Oct. 8, 1929. H. P. CHANDLER 1,730,406

SUPPORTING DEVICE FOR TROLLEY WIRES AND OTHER CONDUCTORS

Filed Feb. 17, 1928

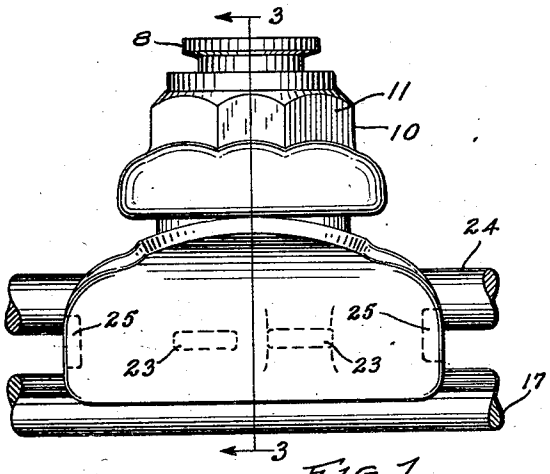


FIG. 1.

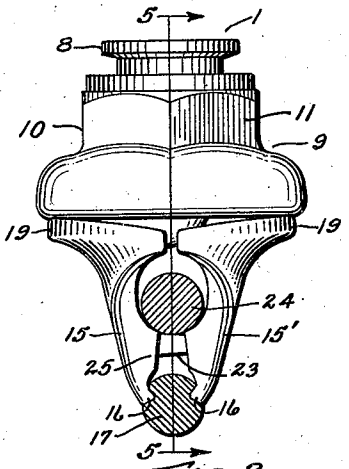


FIG. 2.

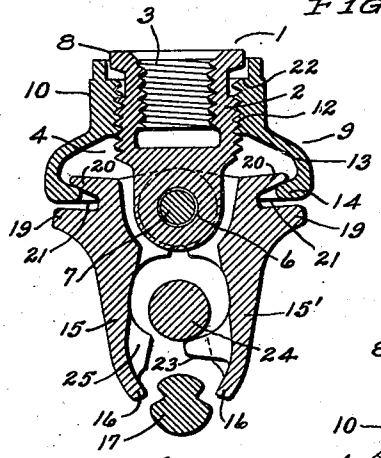


FIG. 4.

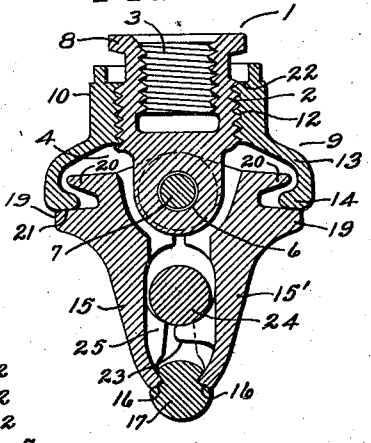


FIG. 3.

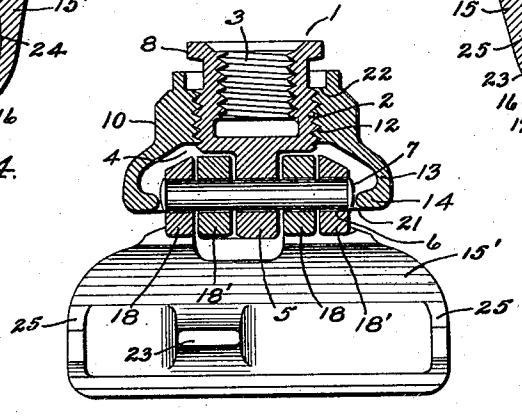


FIG. 5.

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UNITED STATES PATENT OFFICE

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SUPPORTING DEVICE FOR TROLLEY WIRES AND OTHER CONDUCTORS

Application filed February 17, 1928. Serial No. 255,013.

My invention relates to supporting devices for trolley wires and other conductors.

The object of my invention is to provide a simple device which will grip the trolley wire and simultaneously support an auxiliary feeder cable or wire.

Another object of my invention is to provide a device in which the trolley wire and the auxiliary, or feeder wire, can be inserted between the jaws of the device without the labor of stringing the wires along from clamp to clamp between the jaws, but in which the wires may be merely raised up between the jaws and brought into final position.

Another object is to provide a device in which the feeder wire may be supported by the device before the trolley wire is placed in position between the jaws of the device.

Another object of my invention is to provide a device in which the clamping jaws are moved simultaneously to an open or closed position and have means for securing the device to an overhead support.

Other objects will be disclosed as my construction is further set forth herein.

My invention resides in the new and novel construction, combination and relation of the various parts hereinafter described and shown in the accompanying drawing.

In the drawing:

Fig. 1 is a side view in elevation of my device with two conductors shown therewith.

Fig. 2 is an end view of Fig. 1.

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

Fig. 4 is a sectional view on the line 3—3 of Fig. 1 but showing the gripping jaws partially open, sufficient to support the auxiliary wire and to permit the insertion of the trolley wire between the jaws.

Fig. 5 is a partial longitudinal section on the line 5—5 of Fig. 2 but without the wires shown.

In the preferred embodiment of my invention, I employ a supporting member 1 which in turn has a socket member 2 internally threaded at 3 and externally threaded at 4 and with a depending tongue 5 provided with a hole 6 to receive a pin 7. The supporting member 1 is provided at its upper edge with a flange 8.

Mounted on threads 4 of the member 1 is a rotatable operating member 9 which has a portion 10 provided with a plurality of faces 11 on its outer surface to receive a wrench and provided with threads 12 on its inner surface to engage and co-operate with threads 4 on the member 1. The member 9 is provided with a depending skirt portion 13 provided with inwardly turned flange 14 extending entirely round the inner lower edge of the skirt 13 and circular in configuration.

Mounted upon the pin 7 is a pair of clamp jaws 15—15′. Each jaw is provided with a lip 16 at its lower edge adapted to engage the groove of a trolley wire 17 as shown in Fig. 2. At the upper edge of each jaw there are two projecting spaced lugs on each jaw 18 and 18′ respectively and so arranged that the lugs on the two jaws interengage with each other and with the depending tongue 5. The lugs 18—18′ are provided with transverse holes which register with each other and with the hole 6 in the tongue 5.

Each jaw is provided with an outwardly projecting side shoulder 19 and positioned above the shoulder 19 and spaced therefrom is a lip member 20 forming with the shoulder 19 a channel or recess 21.

The inwardly projecting flange 14 is arranged to ride in the slot or recess 21 so that it will engage with either the shoulders 19 or the lips 20 as shown in Figs. 3 and 4 respectively such that if the member 9 is moved upwardly with respect to the jaws 15, the lip will be engaged and the jaws pivoted about the pin 7 in which case the lower edge of the jaws 16 will be open, and if the member 14 engages with the shoulders 19 when the member 9 is moved toward the jaws, then the lower edge of the jaws will be moved together and into engagement with the trolley wire 17.

In assembling the various parts the member 9 is first threaded upon the member 1 as far as is possible or until the shoulder 22 engages with the flange 8. This will permit the assembling of the jaws 15—15′ in position and permit the insertion of the pin 7 to hold the jaws in position with respect to

the member 1, and in positioning the jaws the flange 8 is interlocked with the jaws as shown in Figs. 3 and 4.

If now the member 9 is rotated in the opposite direction from that necessary to position it upon the member 1, the member 9 will be moved toward the jaws and will engage the shoulders 19 and continued rotation will pivot the jaws about the pin 7 and move the lips 16 toward each other. The rotation of the member 9 in the opposite direction will reverse the operation of the jaws.

Projecting from the inner face of each jaw is a lug 23 which acts as a support for the feeder wire 24. The jaws will open far enough so that the inner edges of the members 23 will be spaced far enough apart to permit the passage of the wire 24 therebetween. The wire 24 is not necessarily gripped by the jaws although proper dimensioning will permit such gripping. If the wire 24 is not gripped between jaws and it is desirable to remove the wire 24, then it may be merely drawn out of the jaws longitudinally without disturbing the trolley wire 17.

It will be noted that the trolley wire and the feeder wire are held in a common vertical plane which coincides with the vertical axis of the device. Therefore, there is no tendency for a bending strain upon the device due to the position of the wires 17 and 24, and likewise the width of the device is made a minimum which is essential due to the fact that the groove current collector moves along the trolley wire 17 and as little interference should be produced with the current collector as possible, and, therefore, it it necessary to maintain the width of the device as small as possible.

To install the device upon a support, the device is first secured thereto by the threads upon the member 1 and the jaws 16 are brought into proper alignment with the trolley wire 17. The member 9 is then rotated to move with the jaws to their open position and enough to permit the wire 24 to be placed therebetween, and the member 9 is then rotated in the opposite direction to close the jaws sufficiently to prevent the wire 24 from dropping away from the jaws but rest upon the lugs 23 as shown in Fig. 4. This operation may be carried out with a succession of the clamps thereby positioning the wire 24. Having done this, the trolley wire is then placed in position and preferably drawn taut and then it is raised up slightly to insert between the lips 16 and the jaws and the member 9 rotated a proper distance to bring the lips 16 into engagement with the grooves in the trolley wire 17, thereby supporting the trolley wire in position. This can be carried out with a succession of the devices and then the member 19 can be drawn up tightly by means of a wrench. Of course, there are modifications to this method of installing the device which may be carried out, as will be obvious.

While the wire 24 may be tightly clipped as before stated, I find that there is an advantage in having it rest loosely between the jaws as already pointed out and I do not find that this is a detriment to the wire 24 acting as a feeder for the trolley 17 and the trolley 17 is not necessarily made dependent for its current upon the wire 24 as usually the trolley 17 is connected to the sources of supply as well as the feeder 24.

At the ends of the jaws there are inwardly projecting flanges 25 which assist in holding the feed wire 24 in position and supporting the same at the ends of the jaws.

There will be modifications to my invention which will be obvious to those skilled in the art, therefore I wish to be limited only by my claims.

I claim:

1. A conductor clamp comprising in combination a pair of jaws to grip a conductor, means to secure the jaws to a hanger, means to move the jaws into or out of engagement with the conductor at will, means along one edge of the jaws to engage the conductor and inwardly projecting means upon the jaws to support an auxiliary conductor at a distance from and parallel with the first said conductor.

2. The combination with a conductor clamp comprising a pair of jaws to hold a pair of conductors and means to secure the jaws to a hanger, of means when moved in one direction to open the jaws sufficiently to receive the conductors therebetween and when moved in the opposite direction to close the jaws, means upon the jaws to securely grip one conductor and other means to loosely engage the other conductor to support and hold the conductors parallel and in spaced relation.

3. The combination with a conductor clamp comprising a pair of jaws to hold a pair of conductors and means to secure the jaws to a hanger, of means interlocked with the jaws to open the jaws when moved in one direction and to close the jaws when moved in the other direction and means on the lower edge of the jaws to engage and grip one conductor and means projecting inwardly from the jaws at a distance from the said conductor to support an auxiliary conductor at a spaced distance from the first conductor, and the common plane of the conductors being common to the vertical axis of the securing means.

4. A conductor clamp comprising in combination a pair of jaws to engage and grip a conductor, each jaw engaging operating means to move it either toward the conductor to trip the conductor or away from the conductor to release or to receive the conductor therebetween, means on the jaws to receive

and engage an auxiliary conductor in spaced relation to the first conductor when the jaws are in an open relation, means to secure the operating means and jaws to a hanger, the operating means arranged to hold the jaws in various degrees of opened relation, namely a fully open position, a position to grip one of the conductors and an intermediate position to hold the other conductor but not the first.

5. The combination with a conductor clamp comprising a pair of jaws to hold a pair of conductors and means to secure the jaws to a hanger, of means movable toward the conductors to move the jaws into holding relation with the conductors and movable away from the conductors to move the jaws out of engagement with the conductors and means projecting laterally from the end of the jaws to engage and hold one of the conductors and means along the edges of the jaws to grip the other conductor in spaced relation to the first conductor.

6. A conductor clamp comprising in combination means to hold a pair of conductors, means to secure the holding means to a support, projecting means to engage and hold the conductors in spaced relation and means to move the holding means to the open position to receive the conductors and to partially close the holding means to support one conductor without supporting the other conductor.

7. A conductor support comprising a pair of jaws to grip a conductor and hold it against longitudinal movement, means to secure the jaws to a support and means intermediate the said conductor and support to hold an auxiliary conductor but permit longitudinal movement relative to the conductor support.

In testimony whereof I affix my signature.

HOMER P. CHANDLER.