Oct. 4, 1927. 1,644,358

H. SCHULTZ

RAIL CLAMP

Filed April 1, 1925

Fig. 1

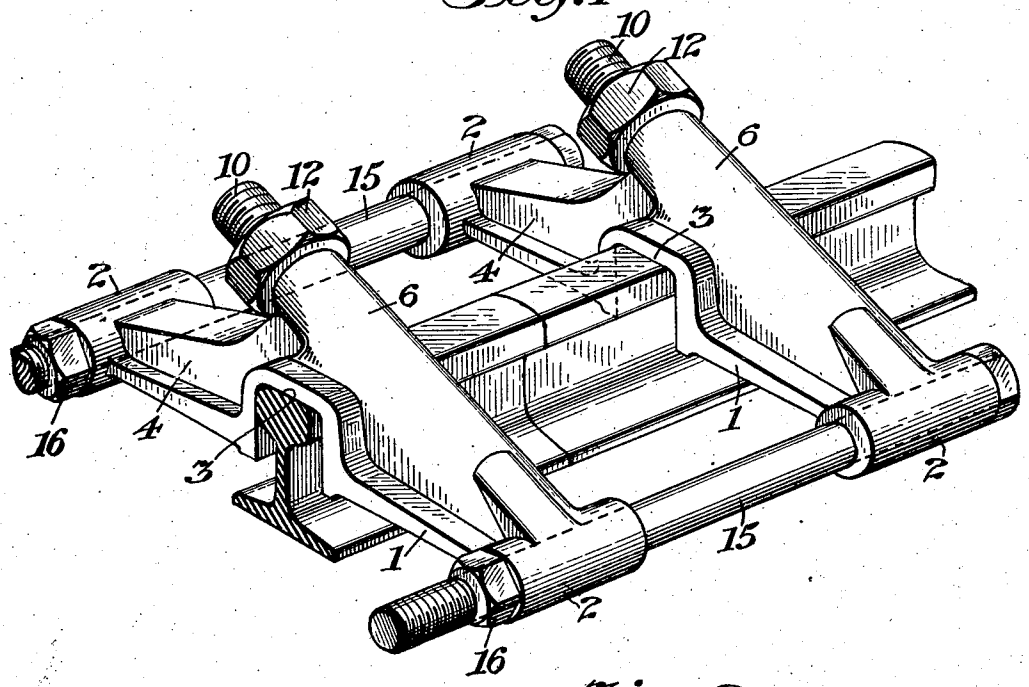
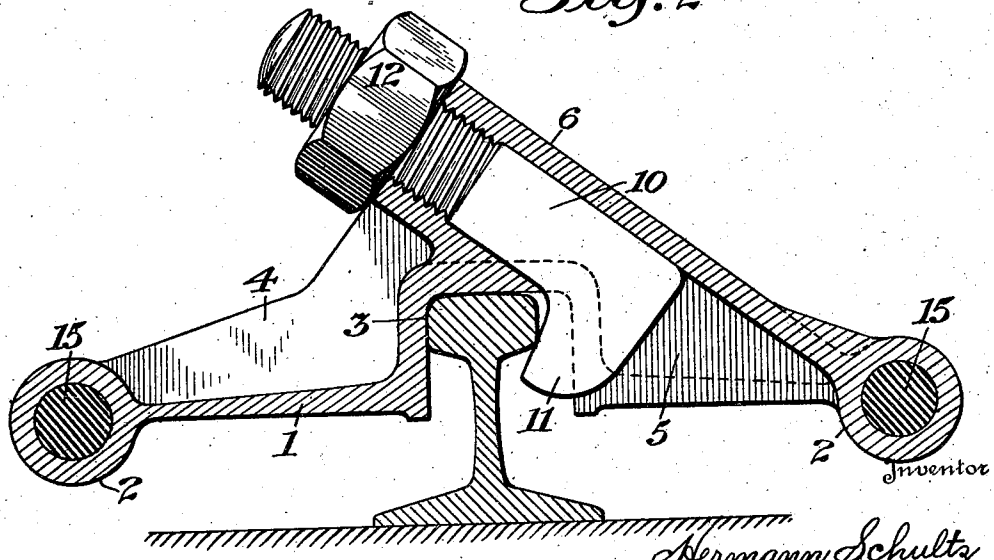


Fig. 2



Inventor

Hermann Schultz

By Chas. F. Burns

his Attorney

Patented Oct. 4, 1927. 1,644,358

UNITED STATES PATENT OFFICE.

HERMANN SCHULTZ, OF LANKWITZ, NEAR BERLIN, GERMANY, ASSIGNOR TO METAL & THERMIT CORPORATION, OF CARTERET, NEW JERSEY, A CORPORATION OF NEW JERSEY.

RAIL CLAMP.

Application filed April 1, 1925, Serial No. 19,864, and in Germany May 1, 1924.

The invention relates to a portable clamping device for use in welding together the ends of rails, beams, girders and the like, and has for its object to provide a simple, cheap and efficient apparatus for clamping the rails in absolute axial alignment with each other, and for forcing the rail ends together to effect the desired compression between the meeting surfaces of the rail ends during the welding operation. To these ends the invention comprises two parallel rail straddling yokes, each yoke including a recess intermediate its ends provided with a vertical wall to engage the side of a rail head and a horizontal wall to engage the rail tread, and means carried by each yoke to exert lateral pressure on the opposite side of the rail head, said means preferably taking the form of a bolt, which is longitudinally adjustable in an oblique hollow boss or socket on the upper part of the yoke, the bore of which boss or socket intersects the rail straddling recess in the yoke, said bolt having a hooked lower end adapted to be drawn into clamping engagement with the other side of the rail head, and preferably with the lower edge of said side, the adjustment of the bolt being effected by a nut on the outer screw-threaded end of the bolt which engages the outer edge of the boss or socket.

The invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a perspective view of the clamp applied to the ends of two abutting rails to be welded.

Fig. 2 is a vertical transverse section through one of the yokes of the clamp.

Referring to the drawings, 1 indicates the body portion of a yoke member, which is provided at each end with the usual ears or sockets 2—2 to receive the customary tension bolts 15, provided with nuts 16. Formed in the mid section of the body of the yoke is a recess 3, adapted to straddle the rail head and being somewhat wider than the width of the rail head, said recess being defined by a vertical wall adapted to engage one side of the rail head, and an upper horizontal wall adapted to engage the rail tread, the other wall of the recess normally being spaced at some distance from the opposite side of the rail head. The body of the yoke is reinforced by a relatively heavy web or fin 4, on its top, and formed in said fin is a hollow boss or socket member 6, the bore of which is cylindrical and is inclined at an oblique angle to the horizontal longitudinal axis of the yoke, so that the bore intersects the recess 3 in the yoke and terminates at its lower end in an enlarged recess or housing 5 formed within the fin 4 and body portion 1 at one side of the yoke.

The upwardly inclined bore of the boss or socket member 6 is engaged by a bolt 10, preferably provided with screw threads on its outer end and having a hook 11 on its inner or lower end, which latter occupies the housing 5 within the yoke, the hook member being so disposed as to engage the lower edge of one side of the rail head when the nut 12 carried by the screw threaded end of the bolt and which cooperates with the outer end of the boss 6, is set up to move the bolt outwardly in the bore of the boss.

The clamp as a whole comprises two yokes of the character indicated, which are connected together by tension bolts 15, passing through the perforated lugs or ears 2—2 on the outer ends of the respective yokes, the bolts being provided with the customary nuts 16, by means of which the yokes can be moved relatively toward and from each other. The clamp is applied to the rail ends to be welded, in the manner shown in Fig. 1, with the yokes straddling the respective rail ends and with the corresponding vertical walls defining the recesses 3 in each yoke, engaging one side of each rail head, and the horizontal surfaces of the recesses engaging the treads of the rails, these two surfaces constituting accurate gauges for effecting axial alignment of the rails preparatory to welding the ends thereof together. The hooked ends 11 of the bolts 10, when the clamp is being placed on the rails, occupy the housings or recesses 5 in the yokes and are far enough away from the rail heads to permit the clamps to be placed in straddling relation upon the ends of the rails. Each bolt is then moved outwardly by setting up the nut 12 which bears against the outer end of the hollow boss or socket 6, the longitudinal movement of the bolts causing the hooked ends 11 thereof to be forced into clamping engagement with the lower edge of the other side of the rail head from that engaged by the vertical wall of

the recess in the corresponding yoke. It will thus be seen that each rail end is firmly clamped at the head section thereof between the fixed vertical wall and the fixed horizontal wall of the recess in the yoke and the laterally inclined face of the hook 11 on the corresponding bolt, the three clamping faces being disposed in substantially triangular arrangement, as indicated in Fig. 2, so that each rail end is immovably clamped in its corresponding yoke, and the rail ends are firmly locked in absolute axial alignment and may be drawn into any desired degree of compressive contact to effect the proper welding together of the ends, by the usual manipulation of the nuts 16 on the tension bolts 15.

While the hooked bolt 10 and co-operating nut 12 have proven to be the preferred and more effective means for exercising the adjustable clamping pressure between the yokes and the rail ends, it will be understood that the invention is not limited to the specific adjustable clamping means shown, as obvious variations may be made in said adjustable clamping element without departing from the scope of the invention.

What I claim is:

1. A clamp for use in butt-welding rails and the like comprising two yokes each having end sockets, bolts engaging said sockets for connecting the yokes laterally of the rail engaging portions thereof, each yoke provided with a rail straddling recess having a vertical wall to engage the gage side of a rail head and a horizontal wall to engage the rail tread, and means carried by each yoke to exert pressure on the opposite side of the rail head to bring said gage sides and said treads into alignment.

2. A clamp for use in butt-welding rails and the like comprising two yokes each having end sockets, bolts engaging said sockets for connecting the yokes laterally of the rail engaging portions thereof, each yoke provided with a rail straddling recess having a vertical wall to engage the gage side of a rail head and a horizontal wall to engage the rail tread, and means carried by each yoke to exert upwardly and laterally directed pressure on the opposite side of the rail head to bring said gage sides and said treads into alignment.

3. A clamp for use in butt-welding rails and the like comprising two yokes, bolts connecting the yokes, each yoke provided with a rail straddling recess having one vertical wall to engage the side of the rail head and a horizontal wall to engage the rail tread, and an oblique hollow boss on its top the bore of which intersects said recess, a bolt longitudinally adjustable in each of said bosses having a hooked lower end to engage the lower edge of the other side of the rail head, and means for forcing the hooked end of the bolt into engagement with the rail head.

4. A clamp for use in butt-welding rails and the like comprising two yokes, bolts connecting the yokes, each yoke provided with a rail straddling recess having a vertical wall to engage the side of the rail head and a horizontal wall to engage the rail tread and an oblique hollow boss on its top the bore of which intersects said recess, a bolt longitudinally adjustable in each of said bosses having a hooked lower end to engage the lower edge of the other side of the rail head, and a nut on each bolt for drawing the hooked end thereof into engagement with the rail head.

5. A yoke for rail welding clamps comprising a body portion having end sockets to receive tensioning bolts, a rail straddling recess intermediate its ends having one vertical wall to engage one side of the rail head and a horizontal wall to engage the rail tread, an oblique hollow boss on its top the bore of which intersects said recess, a bolt in said bore having a hooked end to engage the lower edge of the other side of the rail head, and a nut on the outer end of the bolt engaging the upper end of the boss to draw the hooked end of the bolt into engagement with the rail head.

6. A yoke for rail welding clamps comprising a body portion having end sockets to receive tensioning bolts, a rail straddling recess intermediate its ends having one vertical wall to engage one side of the rail head and a horizontal wall to engage the rail tread, an oblique hollow boss on its top the bore of which intersects said recess, a member in said bore having a hooked portion to engage the lower edge of the other side of the rail head, and means cooperating with said member to draw the hooked portion thereof into engagement with the rail head.

In testimony whereof I affix my signature.

HERMANN SCHULTZ.