

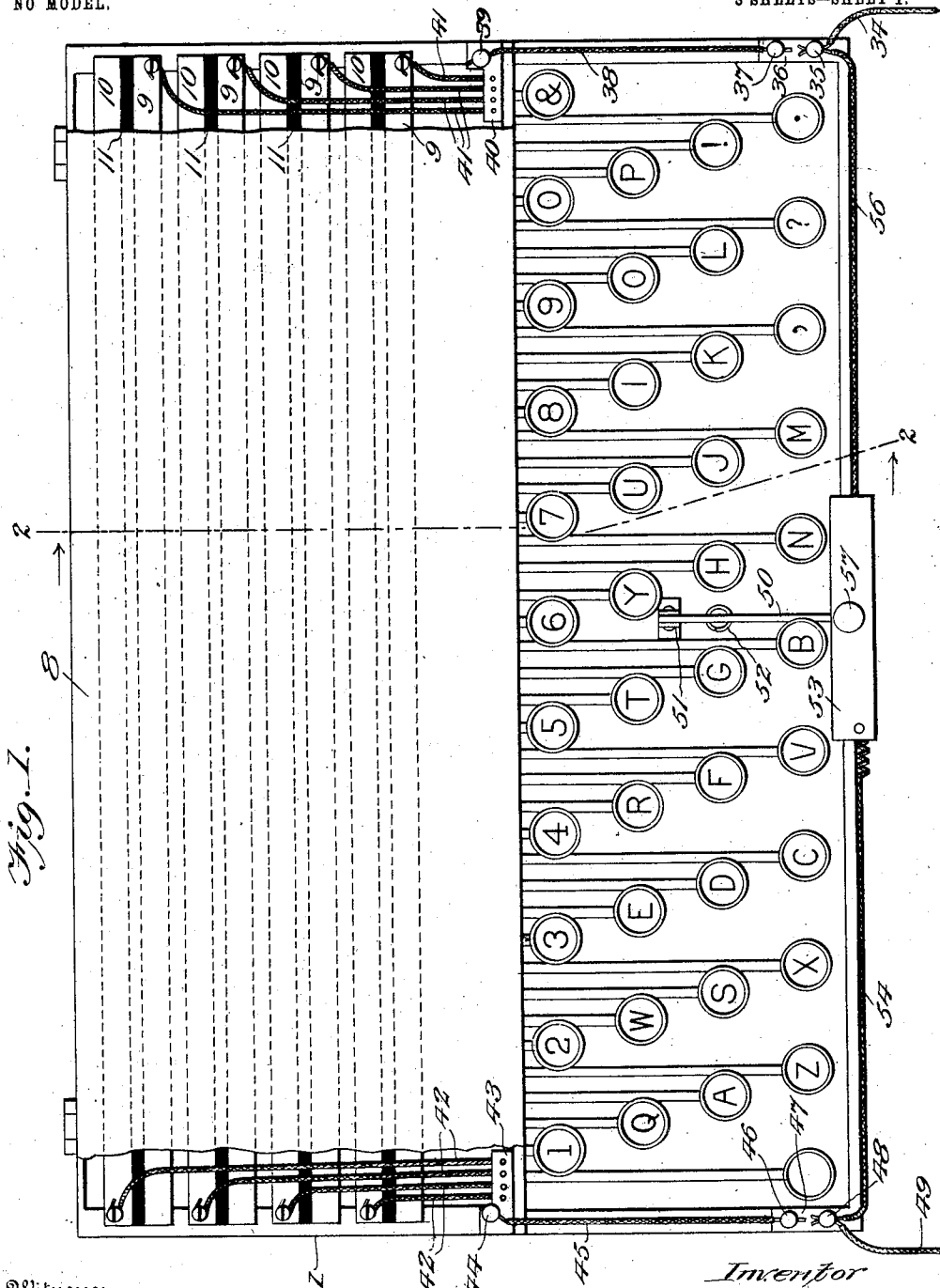
No. 761,917.

PATENTED JUNE 7, 1904.

W. J. ROUSSEL.
TELEGRAPH TRANSMITTER.
APPLICATION FILED FEB. 11, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses

Edwin F. McKee
Herbert D. Lawson

By

Inventor
Willis J. Roussel
Victor J. Evans
Attorney

No. 761,917.

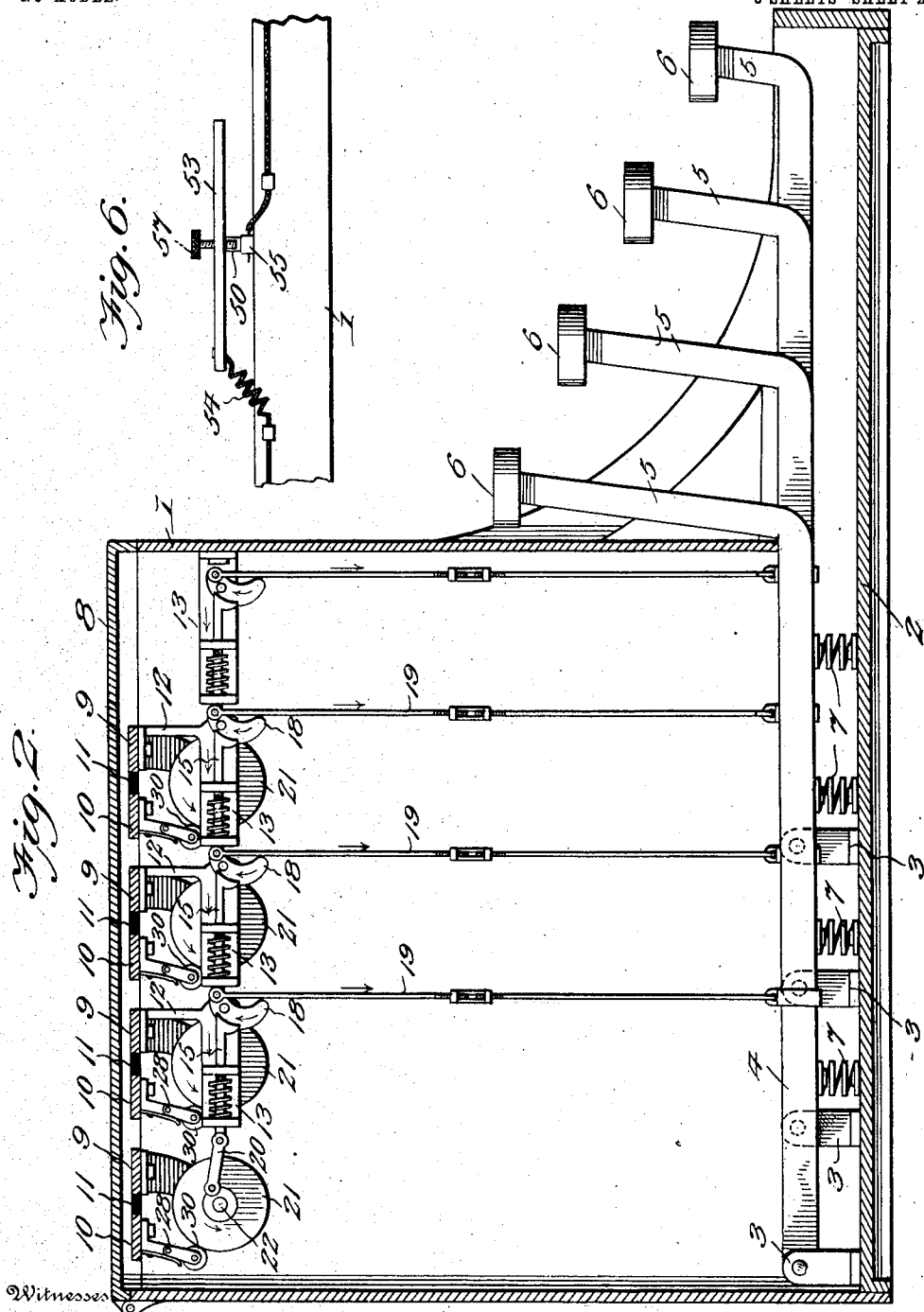
PATENTED JUNE 7, 1904.

W. J. ROUSSEL.
TELEGRAPH TRANSMITTER.

APPLICATION FILED FEB. 11, 1903.

NO MODEL.

3 SHEETS—SHEET 2.



Witnesses:

Edmund G. McKee
Herbert D. Lawson

By

Inventor
Willis J. Roussel
Victor J. Evans *Attorney*

Attorney

No. 761,917.

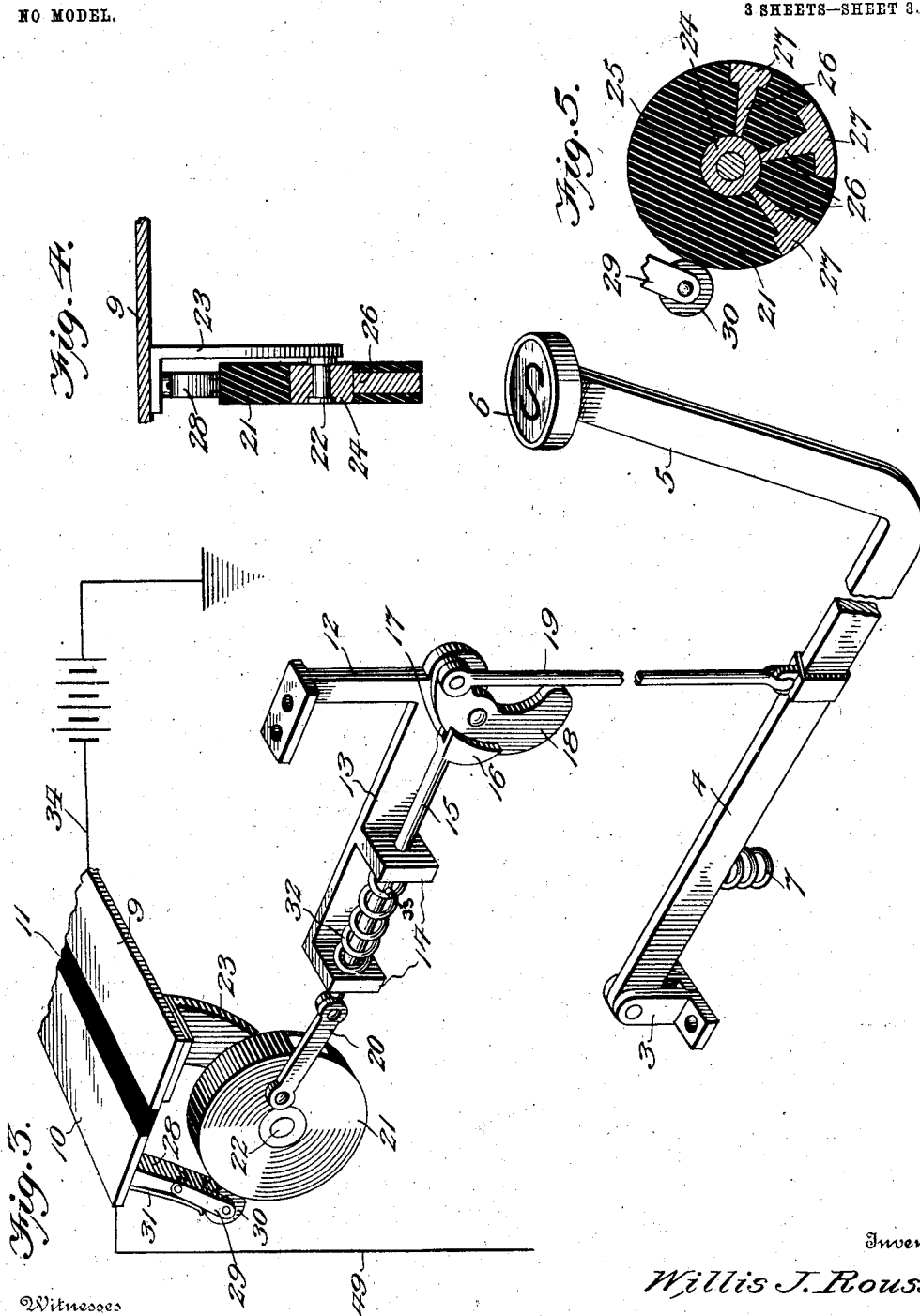
PATENTED JUNE 7, 1904.

W. J. ROUSSEL.
TELEGRAPH TRANSMITTER.

APPLICATION FILED FEB. 11, 1903.

NO MODEL.

3 SHEETS—SHEET 3.



Witnesses
Edwin F. McKee
Herbert Lawson

Inventor
Willis J. Roussel
Victor J. Evans
Attorney

UNITED STATES PATENT OFFICE.

WILLIS J. ROUSSEL, OF NEW ORLEANS, LOUISIANA, ASSIGNOR OF ONE-EIGHTH TO ALPHONSE KING, OF CHICAGO, ILLINOIS.

TELEGRAPH-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 761,917, dated June 7, 1904.

Application filed February 11, 1903. Serial No. 142,952. (No model.)

To all whom it may concern:

Be it known that I, WILLIS J. ROUSSEL, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented new and useful Improvements in Telegraph-Transmitters, of which the following is a specification.

My invention relates to new and useful improvements in telegraph-transmitters; and its object is to provide a device which is adapted to transmit "Morse" characters upon the depression-keys, which are located upon the keyboard in any suitable manner.

A further object is to provide means of simple construction whereby upon the depression of a key the proper signal may be transmitted quickly and accurately.

A further object is to employ a circuit-closer, by means of which the transmitter may be removed from the circuit and which is also so constructed that the same may be used as an ordinary telegraph-transmitter.

With the above and other objects in view the invention consists in providing a transmitter having a keyboard which is preferably similar to that employed in connection with type-writers and each key of which is connected in a novel manner to a rotary disk having contact-plates upon the periphery thereof of such lengths and so spaced apart as to indicate in the Morse alphabet the character designated upon the key connected therewith. These contact-plates are electrically connected with one wire of the circuit, while a contact-roller bears upon the periphery of the disk normally at a non-conducting point thereon and is electrically connected with the other wire of the circuit. It is therefore obvious that when the disk is revolved by depressing the key all parts of the periphery thereof will contact with the roller, and the proper combination of dots and dashes will be promptly and quickly transmitted.

The invention also consists in the further novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings,

showing the preferred form of my invention, and in which—

Figure 1 is a plan view of my improved transmitter, the top thereof being broken away to show the wiring of the interior of the device. Fig. 2 is a section on line 2 2, Fig. 1. Fig. 3 is a perspective view of a key, the disk thereof, the mechanism connecting the key and disk, and the contact-roller upon the disk. Fig. 4 is a vertical transverse section through the disk. Fig. 5 is a vertical longitudinal section therethrough. Fig. 6 is a front elevation of the central portion of the transmitter and showing in detail the circuit-closer.

Referring to the figures by characters of reference, 1 is a casing of any desired form and is provided with a base 2, which preferably extends a suitable distance from the front of the casing. Brackets 3 are arranged upon the base at points within the casing, and within each bracket is fulcrumed a lever 4, terminating at a point outside the casing and above the projecting portion of the base in an upwardly-extending arm 5, having a key 6 secured to the end thereof. Springs 7 are preferably interposed between the base and the levers 4, so as to hold said levers normally raised.

The top of casing 1 is adapted to be closed by a hinged cover 8, and strips 9 and 10 of conducting material are secured upon the casing at a point below the cover and extend from side to side thereof. These strips 9 and 10 are arranged in pairs, and the strips of each pair are insulated from each other, preferably by means of an interposed layer 11 of non-conducting material. To each strip 9 are secured at desired intervals hangers 12, having rearwardly-projecting arms 13, provided with laterally-extending ears 14. Within each pair of ears is slidably mounted a plunger 15, having a shoe 16 at its forward end provided with a groove 17 therein. This groove is adapted to receive the working edge of a cam 18, pivoted to the lower end of hanger 12 and having its upper end connect-

ed to one of the levers 4 by means of an adjustable rod 19.

The rear end of plunger 15 is pivoted to a pitman 20, which is connected in a similar manner to one side of a disk 21, mounted upon a stud-shaft 22, which extends laterally from a hanger 23. This hanger is secured in any suitable manner to the lower surface of the strip 9 of the adjoining pair. The disk is preferably formed of a core 24 of conducting material inclosed by an insulated portion 25, and plugs 26 extend through the insulated portion of the disk at desired intervals and are electrically connected with the core. Each plug is provided with a head 27, which is flush with the periphery of the disk, and these heads are adapted to be of different lengths to represent the dots and dashes of a Morse alphabet. The heads are also adapted to be placed at desired intervals from each other, so as to permit the desired intervals to elapse between the transmission of the dots and dashes of the character. The strip 10 of the pair within which the strip of hanger 23 is included has an arm 28 depending therefrom, and to the lower end of this arm is hinged a strip 29, having a roller 30 of suitable conducting material journaled therein. This roller is held normally in contact with the periphery of the disk 21 by means of a spring 31, which is secured to arm 28 and bears upon the strip 29. For convenience in construction the arms 13, within which are mounted the rods adapted to operate the front or first row of disks, are not connected to depending hangers 12, but are instead fastened to the front wall of casing 1, as has been clearly illustrated in Fig. 2. Each of the rods 15 has a coil-spring 32 thereon at points between the two ears 14, and a lug 33 extends from each rod and engages its spring. It is therefore obvious that when the spring is compressed by forcing the rod in one direction it will promptly return said rod to its normal position as soon as released.

The wire 34 of the telegraph-circuit is connected to a binding-post 35, mounted on a plate 36 of conducting material, said plate being secured to and insulated from the base 2 of the transmitter at one side thereof. A second binding-post 37 may be mounted upon this plate and is adapted to be connected, by means of a wire 38, with a binding-post 39, arranged on and electrically connected with a distributing-plate 40, arranged within the casing 1 at a point directly under the cover 8 thereof. Wires 41 extend from this distributing-plate to each strip 9. The strips 10 are connected, by means of wires 42, with a distributing-plate 43, located within the top of the casing at the other side thereof and having a binding-post 44 thereon, to which is connected a wire 45. This wire is fastened at its

other end within a post 46, mounted on a plate 47, of conducting material, which is secured to the base 2, preferably at that side thereof farthest removed from plate 36. A second binding-post 48 is mounted on this plate 47 and is connected to the remaining wire 49 of the telegraph-circuit.

In order that the transmitter may be removed from the telegraph-circuit and messages transmitted and received at points upon the wires 34 and 49 at opposite sides thereof, I provide a circuit-closer of novel construction. This circuit-closer, as illustrated in Figs. 1 and 6, comprises a lever 50, which is preferably located at the center of the front end of base 2 and is fulcrumed within a bracket 51 and provided with a spring 52 for holding the same normally raised. A strip 53 is arranged upon the end of lever 50 and is electrically connected to the post 48 by means of a wire 54. A block 55 is arranged under the center of strip 53 and is electrically connected with post 35 by means of a wire 56. A thumb-screw 57 is mounted within the center of strip 53 and is adapted when turned in one direction to be brought into contact with block 55, and thereby short-circuit the transmitter and permit a current to pass from wire 34 to wire 49 without first going through said transmitter.

When the transmitter is to be used, screw 57 is turned so as to be removed from contact with block 55. The keys representing the characters to be transmitted are then depressed in the order in which they are to be used. As before stated, the disks 21, connected to and operated by the keys, are provided in their peripheries with series of contact-heads 27 of such lengths and distances apart as to represent in the Morse alphabet the characters upon the keys connected therewith. For instance, the disk connected to the key F has three plugs 26 therein, the end plugs have small heads 27, representing dots, while the middle plug has a long rectangular head thereto to represent a dash. Therefore when the key F is depressed cam 18 will be swung upward upon its pivot and will force plunger 15 longitudinally and compress spring 32. Pitman 20 will during such movement of the rod move the disk 21 one-half a revolution, and as soon as key F is released spring 32 will expand and return to its normal position, and thereby complete the revolution of the disk. As the disk revolves the contact-heads 27 are brought successively in position under the roller 30, and as long as one of these heads is in contact with said roller an electrical circuit is established between wires 34 and 49 by way of plate 36, wires 38 and 41, strip 9, hanger 23, shaft 22, core 24, plug 26, roller 30, strip 29, arm 28, strip 10, wires 42 and 45, and plate 47.

By constructing the disk-operating mechanism in the manner herein described it will be seen that the first half of the revolution of the disk is produced by depressing the key; but this movement is not sufficient to bring one of the contact-heads 27 into position under the roller 30. As soon as the key is released, however, the spring 32, which was tensioned by the depression of the key, expands and completes the revolution of the disk by retracting plunger 15. As all of the springs 32 are the same, it is obvious that the second half of the revolution of each disk will be the same, and therefore the characters transmitted by the disks will be uniform. As the downward movement of the levers 4 does not bring any one of contact-heads 37 below the roller 30, it is obvious that the keys may be depressed at various speeds; but the second halves of the revolutions of the disks will always be of uniform speeds.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus described the invention, what is claimed as new is—

1. In a telegraph-transmitter, the combination with a contact adapted to be connected to one wire of a circuit, of a rotary disk, the periphery of which is contacted by said contact, said disk being adapted to be connected to the other wire of the circuit, a spring-pressed plunger, a pitman connecting said plunger to the disk, a key-lever, and means operated by the lever for operating the plunger and compressing the spring, whereby the disk is rotated in one direction only.

2. In a telegraph-transmitter, the combination with a rotary disk adapted to be electrically connected with one wire of a circuit and having contact-heads in the periphery thereof, and a contact normally bearing upon the periphery of the disk and adapted to be connected to the other wire of the circuit; of a spring-pressed plunger, a pitman connecting said plunger and disk, a cam adapted to bear upon and operate the plunger and compress the spring, a key-lever, and connecting means between said lever and cam.

3. In a telegraph-transmitter, the combination with a rotary disk adapted to be connected to one wire of a circuit and having contacts in the periphery thereof, insulating material interposed between the contacts, and a contact-roller adapted to be electrically connected with the other wire of the circuit and normally bearing upon the periphery of the disk; of a plunger, a pitman connecting the plunger and

disk, a spring for retarding movement of the plunger in one direction, a shoe upon the plunger, a cam bearing thereon, a key-lever, and a rod connecting said lever and cam.

4. In a telegraph-transmitter, the combination with a rotary disk having contacts in the periphery thereof and insulating material interposed therebetween, of a hanger, an arm to the hanger, lateral ears upon the arm, a plunger slidably mounted within the ears, a pitman connecting the plunger and disk, a spring upon the plunger and adapted to retard movement thereof in one direction, a grooved shoe upon the plunger, a cam adapted to travel within said groove and impart longitudinal movement to the plunger, a key-lever, and a rod connecting the lever and cam.

5. In a telegraph-transmitter, the combination with a rotary disk having contacts in the periphery thereof, and a contact-arm bearing upon the periphery of the disk; of a key-lever, means connecting said lever and disk whereby the disk is partly revolved during the depression of the lever, and a spring adapted to be tensioned by the depression of the lever and to complete the revolution of the disk and bring the contacts thereon successively in position under the contact-arm.

6. In a telegraph-transmitter, the combination with a rotary disk adapted to be connected to one wire of a circuit and having contacts on the periphery thereof, and a contact-arm normally bearing upon the periphery of the disk and adapted to be connected to the other wire of the circuit; of a spring-pressed plunger connected to the disk and a key-lever adapted to compress the spring and partly rotate the disk, said spring being adapted to subsequently expand and complete the rotation of the disk and bring the contacts successively into position under the arm.

7. In a telegraph-transmitter, the combination with a rotary disk and a contact bearing thereon; of a spring-compressed plunger connected to the disk, a cam bearing upon and adapted to operate the plunger, a key-lever, and connecting means between said lever and cam.

8. In a telegraph-transmitter, the combination with a rotary disk and a contact-arm thereon; of a plunger, a pitman connecting the plunger and disk, a spring inclosing and adapted to be compressed by the plunger, a key-lever and means operated by the lever for compressing the spring and partly rotating the disk, said disk being adapted to be propelled during the completion of its rotation by the expansion of the spring.

9. In a telegraph-transmitter, the combination with a casing having insulated strips therein, each strip being connected to a wire of a circuit; of an arm depending from one strip, a spring-pressed contact-roller hinged

to said arm, hangers depending from the other
strips, rotary disks journaled upon the hang-
ers and having contacts in their peripheries,
the contact-roller being adapted to normally
5 bear upon the periphery of the disk, a plun-
ger slidably mounted upon each hanger, a
shoe at one end of the plunger, a spring in-
closing and adapted to be compressed by the
plunger, a pitman connecting the plunger with
10 a revolving disk, a cam bearing upon the shoe,

a key-lever and means connecting the lever
and cam whereby longitudinal movement is
imparted to the plunger and the spring com-
pressed.

In testimony whereof I affix my signature in 15
presence of two witnesses.

WILLIS J. ROUSSEL.

Witnesses:

FREDERICK J. DELHOMMER,
FRANK DUPLESSIS.