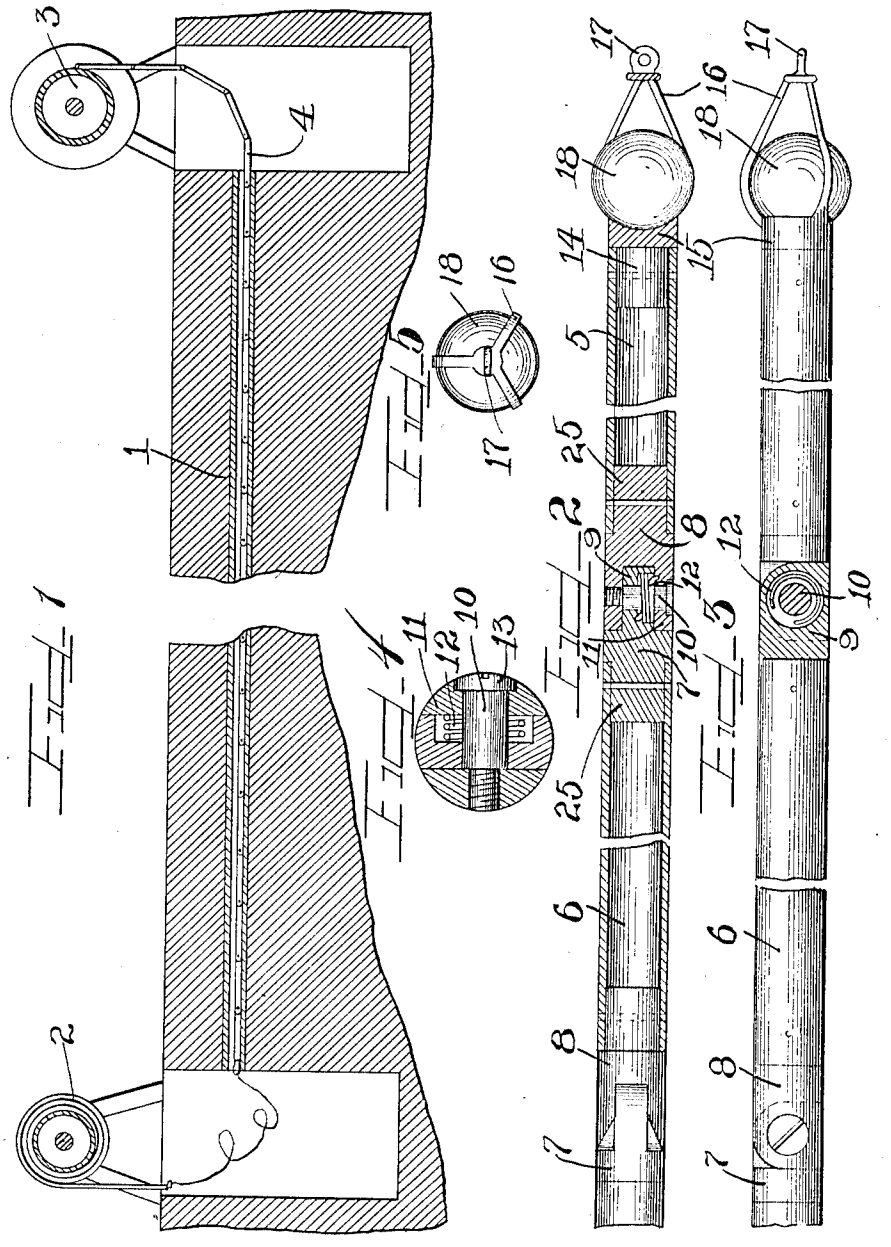
J. J. HESS.

JOINTED ROD FOR INSERTING WIRES IN CONDUITS AND ANALOGOUS PURPOSES.

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1,066,816. Patented July 8, 1913.



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JOINTED ROD FOR INSERTING WIRES IN CONDUITS AND ANALOGOUS PURPOSES.

1,066,816. Specification of Letters Patent. Patented July 8, 1913.

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To all whom it may concern:

Be it known that I, JULIUS J. HESS, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Jointed Rods for Inserting Wires in Conduits and Analogous Purposes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the numbers of reference marked thereon, which form a part of this specification.

It is often a matter of considerable difficulty and necessitates an expenditure of considerable labor and time to insert wire cables or conductors through underground conduits. Various devices have been used to enable this work to be done, in some instances rods having readily detachable sections adapted to be hooked together, being used. These, however, cause frequent inconvenience owing to the heads of the sections breaking or pulling off and necessitating in that event a great deal of trouble and expense to fish or recover the broken portion within the conduit. Furthermore, with devices of the sort it is very important to afford the utmost strength with the least possible practicable weight for the purpose of economizing in manufacture and handling.

The object of this invention is to afford a flexible rod for the purpose specified, capable of being bent in but one direction and adapted when extended to afford practically the rigidity that would be obtained by an integral construction.

It is also an important object of the invention to provide a supporting caster or roller at one end of the rod whereby obstructions in the conduit may be overcome and the labor of inserting the rod may be minimized.

It is also an object of the invention to afford a device of the class described in which a simple type of ball caster is employed adapted to support and guide the end of the rod while inserting or withdrawing the same and also to prevent undue friction should the end of the rod engage against the side of the conduit.

The invention consists in the matters hereinafter described and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a fragmentary vertical section showing the conduit with the rod extended therein and in side elevation. Fig. 2 is a view partly in top plan view and partly in horizontal section. Fig. 3 is a view partly in side elevation but with one of the joints opened to illustrate the construction. Fig. 4 is an enlarged section showing the pintle in elevation. Fig. 5 is a front elevation illustrating the caster construction.

As shown in the drawings: 1, indicates a conduit in which it is desired to insert wire or a cable.

2, indicates the cable reel.

3, indicates the reel upon which the flexible rod is carried and from which it is operated.

4, indicates the rod as a whole. As shown, said rod comprises a plurality of sections, conveniently of such length as to permit the rod to be wound upon a reel 3. Usually, the sections of said rod do not exceed twelve or fifteen inches in length, and each of said sections except the caster section is the exact duplicate of any other section comprising the rod. Said sections may be made of any suitable material. Conveniently, however, and for lightness in weight, each section back of the caster section 5, comprises a relatively light metal tube 6, having rigidly secured in the ends thereof male and female hinge sections 7—8, by means of reduced studs 25, which extend into the ends of the tube and are either brazed or pinned therein or both. As shown, the tenon or male portion 9, of each hinge section 7, is provided with a recess in its side surrounding the pintle 10, and engaged around the pintle and with its ends oppositely engaged on the tenon and on one of the arms 11, of the female section, is a coiled spring 12, which acts normally to hold the sections extended in alinement, said spring exerting sufficient torsional resistance to necessitate the use of considerable force in flexing the rod at the hinge. Said pintle 10, as shown, consists of a cylindric cap bolt or screw having a round head 13, which may conveniently be slotted for engagement with a screw driver, and a cylindric barrel which extends through one of the lateral leaves of the female hinge section through the tenon of the male section and is threaded into the opposite leaf of the female section, as shown in Fig. 4. As shown, both the tenon and the lateral leaves of the female hinge section are rounded over on the upper side, as shown in Figs. 2 and 3, to permit the sec-

tions of the rod to bend upwardly one on another at the hinge. Said rounded portion of the hinge sections, however, extends only approximately inward to the center of the rod, thus affording a rigid rod incapable of being bent either laterally or downwardly at the hinge.

The caster section 5, may be provided at its rear end with either a male or female hinge section dependent upon which end of the rod it is desired to secure the same. At its forward end, however, a caster casing or cage is rigidly secured, the same comprising, as shown, a cylindric stud 14, a rounded bearing head 15, and a plurality of forwardly directed arms 16, as shown three in number and united at their outer end to afford a loop or eye 17, adapted to receive the end of the cable or wire which is to be drawn into the conduit. Within the cage afforded by said arms is secured a relatively large ball 18, which protrudes below the laterally disposed arm 16, and over which engages the third arm, should three be used as shown in the drawings.

The operation is as follows: From the construction described it is evident that the rod may be readily wound upon a reel, as indicated in Fig. 1, and in that manner may be very conveniently carried. Should it be desired at any time to disconnect the portions of the rod it can be accomplished by the removal of the pintle screw or bolt 10. Inserting the rod in the conduit, the end of the rod is drawn downwardly into the conduit well and the rod forced in one direction in which the same may be bent and the end inserted into the conduit and pushed along therein, the ball caster 18, acting to support the end thereof and to assist the same over any inequalities that may exist in the conduit from bad joints or otherwise. Said ball caster acts also to guide the end of the rod away from the sides of the conduit and facilitates the insertion thereby.

Of course, modifications in the construction are possible. I therefore do not purpose limiting this application for patent otherwise than necessitated by the prior art.

I claim as my invention:

1. A tubular jointed rod capable of being bent in but one direction and comprising a plurality of duplicate interchangeable sections pivotally connected, and torsion springs concealed in said sections at said pivoted connections adapted to hold said sections normally extended.

2. In a device of the class described rod sections, interfitting members connecting the rods, a pintle connecting the members and torsion springs concealed in the members and connected at their ends to the respective members.

3. In a device of the class described rod sections, interfitting members secured to the rods, one of the members being provided with a recess, a pintle connecting the interfitting members and threaded into one of the same and a spring fitted in the recess in said member and connected at its ends to the interfitting members.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

JULIUS J. HESS.

Witnesses:
CHARLES W. HILLS, Jr.,
GEORGE R. MOORE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."