April 5, 1927. 1,623,115

K. S. HENSLEY

ELECTRICALLY CONTROLLED CUT-OUT

Filed Jan. 27, 1926

Fig. 1.

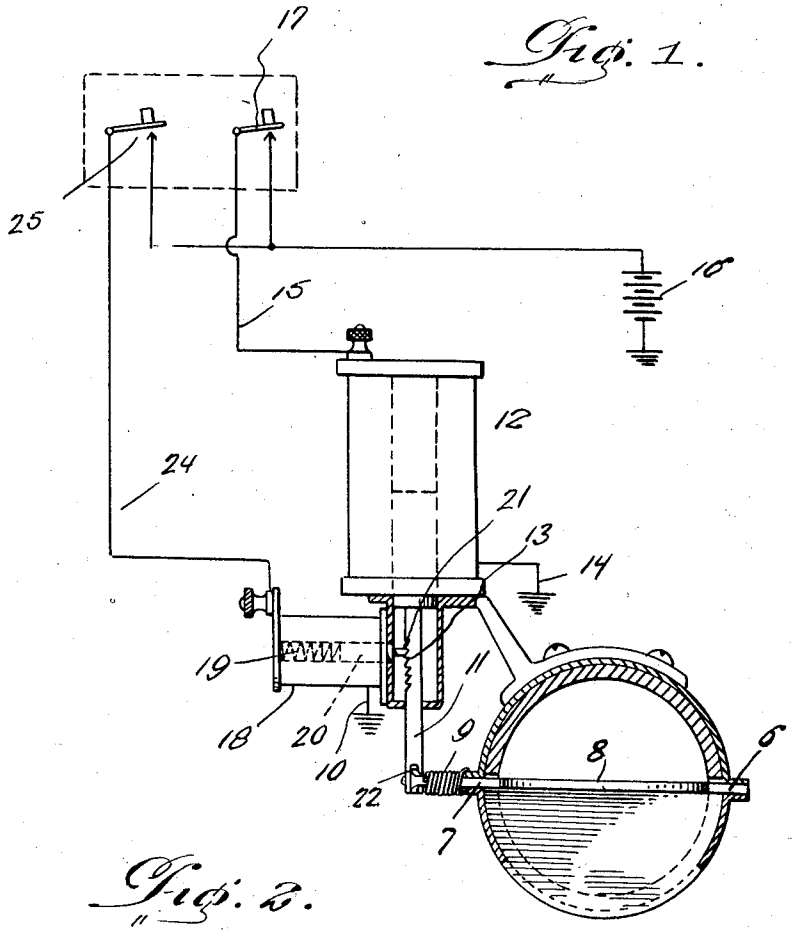
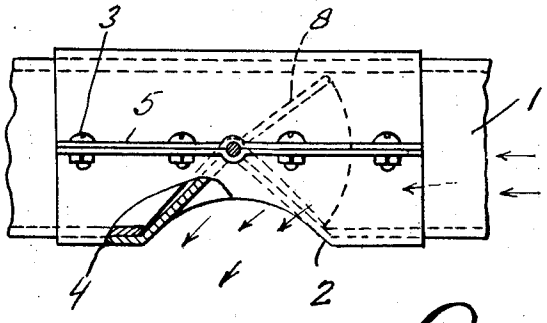


Fig. 2.



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Patented Apr. 5, 1927. 1,623,115

UNITED STATES PATENT OFFICE.

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ELECTRICALLY-CONTROLLED CUT-OUT.

Application filed January 27, 1926. Serial No. 84,141.

My present invention has to do with the control or operation of cut outs, and contemplates the provision of a simple, reliably operating and durable electrically controlled cut out.

Other objects and practical advantages of the invention will be fully understood from the following description and claims when the same are read in connection with the drawings, accompanying and forming part of this specification, in which:—

Figure 1 is a view diagrammatic in character, illustrating the best practical embodiment of my invention of which I am aware.

Figure 2 is a detail view taken at right angles to Figure 1 and showing the arrangement of the cut out or valve member relative to the conduit.

Similar numerals of reference designate corresponding parts in both views of the drawings.

In the preferred embodiment of my invention a conduit 1 is provided with a lateral opening 2, and on and about the apertured portion of the conduit 1 is secured by bolts 3 or other appropriate means a tubular jacket 4 having a lateral opening in coincidence with the opening 2 and also having the bolt receiving flanges 5. Journaled in the flanged portion of the jacket 4 are the trunnions 6 and 7 of the swinging cut out or valve 8. The trunnion 7 is comparatively long so as to permit of the coiling about the same of a torsion spring 9 arranged and connected to yieldingly maintain the valve 8 in the closed position shown by full lines in Figure 1 and to assist in returning the said valve 8 to said position. The cut out trunnion 7 is also provided with a crank arm 10, and to the said arm 10 is pivotally connected the armature bar 11 of a solenoid 12, the said armature bar 11 being toothed as designated by 13. The winding of the solenoid 12 is grounded at 14 and is connected through a conductor 15 with one side of a source of electric energy 16, the conductor 15 including at an intermediate point in its length an appropriate switch 17. It will be manifest from the foregoing that when the switch 17 is closed to complete the circuit including the winding of the solenoid 12, the said solenoid will be energized and the bar 11 will be drawn upwardly to open the valve 8 against the action of the spring 9. The switch 17 is preferably of such type that it will remain closed only while one of its members is subjected to pressure, and therefore, I provide an auxiliary solenoid 18 for retaining the cut out valve 8 in the position to which it is moved through the medium of the solenoid 12. The armature of the solenoid 18 is preferably spring-pressed as designated by 19, and the said armature, which is designated 20 is provided with a beveled clutch 21 arranged in opposed relation to the toothed portion of the armature bar 11 complementary to the solenoid 12. The winding of the auxiliary solenoid 18 is grounded at 22, and is connected by a conductor 24 with the same side of the source of energy 16 as the conductor 15. In the conductor 24 is a switch or circuit closer 25 which by preference is similar in type to the switch or circuit closer 17. With the equipment indicated, it will be understood that when the bar 11 is retracted by energization of the solenoid 12 for the purpose described, the latch 21 complementary to the solenoid 18 will, by engaging the teeth of the bar 11, prevent casual retrograde movement of the said bar 11. As a result of this, the valve 8 will be retained in the open position to which it is moved by energization of the solenoid 12 until the switch 25 is closed for the energization of the solenoid 18. When, however, said solenoid 18 is energized, the armature 20 and the latch 21 will be retracted and the bar 11 being released, it follows that the valve 8 will be free to return to its normal closed position under the action of the spring 9, which spring 9, as before indicated, will operate to yieldingly maintain the valve 8 in normal position.

It will be apparent from the foregoing that in the open position of the valve 8 products may be discharged through the lateral orifice 2 after the manner indicated by arrows in Figure 2.

Notwithstanding the facility with which the valve 8 may be controlled through the medium of my improvement, it will be appreciated that the improvement is simple and inexpensive in construction, is compact as is desirable, and is reliable in operation and well adapted to withstand the usage to which installations of corresponding character are ordinarily subjected.

I have deemed it proper to illustrate the construction and relative arrangement of all of the parts of my improvement and to de-

scribe said parts in detail with a view to imparting a full, clear and exact understanding of the said embodiment. I do not desire, however, to be understood as confining myself to the precise construction and relative arrangement of parts as disclosed, my invention being defined by my appended claims within the scope of which changes in structure and changes in arrangement may be made without departure from my invention.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:—

1. In an electrically controlled cut out and in combination, a conduit having a lateral orifice, a jacket secured about said conduit and having a lateral orifice and also having side flanges connected together, a cut out valve located in the conduit and having trunnions journaled in bearings between the flanges of the jacket, one of said trunnions being comparatively long and provided with a crank arm, a torsional spring mounted about said comparatively long trunnion and arranged and connected to return the valve to and maintain the valve in one position yieldingly, a solenoid, a bar connected to the armature of the solenoid and also connected to said arm on the valve trunnion and having teeth, an auxiliary solenoid having on its armature a latch for cooperation with the teeth of said bar, a source of electric energy, and normally open circuits comprising the said solenoids and the said source of energy and also comprising normal open switches.

2. In an electrically controlled cut out, a conduit, a flanged jacket about the same, said conduit and jacket having coincident lateral openings, a cut out valve in the conduit and having trunnions journaled between the flanges of the jacket, one of said trunnions being comparatively long, a torsion spring about said trunnion, a crank on the said trunnion, electro-mechanical means having an armature and also having a toothed bar on said armature and connected with said crank, an auxiliary electro-mechanical means having an armature and a latch on the armature for cooperation with the teeth of said bar, a source of electric energy, and normally open circuits including the source of energy and the electro-mechanical means and also including switches.

In testimony whereof I affix my signature.

KELLIS S. HENSLEY.