINOIS.

APPARATUS FOR APPLYING TIE-PLATES TO TIES.

No. 832,333.

Specification of Letters Patent.

Patented Oct. 2, 1906.

Application filed February 23, 1906. Serial No. 302,510.

To all whom it may concern:

Be it known that I, WILLIAM C. McCONNELL, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Apparatus for Applying Tie-Plates to Ties; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates in general to the construction of railroad-tracks, and more particularly to an apparatus for forming seats in the ties for the tie-plates.

It is customary to interpose metallic plates between railroad-rails and the supporting-ties in order to prevent the wearing away of the ties by the rails and in order to more firmly secure the rails to the ties, and thereby prevent both longitudinal creeping and lateral spreading of the rails with respect to the ties.

It is desirable that the plates should have ribs or projections on their under surfaces to prevent movement of the plates upon the ties. Such projections, however, render it difficult to seat the plates in the desired positions upon the ties, owing to knots and other irregularities in the grain of the wood. It has been found in practice that ties frequently rot beneath the tie-plates, owing to water accumulating and soaking into the grain of the wood around the projections on the under surface of the plates.

The primary object of my invention is to provide an apparatus for forming seats in railroad-ties for the tie-plates by means of which the plates may be located in the exact positions desired and a perfect gage thereby effected.

A further object of my invention is to provide an apparatus for forming seats in ties for tie-plates which will char the portions of the ties over which the plates are secured, thereby preventing the ties rotting beneath the plates.

A still further object of my invention is to provide an apparatus of the character described which will be simple in construction, comparatively inexpensive in operation, and efficient in use.

My invention generally described comprises a supporting-frame, a pair of heating-

blocks secured to said frame at a distance apart conforming to the gage of the track, a tank for containing liquid fuel supported upon said frame intermediate of the blocks, gaseous-fuel burners supported adjacent each of said blocks, conduits for supplying liquid fuel from the tank to the burners, dies secured beneath the blocks conforming to the under surface of the tie-plates which are to be secured to the tie, handles projecting from the ends of the supporting-frame for facilitating the apparatus being carried from one tie to another, and means for locating the apparatus at the desired distance from either end of a tie.

My invention will be more fully described hereinafter with reference to the accompanying drawings, in which I have illustrated the same as embodied in a convenient and practical form, and in which—

Figure 1 is a vertical sectional view; Fig. 2, a plan view, and Fig. 3 a perspective view of a die corresponding to a tie-plate.

Similar reference characters are used to designate similar parts in the several figures of the drawing.

Reference character A indicates a wooden tie upon which it is desired to secure tie-plates.

Reference characters E' and E² indicate heating-blocks formed of suitable size and shape and of a material capable of being heated and of communicating heat to dies F' and F², secured beneath the respective blocks. The dies conform to the shape of the tie-plates which it is desired to secure to the tie. The dies may, in fact, consist of tie-plates secured beneath the heating-blocks by any suitable means.

The blocks are supported a distance apart conforming to the gage of the track by means of a supporting-frame comprising parallel bars D' and D², between which the blocks are secured. The ends of the bars D' and D² are preferably extended to form handles by means of which the apparatus may be carried from point to point and successively located above the ties. Supported upon the bars D' and D² intermediate of the heating-blocks is a tank C for containing gasoline or other liquid fuel. The tank may be constructed of sheet metal and is provided with a bottom wall which rests upon the upper edges of the bars. Brackets d' d² may be provided, rigidly securing the tank to the supporting-bars.

G' and G² indicate conduits through which the liquid fuel is delivered from the tank C to burners located adjacent the heating-blocks. The conduit G' is divided into two branches 5 g', which communicate with burners H' H² of any desired type for burning gaseous fuel. The ends of the burners aline with and preferably extend into a passage-way e in the heating-block. The heating-block E' is provided with a flue e', communicating with 10 the passage e, through which the products of combustion are discharged. Preheating-cups g g are provided beneath the burners to initially vaporize the fuel. The supply of 15 fuel through the burners may be regulated by valves h h.

The heating-block E² is constructed in a similar manner to E' and is provided with gaseous-fuel burners H' H² on the opposite 20 sides thereof and with a flue e², communicating with the passage e, for the discharge of the products of combustion. The liquid fuel is supplied to the burners of the heating-blocks E² by means of the branches g² of the 25 conduit G².

L indicates a pump of any desired construction for creating the liquid-pressure within the tank. M' designates a gage for indicating the pressure in the tank. In 30 order that the heating-blocks may be located the desired distance from either end of the tie, extensible arms B' and B² are provided, each of which may conveniently consist of two portions adjustably connected by means 35 of screws b', extending through a slot in one portion and into engagement with the other portion, as clearly shown in Fig. 1. The portions of the arms which are pivotally connected to the bar D' and D² are provided 40 with sleeves d' d², respectively, which are interposed between the bars and through which bolts extend which serve as fulcrums for the arms. The adjustable portion of the arm B' is provided with an angular bracket 45 b³, while a similar angular bracket b⁴ is provided on the end of the extensible portion of the arm B².

When the tie-plates are to be located a fixed distance from the left end of the tie, the 50 arm B' is swung into the position shown in Fig. 1, so that the bracket b³ engages the end of the tie, thereby locating the apparatus in the proper position upon the tie. When it is desired to locate the tie-plates with refer- 55 ence to the right end of the tie, the arm B' is swung upwardly in a position corresponding to the position of the arm b² in Fig. 1 and the arm B² swung downwardly, so that the bracket b⁴ thereon will rest upon the end of 60 the tie, thereby locating the heating-blocks in the desired position upon the tie.

It is customary in laying tracks running north and south to have the west ends of the ties aline, while in tracks running east and 65 west the north ends of the ties aline. By

providing the arms B' and B² the apparatus may be conveniently located upon the ties with the heating-blocks the desired distance from the end of the tie which alines with the other ties.

The manner of using and operation of my improved apparatus are as follows: The desired pressure is created in the tank by means of the pump L and the liquid fuel supplied through the conduits G' and G² to the 70 burners H' H², located adjacent the heating-blocks E' E². A small quantity of the liquid fuel is placed in the preheating-cups g and ignited to initially vaporize the fuel. The vapor passes from the burners to the passage- 75 ways e e within the blocks and is ignited, so as to impart heat to the blocks, such heat being communicated to the dies F' F². The openings through the centers of the blocks and the communicating flues e' e² serve as 80 passages for the discharge of the products of combustion.

The apparatus may be carried to a position above the tie by means of the handles on the bars D' D² and the dies located at the 85 desired distance from either end of the tie. The weight of the apparatus causes the hot dies to burn into the wood of the tie, thereby forming seats to receive the tie-plates. After the seats have been formed the appa- 90 ratus is moved to another tie, and the tie-plates may then be readily secured in the seats burned in the tie.

From the foregoing description it will be observed that I have invented an improved 95 apparatus for forming seats in ties for the tie-plates by means of which the tie-plates may be accurately located in the desired positions upon the ties and by means of which the wood of which the ties are formed is charred 100 beneath the plates, thereby protecting the same from rotting.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an apparatus for forming tie-plate seats in railroad-ties, the combination with a pair of dies, of means for supporting said dies at a distance apart conforming to the gage of the track, and means for heating said dies. 110

2. In an apparatus for forming tie-plate seats in railroad-ties, the combination with a pair of heating-blocks, of dies secured beneath said heating-blocks, means for supporting said blocks at a distance apart conforming to the gage of the track, and means 115 for heating said blocks.

3. In an apparatus for forming tie-plate seats in railroad-ties, the combination with a pair of heating-blocks, of dies secured beneath said heating-blocks, means for supporting said blocks at a distance apart conforming to the gage of the track, and gaseous-fuel burners supported adjacent said blocks 120 for heating the same. 125

4. In an apparatus for forming tie-plate seats in railroad-ties, the combination with a pair of heating-blocks, of dies secured beneath said heating-blocks, means for supporting said blocks at a distance apart conforming to the gage of the track, gaseous-fuel burners supported adjacent said blocks for heating the same, and a tank for liquid fuel supported intermediate of said blocks for supplying fuel to said burners.

5. In an apparatus for forming tie-plate seats in railroad-ties, the combination with a pair of dies, of means for supporting said dies at a distance apart conforming to the gage of the track, means for heating said dies, and means for locating said dies upon a tie at predetermined distances from one end of the tie.

6. In an apparatus for forming tie-plate seats in railroad-ties, the combination with a portable supporting-frame, of a pair of dies secured to said frame at a distance apart conforming to the gage of the track, and means for heating said dies.

7. In an apparatus for forming tie-plate seats in railroad-ties, the combination with a pair of parallel bars, heating-blocks supported between said bars at a distance apart conforming to the gage of the track, dies secured to the under surfaces of said blocks, means for heating said blocks, and handles formed at the ends of said bars to facilitate locating the apparatus in the desired position above a tie.

8. In an apparatus for forming tie-plate seats in railroad-ties, the combination with a

pair of parallel bars, of a pair of dies secured to said bars at a distance apart conforming to the gage of the track, means for heating said dies, and extensible arms pivoted between said bars adapted to engage the ends of a tie to locate the apparatus in the desired position above the tie.

9. In an apparatus for forming tie-plate seats in railroad-ties, the combination with a pair of parallel bars, a pair of heating-blocks supported between said bars at a distance apart conforming to the gage of the track, dies secured beneath said blocks, means for heating said blocks, handles formed at the ends of said bars to facilitate the location of the apparatus above a tie, and arms pivoted between said bars adapted to engage the ends of the tie to locate the apparatus in the desired position thereon.

10. In an apparatus for forming tie-plate seats in railroad-ties, the combination with a pair of bars, of heating-blocks supported between said bars at a distance apart conforming to the gage of the track, dies secured beneath said block, gaseous-fuel burners located adjacent said blocks for heating the same, a tank supported upon said bars intermediate of said blocks, and conduits extending from said tank to said burners for supplying fuel.

In testimony whereof I sign this specification in the presence of two witnesses.

WILLIAM C. McCONNELL.

Witnesses:

GEO. L. WILKINSON,
C. A. MULLEN.