

H. C. WILLIAMS.
ELECTRICAL BONDING DEVICE.
APPLICATION FILED MAY 20, 1911.

1,041,394.

Patented Oct. 15, 1912.

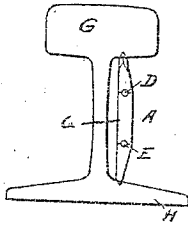


Fig. 1.

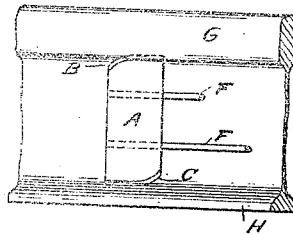


Fig. 2.

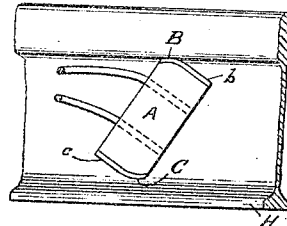


Fig. 3.

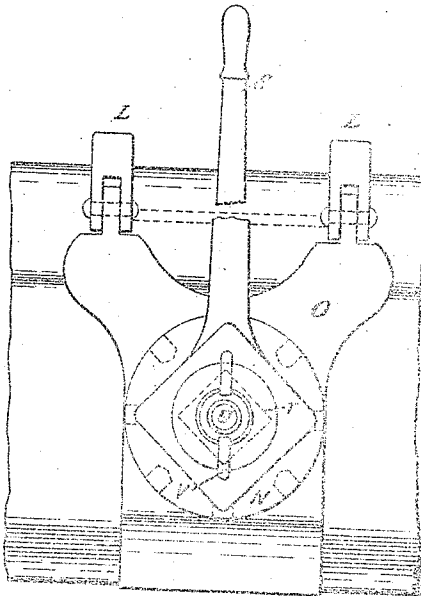


Fig. 4.

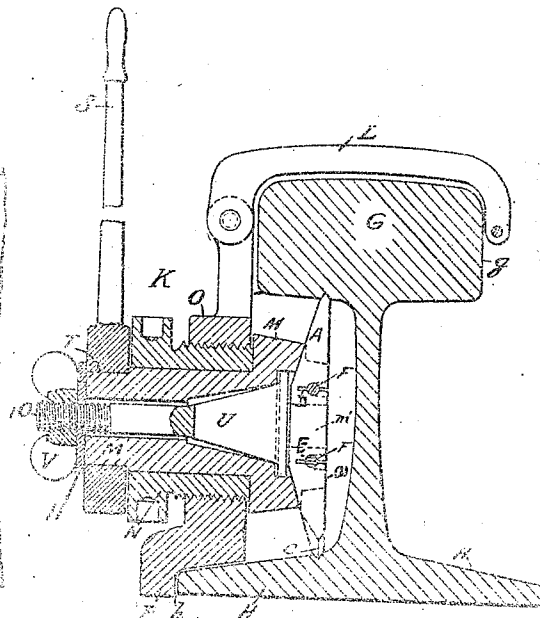


Fig. 5.

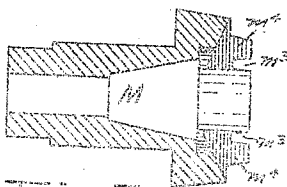


Fig. 7.

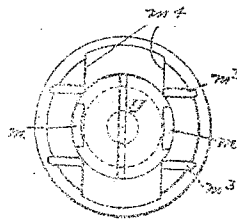


Fig. 6.

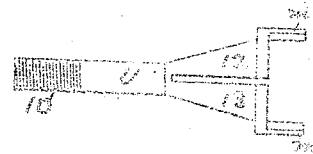


Fig. 8.

Witnesses
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UNITED STATES PATENT OFFICE.

HIRAM C. WILLIAMS, OF UTICA, NEW YORK, ASSIGNOR OF ONE-THIRD TO FRANCIS B. HARRINGTON, OF ALBANY, NEW YORK, AND ONE-THIRD TO STEPHEN E. PAYNE, OF SYRACUSE, NEW YORK.

ELECTRICAL BONDING DEVICE.

1,041,394.

Specification of Letters Patent.

Patented Oct. 15, 1912.

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To all whom it may concern:

Be it known that I, HIRAM C. WILLIAMS, a citizen of the United States of America, residing at No. 89 Kimbell street, in the city of Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Electrical Bonding Devices, of which the following is a specification.

My invention relates to electrical bonding devices, and the object of my invention is to provide a means for electrically bonding adjacent electrical conducting agents especially adapted for use in railway service, and so constructed and arranged that the bonding wires are positively held in contact with the rails; together with such other elements and combinations as are hereinafter set forth and claimed.

I accomplish these objects by means of the mechanism illustrated in the accompanying drawing, in which:

Figure 1 is an end elevation of a rail with my invention in place. Fig. 2 is a side elevation, with parts broken away, of a rail supplied with my invention. Fig. 3 is a side elevation of a rail showing my invention before it is securely placed in position. Fig. 4 is a side elevation of a rail showing a means for placing my invention in position in connection therewith. Fig. 5 is a cross section of a rail showing a means for placing my invention in position in connection therewith. Fig. 6 is an end elevation of the bonding plate chuck. Fig. 7 is a sectional view of the shell, M. Fig. 8 is a detail plan view of the bifurcated jaw, U.

Similar letters refer to similar parts throughout the several views.

In order to make a good electrical contact between adjoining rails, it has been the custom to connect the rails by means of electric wires which are inserted through holes bored for that purpose in the web of the rails. It takes considerable time and expense to thus connect the wires with the rails. The wires being loose between the rails are covered with the dirt and lie in the moist earth, and these wires are also injured frequently by men working on the road and people walking along the track.

I have produced a bond wire holder for holding the wires in contact with the rail, which grips both the wires and the rail in

such a manner that there can be no possibility of the wires becoming disengaged or loosened. By my invention I also provide for keeping the wires well out of the dirt and where they cannot be accidentally interfered with by those walking along the track.

My bond wire holder comprises a plate, A, which is provided along one edge with a cutting surface, B, the cutting surface, B, being rounded preferably as shown in Figs. 2 and 3. The edge of the plate, A, diagonally opposite, B, is formed with a similar cutting surface, C. The plate, A, is provided with openings, D, E, extending through the plate from one surface, *a*, of the plate, A, toward the medial line thereof and there enlarged to admit of the wires, F, F. The wires are placed through the openings, D, E, where they are gripped and held tightly in contact with the plate when the plate is pressed between the head and foot of the rail, as hereinafter described, the openings being partly closed by the force exerted on the ends of the plate. The plate, A, with the wires, F, F, are then placed in contact with the rail as shown in Fig. 3. I then rotate the plate, A, the cutting surfaces, B and C, thereof, during the rotation, cutting a channel along the under portion of the head, G, and in the foot, H, thereof. The portions, *b*, *c*, of the edges adjacent to the cutting surfaces, B and C, respectively, enter the said channels as the plate, A, is rotated to the position shown in Fig. 2, and the plate is held securely in connection with the rail.

For the purpose of rotating the plate, A, I preferably use a tool, K, provided with an arm, L, adapted to pass over the head, G, and engage the side, *g*, of the head opposite that occupied by the rest of the tool, K.

I provide a chuck comprising a shell, M, and a bifurcated jaw member, U, which is adapted to enter the shell, M, and which is provided at one end with a threaded portion, 10, passing through the plate, 11, at the end of the shell, M, upon which I place the wing nut, V. By operating the wing nut, V, I may thus draw the jaw member, U, into the shell, M, which will tend to cause the jaws, 12 and 13, to be forced toward each other, engaging as they do the sides of the shell, M, which sides approach each other as shown in Figs. 5 and 7. The jaw, 12, has a gripping lug, *m'*, and the jaw, 13,

has a gripping lug, m , which engage opposite lateral sides of the plate, A. The shell, M, is provided at its end with the shoulders, m^4 , m^4 , and the grooves, m^3 , m^3 . The 5 grooves, m^3 , prevent the wires, F, F, from being interfered with during the placing of the plate, A, in position.

The shell, M, is mounted in the sleeve, N, which is screwed into the plate, O, to which 10 plate, O, is hinged the arm, L. The plate, O, is provided with a flange, P, engaging the edge, h , of the foot, H, of the rail. The end of the shell, M, is squared at T, and the handle bar, S, is placed thereon by means of 15 which the shell and the jaw, U, are rotated, forcing the plate, A, in the position between the head and foot of the rail and thereby closing the openings, D, E, tightly upon the wires, F, F.

20 I do not limit myself to the use of the tool herein shown and described for the purpose of placing the plate, A, in position, because it can be done with a wrench or other similar instrument, although the tool described is a very complete and practical one 25 for the purpose.

What I claim as my invention and desire to secure by Letters Patent is:

30 1. A bond wire holder comprising a plate provided with openings therein for holding bonding wires; each end of said plate pro-

vided with a cutting edge throughout a portion of its extent; whereby said plate may be rotated between the under side of the head 35 of the rail and the upper side of the foot thereof, forming a channel in the under side of the head of the rail and in the top side of the foot, into which the ends of the plate will be forced.

2. A bond wire holder comprising a plate 40 provided with openings, extending from one edge toward the medial line thereof, for wires therein; said plate placed, when in operation, with its ends projecting into the head and foot of a rail; wires extending into 45 said openings in the plate.

3. An electrical bond, comprising two retaining plates provided with openings there- 50 through; wires placed in said openings respectively; adjacent rails; one of said plates between the head and the foot of each rail; a means on said plates for causing a channel to be cut in the head and foot of the rails when said plates are rotated, into 55 which channel the ends of the plates will project.

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

HIRAM C. WILLIAMS.

Witnesses:

LOTTIE PRIOR,

FREDERICK W. CAMERON.