

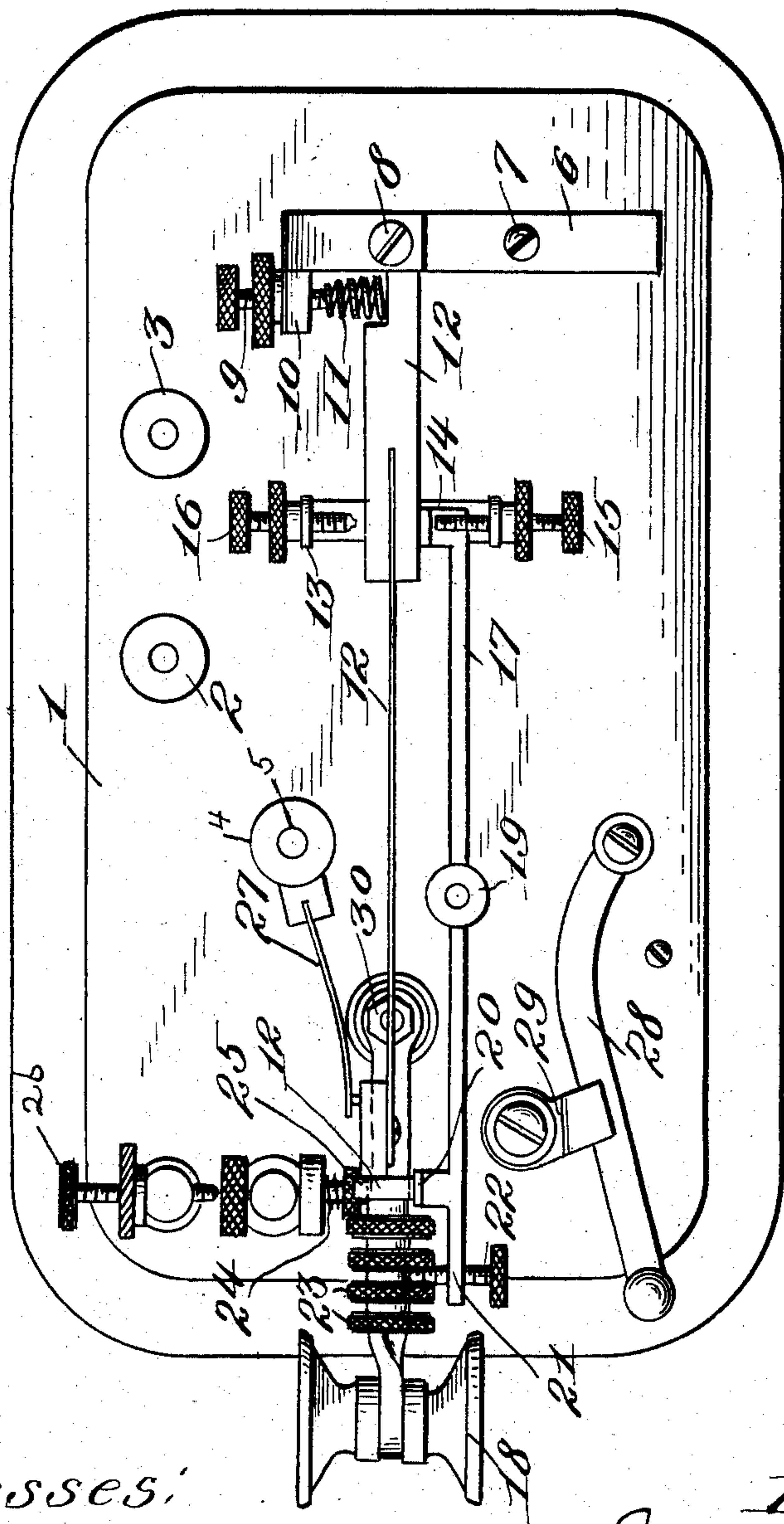
No. 864,950.

PATENTED SEPT. 3, 1907.

J. A. CARTER, JR.
TELEGRAPH TRANSMITTER.
APPLICATION FILED MAR. 4, 1907.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
H. T. Graves,
Josiah H. Quinn

Inventor
Josiah A. Carter
By
Clarence H. Bennett
Att'y

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2 SHEETS—SHEET 2.

Fig. 2.

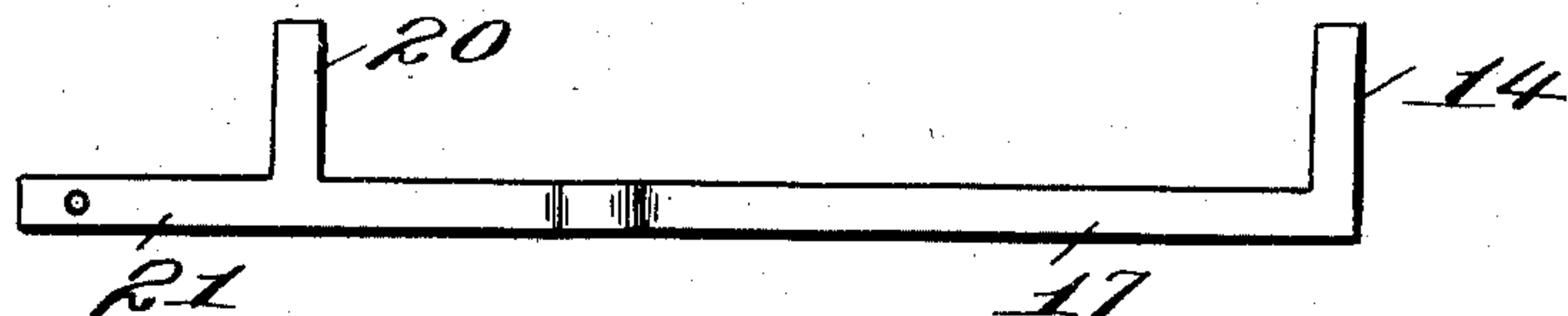


Fig. 3.

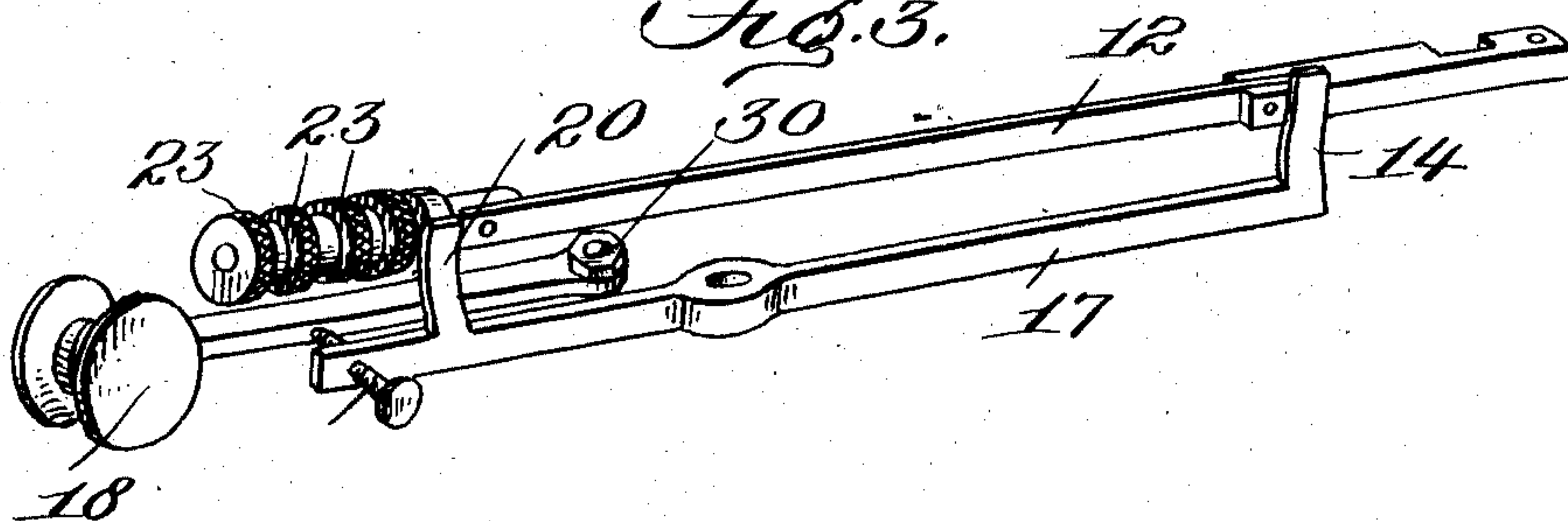
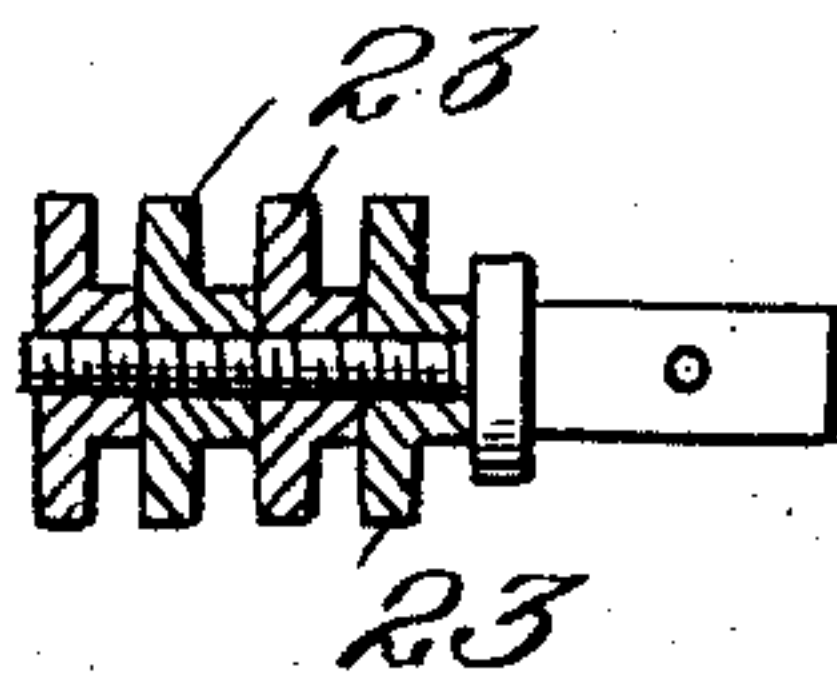


Fig. 4.



Witnesses:
H. J. Graves,
Joshua H. Shinn

Inventor
Josiah A. Carter Jr.
By Elmer H. Bennett,
Attys.

UNITED STATES PATENT OFFICE.

JOSIAH A. CARTER, JR., OF ATLANTA, GEORGIA.

TELEGRAPH-TRANSMITTER.

No. 864,950.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed March 4, 1907. Serial No. 360,328.

To all whom it may concern:

Be it known that I, JOSIAH A. CARTER, Jr., a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented a certain new and useful Improvement in Telegraph-Transmitters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

Many forms of vibrator are in use, but in illustration of the general principle I have adopted the device having the nature of a pendulum, which by the engagement of the key is normally held at such point in its path of swing that when released by the withdrawal of the key it will be free to vibrate. This vibrator is utilized to make and break a circuit and send dots over the line, the number sent in succession being determined by the length of time the key is held out of engagement with the pendulum.

My device is a modification of this pendulum in length, by which a wider vibratory arc is secured, and by the application of another device which removes the stop from the path of the vibrator automatically, permitting the vibrator to have the full force of the stroke, and insuring a farther travel of the dots with added clearness.

The Morse key requires of the operator a separate movement of his hand for each dot and dash. The dots preponderate very greatly and mechanism has been devised, whose principal object has been the relief of the operator from the nervous strain consequent upon the dual attention and the dual manual movement required by the alphabet.

The more essential features of telegraphic transmission, the carrying of the dots farther and more clearly, have been underestimated, and the object of my invention is not only to accomplish the relief of the operator from strain, but also to provide a longer vibratory contact and a consequent air gap by which the dots will be carried farther and more clearly, and also to provide a more certain regulation of the exactness of speed by which split dots or complete failure of transmission may be avoided.

To this end the mechanism consists of a lengthened vibrator, with screw weights adapted not only to change the speed of the transmission, but to regain exactly any former rate of speed, and a key lever operating to release the vibrator, modified by an auxiliary key lever which gives the vibrator the full force of the stroke, and carries a special device for stopping the vibration automatically.

The more particular embodiment of the invention herein shown and more fully hereinafter described is also comprised within the present invention.

In the drawings Figure 1 is a plan view of my improved telegraphic transmitter made in diagrammatic form; Fig. 2 is a side view of the auxiliary key lever or

bar; Fig. 3 is a side view of the auxiliary key lever or bar, the key lever and the vibrator; Fig. 4 is a sectional view of the screw weights on the end of the vibrator.

Similar figures refer to similar parts throughout the several views.

The vibrator 12 is of the usual form, except that instead of a slidable weight on its end next to the key lever 18 a series of screw weights, 23—23 are provided which may be taken off and replaced at the pleasure of the operator. These screw weights 23—23 change the time of the vibration and hence the speed of the instrument; the more the slower, the less the faster as is well known; the screw weights 23—23, however, before replaced *seriatim* bring the speed to exactly what it was when each weight was removed. When sliding weights are used it is a difficult matter to replace them in their original position, and unless they are so replaced the resulting transmission would result in either complete failure or a series of split dots. The rear end of the vibrator 12 is fitted into a shoulder 6 by means of the set screw 8, and the shoulder 6 is screwed to the frame 1 by means of an ordinary screw 7. This shoulder 6 is so shaped as to have two arms, the lower being flat upon the frame 1 and the other projecting upwards and provided with a screw hole at its point, so that the set screw 8 may pass through the end of the vibrator 12 down into a socket on the upper side of its lower arm.

In the curve of the shoulder 6 is a jaw 10 which is provided with a screw hole in which the screw 9 operates on the spring 11 which holds the vibrator 12 in place in the usual way.

Another shoulder 13, U shaped, is fastened to the frame 1, and is provided with screws 15, 16 which adjust the movement of the vibrator 12; the screw 16 on the left side of the vibrator 12 in the shoulder 13 is the contact point from which the current passes into the vibrator 12. The set screw 30 is attached to the frame 1 and operates as a base or pivot to which the rear end of the key lever 18 is attached.

The auxiliary key lever or bar 17 is fixed to the frame 1 by means of the pivot 19 screwed to the frame and fastened by a nut on the under side. The rear end of this bar 17 is bent upward and kept permanently in contact with the vibrator 12 at the point 14. The front of this lever or bar 17 is so shaped as to have two arms, one 21 being a prolongation of the lever or bar itself, and through which at its point a screw 22 is placed; this screw is always in contact with the key lever 18 except when that lever is pushed by the operator to the dash or left hand side of the machine. The other arm 20 projects upward and is at right angles to the lever or bar 17 and at stated intervals comes in contact with the vibrator 12 and stops it. When the key lever 18 is thrown to the dot or right hand of the machine, the auxiliary key lever or bar 17 throws the

vibrator 12 into motion and at the same time removes the arm or stop 20 away from the vibrator 12, thus giving the vibrator the full force of the stroke. In other machines the stop 20 is stationary, immovably
 5 fixed to the frame and because of its fixedness destroys fully one half of the stroke of the vibrator 12. The lever or bar 17 coupled with its arm or stop 20, together with the extreme length of the vibrator 12 resulting from the introduction of the lever or bar 17, permits a move-
 10 ment over the contact points more than twice as far as any known key, thus giving a longer electric contact and a wider air gap, making the dots go farther and much more clearly, and also throwing the vibrator 12 into motion, removing the arm or stop 20, and giving
 15 the vibrator the full force of the stroke of the key lever 18.

The contact spring 27 on the left hand side of the vibrator 12 adjusts the strength of the contact on the dot side and is regulated by the adjustable screw head
 20 5 at the top of a fixed pivot 4 screwed to the frame 1. The adjustable screw 26 is for dash contact and adjusting the play of the key lever 18 on the dash side of the machine. The spring 24 holds the contact point on the dash side of the machine apart, its strength
 25 being adjusted by the nut on screw 25.

Point 2 and 3 are the ordinary binding posts or the wire cord which is connected with the ordinary telegraph key by means of a plug; 28 is the usual switch for closing the circuit when the key is not in use. 29 is the contact point for 28, completing the circuit 30 when the switch is open, and with all its parts is the switch used on the ordinary telegraph key.

What I claim as my invention and desire to secure by Letters Patent is—

1. The combination of a key lever, a vibrator, and 35 auxiliary lever or bar pivoted at its center and in constant contact at its rear end with the vibrator and carrying in its forward end a screw adapted to contact with the key lever, and a stop which upon release of the key lever engages the vibrator and stops it, the key lever being 40 adapted to control the operation of said auxiliary lever or bar.

2. In a telegraphic-transmitter, in combination, a vibrator extending beyond the pivotal point of the key lever, speed adjusting screw weights, an auxiliary lever or bar 45 contacting with the vibrator and with the key lever, a movable stop, and a key lever controlling the action of the vibrator, stop and bar.

JOSIAH A. CARTER, JR.

Witnesses:

THOS. A. PRINSON,
 GEO. M. CHAPIN.