

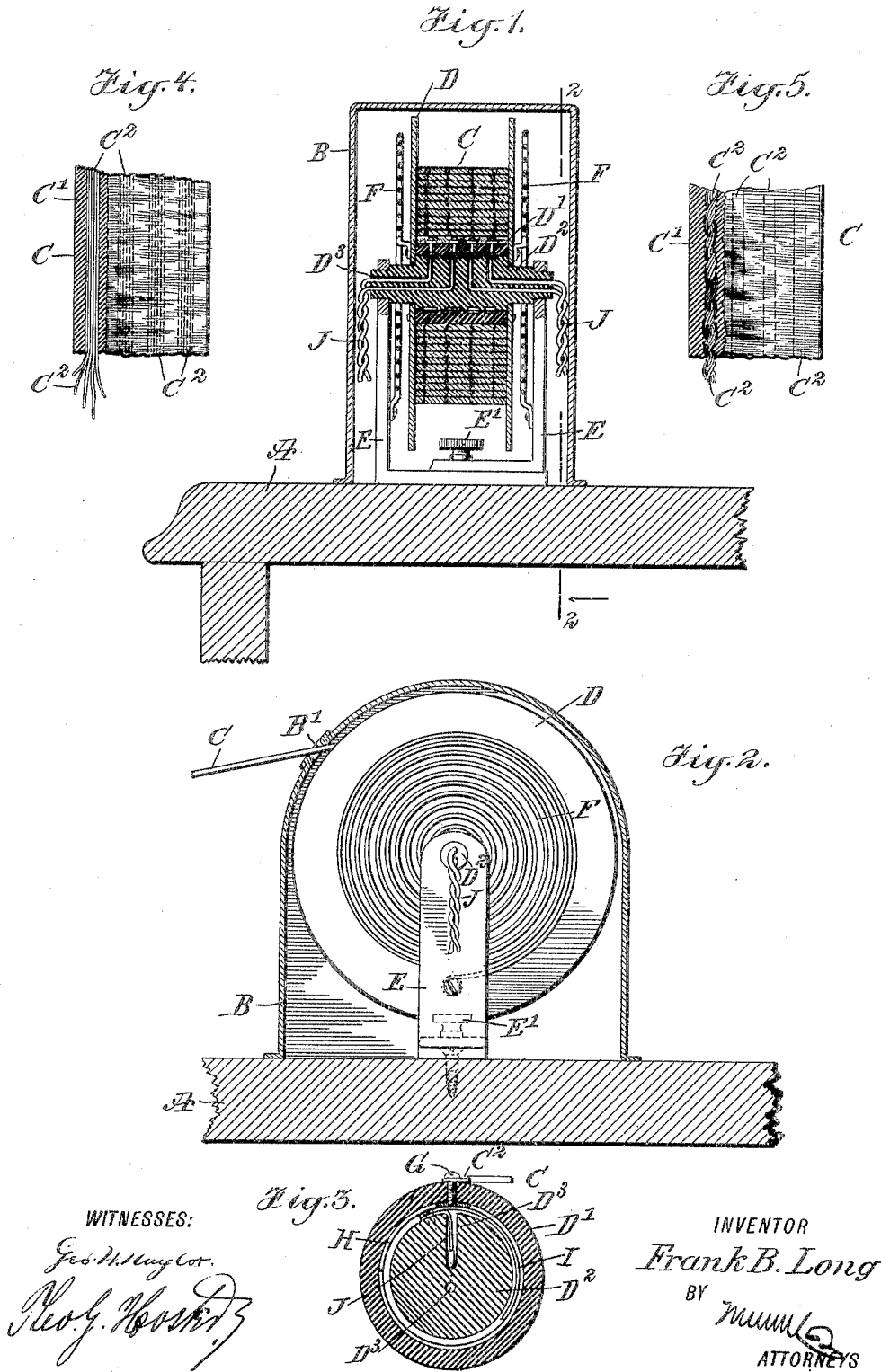
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F. B. LONG.

AUTOMATIC TAKE-UP DEVICE FOR TELEPHONE CONNECTIONS.

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UNITED STATES PATENT OFFICE.

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AUTOMATIC TAKE-UP DEVICE FOR TELEPHONE CONNECTIONS.

SPECIFICATION forming part of Letters Patent No. 793,845, dated July 4, 1905.

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To all whom it may concern:

Be it known that I, FRANK BENAJAH LONG, a citizen of the United States, and a resident of Los Angeles, in the county of Los Angeles and State of California, have invented a new and Improved Automatic Take-Up Device for Telephone Connections, of which the following is a full, clear, and exact description.

The invention relates to telephony; and one of the principal objects thereof is to provide means for storing the electrical connections for the receiving and transmitting instruments of an ordinary telephone in such manner that during the time the instruments are hung up or out of use there will be no slack or loose portions of the connections hanging about the telephone.

A further object is to provide means whereby the electrical connections for the receiving and transmitting instruments of an ordinary telephone may be drawn or paid out to the length thereof required to enable the instruments to be conveniently placed to the ear or mouth and again taken up automatically and stored after the instruments are hung up or restored to their supports.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a cross-section of the improvement. Fig. 2 is a sectional side elevation of the same on the line 2 2 of Fig. 1. Fig. 3 is an enlarged sectional side elevation of the contact in the drum. Fig. 4 is a face view, partly in section, of a portion of the flexible conducting-web; and Fig. 5 is a similar view of a modified form of the same.

On a desk or other suitable support A is held a casing B, having in its peripheral face a slot B' for the passage of a conducting-web C, which may be connected at its outer end with the receiving and transmitting instruments of a telephone, (not shown,) said con-

ducting-web winding up and unwinding on and from a drum D, arranged within the casing B, and having its hub D' mounted to turn loosely on a shaft D², fixed in brackets E, fastened by a screw E' to the desk A or to the bottom of the casing B. When the user of the telephone pulls on the conducting-web C, the latter unwinds from the drum D, now running in one direction and winding up one or more springs F, held fastened at one end to the corresponding bracket E and at its other end to the drum-flange, so that when the user releases the pull on the web C the drum is rotated by the spring or springs in an opposite direction, and consequently the web C is re-wound on the drum D.

The conducting-web C is made of a non-conducting fabric material C', in which are embedded conductors C², placed suitable distances apart and each preferably made of a plurality of fine wire strands, either bunched or twisted together, as plainly shown in Figs. 4 and 5. By the use of a plurality of fine wire strands for each conductor a desirable flexibility is maintained in the web for the latter to readily wind up and unwind on and from the drum without requiring heavy springs F and consequent undue physical exertion on the part of the user for pulling on the web with a view to extending the same to bring the receiving and transmitting instruments (not shown) in proper position relative to the ear and mouth of the user and holding the same there during use.

The inner ends of the electric conductors C² are fastened by screws G or like fastening devices to the hub D' of the drum D, and the said screws also engage contact-rings H, preferably in the form of split rings, each fitted in an annular recess in the bore of the hub D', each ring H being in contact with a spring contact-plate I, fitted in a recess on the peripheral face of the shaft D². Each of the spring contact-plates I is connected with the bare end of the corresponding insulated line-wire J, extending through a passage-way D³, formed in the fixed shaft D². As shown in the drawings, the two line-wires for the receiver pass into the corresponding passage-

ways D³ at one end of the shaft D², while the line-wires for the transmitter pass into the passage-ways at the other end of the shaft, so as to keep the line-wires for the receiver and transmitter completely separate.

In practice the receiving and transmitting instruments are held on some suitable support in the immediate neighborhood of the casing B, so that the conducting-web C is wound up on the drum D. When the subscriber or user of the telephone has occasion to use the telephone for its legitimate purpose, then the receiving and transmitting instruments are taken hold of by the user and moved to the ear and mouth, and in doing so a pull is exerted on the conducting-web C to unwind the same from the drum D and put the springs F under tension. When the subscriber is through using the telephone, the receiving and transmitting instruments are returned to their usual place of rest, and in doing so the conducting-web C is relieved of the pull, and hence the springs F cause the drum D to revolve in a reverse direction to rewind the conducting-web on the drum.

By the arrangement described the conducting-web C can be readily unwound or wound up from or on the drum D without disconnecting the line-wires J from the electric conductors C², embedded in the material C' of the conducting-web C.

The device is very simple and durable in construction and can be cheaply manufactured and placed anywhere on a desk or other suitable support, so that when the user is through using the telephone and the web C is wound up on the drum D it is evident that no wires of any shape or form will lie loose around the desk, and hence a disagreeable tangling up of the wires is not liable to take place. By removing the casing D conven-

ient access can be had to the working parts in case repairs or the like are necessary.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. An automatic take-up for telephone connections, comprising a stationary shaft having two passage-ways leading from each end to the outer surface thereof, electrical contact-plates on the shaft across the inner extremities of the passage-ways, a spring-actuated drum having its hub rotatably mounted on the shaft, and provided with rings in its bore, having electrical contact with said contact-plates, line-wires extending through the passage-ways and connected to the contact-plates, insulated electrical conductors winding and unwinding on and from said drum, and binding-screws therefor passing through the hub and having electrical connection with said rings.

2. A take-up for telephone connections comprising a casing, a shaft fixed in the casing and having passage-ways for the line-wires, spring-contacts secured on the shaft and connected with the said line-wires, a drum mounted to turn on the said shaft, contact-rings secured in the bore of the drum and in contact with the said spring-contacts, a conducting-web, winding and unwinding on and from the said drum and made of an insulating material, and electric conductors embedded in the said material, the inner ends of the conductors being connected with the said contact-rings.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK BENAJAH LONG.

Witnesses:

F. O. ADLER,
NORMAN TURLEY.