Aug. 18, 1931. H. C. CLAUSEN 1,818,970

TRACK RAIL CONTACTOR

Filed Jan. 23. 1931

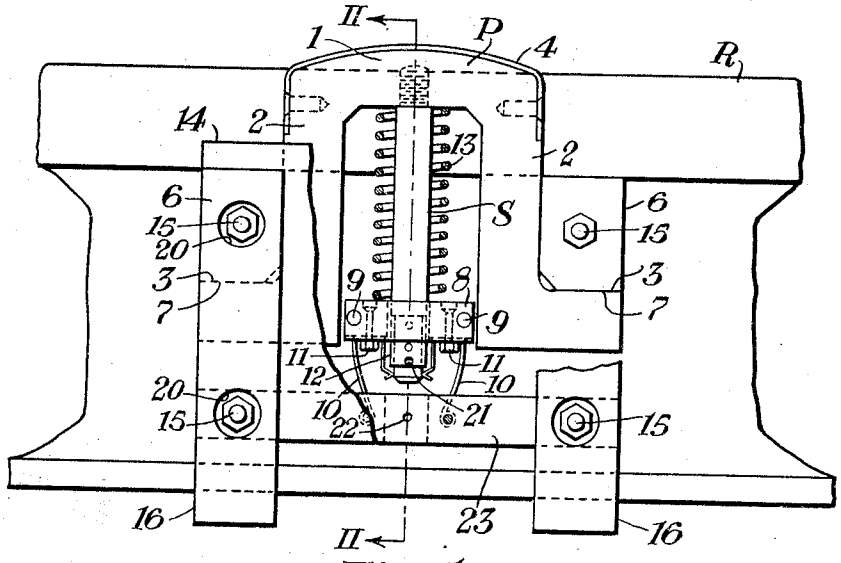

Fig. 1.

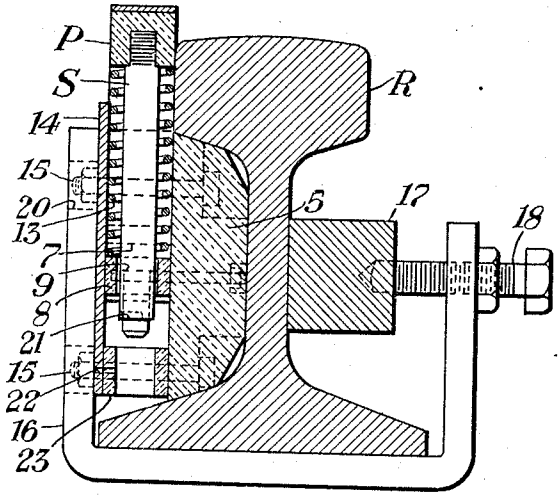

Fig. 2.

INVENTOR:
H. C. Clausen,
BY A. R. Vennill
His ATTORNEY.

Patented Aug. 18, 1931 1,818,970

UNITED STATES PATENT OFFICE

HAROLD C. CLAUSEN, OF SWISSVALE, PENNSYLVANIA, ASSIGNOR TO THE UNION SWITCH & SIGNAL COMPANY, OF SWISSVALE, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

TRACK RAIL CONTACTOR

Application filed January 23, 1931. Serial No. 510,675.

My invention relates to track rail contactors, and has for an object the provision of a novel and improved contact device which may be mounted on a track rail for operation by the wheels of a passing car.

I will describe one form of contactor embodying my invention, and will then point out the novel features thereof in claims.

In the accompanying drawings, Fig. 1 is a view showing inside elevation, with parts broken away, one form of contactor embodying my invention. Fig. 2 is a sectional view on the line II—II of Fig. 1.

Similar reference characters refer to similar parts in each of the views.

Referring to the drawings, the reference character R designates one track rail of a railway track. Mounted on one side of the web of this rail is a block 5 provided with two spaced vertical outer guide members 6, the lower ends of which constitute stops or abutments 7 for limiting the upward movement of a plunger, as hereinafter explained. Also attached to the block 5, between the two guide members 6, is a middle guide member 8, the attachment being accomplished by bolts 9. An inverted U-shaped plunger P is mounted to slide vertically on the outer surface of the block 5, with each leg 2 located between the middle guide member 8 and one of the outer guide members 6. The lower end of each leg 2 is provided with an outwardly extending foot 3, which, when the plunger is in its uppermost position, engages with the abutment 7 on the associated guide member 6. The upper surface of the plunger P is provided with a replaceable wearing plate 4.

The plunger P is biased to its uppermost position by a spring 13 which coacts with the upper surface of the guide member 8, and with the lower or inside surface of the cross bar 1 of the plunger. When the plunger is in its uppermost position, that is, when the feet 3 are in engagement with the abutments 7, the upper surface of the plunger P is in such position that it will be engaged by each wheel of a passing car, and so will be moved downwardly against the biasing action of the spring 13.

A stem S is threaded into the cross bar 1 of the plunger P and extends downwardly through an opening in the middle guide member 8, this opening being large enough to allow the stem to pass through without friction. The stem S is of insulating material, and its lower end is provided with a band 12 of conducting material, which band coacts with two contact members 10 attached to the lower side of guide member 8 by means of bolts 11. As shown in the drawings, when the plunger is in its normal position, the contact 10—12—10 is open, and this contact becomes closed when the plunger is depressed by a car wheel. The contact might as well be arranged to be closed when the plunger is in normal position, and opened when the plunger is depressed.

A plate 14 covers the operating parts thus far described, and this plate, together with the guide members 6, is attached to the block 5 by means of bolts 15. The clearances are such that the plunger P may move freely between the plate 14 and the block 5. It will be seen from the foregoing, that the parts thus far referred to, constitute a unitary structure which may be applied to the track rail at any desired point.

To attach the contactor to the track rail, I preferably provide two U-shaped members 16, one leg of each of which members is provided with holes 20 large enough to receive the heads of the bolts 15. The other leg of each member 16 extends upwardly on the other side of the rail and is clamped to a block 17 by means of a bolt 18, the block 17 resting against the web of the rail on the side opposite to the contactor. It follows that the contactor may be securely clamped to the track rail at any desired point, and may be removed and applied by merely releasing and tightening the bolt 18.

The contact may be applied to either side of a track rail. When it is located on one side it will be operated by the tread of the wheel, whereas when it is located on the other side, it will be operated by the wheel flange, and, consequently, it is necessary to vary the normal height of the plunger ac-

cording as it is used on one side or the other of the rail.

When it is desired to hold the contactor in its depressed position, a pin may be inserted through a hole 21 in the lower end of the stem S and a hole 22 passing through a block 23 which is located between the plate 14 and the block 5, and which is apertured to receive the lower end of the stem.

A contactor embodying my invention is rugged in construction and is protected from weather conditions. Furthermore, the plunger is accurately guided, and provides for an even steady motion of the contact stem, thereby assuring accurate operation under all conditions. Another advantage of a contactor constructed in accordance with my invention, is that the device is rigidly attached to the track rail and cannot creep under the influence of passing cars.

Although I have herein shown and described only one form of contactor embodying my invention, it is understood that various changes and modifications may be made therein within the scope of the appended claims without departing from the spirit and scope of my invention.

Having thus described my invention, what I claim is:

1. A track rail contactor comprising a block attached to the side of a rail and provided with two spaced vertical outer guide members, an apertured middle guide member fixed to said block between said vertical guide members, an inverted U-shaped plunger each leg of which is provided with an outwardly projecting foot, and each of which legs is movable between said middle guide member and one of said outer guide members, a spring interposed between said middle guide member and the cross bar of said plunger to bias the plunger upwardly to such position that the two feet engage the lower ends of said two outer guide members, from which position the plunger will be moved vertically downward by each wheel of a passing car, a stem attached to the cross bar of said plunger and projecting downwardly through the aperture in said middle guide member, and a contact operated by said stem.

2. A track rail contactor comprising a block attached to the side of a rail and provided with two spaced vertical outer guide members, an apertured middle guide member fixed to said block between said vertical guide members, an inverted U-shaped plunger each leg of which is provided with an outwardly projecting foot, and each of which legs is movable between said middle guide member and one of said outer guide members, a spring interposed between said middle guide member and the cross bar of said plunger to bias the plunger upwardly to such position that the two feet engage the lower ends of said two outer guide members, from which position the plunger will be moved vertically downward by each wheel of a passing car, a stem attached to the cross bar of said plunger and projecting downwardly through the aperture in said middle guide members, and two cooperating contact members one of which is fixed to said middle guide member and the other of which is fixed to said stem.

3. A track rail contactor comprising a block attached to the side of a rail and provided with two spaced vertical outer guide members, a middle guide member fixed to said block between said outer members, an inverted U-shaped plunger each leg of which is provided with an outwardly projecting foot, and each of which legs is movable between said middle guide member and one of said outer guide members, means for biasing said plunger upwardly to such position that the two feet engage the lower ends of said outer guide members from which position the plunger will be moved vertically downward by each wheel of a passing car, and a contact operated by said plunger.

4. A track rail contactor comprising a block attached to the side of a rail and provided with two spaced vertical outer guide members, a middle guide member fixed to said block between said outer members, an inverted U-shaped plunger each leg of which is provided with an outwardly projecting foot, and each of which legs is movable between said middle guide member and one of said outer guide members, a spring interposed between said middle guide member and the cross bar of said plunger to bias the plunger upwardly to such position that the two feet engage the lower ends of said outer guide members from which position the plunger will be moved vertically downward by each wheel of a passing car, and a contact operated by said plunger.

In testimony whereof I affix my signature.

HAROLD C. CLAUSEN.