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H. P. CHANDLER

CONNECTING DEVICE

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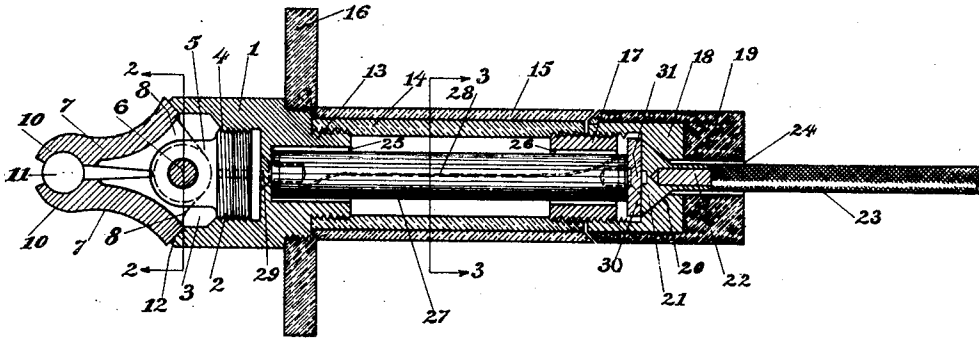


Fig. 1

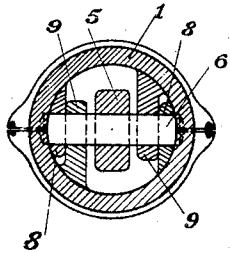


Fig. 2

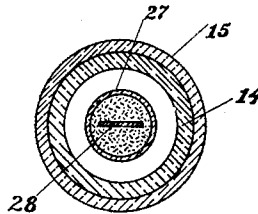


Fig. 3

Inventor

Homer P. Chandler

Attorney

# UNITED STATES PATENT OFFICE.

HOMER P. CHANDLER, OF MANSFIELD, OHIO, ASSIGNOR TO THE OHIO BRASS COMPANY, OF MANSFIELD, OHIO, A CORPORATION OF NEW JERSEY.

## CONNECTING DEVICE.

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My invention relates to connecting devices and particularly that class of device for making temporary electrical connections to a conductor.

5 The object is to provide a means which is easy and quick in manipulation and which will make an electrical connection with a feeder conductor and with a fuse or other protecting device interposed.

10 My invention resides in the new and novel construction, combination and relation of the various parts fully described herein and disclosed in the accompanying drawing.

In the drawing:

15 Fig. 1 is a longitudinal sectional view of my invention.

Fig. 2 is a sectional view on the line 2—2 of Fig. 1.

20 Fig. 3 is a sectional view on the line 3—3 of Fig. 1.

In the preferred embodiment of my invention I employ a body member 1 which is provided with an internally threaded recess 2 and a larger recess 3. Mounted in the threaded recess 2 is a threaded boss 4 provided with a depending lug 5 provided with a transverse opening to receive a pintle 6. Mounted upon the pintle 6 are two jaws 7 and each jaw is provided with lugs 8 and 9, as better shown in Fig. 2, by means of which the jaws 7 are pivotally mounted upon the pintle 6. The jaws 7 are also provided with oppositely disposed grooves 10 to receive the feeder conductor 11, which may be a plain conductor or may be a trolley wire which is used not only as a conductor, but as a source of current supply to a moving vehicle.

The body member 1 is provided with an annular face 12 which engages the jaws 7 and as the jaws and body member are moved relatively toward each other the extreme end of the jaws 7 will be moved toward each other and into engagement with the conductor and when the jaws and body member are moved away from each other then the jaws will be left free to release their grip upon the conductor. The relative movement of the jaws 7 and body member 1 is brought about through the connection between the body member 1 and the boss 4 as it will be evident that the rotation of the body member 1 in either direction will move the boss 4 either inwardly or outwardly with respect to the body member 1, and this in turn will

move the jaws 7 toward or away from the body member 1.

Projecting from the body member 1 is an externally threaded flange 13 to which is threadably secured an insulating tube 14 which I prefer to form of what is known as vulcanized fiber, that is, a tube formed of paper and treated to produce a hard, tense material, and which I find is not easily affected by an electric arc. This material, however, is not as water proof as I would like, therefore, I surround the same with a tube 15 composed of fibrous material treated with a phenolic resin. The outer tube will be highly water proof as compared with the inner tube, but it does not stand an arc as well as a tube composed of vulcanized fiber. Both of these materials are common products upon the market and can be readily secured. Interposed between the tube 15 and the member 1 is a collar 16 composed of insulating material and which protects the hand of an operator from contacting with the member 1 in connecting or disconnecting the device with relation to a live conductor.

The end of the member 14 away from the member 1 is internally threaded to receive a bushing 17 and to the projecting end of the bushing 17 is secured a metal cap 18 which is protected externally by an insulating cap 19 formed preferably of a phenolic compound. The interior of the metal cap 18 is provided with a conical shaped recess 20 in which is mounted a connecting member 21 having a conical surface corresponding to that of the recess 20 and the member 21 is provided with a cavity in which is secured, preferably by soldering, the end 22 of an insulated conductor 23. The conductor 22 is mounted in the member 21 by first passing the cable 23 through the opening 24 in the combined members 18 and 19 which are disengaged from the bushing 17. The members 21 and 22 are then secured together by soldering and the member 21 is then drawn back into position into the tapered cavity 20, and then the parts 18 and 19 are positioned upon the bushing 17. It will be noted that this construction gives a swivel connection between the members 18 and 21 so that in assembling the parts the cable 23 is not twisted as it does not necessarily rotate when the members 18 and 19 are rotated.

The body member 1 is provided with a shouldered recess 25 and the bushing 17 is

provided with a passage 26 and mounted in the recess and passage is an enclosed fuse 27 which is provided with a fusible element 28 which is electrically connected to the body member 1 through the medium of the screw 29, and whose other end is connected to a washer 30 by means of the screw 31.

In assembling the members 18 and 19 and 21 the rotation of the members 18 and 19 will move the member 21 into contact with the washer 30 thereby placing the conductor 23 in electrical connection with the end of the fuse 28 thereby establishing an electric circuit through the fuse from the jaws 7 to the conductor 23.

In order to apply the invention to a conductor 11 the operator will hold the jaws 7 in one hand and the parts 15 and 19 in the other hand and by rotating the parts 15 and 19 he will be able to rotate the part 1 which will rotate relative to the jaws 7, and if the parts 15 and 19 are rotated in the proper direction the member 1 will be moved away from the jaws, permitting them to be opened. Having released the jaws 7 a proper amount, the operator, still holding the members 15 and 19, will position the jaws 7 upon the conductor 11 and will then rotate the parts 15 and 19 in the opposite direction from that previously rotated, which will cause the member 1 to rotate to the jaws 7 as the jaws 7 cannot rotate on account of the positioning of the conductor 11 within the grooves 10. This rotation will move the member 1 into engagement with the jaws 7 and cause them to pivot about the pintle 6 and into engagement with the conductor 11. If desired, the members 13 and 14 may be pinned together to prevent any relative rotation, and the member 15 is preferably secured to the member 14 against rotation by a tight fit of these parts.

If a fuse 28 should be blown it may be replaced by rotating the jaws 7 together with the boss 4 until the boss 4 is removed from the member 1 and the screw 29 is then removed, which releases the end of the fuse 27, and the elements 18 and 19 are then removed by proper rotation and the enclosed fuse may then be removed from the casing and replaced by another fuse and the parts re-assembled.

My invention provides a simple and quick way of making a positive clamp connection with a feeder conductor and is of particular use around mines where such connections are frequently made and broken at various points within the mine for the operation of portable machinery.

It will be evident to those skilled in the art that modifications may be made in the

disclosure herein made, but which will not depart from the spirit of my invention and, therefore, I do not wish to be limited other than by my claims.

I claim:

1. A feeder tapper comprising a pair of pivotally mounted jaws to engage and grip a conductor, operating means to engage the jaws externally thereof and to move relative thereto in a longitudinal direction to move the jaws into engagement with the conductor, a handle secured to the operating means and which, when rotated, will rotate the operating means, means connecting the operating means and jaws to move the jaws and said means relative to each other when the handle is rotated, means to secure a cable to said tapper and a fuse interposed between the jaws and the cable.

2. A feeder tapper comprising a pair of pivotally mounted jaws to grip a conductor, a rotatable handle, means to move the jaws either toward or away from the handle, depending upon the direction of rotation of the handle, means interposed between the handle and the jaws to engage the jaws externally thereof and move the jaws into and hold them in engagement with a conductor and means to electrically connect a cable with the jaws to conduct current from the conductor to the cable.

3. The combination with a pair of pivotally mounted members to grip a conductor and having externally and oppositely disposed conically shaped bearing surfaces having conically shaped interior surfaces to engage the bearing surfaces on the gripping members, of a rotatable insulated handle to move the members into engagement with a conductor, means connecting the jaws and handle in relative rotatable and longitudinally movable relation and means to electrically connect the members to a cable.

4. A feeder tapper comprising a pair of jaws to engage a conductor and both jaws movable simultaneously toward or away from the conductor, an insulated handle, means attached to the handle and engaging the two jaws to move both the jaws simultaneously toward the handle and toward the conductor when the handle is rotated, a fusible element within the handle, means to detachably connect the inner end of the fuse to the said means attached to the handle and engaging the jaws, a terminal member for connection to a cable and detachable means secured to the handle to hold the terminal member in contact with the outer end of the fusible member.

In testimony whereof I affix my signature.  
HOMER P. CHANDLER.