

(No Model.)

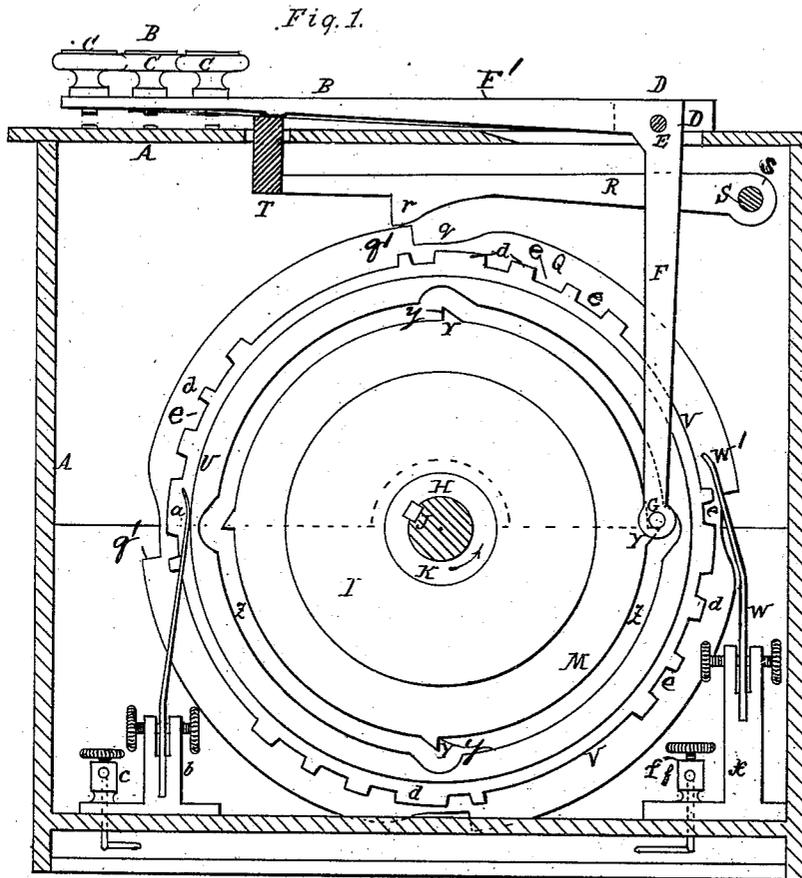
3 Sheets—Sheet 1.

G. JUENGST.

TELEGRAPHIC TRANSMITTER.

No. 372,805.

Patented Nov. 8, 1887.



WITNESSES:

*Samuel Daly*  
*Reinhold Brocklin*

INVENTOR

*George Juengst*



(No Model.)

3 Sheets—Sheet 3.

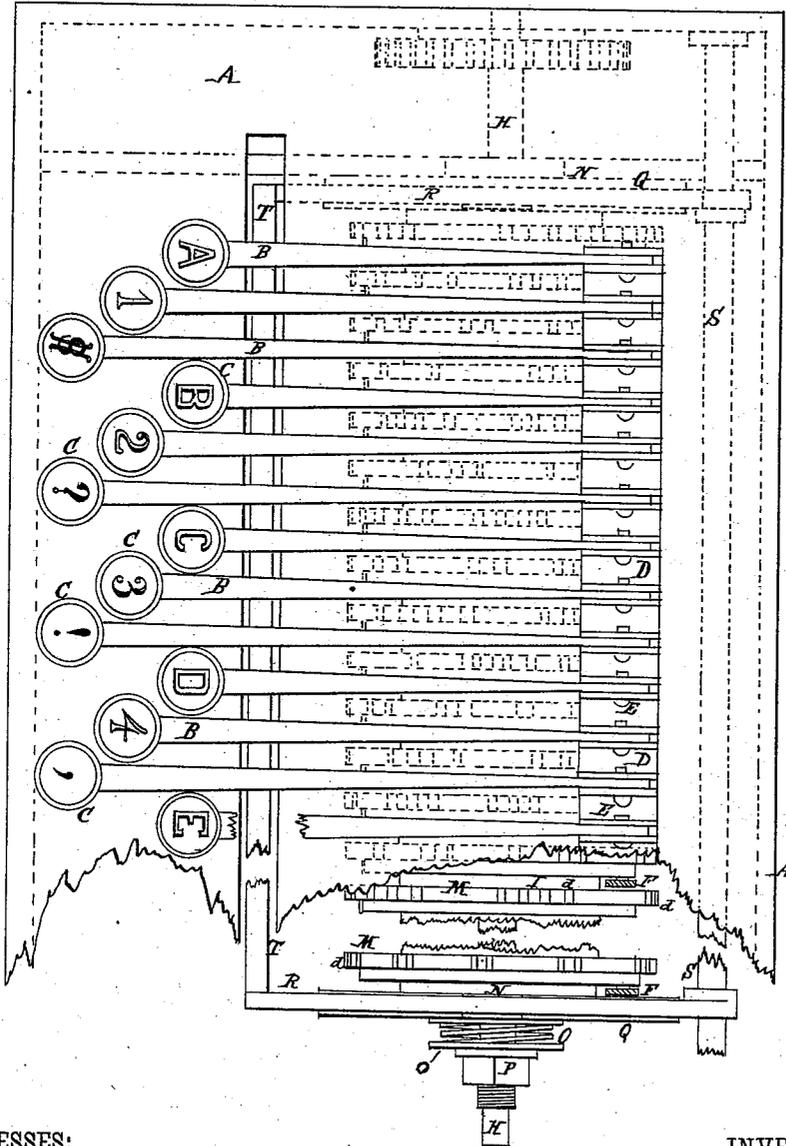
G. JUENGST.

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Patented Nov. 8, 1887.

Fig. 3.



WITNESSES:

*David Doby*  
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# UNITED STATES PATENT OFFICE.

GEORGE JUENGST, OF CROTON FALLS, NEW YORK.

## TELEGRAPHIC TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 372,805, dated November 8, 1887.

Application filed May 27, 1885. Renewed July 18, 1887. Serial No. 244,679. (No model.)

### *To all whom it may concern:*

Be it known that I, GEORGE JUENGST, Sr., a citizen of the United States of America, residing at Croton Falls, in the county of Westchester and the State of New York, have invented an Improvement in the Method of Transmitting Telegraphical Signals, of which the following is a specification.

The invention relates to improvements in that class of telegraph-transmitters in which keys marked with ordinary letters, figures, and marks act upon and actuate parts which indicate the corresponding letters, &c., in the Morse alphabet at the other end of the line; and it consists in the construction and novel arrangement of parts hereinafter described, and pointed out in the appended claims.

In the drawings, Figure 1 represents a vertical section of the invention transverse to the shaft thereof; Fig. 2, a vertical section of a portion of the invention in the line of the shaft; and Fig. 3, a plan view, partly broken away to show the interior.

Referring to the accompanying drawings by letter, A designates the case of the transmitter, of general rectangular form, in proper bearings in the sides of which turns the shaft H, which is driven by a suitable motor power, as indicated by the gearing in Fig. 2.

I I are a number of friction-disks splined on and turning with the shaft H by means of the long feather J. If desired, each disk may be splined on separately. M M are contact transmitting-disks, which lie between the friction-disks I and turn loosely on the hubs K thereof. The periphery of each disk M is separated into two parts—a perfectly smooth portion, U, and a portion, V, with the four equidistant sets of teeth *d*, each similar to the other. Each set has its teeth equally distant apart, but of different lengths. The lengths of the teeth represent the length of the times of contact to make some particular letter or character of the Morse alphabet.

The disks M are caused to turn with the shaft H by means of the spring O, which surrounds the shaft and presses against the outer disk, causing all the disks to bind sufficiently to turn together. The spring is held in place and given tension by means of the disk *o* and

nut P, engaging the threaded end of the shaft H. If desired, springs may be arranged at each end of the line of disks. The opposite end of the line of disks bears against the standard H', rising from the casing, Fig. 2. Each of the disks M has on one side a groove, Z, concentric with the shaft H, and provided on its interior circumference with the four equidistant similar stops, Y. The shoulders *y* of these stops are on the side toward which the shaft H turns, as seen in Fig. 1, and the groove stands outward opposite them, so as to have the same width everywhere.

Q Q are similar disks secured centrally to hubs outstanding from the end disk, I, and provided on their peripheries with four similar equidistant notches, *q*, the shoulders *q'* of which stand in the reverse direction to the shoulders *y* of the stops Y.

B B are angular levers, each pivoted at its angle E upon the side of a block, D, secured to the upper surface of the top of the casing A. The vertical arm F of each lever B passes through a slot in the top of the casing, and standing laterally from its lower end is a pin, G, which enters a groove, *z*, of one of the disks M. The horizontal arm F' of each lever has on its free end a head, C, marked on its upper surface with a letter, figure, or other mark used in ordinary printing. This letter corresponds with the Morse character indicated on the edge of the disk with which the key has connection. The levers, with their heads, hence form a complete key-board, which any one can use like a type-writer.

S is a horizontal bar running longitudinally through the rear portion of the casing near its top, and having pivoted upon it the rear ends, *s*, of the two levers R, situated respectively near the sides of the casing. The front ends of the said levers are secured to and connected together by a bar, T, which passes up through a proper slot in the casing and bears against the under surfaces of the arms F of all the levers B.

*r r* are similar lugs on the lower edges of the levers R, which lugs have their shoulders or holding-edges toward the front of the case. The lugs *r* are adapted to enter the notches *q* when the wheels Q rotate the same below them,

and to make this possible the notches on each side wheel register longitudinally with those on the other, and the lugs *r* similarly register with each other.

5 Each disk *M* has bearing upon the portion *U* of its periphery a spring contact-plate, *a*, having its lower end held by the support *b*, of proper form, and made in one piece with a binding-post, *c*, which is connected to the positive wire of the circuit.

10 On the rear side of the disk *M* is a binding-post, *f*, connected to the negative wire of the circuit, and having a support, *x*, made upon it, which support holds the lower end of a spring-plate, *W*, the upper end, *W'*, of which does not normally touch the part *V* of the periphery of the wheel, but will touch and drag over the teeth *d* of said part *V* when the disk rotates. Thus each tooth will make circuit, and each notch *e* between the teeth will break circuit, the current being normally broken between the sets of teeth.

The parts are so arranged that when the lug *r* is just forward of the shoulder *q'* of a notch 25 *q* the pins *G* of the arm *F* are resting upon the shoulders *y* of the stops *Y*, and a set of teeth *d* are just below the point *W'* of the plate *W* and ready to come into contact therewith. The plate *W* can in this position make 30 no contacts, as the bar *F* prevents any one of the levers *B* from being depressed, and consequently the pins *G* and stops *Y* prevent any one of the disks *M* from rotating with the shaft and friction-disks, the hubs of which turn in their central openings.

35 When the disk *Q* turns a little farther, the lugs *r* drop in the notches *q* and the bar *T* descends, allowing any key to be depressed. Upon depressing a key or lever *B* the pin *G* is thrown off the stop *Y*, of the groove on the disk *M* corresponding to that key, and the said disks begin to rotate with the shaft *H* and friction-disk, bringing the teeth *d* and plate *W* into contact. The disk *M* will then rotate till 40 the pin *G* brings up against another stop *Y*. It is evident that one set of teeth in a disk will successfully operate. In that case there would be but one notch in each of the disks, *Q*, and one stop *Y* would be used, and the disk *M* would have to make an entire rotation before it again comes to a proper position. By duplicating the said parts, as shown in the drawings, the disk *M* has to make but a quarter-rotation for the purpose and the device could be worked faster, 45 as the same letters might have to be printed twice in juxtaposition, as "m m," for instance, in "command" or other word.

Having described my invention, I claim—

1. In a telegraphic transmitter, the combination of the pivoted levers *B*, provided on 60 their horizontal arms with heads marked with the characters used in ordinary printing, and having the stop-pins *G* on their vertical arms, the disks *M*, provided with the teeth *d* and grooves *Z*, having the stops *Y* made therein, 65 the rotating shaft, the friction-disks, and means, substantially as described, whereby the pins *G* may be released from the stops *Y* and the circuit made, substantially as specified.

2. In a telegraphic transmitter, the combination of the levers *B*, having the pins *G* on 70 their vertical arms and on their horizontal arms, the heads *C* marked with the characters used in ordinary printing, the disks *M*, having the smooth peripheral parts *U*, the peripheral 75 parts *V*, provided with the teeth *d*, and the grooves *Z*, having the stops *Y* made therein, the rotating shaft, the friction-disks, the contact-plates *a* and *W*, respectively connecting with the positive and negative wires of the circuit, 80 and means, substantially as described, whereby the pins *G* may be released from the stops *Y*, all substantially as set forth.

3. In a telegraphic transmitter, the combination of the keys *B*, having the pins *G* on 85 their arms *F*, the disk *M*, having the teeth *d* and the grooves *Z*, provided with the stops *Y*, the electrically-connected contact-plates *a* and *W*, the rotating shaft *H*, the friction-disks *I*, splined thereon, the standard *H'*, spring *o*, 90 disk *O*, and nut *P* on the threaded end of the shaft *H*, substantially as specified.

4. In a telegraphic transmitter, the combination of the keys *B*, having the pins *G* on 95 their arm *F*, the disks *M*, provided with the teeth *d*, and grooves *Z*, having the stops *Y*, the contact-plates *a* *W*, and the pivoted levers *R*, connected at their front ends by the bar *T*, and provided with the lugs *r*, with the rotating shaft, the friction-disks splined thereon, and 100 the disks *Q*, provided with the peripheral notches *q*, all constructed and arranged substantially as shown and described, for the purpose specified.

In witness that I claim the foregoing as 105 my invention I have signed my name, in presence of two witnesses, this 26th day of May, 1885.

GEORGE JUENGST.

In presence of—

DANIEL DALY,  
REINHOLD BOEKLEN.