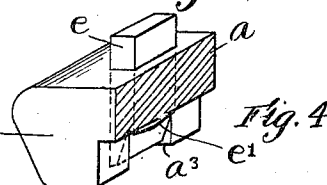
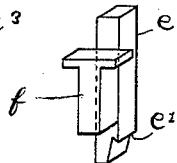
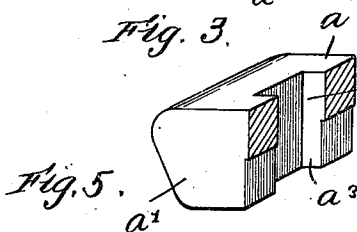
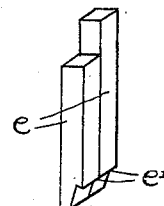
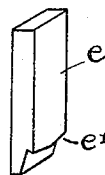
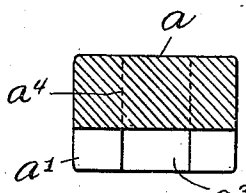
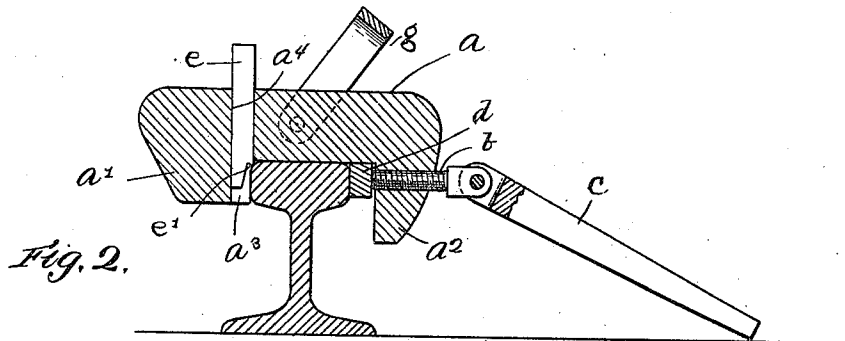
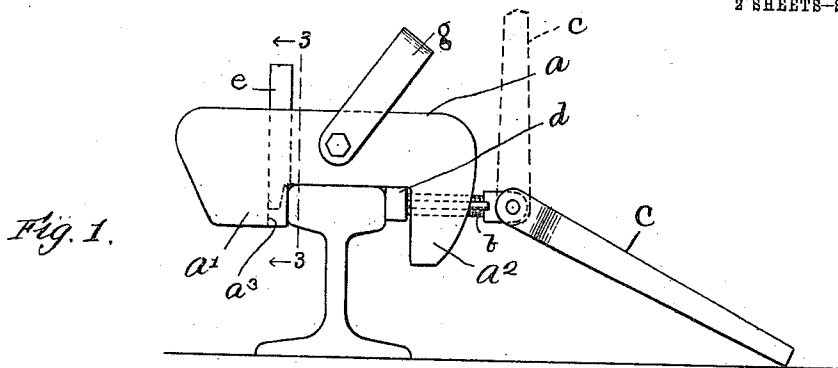


W. G. STUART.
 DEVICE FOR PREPARING RAILS FOR THE ATTACHMENT OF RAIL BONDS.
 APPLICATION FILED DEC. 24, 1909.

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2 SHEETS-SHEET 1.



Witnesses:
 H. B. Davis
 D. S. Peterson.

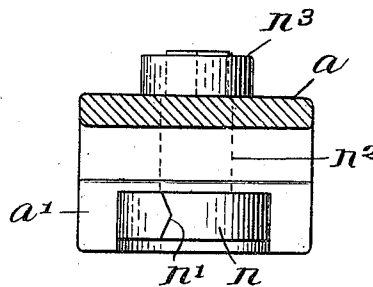
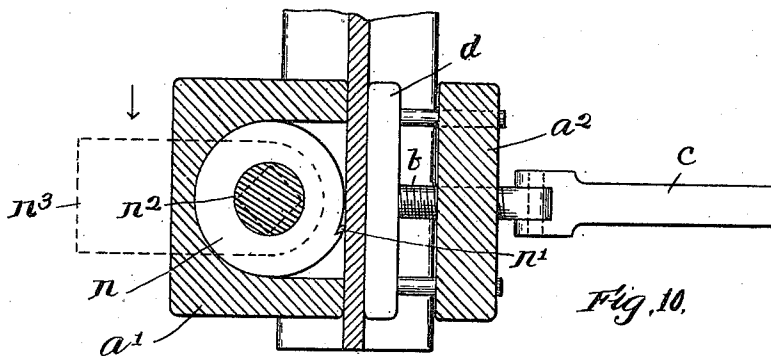
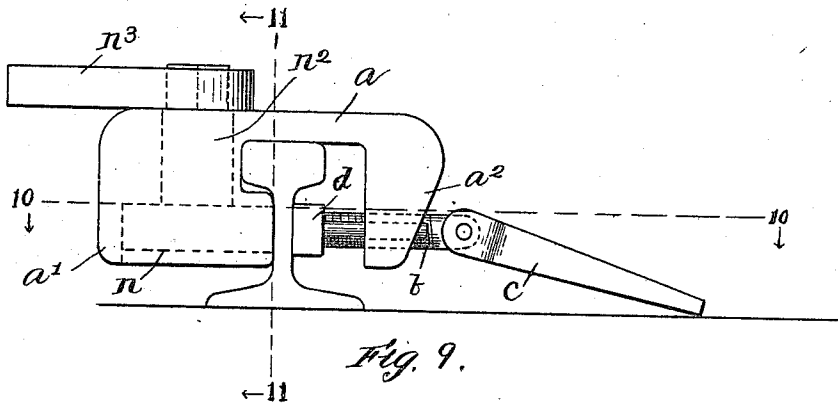
Inventor:
 William G. Stuart.
 By Hayes & Lammann
 Attys.

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2 SHEETS—SHEET 2.



Witnesses:
 H. B. Davis,
 D. S. Peterson.

Inventor:
 William G. Stuart
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 atty.

UNITED STATES PATENT OFFICE.

WILLIAM G. STUART, OF NEWBURYPORT, MASSACHUSETTS, ASSIGNOR TO CHASE-SHAWMUT COMPANY, OF NEWBURYPORT, MASSACHUSETTS, A CORPORATION OF MAINE.

DEVICE FOR PREPARING RAILS FOR THE ATTACHMENT OF RAIL-BONDS.

974,931.

Specification of Letters Patent.

Patented Nov. 8, 1910.

Application filed December 24, 1909. Serial No. 534,801.

To all whom it may concern:

Be it known that I, WILLIAM G. STUART, of Newburyport, county of Essex, State of Massachusetts, have invented an Improvement in Devices for Preparing Rails for the Attachment of Rail-Bonds, of which the following is a specification.

When attaching rail-bonds to railway rails by solder, it is necessary to clean the surface of the rail where the solder is to be applied to insure a good connection. Among the many ways devised for accomplishing this result sand-blasts and abrasive wheels have been employed to a considerable extent, and by such means a clean surface is produced, but in practice particles of sand or abrasive material are left on and embedded in the clean surface thus formed, which detracts from producing the best possible results, and, furthermore, an effective sand-blast appliance is expensive and cumbersome to transport, and requires two or more men to operate it, hence the cost of applying rail-bonds by the soldering process, when using a sand-blast, is quite high.

This invention has for its object to construct an apparatus by which a clean spot may be produced on the surface of the rail, which may be cheaply manufactured, easily transported, and operated by one man, and the clean spot which is formed will be devoid of particles of sand, and the cost of producing the same reduced materially, as compared with the sand-blast process, and the rail will not be materially weakened.

My invention comprehends the employment of a chisel as a device for cutting the surface of the rail to produce a clean spot thereon, to thereby prepare the rail for the attachment of a railbond, and guiding-means for said chisel by which it is supported and guided, and clamping-means for holding the chisel-guiding means in position on the rail in such manner that the cutting edge of the chisel may be moved into engagement with the rail. The chisel-guide may be formed with a chisel-receiving recess having an opening at the side adjacent the rail, so that the cutting edge of the chisel, when occupying a position at said opening, may engage the rail. The chisel-guide is so constructed that the chisel supported by it is more or less exposed, or has a part attached to it more or less exposed,

adapted to be struck by a mallet or other implement for the purpose of moving it in the guide to cause its cutting edge to engage and cut the rail. The employment of a chisel permits the removal from the rail of the least possible amount of material, including the dirt and other impurities, so that a clean spot is produced and the rail not weakened by its use. The clamping-means may be such as to engage the flange or ball of the rail and to support the chisel so that it will act to produce a clean spot on the side of the flange or ball, or it may be designed to extend over the flange or ball of the rail and to be secured to the web to cause the chisel to produce a clean spot on one side of the web of the rail.

Provision is made for the employment of a chisel of novel design which comprises a shank or body portion having a cutting edge arranged with supporting portions at opposite sides thereof to thereby guide and firmly support the chisel.

Figure 1 is a side elevation of a device embodying my invention for cleaning a spot on the flange or ball of a rail, Fig. 2 is a longitudinal vertical section thereof, Fig. 3 is a transverse section of the guiding device for the chisel, taken on the dotted line 3—3, Fig. 1, the chisel being removed, Fig. 4 is a perspective view of the guiding-device for the chisel and the chisel contained therein, Fig. 5 is a transverse section of the device taken on a line with the cutting edge of the chisel, Fig. 6 is a perspective view of a chisel which may be employed, Fig. 7 is a similar view showing more than one chisel, Fig. 8 is a detail showing a spacing-block which may be placed in the recess in the guiding-device for the chisel at one side of a narrow chisel, Fig. 9 is a side view of another embodiment of my invention employing a chisel adapted to be moved rotarily to engage the rail, Fig. 10 is a horizontal section of the device shown in Fig. 9, taken on the dotted line 10—10, and, Fig. 11 is a transverse section of the same taken on the dotted line 11—11, Fig. 9.

The guiding-means for the chisel, which will be hereafter referred to as the chisel-guide, is shown in Figs. 1 to 5, as formed in or as a part of one of the jaw-members of a clamp, so that the chisel-guide and clamping-means therefor may be closely asso-

ciated, but my invention comprehends the employment of other forms of chisel-guides. Referring to said Figs. 1 to 5, *a* represents the body-portion of a clamp which is made long enough to extend across the top of a rail, and *a'* *a*² the jaw-members adapted to extend down over and engage the opposite sides of the flange or ball of the rail. The jaw-member *a*² has a screw *b* extended through it engaging a shoe *d* arranged at the inside thereof and adapted to engage the rail. By turning the screw in one direction the shoe is moved into engagement with the flange or ball of the rail and the jaw-member *a'* drawn into engagement with the opposite side thereof, thereby firmly securing the clamp to the rail, but the shoe may be omitted and the screw arranged to engage the rail directly. A hand-piece *c* is here shown as pivotally-connected to the screw for the purpose of turning it, but it may be otherwise connected to the screw in any suitable manner.

As shown in Figs. 1 to 5, the body *a* and jaw-member *a'* are formed or provided with a chisel-receiving recess extended through them from top to bottom and said recess is arranged at the rail-engaging face of the jaw, and is therefore open at one side adjacent the rail. *a*³ represents the portion of said recess extending along the rail-engaging face of the jaw, and *a*⁴ the portion extended up through the body. Said recess is made of a shape and size to correspond to the shape and size of the chisel which is employed, and, as here shown, I prefer to employ a chisel such as shown in Fig. 6, consisting of a shank-portion *e* made as a bar, quadrangular in cross-section, having at one side, at a point intermediate its length, a cutting-edge *e'*, which extends transversely across the shank portion. Said cutting-edge is formed by cutting away the shank-portion at its lower edge, as shown, so that the lower part of the shank-portion is made thinner than the upper part. Said chisel is placed in the guiding-recess at the top, and, as it is moved downward therein, its cutting-edge occupies a position at the side opening thereof and engages the side of the flange or ball of the rail. The chisel, thus constructed, has guiding-portions both above and below the cutting-edge which provide for effectively guiding and supporting it. The chisel projects above the jaw-member for a short distance, thereby providing an exposed portion adapted to receive the blows of a mallet or other implement by which it is moved in the chisel-receiving recess and caused to cut or chip the rail. The chisel may be struck one or more blows and thereby driven downward, and its downward movement is guided by the walls of the recess with great accuracy, but owing to the position of the cutting-

edge of the chisel, with respect to the side opening of the recess, the rail will be engaged and cut. After the rail has been cut the clamp is removed and the clean spot which is produced on the surface of the rail is exposed for the attachment of the rail-bond. Instead of employing one side chisel, I may employ two or more narrow chisels, arranged side by side in the chisel-guide, as represented in Fig. 7, wherein two chisels are shown arranged side by side. Said chisels may be simultaneously or separately struck with the mallet. In case one narrow chisel only is employed to clean a correspondingly narrow spot on the rail, a spacing block *f*, see Fig. 8, may be placed in the recess at the top to partially fill said recess. I do not, however, limit my invention to the construction of the several parts here shown, as it is obvious that they may be modified and yet come within the spirit and scope of my invention.

Referring to Figs. 9 to 11, the chisel-guide is arranged in one of the jaw-members of a clamp similar to that shown in Fig. 1, but designed to engage the web of the rail instead of the flange, hence the jaw-member *a'* extends downward farther and is formed to project under the flange. In this instance, a chisel is shown adapted to cut or chip the web of the rail, and a rotary chisel is employed consisting of a circular disk *n* arranged in a recess in the jaw *a'* having on its periphery a cutting-edge *n'*, of suitable shape, and said disk is provided with a shaft *n*², see dotted lines, Fig. 9, which extends up through the recess on the clamp and the upper end of said shaft is squared or otherwise formed to receive an arm *n*³, the side of which may be struck one or more blows for the purpose of turning the disk. The disk is arranged in the chisel-receiving recess in the jaw-member with its cutting-edge at the open side of said recess, so as to engage the rail at said point. It will be observed that with this arrangement the chisel is held with the same firmness and is supported against the thrust of the work by broad guiding-portions so as to cut each time substantially the same amount from the rail as when the straight chisel is used. The device is provided with a bail *g*, which serves as a handle by which it may be carried from place to place.

I claim:

1. In a device of the character described, a clamp comprising a body portion adapted to extend across the top of a rail, and jaw-members to engage opposite sides of the rail, one jaw-member having a recess in its rail-engaging face shaped to correspond to the shape of a chisel which is adapted to be movably placed therein, whereby the chisel is guided, and the body portion having a hole through it in line with said recess up

through which the shank of the chisel extends, substantially as described.

2. In a device of the character described, a clamp comprising a body portion adapted to extend across the top of a rail and jaw-members to engage opposite sides of the rail, one jaw-member having a recess in its rail-engaging face extended throughout the length of the jaw and shaped to correspond to the shape of a chisel adapted to be movably placed therein, whereby the chisel is guided, and the body portion having a hole

through it in continuation of and in line with said recess up through which the shank of the chisel extends, substantially as described. 15

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

WILLIAM G. STUART.

Witnesses:

B. J. NOYES,

H. B. DAVIS.