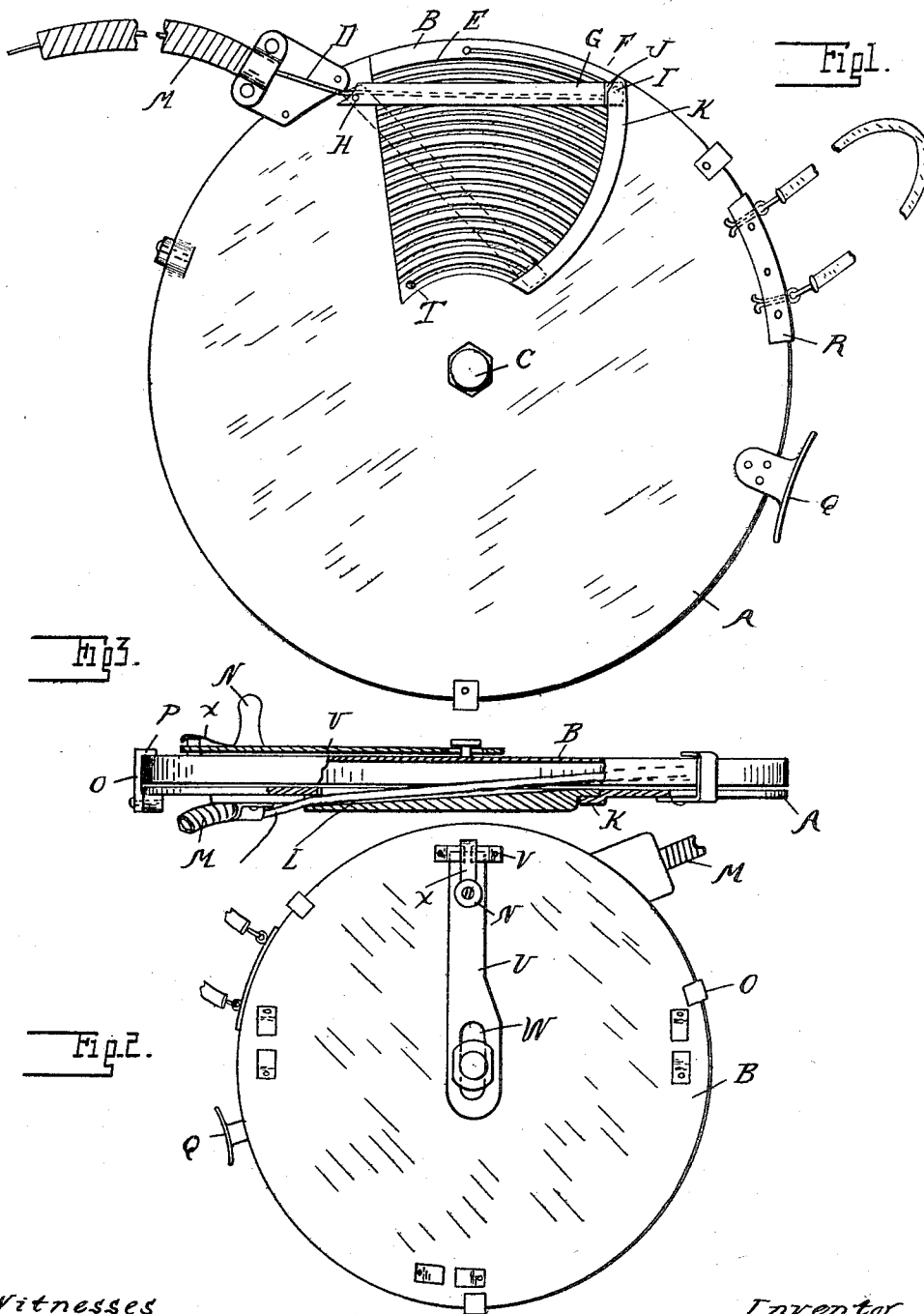


N. J. BIGHAM.
CONDUIT WIRING DEVICE.
APPLICATION FILED APR. 26, 1912.

1,107,250.

Patented Aug. 18, 1914.



Witnesses
J. B. Ford
James P. Barry.

Inventor
Neal J. Bigham
By *William H. Whitmore*
att'y

UNITED STATES PATENT OFFICE.

NEAL J. BIGHAM, OF DETROIT, MICHIGAN.

CONDUIT-WIRING DEVICE.

1,107,250.

Specification of Letters Patent.

Patented Aug. 18, 1914.

Application filed April 26, 1912. Serial No. 693,433.

To all whom it may concern:

Be it known that I, NEAL J. BIGHAM, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Conduit-Wiring Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

10 My invention relates to a device for feeding or threading a wire through a conduit and for rewinding the threading wire to draw the cable, wires, or the like through the conduit.

15 The invention consists in the provisions of a simple and efficient device whereby the size and weight thereof may be reduced to a minimum; in the provisions of a structure whereby the threading wire may be wound in a flat coil and held from uncoiling; in the construction of a guide which automatically adjusts itself to the size of the coil; and in certain details of construction as will more fully hereinafter appear.

25 The invention resides in a peculiar construction, arrangement and combination of parts, as hereinafter described and particularly pointed out in the claims.

30 In the drawings:—Figures 1 and 2 are side elevations of the device embodying my invention, looking from opposite directions, and, Fig. 3 is an end elevation, partly in section.

35 A designates the frame of the machine and B the reel, each of said members being preferably in the form of a flat, circular, metallic disk, said disks being secured together by means of a bolt C. The inner face of the disk B is provided with a guide for receiving the threading wire D. This guide preferably is in the form of a spiral groove E extending from adjacent the center of the disk and to near its periphery. At the top of the disk A is cut away as at F, to receive an auxiliary guide member G, which has one end pivoted to the frame at H, and has the other end provided with a pin I engaging the spiral groove. The free end J of the member G is of reduced cross-section and is positioned beneath the recessed edge K of the cut-away portion, so as to retain the pin I within the spiral groove. On the inner side the member G is provided with a groove L which forms an auxiliary guide for the threading wire between the spiral groove and the short, flexible conduit M, carried by

the frame, the flexible conduit serving to direct the threading wire to the point desired.

N is the handle for rotating the reel and O are clips carried by the disk A at the periphery thereto which have inwardly extending portions P for engaging the edge of the disk B whereby spread of the disks adjacent their peripheries is prevented.

60 The frame A may be supported in any suitable manner, but in the construction illustrated in the drawings I have provided a device which is adapted to be carried by the operator, since in wiring buildings, it is frequently necessary for the wiring to be done while the operator is upon the ladder. As shown the disk A has a breast plate Q secured thereto and is provided with a bearing flange R, to which shoulder straps are secured. In order to reduce the weight of the device to a minimum, the disks are preferably of aluminum.

70 Normally the wire D is wound upon the reel within the spiral groove, the inner end of the wire being secured to the reel as by a screw T.

75 In operation of the parts so far described, if it is desired to thread a conduit the frame A is supported so as to be stationary and the reel rotated in a forward direction forcing the threading wire outward through the groove L to the conduit M. As the reel rotates, since the pin I is in engagement with the spiral groove, it will cause the member G to follow the coil. Thus, when the threading wire is nearly entirely unwound, the member G will be in the position shown in the dotted lines in Fig. 1. In re-winding the threading wire the member G will travel outward as the coil increases.

80 As will be seen in Fig. 3 the arrangement of parts is such that the auxiliary guide effects a lateral dis-engagement from or engagement with the spiral groove of the threading wire. Furthermore, the groove E prevents the wire from uncoiling while plate A is in sufficient proximity to the disk B as to avoid accidental dis-engagement of the wire laterally from the groove.

85 Frequently in rewinding the threading wire, to pull the cable, wire or the like through the conduit, considerable force is required. I have, therefore, so connected the handle to the reel that the handle may be rotatively adjusted in relation to the reel, to permit the handle to be so positioned as to

provide the best leverage for the operator. To this end, both the disks are loosely journaled upon the bolt C and the handle is carried by a member U, which has one end adapted to detachably engage abutments V upon the outer face of the member B. To permit of its engagement or disengagement, the inner end of said member is provided with a slotted portion W, slidably engaging the bolt C so as to permit of member U to be moved or slid into and out of engagement with the abutments V. A suitable retaining device may be provided for preventing accidental dis-engagement of the outer end of the member U from the bearings, this being accomplished in the construction shown by means of a spring X adapted to engage over the upper face of the bearings V. To adjust the handle it is merely necessary to slightly raise the spring X and move the member U inward until the outer end thereof passes out of engagement with the bearings. The handle may be then turned to align the outer end with another of the bearings V and then moved outward into engagement therewith.

While I have shown and described the preferred form of my invention, I do not desire to limit myself to the construction shown.

What I claim as my invention is:—

1. In a device for threading conduits, the combination with a frame of a disk journaled on the frame having a spiral groove forming a guide for the threading wire, an auxiliary guide pivoted to the frame, and means for causing said auxiliary guide to follow the threading wire during the rotation of the reel.

2. A fish wire machine, comprising a supporting frame, a disk revolubly mounted thereon and having a spirally-arranged groove in one of its flat faces adapted to receive the fish wire, and a carriage movable transversely of said groove and provided with a guide to receive said fish wire.

3. A conduit fish wire machine, comprising a frame including a circular, stationary disk, a revolving disk centrally mounted on said stationary disk and having a spirally-arranged groove in one of its flat faces, said stationary disk having a radial opening therein, and a carriage movable over said opening and transversely of said groove, and provided with a guide to receive the end of the fish wire in said groove.

4. A machine of the class described, comprising a revolving disk having a groove in one of its flat faces extending spirally from the center toward the periphery of the disk, a wire having one end secured to said disk near the axis thereof and fitting within said groove, the walls of said groove preventing

bending or buckling of the wire, a guide adapted to receive the outer end of the wire, and means for preventing the coils of the wire from being accidentally discharged from said groove.

5. A machine of the class described, comprising a disk having a flat surface and a groove formed therein extending spirally from a point near the axis of said disk to the periphery thereof, the convolutions of said groove being concentric, a wire fitting within said groove and having its inner end secured to said disk, and a guide movable to points of varying distances from the axis of the disk adapted to receive the outer end of said wire.

6. In a device for threading conduits, the combination of a frame and a disk journaled in the frame having a spiral groove in one of its flat faces forming a guide for receiving the threading wire.

7. In a device for threading conduits, the combination of a frame, and a reel comprising complementary comparatively flat disks, one of said disks having a spiral groove in one of its flat faces forming a guide for the threading wire.

8. In a device for threading conduits, the combination with a frame and a reel, comprising complementary comparatively flat disks, one of said disks having a spiral groove in one of its flat faces forming a guide for the threading wire, of a member pivoted to the frame and provided with a slot forming an auxiliary guide, and a pin on said member traveling in said spiral groove, whereby said auxiliary guide follows the threading wire during the rotation of the wire.

9. In a device for threading conduits, the combination with a disk having a spiral groove in one of its flat faces, forming a guide for receiving the threading wire, of means for successively disengaging the wire laterally from different portions of the spiral groove.

10. In a device for threading conduits, a member comprising a disk having a spiral groove in one of its flat faces, forming a guide for receiving the threading wire, said member being rotatable in one direction to wind the threading wire in said groove in a flat spiral coil, and means coöperating with the spiral groove for positively projecting the threading wire forward when said member is rotated in the opposite direction.

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

NEAL J. BIGHAM.

Witnesses:

W. J. BELKNAP,
JAMES P. BARRY.