

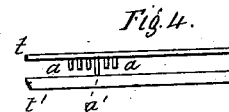
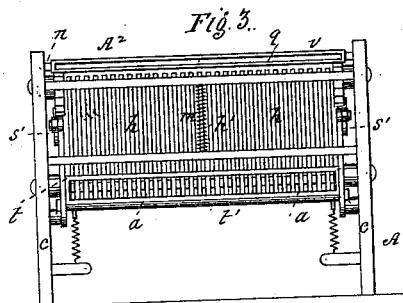
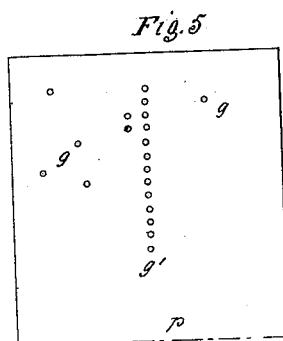
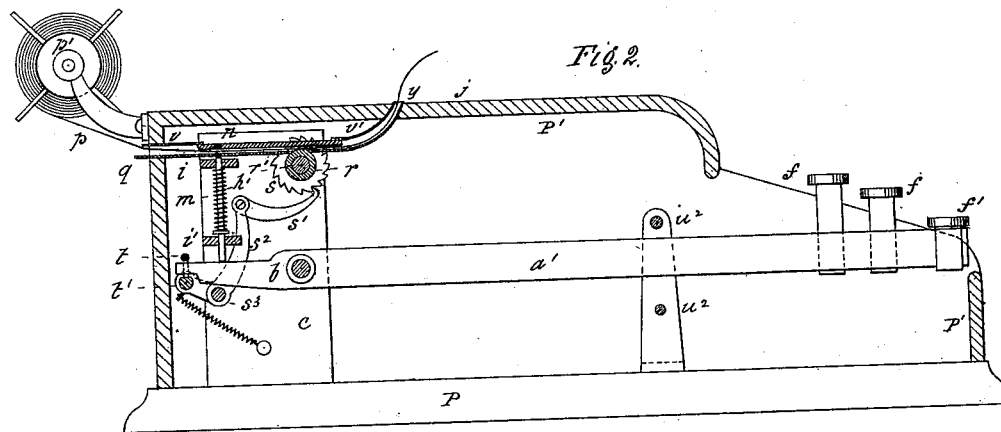
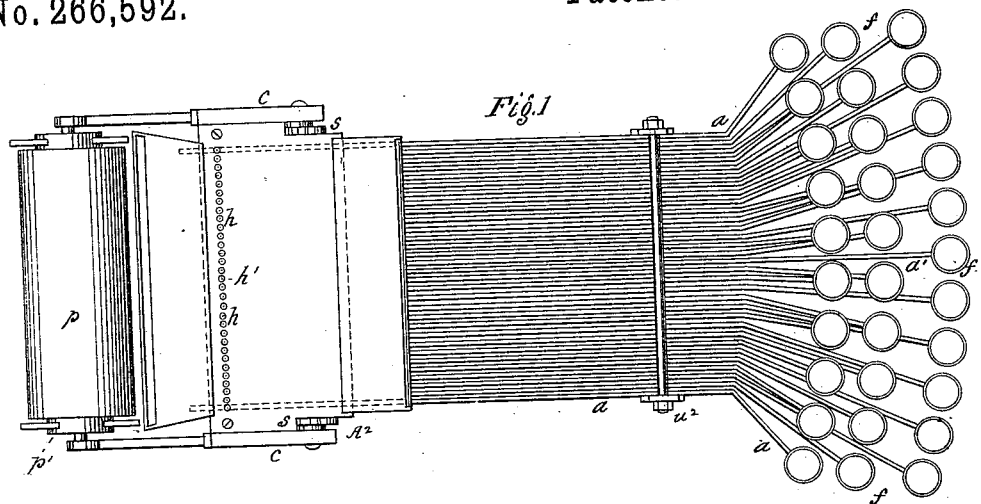
(No Model.)

A. F. & F. B. JOHNSON.

PERFORATOR FOR AUTOMATIC PRINTING TELEGRAPHS.

No. 266,592.

Patented Oct. 24, 1882.



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UNITED STATES PATENT OFFICE.

ALBERT F. JOHNSON AND FRANK B. JOHNSON, OF BROOKLYN, N. Y., ASSIGNORS TO THE JOHNSON MANUFACTURING COMPANY, OF SAME PLACE.

PERFORATOR FOR AUTOMATIC PRINTING-TELEGRAPHS.

SPECIFICATION forming part of Letters Patent No. 266,592, dated October 24, 1882.

Application filed February 23, 1882. (No model.) Patented in England March 29, 1882, in Austria April 7, 1882, in France April 15, 1882, in Belgium April 17, 1882, and in Germany April 18, 1882.

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 an Improved Perforator for Automatic Printing-Telegraphs; and we hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to improvements in perforating-instruments for use in automatic telegraphing, and forms part of the mechanism used by us in our improvements in automatic printing-telegraphs described in our specification marked "A," filed simultaneously herewith.

In this improvement each letter or character of the message to be transmitted and printed at the receiving-station is represented by a separate perforation made upon a strip of paper or other suitable material by the instrument herein described, and each of the said perforations, when the perforated paper is passed through a suitable transmitter, sends an electric impulse over its respective line-wire to the receiving-instrument and causes the latter to print that particular letter or character; and this invention consists in certain improved constructions and combinations of parts, as hereinafter particularly described.

In the accompanying drawings, Figure 1 represents a plan view of the instrument; Fig. 2, a longitudinal sectional elevation; Fig. 3, a partial end view, and Fig. 4 a detail hereinafter explained. Fig. 5 is a plan view of a sheet of paper perforated, as hereinafter described.

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

a represents a series of levers, arranged side by side and fulcrumed on a transverse bar, *b*, that is secured at each end to the sides *c c* of an upright frame, Δ^2 , so that said levers swing vertically. At the outer end of said levers are secured knobs or press-buttons *f*, each having marked thereon one of the letters of the alphabet, or such other character as it may be desired to use in transmitting messages. In

the drawings thirty-one of such levers are shown, each provided with its respective press-button; but, if desired, levers and press-buttons representing numerals may be added.

h represents a series of punching-rods, corresponding in number with said levers, and each operated by one of the same. These rods are fitted between transverse plates *i i'*, having perforations to receive and guide them, and each of them is either pivoted to one of the levers *a* or arranged so that its lower end rests upon the end of its corresponding lever when in its normal position. Retracting-springs *m* are fitted on the rods *h*, between the plates *i i'*, for the purpose of bringing the levers *a* into their normal position when the pressure on the knobs is removed. Above the plate *i*, and parallel therewith, is another plate, *n*, having a series of perforations, each directly over the upper end of one of the rods *h*, and between these plates *i* and *n* the paper *p* to be perforated is passed from a reel, *p'*, located in any suitable position, so that when one of the knobs *f* is pressed its respective rod *h* is raised and makes a perforation in the paper.

q is a thin metal plate running parallel with and between said plates *i* and *n*, and having perforations coinciding with those on the plates *i* and *n* for the purpose of stripping the paper from the rods when a perforation has been made.

r is a feed-roller having a roughened or friction surface, which presses against the under surface of the plate *n*, and is fixed upon a shaft, *r'*, having bearings in the sides *c* of the frame. This roller is driven by means of ratchet-wheels *s*, fixed upon the ends of said shaft *r'*, which are operated by pawls *s'*, pivoted at the upper ends of bent levers *s^2*, fulcrumed on a transverse bar, *s^3*. To the lower ends of the bent levers *s^2*, are secured two parallel transverse bars, *t t'*, between which the ends of the levers *a* extend, so that whenever one of the knobs *f* is pressed the pawls *s'* are thrown forward to make a stroke, and the stroke is made by the return of the lever to its normal position through the medium of its retracting-spring *m*. These pawls *s'* are arranged to make

a longer stroke than is necessary merely for engaging with each tooth of the ratchets, the object of this arrangement being to permit the rods to descend by the action of their retracting-springs a sufficient distance to clear themselves from the paper before the latter is moved forward by the pawl engaging with the ratchet-tooth. The paper, as it receives the perforations, (being moved forward by the roller *r*, as above described,) passes out through an opening in the case or cover *j* at any convenient point, as at *y*. Each of the rods *h* makes a perforation on the paper *p* that represents the particular letter or character marked on the knob or press-button at the end of the lever by which such rod is lifted, and when the said perforation is passed through the transmitting-instrument it brings into circuit a magnet on the receiving-instrument, which is provided with devices for printing that particular letter on the message-strip. The knob *f'* on the lever *a'* is not marked with any letter or character, and is for the purpose of making perforations by means of its rod *h'*, which, when passed through the transmitter, operates the feed mechanism of the receiving-instrument. This lever *a'* and rod *h'* are constructed and arranged to operate in the same manner as the levers *a* and rods *h*, with this exception, that while the lever *a'* has an independent movement it is also raised to make a perforation whenever any one of the rods *h* makes one. These perforations (marked *g'*) are for the purpose of moving forward the message-strip in the receiving-instrument whenever a letter is printed. The device by which this movement is effected is shown in Fig. 4, and is as follows: The ends of the levers *a* rest in their normal position on the under side of the bar *t*, and whenever the knob on its other end is depressed it raises said bar *t*, and also the bar *t'*. The end of *a'* rests in its normal position with its under side on the upper surface of the bar *t'*, and, therefore, whenever the bar *t* is raised the bar *t'* raises the end of the lever *a'* and causes its rod *h'* to make a perforation, *g'*.

*u*² *u*² are transverse bars for limiting the movements of the levers, and *v* and *v'* are guide-plates to conduct the paper to and from the feed-roller.

P is the base, to which the working parts are secured, and *P'* a case or cover, which may be of any suitable form.

The operation to perforate a message is as follows: The end of the paper having been passed between the plates *q* and *n*, and over the feed-collar, the knob *f*, which has the first letter of the message, is depressed, which causes one of the rods *h* to make a perforation representing that particular letter and the rod *h'* to make a perforation for the purpose of moving forward the message-strip in the receiving-instrument. Then the knob having marked on it the second letter of the message is depressed, and so on to the end of the first word. Between the words of the message the knob *f'* is depressed once to leave spaces on the message-strip between words. At the end of the subject-matter of the message the knob *f'* is depressed a number of times to leave a vacant space on the message-strip in the receiving-instrument, after which perforations are made, as before, to represent the letters and words composing the address.

What we claim as our invention is—

1. In combination with the levers *a*, each provided with and operated by a knob, *f*, representing a particular letter or character, and the lever *a'*, provided with and operated by a knob, *f'*, the punching-rods *h* and *h'*, feed-roller *r*, ratchet-wheels *s*, pawls *s'*, bent levers *s*², and bars *t t'*, as and for the purposes set forth.

2. In combination with the rods *h h'*, the ratchet-wheels *s*, and feed-roller *r*, the bent levers *s*², provided at their upper ends with pawls *s'* and at their lower ends with the transverse bars *t t'*, and the levers *a* and *a'*, having their ends fitted between said bars *t t'* in the relative positions shown and described—that is to say, with the upper surfaces of the levers *a* in contact with the bar *t* and the under surface of the lever *a'* in contact with the upper surface of the bar *t'*, for the purpose set forth.

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Witnesses.

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