

G. D. YOUNG.
 ACTUATING DEVICE FOR CIRCUIT CLOSERS.
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1,043,655.

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Fig. 1.

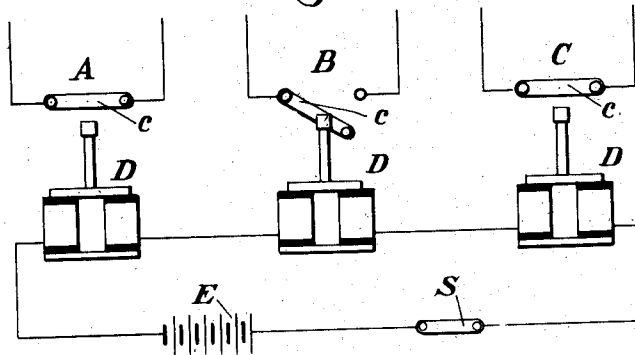


Fig. 2.

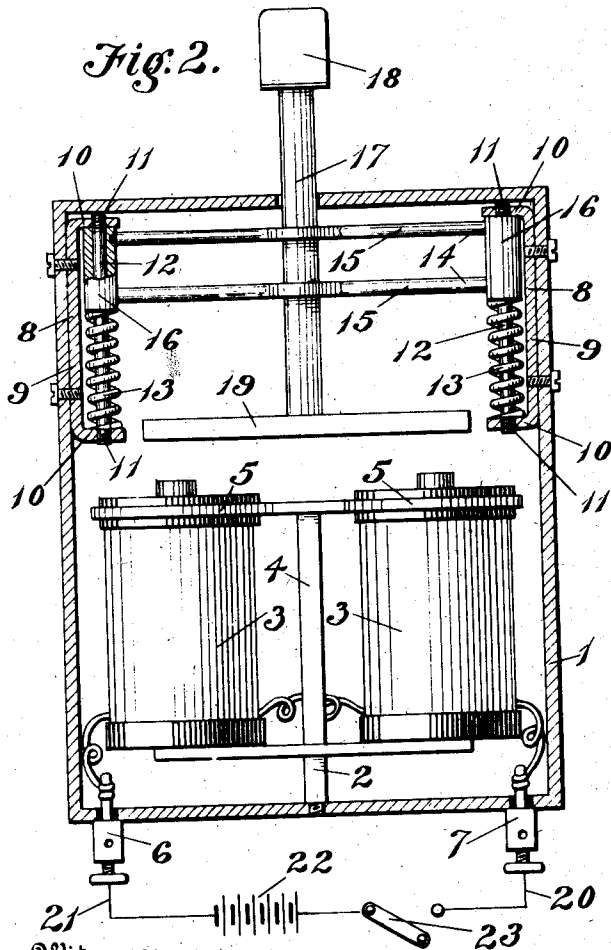
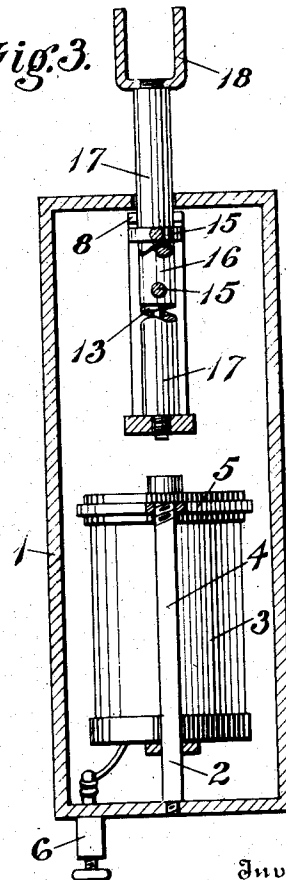


Fig. 3.



Witnesses

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ACTUATING DEVICE FOR CIRCUIT-CLOSERS.

1,043,655.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE D. YOUNG, a citizen of the United States of America, residing at Hereford, in the county of Deaf Smith and State of Texas, have invented new and useful Improvements in Actuating Devices for Circuit-Closers, of which the following is a specification.

This invention relates to actuating devices for the circuit closers of telegraph instruments.

In carrying out the present invention, it is my purpose to provide an actuating device whereby the circuit closers of telegraph instruments may be operated to circuit closing position in the event of such closers being left open by the operator in charge of the instrument.

Furthermore, I aim to provide a device of this type whereby an open circuit of a telegraph or the like instrument may be closed from a remote point in the event that such circuit is open and it is desired to energize the same.

It is also my purpose to provide a system of actuating devices so constructed and arranged that the circuits of any one or all of a plurality of telegraph instruments may be closed from a remote point, such as a wire chief's office, should any one or all of such circuits be left open inadvertently such as would occur from the vibration of a train in proximity to the instruments or the carelessness of an operator.

The invention also involves an actuating device normally maintained inactive with respect to the circuit closer of the telegraph line by a normally closed circuit and designed to actuate such circuit closer to circuit closing position upon the opening of such normally closed circuit.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter set forth in and falling within the scope of the appended claims.

In the accompanying drawing there has been illustrated one preferred embodiment of my invention and in this drawing; Figure 1 is a diagrammatic view illustrating one application of the present invention. Fig. 2 is a view in elevation partly in section of an actuating device constructed in accordance with the present invention. Fig. 3 is a central vertical sectional view taken at right angles to Fig. 2.

Similar reference characters designate like parts throughout the several views.

Referring now to the accompanying drawing in detail, and particularly to Figs. 2 and 3, my improved actuating device for circuit closers, in the present instance, includes a casing 1 constructed of brass, wood or other suitable material and preferably of rectangular outline. Fixed to the lower portion of the casing 1 is a support 2 preferably of T-shape and supported upon the opposite arms of the head of such support are electromagnets 3, 3. Located centrally of the magnets 3, 3 and suitably fastened to the head of the support 2 is a block 4 equipped at its upper extremity with oppositely disposed rings 5, 5 adapted to receive the magnets 3, 3 and hold the same securely upon the support 2. In the present embodiment of my invention, I have shown two magnets and these magnets are connected in series and one wire of the coils of such magnets is connected to a binding post 6 upon the exterior of the bottom of the casing 1, while the other wire of such magnets is connected to a binding post 7 upon the bottom wall of the casing 1, such binding posts 6 and 7 forming the terminals of the energizing circuit for the magnets.

Bolted or otherwise secured to opposite sides of the casing 1 and interiorly thereof, are supports 8, 8 each of which comprises, in this instance, an attaching member 9 by means of which the respective supports may be secured to the casing and from which project the right angular spaced parallel flanges 10, 10 provided with alining threaded openings 11, 11. Threaded into the openings 11, 11 of the flanges of each support is a guide rod 12, and encircling the guide rod is a coiled expansion spring 13.

Slidably mounted upon the guide rods 12 above the upper extremities of the springs 13 is a cross head 14 composed preferably of the spaced parallel members 15, 15 connected to each other at their opposite extremities by means of integral collars 16, 16, which collars receive the rods 12, the springs 13 acting upon the cross head 14 to normally hold the same at its limit of movement in one direction upon the rod 12. Fixed to the cross head preferably centrally of its length and movable with such cross head, is a rod 17 provided with a forked end 18 exteriorly of the casing 1 and carrying at its opposite end an armature 19

disposed within the influence of the magnets 3, 3 and whereby the cross head 14 is drawn inwardly of the casing 1 and against the action of the springs 13, 13 when the magnets 3, 3 are energized, the deenergization of the magnets permitting the springs 13, 13 to act upon the cross head 14 and force the forked end 18 of the rod 17 away from the casing 1. In Fig. 2, the magnets 3, 3 are shown connected in series with an energizing or operating circuit composed of the conductors 20, 21 connected to the binding posts 7 and 6 respectively, a source of energy such as a battery 22, and a switch 23, the switch being shown in its open position. In this position of the switch, the magnets are deenergized, thereby permitting the springs 13 to influence the cross head 14 as aforesaid. Upon actuating the switch 23 to circuit closing position, the magnets 3, 3 will be energized thereby attracting the armature 19 and actuating the cross head 14 against the action of the springs 13 to draw the forked end 18 of the rod 17 toward the casing 1.

In the diagram shown in Fig. 1, I have illustrated one mode of utilizing my present invention. In this instance, A, B and C represent the circuits of telegraph instruments respectively, and *c* the circuit closers of such circuits. Located adjacent to the circuit closers *c* of each telegraph instrument circuit, is one of my improved actuating devices indicated at D, and these actuating devices are connected up in series with each other and with a source of energy E, such as a battery or the like, a switch S being also arranged in the circuit to open and close the same, such switch being arranged in a wire chief's office or the office of a like authority having charge of the telegraph lines. For the purpose of illustration, the circuit closer *c* of circuit B is shown in open position, and owing to the proximity of the actuating device D of such circuit, rests within the forked end 18 of the rod 17. In view of the line being open, it would be impossible to energize this particular circuit. But by opening the switch S, the armature 19 of the actuating device will be released thereby permitting the springs 13 of such device to actuate the cross head 14 and consequently the forked end 18 of the rod 17 whereby the circuit closer of the open circuit will be moved to circuit closing position, all of the actuating devices operating simultaneously upon the opening of the switch owing to the same being connected in series, as will be readily understood.

From the foregoing description taken in connection with the accompanying drawing, it will be seen that I have provided an actuating device by means of which the circuit of a telegraph instrument may be closed from a remote point, in the event of such circuit closer being left inadvertently open or being accidentally opened. Furthermore, it will be seen that I have provided a system whereby any one or all of the circuit closers may be closed from a remote point.

In the accompanying drawing, I have shown my invention as applied to a telegraph circuit. It is to be understood, however, that the invention is equally applicable to telephone lines, and to other circuits where circuit closers are employed, and while I have herein shown and described one particular form of my invention by way of illustration, I desire to have it understood that I do not limit myself to all of the details of construction herein described and delineated, as modification and variation may be made without exceeding the scope of the claims or departing from the spirit of the invention.

I claim:

1. An actuating device for circuit closers, comprising a casing, a plurality of magnets within the casing, a cross head within the casing and slidable therein, an armature associated with the cross head and disposed within the influence of said magnets, means carried by the cross head and adapted to engage the circuit closers, means for energizing the magnets to render the first means inactive with respect to the circuit closers, and means for actuating the first means upon the deenergization of said magnets to actuate the circuit closer.

2. An actuating device for circuit closers comprising a casing, a magnet within the casing, a cross head within the casing and slidable therein, an armature connected to the cross head and disposed within the influence of said magnet, means carried by the cross head and adapted to engage the circuit closer, means for energizing the magnet to render the first means inactive with respect to the circuit closer, and springs for actuating the first means upon the deenergization of said magnet to actuate the circuit closer.

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

GEORGE D. YOUNG.

Witnesses:

B. M. HESTER,
J. B. HESTER.