

(No Model.)

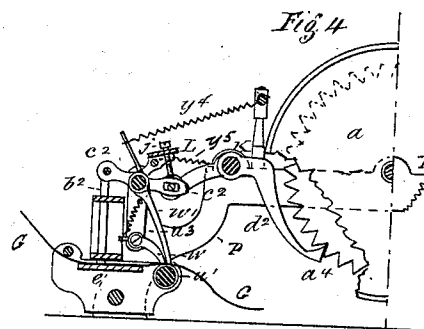
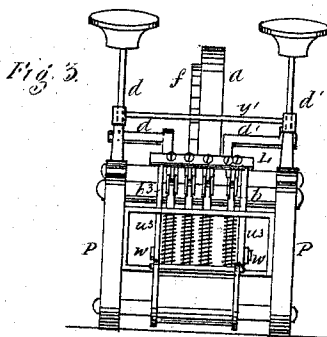
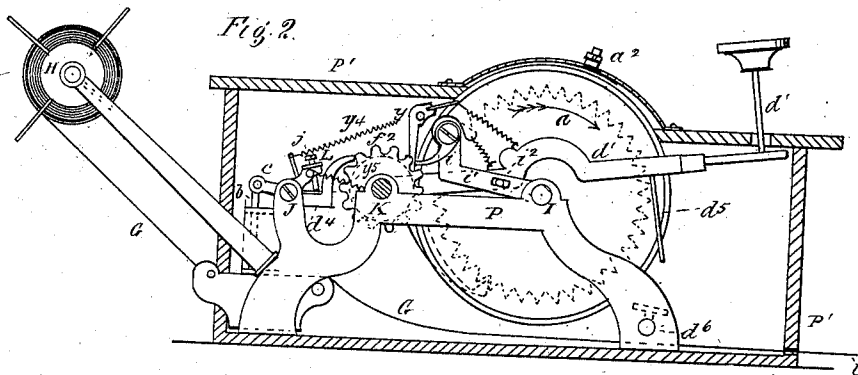
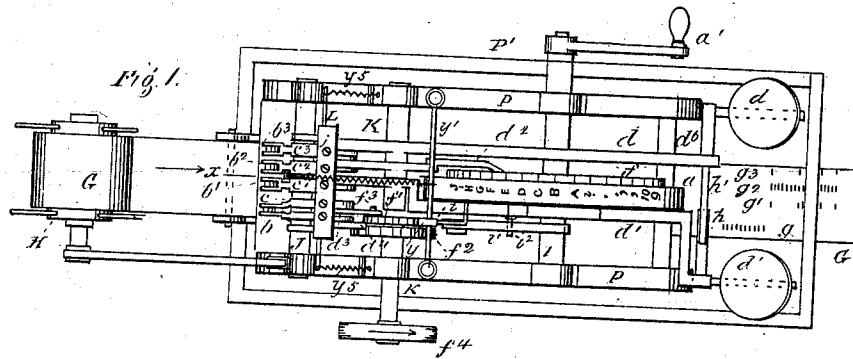
A. F. & F. B. JOHNSON.

2 Sheets—Sheet 1.

APPARATUS FOR PREPARING AND TRANSMITTING SECRET TELEGRAPHIC
MESSAGES.

No. 253,061.

Patented Jan. 31, 1882.



Witnesses
William G. Clark
Jno. H. Cleason

Inventors.
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Frank B. Johnson
By their atty.
John B. Thornton

(No Model.)

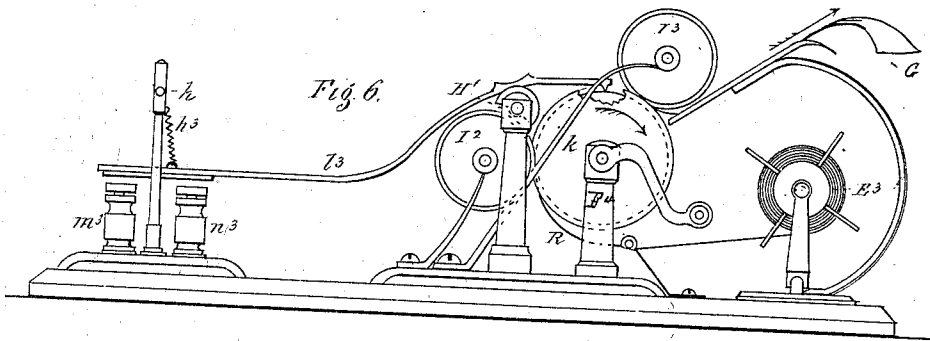
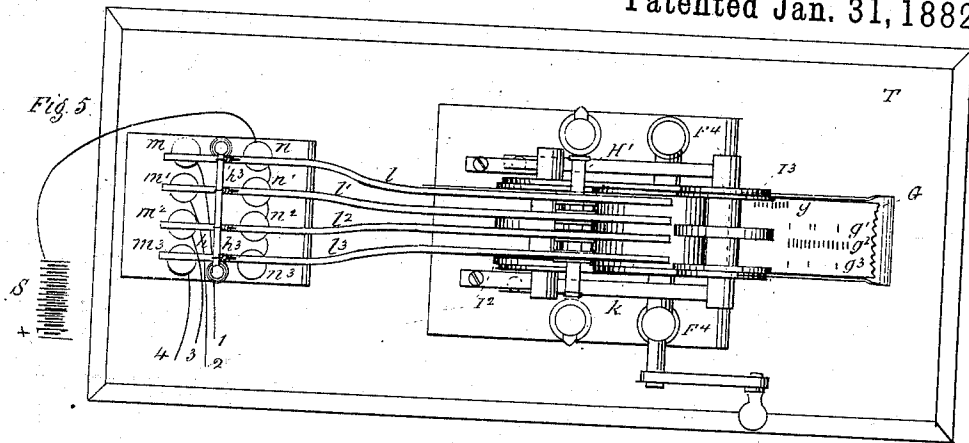
A. F. & F. B. JOHNSON.

2 Sheets—Sheet 2.

APPARATUS FOR PREPARING AND TRANSMITTING SECRET TELEGRAPHIC
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UNITED STATES PATENT OFFICE.

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PLACE.

APPARATUS FOR PREPARING AND TRANSMITTING SECRET TELEGRAPHIC MESSAGES.

SPECIFICATION forming part of Letters Patent No. 253,061, dated January 31, 1882.

Application filed August 16, 1881. (No model.)

To all whom it may concern:

Be it known that we, ALBERT F. JOHNSON and FRANK B. JOHNSON, citizens of the United States, residing in the city of Brooklyn, in the county of Kings and State of New York, have jointly invented certain new and useful Improvements in Apparatus for Preparing and Transmitting Secret Telegraphic Dispatches; and we hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, on two sheets, which form a part of this specification.

This invention relates to improved apparatus for preparing and transmitting secret telegraphic dispatches, which we employ in our "improved system of transmitting secret messages by electro-magnetic instruments," set forth in the specification marked A, filed simultaneously herewith.

As set forth in said specification A, we ordinarily employ two separate machines or instruments in the preparation and transmission of the messages, (in connection with a receiving-instrument,) upon the first of which the person who wishes to send a message prepares the message himself by means of indentations made upon a strip of paper, which is then handed to the person in charge of the transmitting-machine, who forwards it to the station at which it is to be delivered; and this invention consists in certain novel constructions and combinations of mechanism, herein-after particularly described, whereby the said messages are prepared for transmission.

In the accompanying drawings, Figure 1 represents a plan view of the machine for impressing the message on the strip; Fig. 2, a side elevation of the same; Fig. 3, an end view, and Fig. 4 a sectional elevation, of part of the said machine; Fig. 5, a plan view of the instrument for transmitting the prepared message; Fig. 6, a side elevation of the same.

Similar letters of reference indicate the same parts in all the several figures.

P represents the frame of the preparing-machine, which may be of suitable form and dimensions for holding the working parts.

P' represents a case or cover, in which the machine is inclosed, provided with an opening at its front end to receive the strip G as it passes from the spool H, another opening at

its rear end, through which the strip passes after it has been indented, and another small opening at the top, through which is seen each letter or character on the letter-wheel *a* as it comes under the same; and immediately over this last-mentioned opening is an index, *a*², which is secured to the top of the case. The letter-wheel *a* is secured upon a shaft, I, which has bearings in the sides of the frame, and is rotated by a crank, *a*'. On its periphery are marked the letters of the alphabet in regular order, together with numerals up to ten, and the ordinary punctuation-characters, which in all are forty in number, and are counterparts of those on the type-wheel in the receiving-machine, (mentioned in specification A;) and at one side of the said wheel *a* is secured upon the same shaft a wheel, *f*, having forty teeth, each of said teeth coinciding with one of the letters or characters on the wheel *a*.

b *b*' *b*² *b*³ represent a series of four upright rods or pistons, the upper ends of which are pivoted to a series of four reciprocating arms, *c* *c*' *c*² *c*³, which are fitted upon a horizontal transverse shaft or bar, J, and the lower ends of which, when depressed, make indentations on the strip of paper G, which passes underneath them over a plate, *e*, secured to the frame of the machine. The rod *b*² is depressed by means of a bent lever, *d*², fitted to swing upon a transverse shaft, K, one end of which said lever is pivoted to the rear end of the arm *c*², and its other end is provided with a click or pallet, *a*⁴, which falls between the teeth of the wheel *f*, so that as each tooth on the said wheel passes the said click, in bringing the desired letter or character into position under the index *a*², it operates the lever *d*² and arm *c*², and thereby causes the rod *b*² to make one of the indentations *g*² on the strip G, which said indentations, when passing through the transmitting-instrument, cause a corresponding rotation of the type-wheel on the receiving-machine.

d is a lever, also fitted upon the shaft K, the front end of which is pivoted to the rear end of the arm *c*³, and the rear or outer end of which is depressed by hand whenever the required character on the letter-wheel has been brought under the index *a*² by rotating the letter-wheel, and this lever *d* operates the arm *c*³ and causes the rod *b*³ to descend and make one of the in-

dentations g^3 , which said indentations, in passing through the transmitting-machine, operate to throw up the platen or impressing-roll in the receiving-machine and print that letter on the strip therein. At the outer end of this lever d is an upright rod, which passes through an opening at the top of the cover P' , and is provided with a knob for convenience in operating it.

The rod b' makes indentations g' on the strip, which, in passing through the transmitting-instrument, operate the mechanism which causes the transverse movement of the type-wheel in the receiving-machine, and it is depressed by a lever, d' , fitted upon the shaft K , the front end of which is pivoted to the arm c' , and its rear end provided with an upright rod, which passes through the top of the case P' , and is provided with a knob for convenience in operating it. This lever d' is depressed at each depression of the lever d by means of a pin, h , near its outer end, which passes underneath a similar pin secured immediately over the same on the lever d , so that whenever one of the indentations g^3 is made one of the indentations g' also is made; but this lever d' has also an independent movement and is depressed separately (by hand) at the end of each word, so that an additional indentation, g' , is made, one of them being to move the type-wheel in the receiving-machine transversely to print the last letter of the word, and the other to similarly move said wheel, so as to leave a space between the last letter printed and the first letter of the next word.

The rod b makes indentations which, in passing through the transmitting-machine, operate the mechanism in the receiving-machine, which feeds the strip therein longitudinally. It is operated by two separate mechanisms—one for making an indentation, g , to move said strip longitudinally the space between transverse lines of printing thereon whenever one of said lines has been completed, and the other to make a number of indentations at the end of the message to feed the said strip longitudinally a sufficient space to receive the address thereupon. The devices for effecting the former are as follows: f' is a ratchet-wheel having a number of teeth equal to the number of letter-spaces on each transverse line of printing on the strip in the receiving-machine, which is fitted on the shaft J and is free to rotate thereon. i is a pawl pivoted to one end of a lever, i' , which is pivoted at its other end upon the shaft I , and has a slot, i^2 , through which passes a pin fixed on the side of the lever d' , so that each time the lever d' is depressed the said pawl moves the wheel f' the space of one tooth. When the lever d' has thus been depressed a sufficient number of times to cause the wheel f' to make a complete revolution, a pin, f^3 , fixed on its side, near its periphery, lifts a lever, d^3 , secured to the rear end of the arm c , and thereby causes the rod b to make one of the indentations g on the strip G , which said indentations, in passing through the trans-

mitting-instrument, cause the longitudinal movement of the strip in the receiving-machine while the message is being transmitted. The devices for moving the strip longitudinally in the receiving-machine at the end of the message consist of a toothed wheel, f^2 , fixed upon the shaft K , which is rotated by hand one complete revolution by means of a crank or a hand-wheel, f^4 , outside of the case. This wheel f^2 operates a pawl or click at the end of a lever, d^4 , which latter is secured to the rear end of the arm c , so that as the teeth pass under the said pawl the latter is lifted by each tooth, and thereby depresses the rod b , causing the latter to make indentations g corresponding in number with the number of teeth that have passed under said pawl. After the address has been indented in the same manner as the message the wheel f^2 is again turned one revolution, which causes the rod b to make indentations for the purpose of feeding the strip in the receiving-machine forward longitudinally to receive another message. y is an upright rod pivoted on the bar y' , against the lower end of which the end of the pawl i rests, and which prevents the latter from taking more than one tooth of the wheel f' at each stroke. When the several levers which operate the rods b b' are at rest the latter are raised from the paper by means of a spiral spring, with which each is provided.

L is a frame, which is pivoted at its ends on the bar or shaft J , and is provided with a downwardly-projecting arm, w^3 , at each end. The upper part of this frame extends above and across the rear ends of the arms c c' c^2 c^3 , and a series of set-screws, j , pass through the same, so that their lower ends each rest upon the rear end of one of the arms c c' c^2 c^3 , so that whenever the rear end of one of said arms is raised and its front end correspondingly depressed the upper part of the frame L is also raised and the lower ends of its arms w^3 are thrown back, and a dog, w , pivoted to each pushes the paper G forward over a roll, w' , as shown in Fig. 4. By these means the strip G is fed forward each time an indentation is made thereon. The lower ends of the set-screws j are kept in contact with the rear ends of the arms c c' c^2 c^3 by a spring, y^5 , which is attached to the frame L at one end and to the machine-frame P at its other end. A second dog or drag, w' , which is pivoted on the bar J and kept with its lower end in contact with the strip G as it passes over the roll w' by means of a spring, y^4 , holds the said strip while the dogs w are retracted. From this it will be understood that the indentations are made on the strip G as it passes over the plate e , and that every time an indentation is made the strip is fed forward.

The throw of the rods b b' b^2 b^3 is determined by means of rods d^5 , fixed on the under side of the levers d and d' , the lower ends of which said rods, when the said levers are struck, coming in contact with the heads of adjusting-screws fixed on a transverse bar, d^6 , at the rear

of the frame. The strip G, having the message indented upon it, as above described, is then ready to be passed through the transmitting-instrument. (Shown on Sheet No. 2.) For this purpose it is first placed upon some suitable device connected with the latter which will secure a proper tension on the strip—as, for instance, upon a reel, E³.

k represents a drum, over which the indented strip is to be passed, having bearings in the upright posts F⁴, and is turned by a crank in the direction indicated by the arrow. Its periphery is provided with a roughened or friction surface, so that the paper shall not slide thereon. The strip is passed over this drum with its indented surface next to the surface of the latter, so that the indentations form bosses or projections from the surface which is uppermost as it passes over the drum.

I² and I³ are friction-rollers, by means of which the paper is held snugly on the drum, and R a curved metal plate for guiding the strip to the drum.

l l' l² l³ represent a series of four levers, which are fitted upon a transverse bar, H', to swing vertically, and immediately under the extreme upper (and shorter) end of each is provided a pin or projection, under which said pins the bosses g g' g² g³ respectively pass as the strip G is drawn over the drum, and raise the ends of the levers under which they pass. The other ends of these levers l l' l² l³ are suspended by spiral springs h³ from a transverse bar, h⁴, directly over two series of posts, m m' m² m³ and n n' n² n³, respectively, so that whenever the upper end of one of the levers is raised by the passage of one of the bosses under it its lower and longer end makes contact with one of each series of the said posts. The posts m m' m² m³ are each insulated from the platform upon which they are secured, and from each other, and each is connected by a line-wire with one of the magnets on the receiving-machine at the receiving-station, and the posts n n' n² n³ are insulated from the platform upon which they are secured, but are connected with each other and with the negative pole of the battery S, and a wire connects the magnets of the receiving-machine with the positive pole of said battery. These levers l l' l² l³ therefore form circuit-closers, as will presently be described. The posts which hold the bar h and the springs h³ are also insulated from the platform.

In the drawings the levers l l' l² l³ are represented as being pivoted at a point distant from their upper ends equal to about one-fourth of their length, so that their lower ends will have a vertical sweep equal to about four times the height of the bosses, which will be sufficient to effectually break and close the circuits as the levers are raised or lowered. The tension of the springs h³ is to be sufficient to sustain the weight of the lower and longer ends of the levers when they are at rest, so as to keep them from contact with the posts, and the pins on their upper ends in contact with the paper.

The strip G is passed over the drum k, as shown in Fig. 6, and as each of the bosses g³ passes under the lever l³ it causes the latter to make contact with the posts m³ and n³, and the post m³ being connected by a wire, 4, with the magnet on the receiving-machine that brings up the platen or impressing-roll, the said magnet is thereby brought into circuit. As each boss g² passes under the lever l² the latter makes contact with the posts m² and n², and thereby brings into circuit the magnet which operates the mechanism that rotates the type-wheel on the receiving-machine, the said post m² being connected with the said magnet by a wire, 3. As each boss g' passes under the lever l' the latter makes contact with the posts m' and n', and thereby brings into circuit the magnet which effects the transverse movement of the type-wheel on the receiving-machine, the said post m' being connected with said magnet by a wire, 2, and as the bosses g pass under the lever l the latter makes contact with the posts m and n, and the said post m being connected by wire 1 with the magnet on the receiving-machine which operates the longitudinal feed of the strip therein, the said magnet is thereby brought into circuit.

From the above description it will be understood that the message is impressed upon the strip G in a form which is unintelligible to any one who may examine it, and that the said indentations, although in themselves without significance or meaning, are placed in such relation to each other that when passed through the transmitting mechanism they operate the receiving-machine in such manner as to cause it to reproduce the message in printed form.

We do not in this application claim the transmitting mechanism shown in Figs. 5 and 6, but insert the same and the description thereof merely to show the purpose of the indentations, and the manner in which they are made to operate in our system of telegraphing.

What we claim as our invention is—

1. In combination with the letter-wheel a and ratchet-wheel f, the levers d d' d² d³ d⁴, pivoted arms c c' c² c³, punching-rods b b' b² b³, and toothed wheels f¹ and f², constructed and operated as described, the whole being constructed and arranged to operate substantially as described, for the purpose of making indentations or bosses on the strip G, which indicate the subject and import of the message, as set forth.

2. In combination with the pivoted arms c c' c² c³, operated as described, the frame L, provided with the set-screws j j j j j, and arms w³, carrying the dogs w, roller w', dog w', and springs y⁴ and y⁵, as shown and described, for the purpose of feeding forward the strip G.

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