

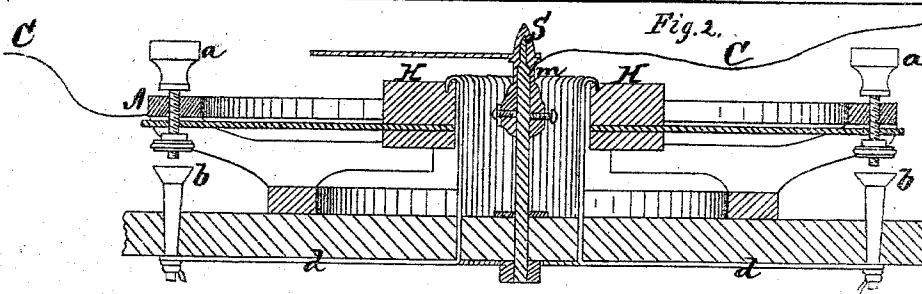
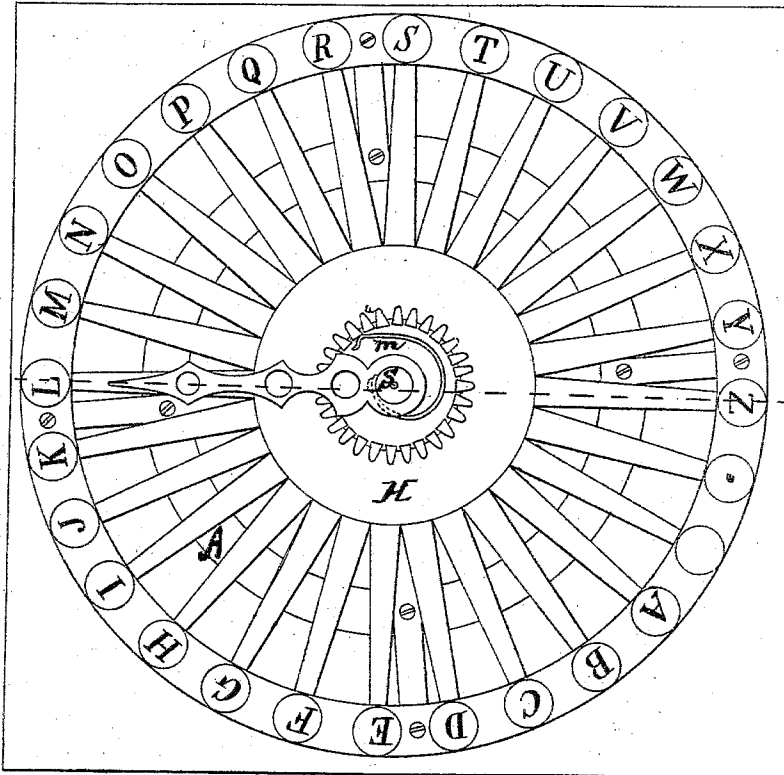
L. T. LINDSEY.

Transmitter for Printing Telegraphs.

No. 136,250.

Patented Feb. 25, 1873.

Fig. 1.



Witnesses:

Henry A. Miller
C. L. Everett,

Inventor

L. T. Lindsey.
per Alexander Watson

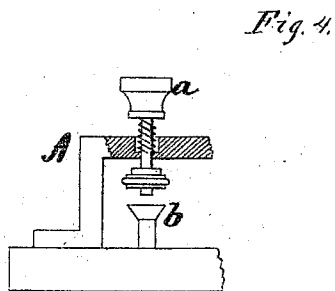
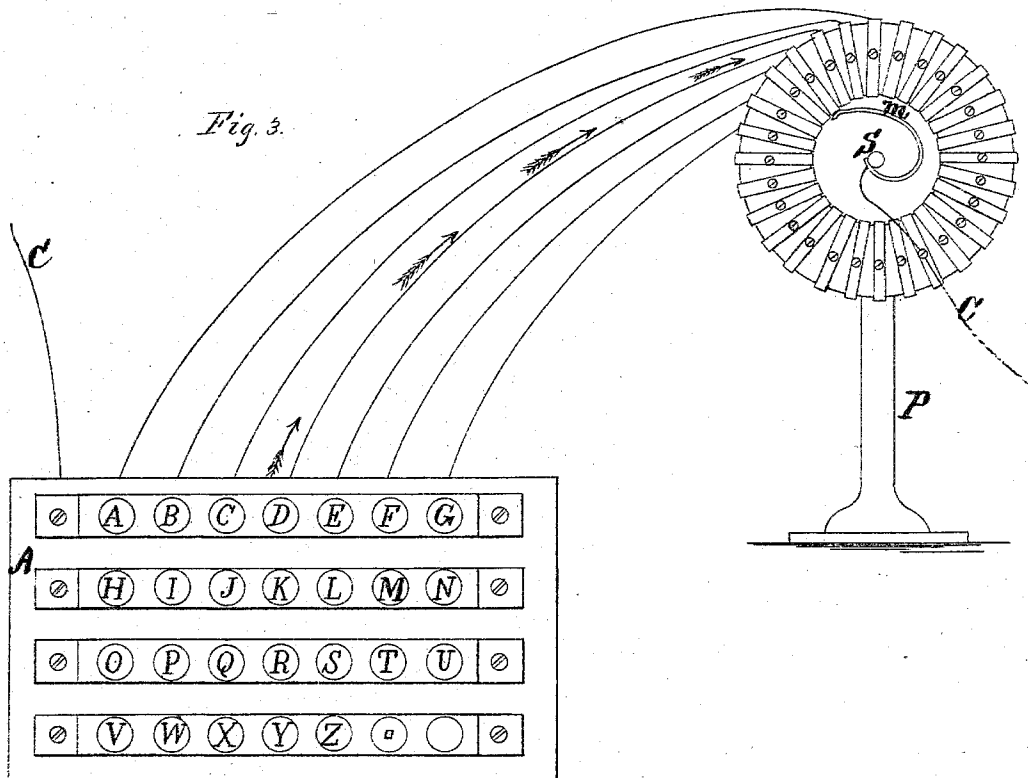
Attorneys.

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UNITED STATES PATENT OFFICE.

LANDY TUNSTALL LINDSEY, OF JACKSON, TENNESSEE.

IMPROVEMENT IN TRANSMITTERS FOR PRINTING-TELEGRAPHS.

Specification forming part of Letters Patent No. 136,250, dated February 25, 1873.

To all whom it may concern:

Be it known that I, LANDY TUNSTALL LINDSEY, of Jackson, in the county of Madison and in the State of Tennessee, have invented certain new and useful Improvements in Transmitting Device for Printing-Telegraph; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

In the drawing, Figure 1 is a horizontal or plan view of my device.

Fig. 2 is a vertical section of the same showing on either side an alphabetical knob, *a*, and its corresponding anvil *b*. *C* is one terminal of a dis severed line-wire connecting with the metallic frame *A*, and through it with the metal portions of the knobs *a a*, upon which the letters *A B C*, &c., are marked. *d d* represent the wires which lead from the anvils *b b*, respectively, and connect each with an isolated metal section in the ring *H*. *S* is a shaft of any printing-telegraph with which my transmitter is to be used, which shaft passes centrally through the circle formed by the metal sections in the ring *H*, and has fixed thereon a curved spring, *m*, the tip of which brushes across the surface of the metal sections during its revolution.

In Fig. 3 the reference letters indicate the same parts wherever they occur, the only change being that the alphabetical knobs are arranged in straight parallel rows, and the ring *H*, detached from immediate proximity thereto, is supported in a vertical position upon a pillar, *P*. This view also shows the arrangement of the interconnecting series of wires, one of which leads from each anvil beneath the alphabetical knobs, and extends to and connects with one of the metal sections of the ring *H*.

Fig. 4 is a section showing one knob and anvil, and their relative position to each other.

My present invention is intended as an improvement upon the Letters Patent granted to me May 3, 1870, No. 102,561. In that case the character-knobs were arranged alphabetically and in circular form, each knob attached to the outer end of a pivoted lever, the inner ends of the levers forming a circle of discon-

nected points, and a central shaft in said circle with an anvil passing over the levers, and coming in contact with any one of the same only when its knob was depressed. This arrangement of the levers to which the knobs were attached, forming the circle in which the type-wheel shaft revolved, was found objectionable for several reasons. The knobs had necessarily to be arranged in circular form and alphabetically, or in the same order as the characters appeared on the type-wheel; and it also required the machine itself to be close to the edge of the table, as the type-wheel shaft had to pass up through the center of the circle formed by the inner ends of the knob-levers, making the whole thing inconvenient, and confining it to one form only.

In the present case the knobs are made entirely separate from the parts which form the circle in which the shaft revolves, and each knob is provided with an anvil, and this anvil connected by a wire with the corresponding part of the circle, whereby I am enabled to arrange the knobs in any form desired, and in any order that may be deemed most advantageous, without regard to the order in which the characters are on the type-wheel; and the machine itself may be located at any desired distance from the key-board.

My invention relates to such printing-telegraphs as are worked on the principles of the Morse and other like systems, which operate by first breaking or opening the circuit of the line, and closing the same only when it is desired to transmit an impulse of electricity; and has for its object to actuate the printing mechanism at the proper time to strike off the letter corresponding with the knob depressed, while the type-wheel is revolved by any of the known and usual means employed for such purpose independent of the means by which the printing mechanism is actuated. To do this I arrange in circular form, as shown in Fig. 1, or in straight parallel rows, as shown in Fig. 3, any series of alphabetical or other character-designating knobs, *A B C D*, &c., each provided separately with an anvil, *b*, beneath, as shown in Figs. 2 and 4. Into a ring, *H*, formed of some insulating substance, I put, equidistant, and one not touching the other, a number of small brass or other suitable con-

ducting metallic sections corresponding to the number of anvils employed, and run a conducting-wire from each metal section within this ring to and connect it with an anvil. This practically makes each anvil terminate in one of the sections forming the aforesaid circle. Through the center of this circle, supported in suitable bearings, passes a shaft, S, from the printing-telegraph, upon which is fixed a curved spring, *m*, the tip of which rests against the inner side of the circle, and when motion is imparted to the shaft S the spring brushes successively across the surface of each metal section during its revolution. The shaft S must be the one upon which the type-wheel of whatever printing-telegraph may be used is fixed; or the type-wheel may be on another shaft connected with it in such a manner that the two shafts will make an equal number of revolutions; and the type-wheel is revolved by any of the means usually employed for that purpose, which rotates the shaft S, thereby causing the spring *m* to brush over the sectional ring, as above described.

The shaft S is to be electrically connected with the magnet actuating the printing mechanism in any suitable manner. For instance, where the line is short the circuit embracing the alphabetical knobs, anvils, connecting-wires, metal sections, and spring may also include the magnets which directly actuate the printing mechanism; but where the length of the line is great, as when connecting remote points, the circuit embracing the alphabetical knobs, &c., may only include a "relay-magnet" for each instrument, and the magnet which actuates the printing mechanism be included in a local circuit, which will in turn be closed by the action of the relay-magnet. To this, however, I lay no particular claim.

The alphabetical knobs, through the metal frame A, in which they are supported, represent one end of a dis severed line-wire, C, which is joined to this frame. The spring *m* represents the other end thereof. The terminals of the line are therefore at A and *m*.

Each anvil having a corresponding metallic section in the ring H, and these being united, respectively, by means of a conducting-wire, as before explained, these form a series of intercommunicating links, any one of which may be brought into requisition to reunite momentarily the terminals of the line-wire at A and *m*, and thus restore the circuit. The manner in which this is done may be thus described: Suppose the shaft S to be in motion, and the spring *m* thereon to be traveling in its circuit over the surfaces of the metal sections of the ring H. If, now, any one of the alphabetical knobs be depressed, so as to form contact with its anvil, a metallic connection therewith is established, and the terminal of the line represented at A is prolonged to that metal section in the circle H to which the intercommunicating wire leading from the aforesaid anvil is joined. We have therefore, by the opera-

tion of depressing an alphabetical knob to a contact with its anvil, extended one terminal of the line beyond the frame A to one of the metal sections in the circle H.

As the spring *m* represents the other terminal of the line-wire, it can readily be seen that, when it is passing across the surface of the metallic section above designated, the circuit is for the time being closed, and the current will immediately flow, influencing directly or indirectly the printing mechanism.

An illustration of this manner of closing the circuit is afforded by Fig. 3 of the drawing, and by reference thereto may be thus traced: One terminal of the line is joined to the frame A; the other terminal to the shaft S. The spring *m* is seen to be in contact with that metal section which has a conducting-wire leading therefrom to the anvil of the knob D. If, now, this knob be depressed to a contact with its anvil, the circuit of the line will be completed, and the current entering at A, thence through the knob D, anvil thereunder, and conducting-wire therefrom, to the metal section in the ring H, on which the spring is resting; then through this spring, shaft S, and the frame-work thereof to the other terminal.

The transmitting device, having an equal number of knobs, anvils, and metal sections with the letters, figures, or other characters on the type-wheel of an instrument, and the ring H placed over the type-wheel shaft S with the spring *m* attached to said shaft, and the type-wheel and transmitting device placed in correspondence, it follows that when the circuit is closed on any desired letter, in the manner hereinbefore described, the impression thereof will be immediately imprinted from the type-wheel on the paper by the action of the printing mechanism thus actuated.

An additional advantage claimed is that, each metal section of the ring H being connected with an anvil by means of an intermediate wire extending from one to the other, the alphabetical knobs can be arranged in one or more parallel, semicircular, or circular rows, or in any other convenient or desirable shape, and may be grouped at pleasure promiscuously without reference to alphabetical rotation, so that those letters most needed may be placed where they will be most available, while those less used can be placed at the points more difficult to command during manipulation. The wires leading to the metal sections, however, require to connect with them in alphabetical order of succession corresponding to the order observed by the characters on the type-wheel.

I am aware that telegraph-machines have heretofore been made in which the keys are worked one-half in an open and the other half in a closed circuit; also, other machines where the keys are worked in an entirely-closed circuit, while my machine is worked with or in a broken circuit. My machine could therefore not be used with either of the other

systems, nor could the machines referred to be used with the system on which my machine works.

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

One or more series of transmitting-knobs, *a*, forming one end, and a shaft, *S*, with spring *m*, forming the other end of a broken line, in combination with anvils *b*, connecting-wires *d*, and sectional ring *H*, all arranged substantially as herein described, so that the circuit

will be closed when the spring is in contact with any one of the sections of the ring and the corresponding knob depressed, for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 13th day of May, 1872.

L. T. LINDSEY.

Witnesses:

C. L. EVERT,
A. N. MARR.