

C. H. OSLUND.  
RAIL BOND COMPRESSOR.  
APPLICATION FILED MAR. 27, 1909.

Patented Nov. 12, 1912.

2 SHEETS—SHEET 1.

1,043,967.

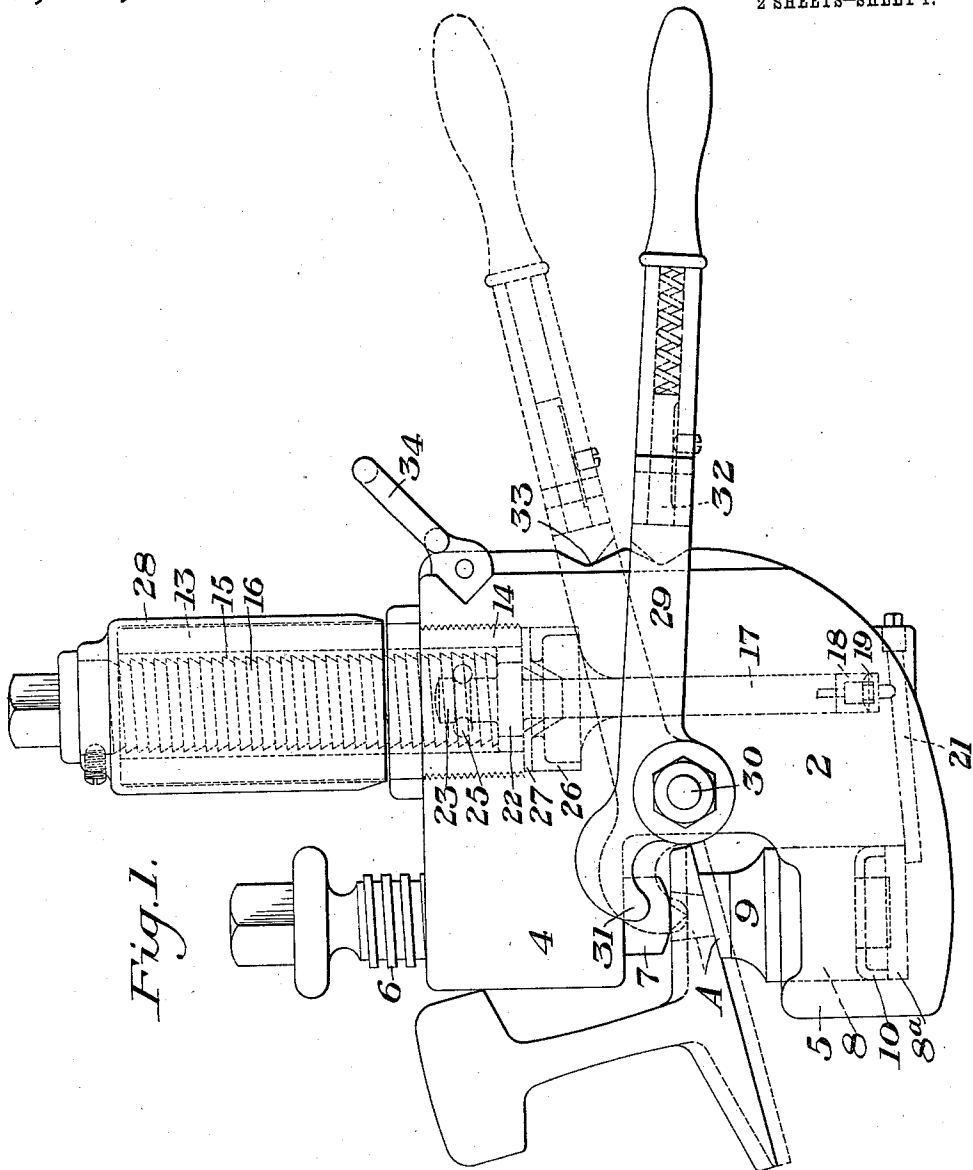


Fig. 1.

WITNESSES

*R. H. Balderson*  
*G. L. Winters*

INVENTOR

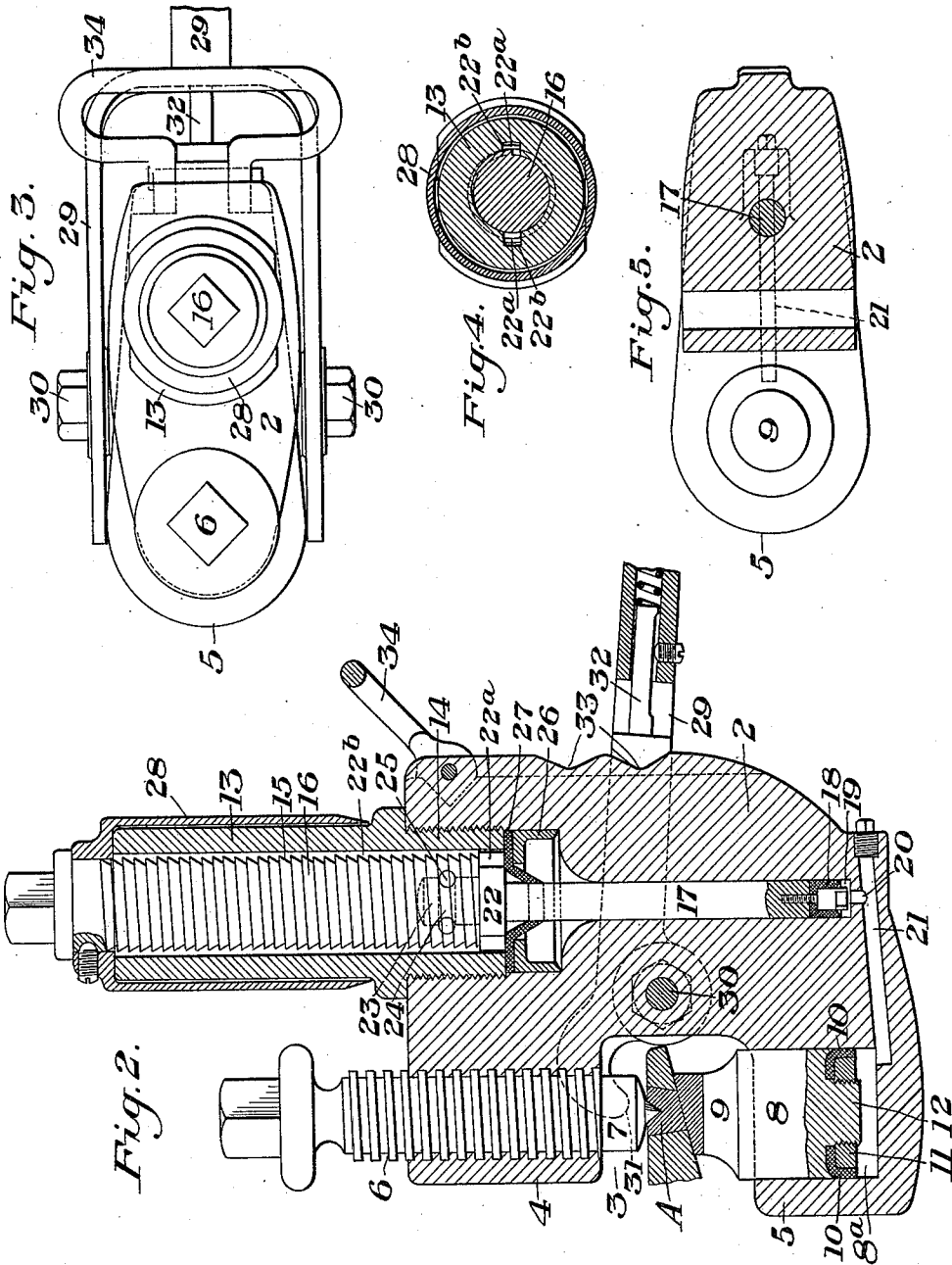
*Chas. H. Oslund*  
*By Baker, Byrnes & Parmelee,*  
*his Attys.*

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# UNITED STATES PATENT OFFICE.

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## RAIL-BOND COMPRESSOR.

1,043,967.

Specification of Letters Patent.

Patented Nov. 12, 1912.

Application filed March 27, 1909. Serial No. 483,231.

*To all whom it may concern:*

Be it known that I, CHARLES H. OSLUND, of Worcester, Worcester county, Massachusetts, have invented a new and useful Rail-Bond Compressor, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view showing the preferred embodiment of my invention; Fig. 2 is a vertical section of the same; Fig. 3 is a top plan view; Fig. 4 is a detail sectional view; and Fig. 5 is a horizontal section taken just above the top of the anvil.

My invention has relation to the class of rail bond compressors, and is designed to provide a simple, strong and effective compressor by means of which the projecting stud terminals of an electric rail bond may be compressed in the holes of the rail in order to insure perfect electric contact between the terminals and the rail.

My invention provides a portable device of this character which can be readily applied to the work, and which is peculiarly effective in its operation as compared with the devices for this purpose heretofore in use.

The nature of my invention will be best understood by reference to the accompanying drawings, in which I have illustrated the preferred embodiment thereof, and which will now be described, it being premised, however, that various changes may be made in the details of construction and arrangement of the parts without departing from the spirit and scope of my invention as defined in the appended claims.

In these drawings, the numeral 2 designates the frame of the device, which preferably consists of an integral steel forging, although it may be cast or otherwise formed. This frame is formed at one side with the recess or opening 3 between an upper jaw portion 4 and a lower jaw portion 5 forming a horizontally extending throat. Seated in the upper jaw portion 4 is a screw 6, preferably of tool steel, and having a lower projecting end portion 7 acting as a die for contact with the upper end of the terminal stud A to be compressed. The lower jaw portion 5 is formed with a piston chamber 8<sup>a</sup>, whose vertical axis is substantially in

line with the vertical axis of the screw 6, and in which is seated a piston 8 having an upwardly projecting anvil portion 9. The lower end of the piston is provided with a cup packing 10, which is shown as secured in place by a nut 11 screwed on the threaded shank or stud portion 12 of the piston.

13 is a sleeve which has a lower threaded end portion 14 screwed in a threaded opening in the upper portion of the frame 2 to one side of the screw 6, and which is provided with an interior thread for engagement with the threads 15 of a screw 16.

17 is a piston rod which extends downwardly through an opening in the frame 2, and has a piston head 18 at its lower end working in a small chamber 19 which communicates by a port 20 with a port 21 leading into the piston chamber 8<sup>a</sup>. The upper end of the rod 17 carries a head 22 within the lower portion of the sleeve 13, with an extension 23 above said head extending upwardly into said screw and having an annular groove 24 which is engaged by the pins 25, constituting a rotary connection between the piston rod and the screw. The head 22 is provided with the lugs or projections 22<sup>a</sup>, which engage vertical grooves 22<sup>b</sup> on the interior of the sleeve 13, in the manner shown in Figs. 2 and 4, thereby preventing rotation of the piston rod 17 and wear and injury to its packings.

26 is a cup, which is seated below the lower end of the screw 13, and is provided with a packing 27.

28 is a protecting sleeve which is fitted loosely over the upper end of the screw 13.

29 is a forked lever, which embraces the frame 2 and is pivoted thereto at opposite sides at 30. This lever has hook-shaped forward ends 31, which are designed to be pressed against the rail flange in the manner shown in dotted lines in Fig. 1, the handle portion of the lever having a spring latch or catch 32 designed to engage with one of a plurality of notches or depressions 33 in the rear side of the frame 2.

34 is a handle which is pivotally connected to the frame. The upper ends of the screws 6 and 13 are provided with wrench seats, as shown, for engagement with suitable wrench levers, by means of which the screws are actuated. The screw 6 is not turned when doing the work, but before ap-

plying the pressure, it is brought up against the terminal in the manner shown in Figs. 1 and 2. The pressure is obtained by turning the screw 13, which forces the liquid  
5 contained in the port 21 and chamber 7 against the piston 8, whereby powerful pressure may be obtained.

The device described is comparatively light; can be readily handled; is strong and  
10 durable; and has been found to be extremely effective in its operation.

The screw 6 is an important feature of the device. The provision of this screw enables the piston 8 to make the same length of  
15 stroke, no matter what may be the length of the bond terminal; that is to say, said piston will travel the same distance with a terminal one-half inch in length and with a terminal one inch in length. When the com-  
20 pressor is put on a rail for operation, this screw is screwed down on the end of the bond terminal, thereby supporting the compressor so that it will remain in the proper position for the application of the hydraulic  
25 power. A further advantage of this screw is, that when it is screwed down tightly on the bond terminal, the tool begins to compress the moment power is applied, there being no lost motion.

I preferably make the upper portion of the chamber in which the piston rod 17 works of flaring or funnel form, as illustrated in Fig. 2. The purpose of this is that,  
30 when said rod is withdrawn, after compression if any leakage has occurred, the liquid will always flow back into the chamber or cylinder. In this manner the passage 21 is  
35 always kept filled, and a substantially uniform pressure is always obtained.

It will be obvious that various changes can be made in the construction and arrangement without departing from the spirit and scope of the invention. Thus, the removable  
40 hydraulic element of the compressor may be arranged above the work and the relatively fixed screw be placed below; and various  
45 other changes may be made.

What I claim is:—

1. A rail bond compressor, comprising a frame having an opening or recess at one  
50 side between two opposing jaw portions, a screw seated in one of said jaw portions and arranged to engage one end of the bond terminal, a piston seated in the opposing  
55 jaw portion and carrying an opposing die member, a liquid chamber for the piston, a second piston for forcing the liquid into said chamber, and a screw for actuating the last  
named piston, together with a clamping lever pivoted to said frame; substantially as  
60 described.

2. In a rail bond compressor, a die-carrying piston, a fluid-containing chamber in which the piston works, a second piston  
65 chamber connected with the first named chamber, a piston rod having a piston working in the second chamber, and an actuating screw for the piston rod, the screw having a  
loose connection with the piston rod, and means for preventing the piston rod from  
70 rotating; substantially as described.

3. A rail bond compressor, having a frame formed with jaws to embrace a portion of a  
75 track rail, compressor tools mounted in said jaws, a lever pivoted to the frame and having a member arranged to engage the rail, and another member provided with a latch  
arranged to engage the frame; substantially as described.

4. A rail bond compressor, having a frame  
80 formed with jaws to embrace a portion of a track rail, compressor tools mounted in said jaws, and a forked lever pivoted to and embracing the said frame, said lever having  
85 arms arranged to engage the rail, and a latch carried by the lever and arranged to engage the frame to lock the lever in different positions; substantially as described.

In testimony whereof, I have hereunto set my hand.

CHARLES H. OSLUND.

Witnesses:

A. J. WESTLING,  
A. L. MUIR.