

(No Model.)

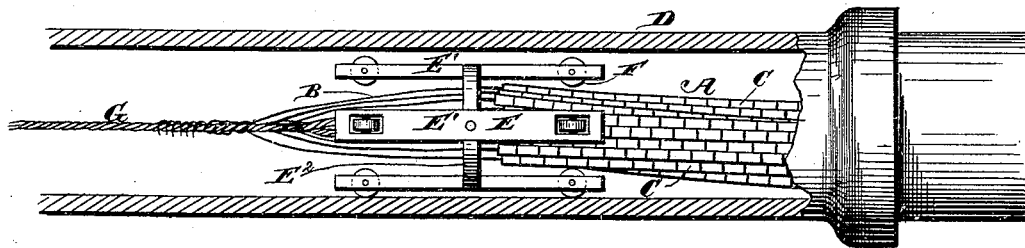
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CARRIAGE FOR LAYING MULTIPLE WIRE TELEGRAPH CABLES IN PIPES.

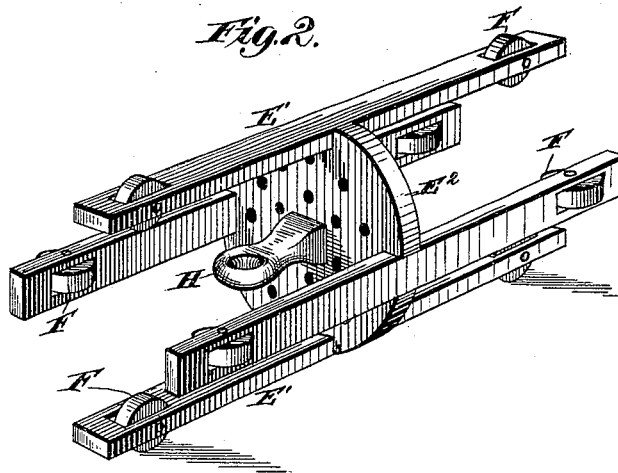
No. 263,586.

Patented Aug. 29, 1882.

*Fig. 1.*



*Fig. 2.*



*Witnesses*

*Robert Emmett*

*J. A. Rutherford*

*Inventor.*

*Nicholas M. Rittenhouse.*

*By James L. Norris*  
*Atty.*

# UNITED STATES PATENT OFFICE.

NICHOLAS M. RITTENHOUSE, OF BALTIMORE, MARYLAND.

CARRIAGE FOR LAYING MULTIPLE-WIRE TELEGRAPH-CABLES IN PIPES.

SPECIFICATION forming part of Letters Patent No. 263,586, dated August 29, 1882.

Application filed May 24, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, NICHOLAS M. RITTENHOUSE, a citizen of the United States, residing at Baltimore, in the county of Baltimore and State of Maryland, have invented new and useful Improvements in Carriages for Laying Multiple-Wire Telegraph-Cables in Pipes, of which the following is a specification.

In a prior application filed by me for Letters Patent I have described a multiple-wire telegraph-cable for use under ground, the conducting-wires of said cable being insulated from each other by a like number of separate sets or series of insulating beads or sections respectively strung upon the wires, the whole being laid within a suitable protecting-pipe.

The object of my present invention is to provide means for conveniently passing the multiple-wire cable through one or more pipe-sections without injury to the insulating-beads that are strung upon the wires and without disarranging or twisting the wires. To such end I provide a small carriage or carrier, through which the ends of the wires are passed, and then twisted together in front of the carrier, which latter is adapted to be easily drawn through the pipe, and also to maintain the wires of the cable in their proper relative positions.

In the drawings, Figure 1 represents the carriage or carrier supporting one end of a multiple-wire cable and in the act of passing through a pipe, which latter is shown in section. Fig. 2 is a perspective view of the carrier.

The letter A indicates the multiple-wire cable, consisting of a set of conducting-wires, B, each having strung thereon a series of glass or other non-conducting beads or tubular sections, C; and D indicates a pipe in which the multiple cable is to be laid.

The carriage or carrier E consists of a cylindrical frame composed of the parallel bars E', secured in recesses in the periphery of a perforated disk, E<sup>2</sup>, which supports the bars at or about their middle portions. Each bar is provided with a recess in each end, in which is journaled a small roller, F, adapted to bear upon the inner wall of the pipe, so that the

carrier will run smoothly and easily through the latter. The perforations in this disk are formed to correspond with the portion of the wires in the multiple cable, the said wires at the end of the insulated portion thereof being passed through these perforations, and then twisted about a wire or wires, G, connected to a hook, staple, or other projection, H, centrally secured on one side of the perforated disk. Wire G is preferably used, although a series of connected links might be employed for such purpose. The cable being thus attached to the carrier, the wire G, or other means by which it is drawn through the pipe, is inserted in and passed through the pipe until its outer extremity reaches the other end of the pipe. The wire can then be grasped and the carrier drawn along through the pipe, the cable, as a matter of course, following the carrier. In this way the cable will be protected, as will also the pipe.

It will be obvious that various modifications of this carrier could be made without departing from the spirit of my invention—as, for example, two perforated disks could be employed, one at each end of the cylindrical frame formed by the bars carrying the rollers; or other forms of cylindrical frames could be used, the object being to provide a carrier which shall hold the end of the cable, preserve the wires at such end in their proper relative positions, and be capable of being drawn easily through the pipe. The anti-friction rollers enable the carrier to run easily through the pipe, which is especially desirable when a heavy weight of cable has to be laid. In case the pipe is divided longitudinally and the upper section removed in laying the cable, the carrier will still be found equally serviceable, and, being surrounded by two or more set of rollers, it will run easily, either in a half-cylindrical or in a cylindrical pipe.

What I claim is—

1. As a means for passing a multiple-wire telegraph-cable through a pipe, a carriage or carrier composed of a cylindrical frame provided with rollers, and having a perforated disk through which the wires at the end of

the cable are passed, substantially as described.

2. The carrier for laying multiple-wire telegraph-cables in pipes, constructed with a series of longitudinal bars arranged in cylindrical form upon a perforated disk, and carrying rollers at their ends, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

N. M. RITTENHOUSE.

Witnesses:

A. H. NORRIS,

J. A. RUTHERFORD.