W. H. FINLEY.

BOND COMPRESSOR.

APPLICATION FILED DEC. 14, 1907.

923,504. Patented June 1, 1909.

FIG. I.

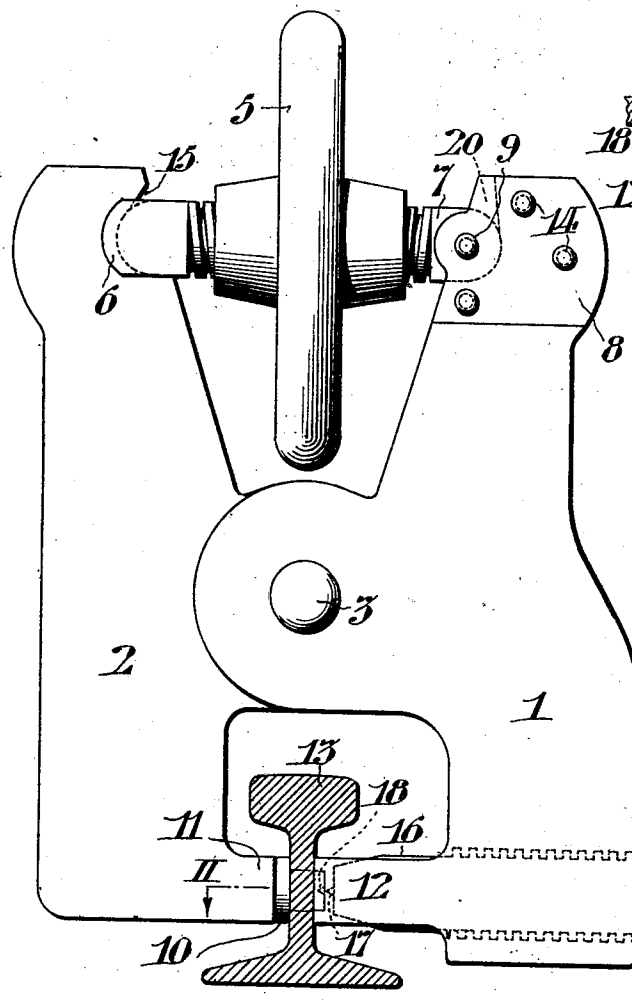
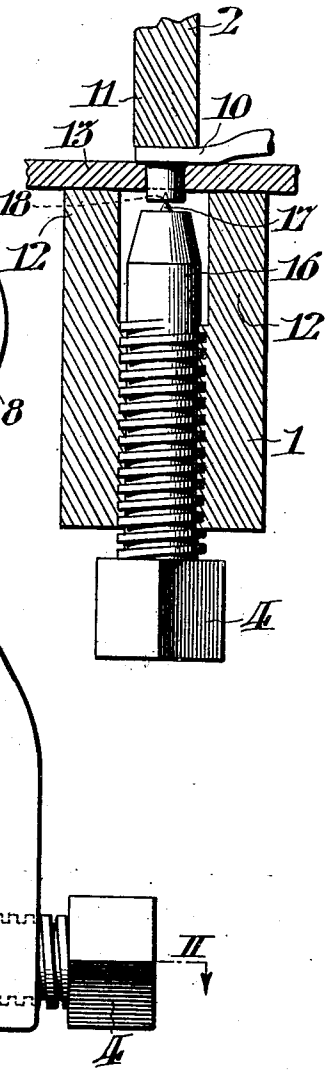


FIG. II.



WITNESSES:

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BOND-COMPRESSOR.

No. 923,504. Specification of Letters Patent. Patented June 1, 1909.

Application filed December 14, 1907. Serial No. 406,470.

To all whom it may concern:

Be it known that I, WALTER H. FINLEY, of Manring, in the county of Claiborne and State of Tennessee, have invented certain new and useful Improvements in Bond-Compressors, whereof the following is a specification, reference being had to the accompanying drawings.

My invention relates to bond compressors for use in compressing the terminals of rail bonds whereby efficient electrical and mechanical connection may be made with rails, girders or other structural shapes, for the purpose of making a continuous electrical connection through any number of sections of the same.

The object of my invention is to provide a tool which may be readily placed in position to seat and clamp a bond terminal against a portion of the rail or other structural shape to which the bond is to be attached, by means of a pair of pivoted members, and also allow said terminal to be visible while being manipulated. In its present embodiment I have shown one means for adjustably controlling the movement of said members, but it is obvious that other means may readily be employed without departing from the spirit and scope of my invention.

In the accompanying drawing, Figure I, is a side elevation of the bond compressor, and showing a bond terminal clamped in position on the web of a rail. Fig. II, is a horizontal section on the line II, II, of Fig. I.

In said figures the frame of the tool comprises two levers 1, and 2, which are hinged by means of the pin 3. The lower end of the lever 1, is provided on its inner side with two projecting lugs 12, 12, spaced apart sufficiently to straddle the projecting end of the bond terminal 10, and also allow the end 16, of the riveting screw 4, to pass between them. On the inner side of the lower end of the lever 2, is the projecting lug 11, which is adapted to engage the outer face of the terminal 10, to seat and clamp the bond firmly against the web of the rail 13.

To each side of the upper end of the lever 1, is secured a plate 8, by means of bolts or rivets 14, and the upper end of said lever is cut away as shown by the dotted lines, thus forming a recess 20, in which the flattened extremity of the screw 7, may swing about the pin 9, as a pivot. When in use the outer end of the screw 7, seats against the upper end of the lever 1.

As a means of adjustably controlling the levers 1, and 2, I have shown right and left hand screws 6, and 7, respectively, threaded into the hub of the hand wheel 5, the left hand end of the screw 6, being recessed and adapted to rest in a recess 15, formed in the upper end of the lever 2; the whole acting as a right and left screw coupling.

Through the lower end of the lever 1, is a threaded hole for the reception of the riveting screw 4. The end 16, of said screw is provided with a point 17, which is adapted to enter a corresponding cavity 18, in the inner face of the bond terminal 10, in order to locate said screw properly with relation to said terminal.

In operation the hand wheel 5, together with the screws 6, and 7, may be swung upwardly in order to allow the upper ends of the levers 1, and 2, to approach until the lugs 11, and 12, at the lower ends of said levers may be passed down over the head of the rail 13, to the position shown in Fig. I. The bond terminal 10, having been placed in the hole in the web of the rail 13, the tool is so placed that the lug 11, may bear against the outer face of the terminal 10, and the lugs 12, may straddle the inner end of said terminal and bear against the web of said rail in such a position that the point 17, of the screw 4, may enter the cavity 18, in the extremity of said terminal. The handwheel 5, and screws 6, and 7, are then turned downwardly and adjusted to assume the position shown in said figure. By turning the handwheel to force the upper ends of the levers 1, and 2, apart, the bond terminal is firmly seated and clamped in position in the rail. The end of the screw 4, by means of a wrench or any other suitable means, is then forced against the inner face of the terminal 10, to manipulate the latter to completely fill the hole in the web of the rail and also head this projecting end of the terminal against the face of the web to make an effective electrical and mechanical connection therebetween.

In previous constructions of bond compressors, it has been usual to employ the same compressive force to successively seat the bond terminal, clamp it to the object to

be bonded and complete the riveting operation. The objection to this form of construction is that the compressive force as finally exerted for the riveting may result in a dislodgment of the compressor by which the riveting is carried on while the bond terminal is not firmly seated, resulting in a faulty joint. It is of the utmost importance that the seating and clamping action of the compressor shall be complete and so maintained with great force during the entire riveting operation, which in my device is a wholly independent and separately operable part of the compressor, which is not put into operation until the seating and clamping operation has been completed. It is also important that the pressure which operates to hold the bond terminal in its seat during the riveting operation shall operate directly between the head of the bond terminal and the opposing face of the object to be bonded, the point of resistance being preferably placed against said opposing face as near as practicable to the aperture through which the stem of the bond pierces it. My device is adapted both to maintain the separateness of the seating and clamping means on the one hand from the riveting means, while at the same time so constructing the seating and clamping means that the pressure which they exert is direct and positive in maintaining the bond terminal in its seat during the subsequent riveting operation.

Although I have shown levers of the first class it should be understood that levers of the third class may be employed, and instead of the specific means employed for controlling said levers I may substitute any well known means, such as cams, levers or toggles.

As a result of the construction above set forth the following advantages will be apparent; First, the work is at all times visible to the operator thus enabling him to see that he is engaging the terminal properly, and also to see to what extent compression has been effected. Second, the lugs 11, and 12, are comparatively small in their dimensions thus enabling them to be applied to a large variety of structural shapes, and also avoid spike heads and be clear of the ties to which the rails may be secured. Third, ease and quickness of attachment and detachment.

It is a further distinct advantage of my construction that the seating and clamping mechanism is subject to a constantly adjustable pressure so that in performing the clamping operation allowance is made in the device for differences in the thickness of the head of the bond terminal, the wear of the parts, and the clamping operation made completely effective before the riveting operation takes place, which in practice is not begun until the seating and clamping means have performed their part.

Having thus described my invention, I claim:—

1. In a bond compressor, the combination of opposing members operating one upon the head of the bond terminal and the other upon the opposite face of the object to be bonded, and at points adjacent said terminal, means for moving said members toward and from each other, in substantially a right line whereby said terminal is firmly seated, said member operating upon the head of the bond terminal being constructed to engage and support the entire head against the riveting thrust, and an independently movable riveting member supported by one of said opposing members, and means between said riveting member and said supporting member, whereby said riveting member may be positively operated.

2. In a bond compressor, the combination of opposing pivoted levers operating the one upon the head of the bond terminal and the other upon the opposite face of the object to be bonded at points adjacent said terminal, a screw whereby the desired degree of compression may be applied to said opposing pivoted levers, and a riveting member carried by one of said opposing levers, and operating independently to perform the riveting operation.

3. In a bond compressor, the combination of opposing pivoted levers operating the one upon the head of the bond terminal and the other upon the opposite face of the object to be bonded; a screw whereby the desired degree of compression may be applied to said opposing pivoted levers; and a riveting screw received within one of said opposing levers and operating independently to perform the riveting operation.

4. A bond compressor, having in combination a pair of pivoted members; a lug on one of said members for forcing the head of a bond terminal against one face of a support; a pair of lugs on the other of said members adapted to receive the free end of the bond terminal therebetween and bear against the opposite face of said support; means for moving the ends of said pivoted members to firmly clamp the terminal head against the support; and means for compressing the free end of said terminal.

In testimony whereof, I have hereunto signed my name, at Manring, Tennessee, this 11th day of December, 1907.

WALTER H. FINLEY.

Witnesses:
M. H. McCORKLE,
C. H. TOWNSEND.