No. 871,726. PATENTED NOV. 19, 1907.

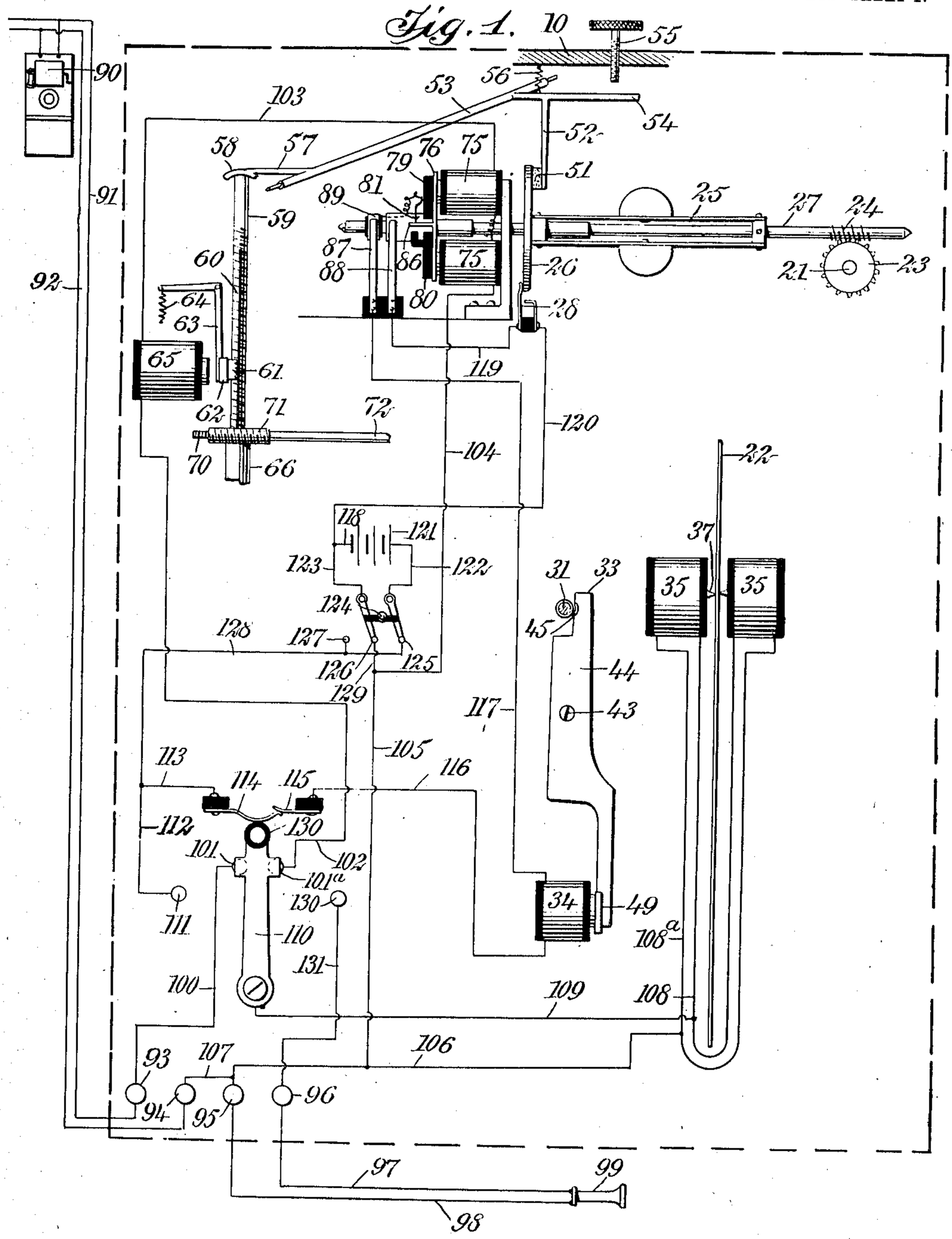
G. MORIN.

TELEGRAPHONE SYSTEM.

APPLICATION FILED JAN. 30, 1907.

6 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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6 SHEETS—SHEET 2.

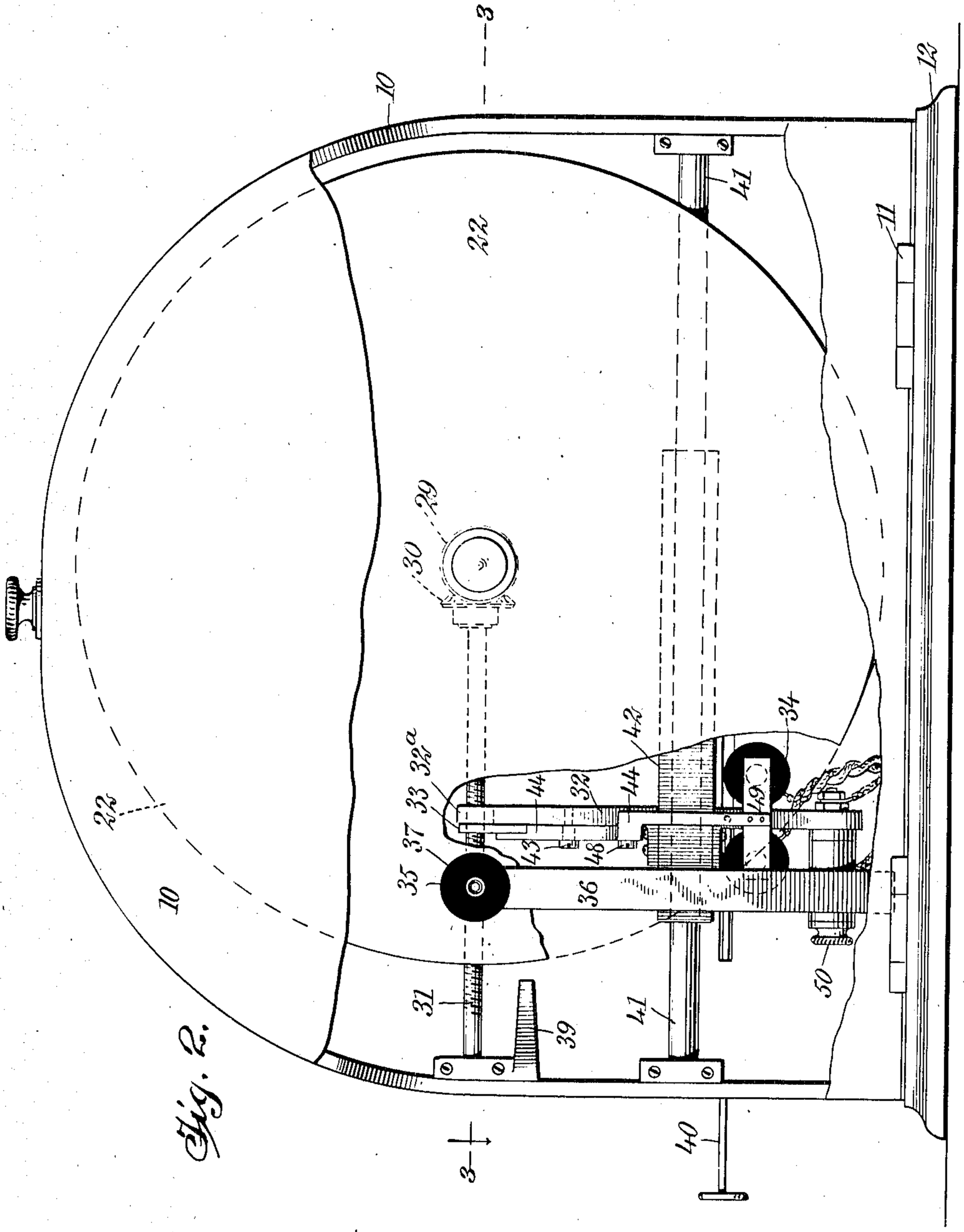

Fig. 2.

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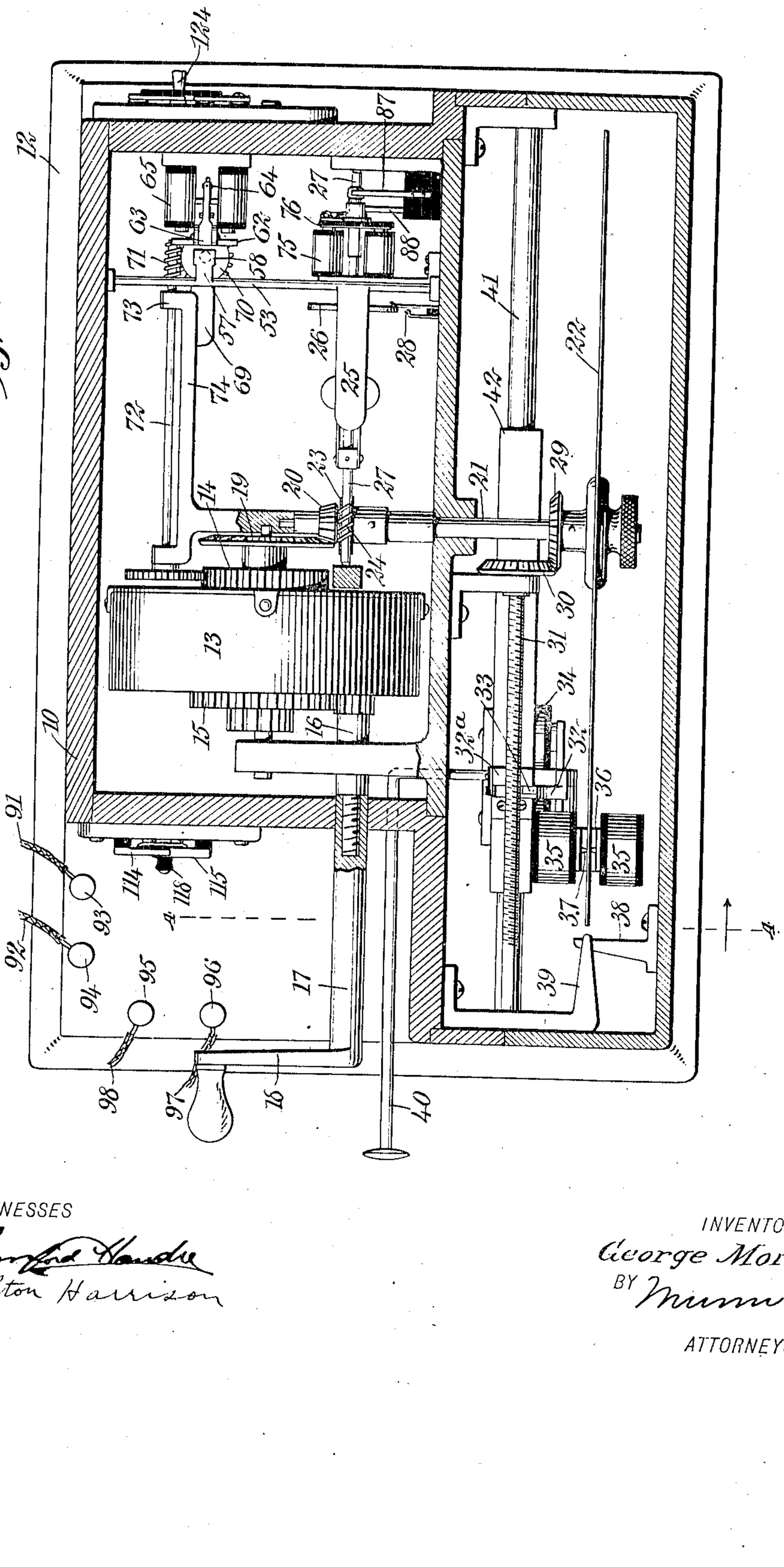
6 SHEETS—SHEET 3.

Fig. 3.



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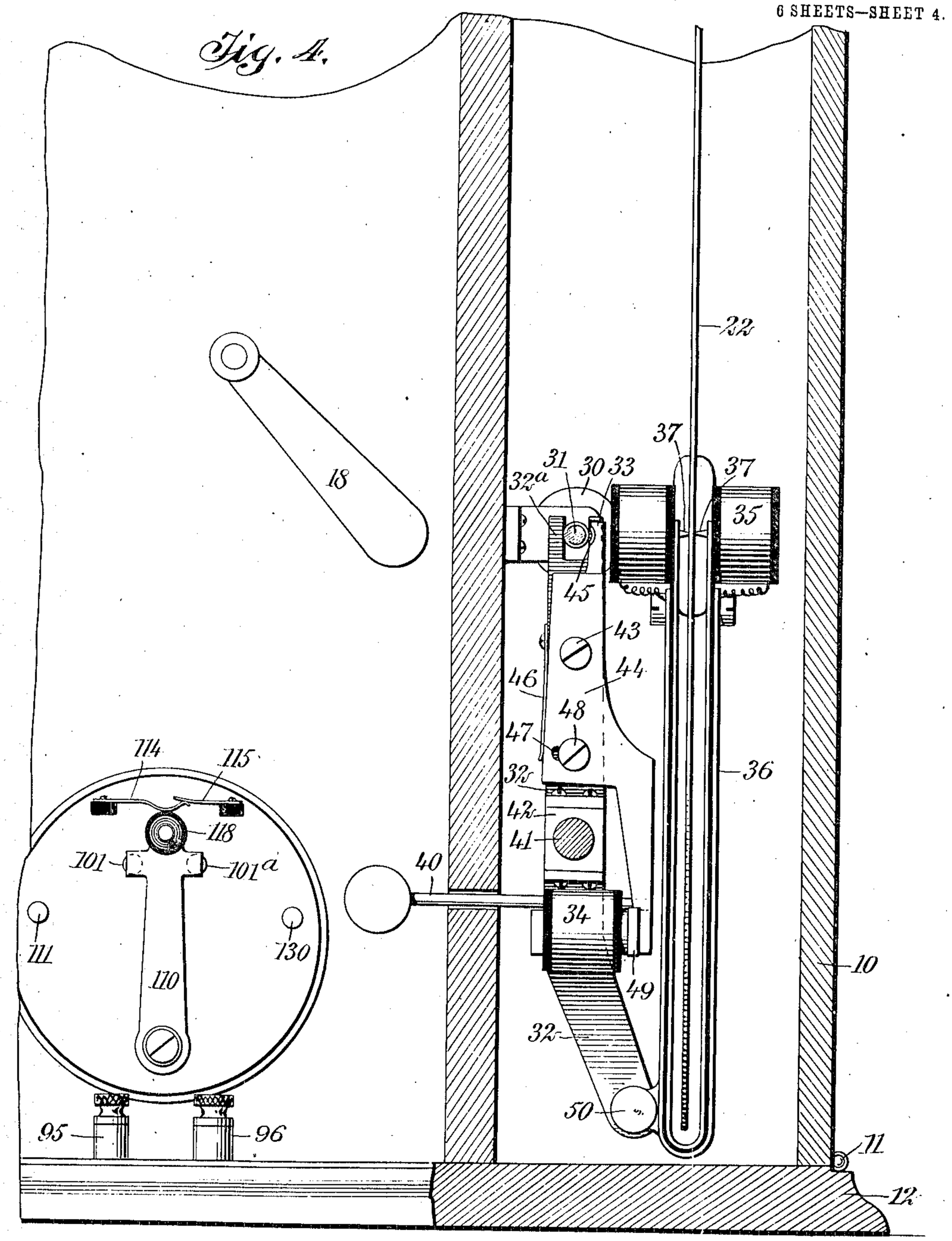
6 SHEETS—SHEET 4.

Fig. 4.



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6 SHEETS—SHEET 5.

Fig. 5.

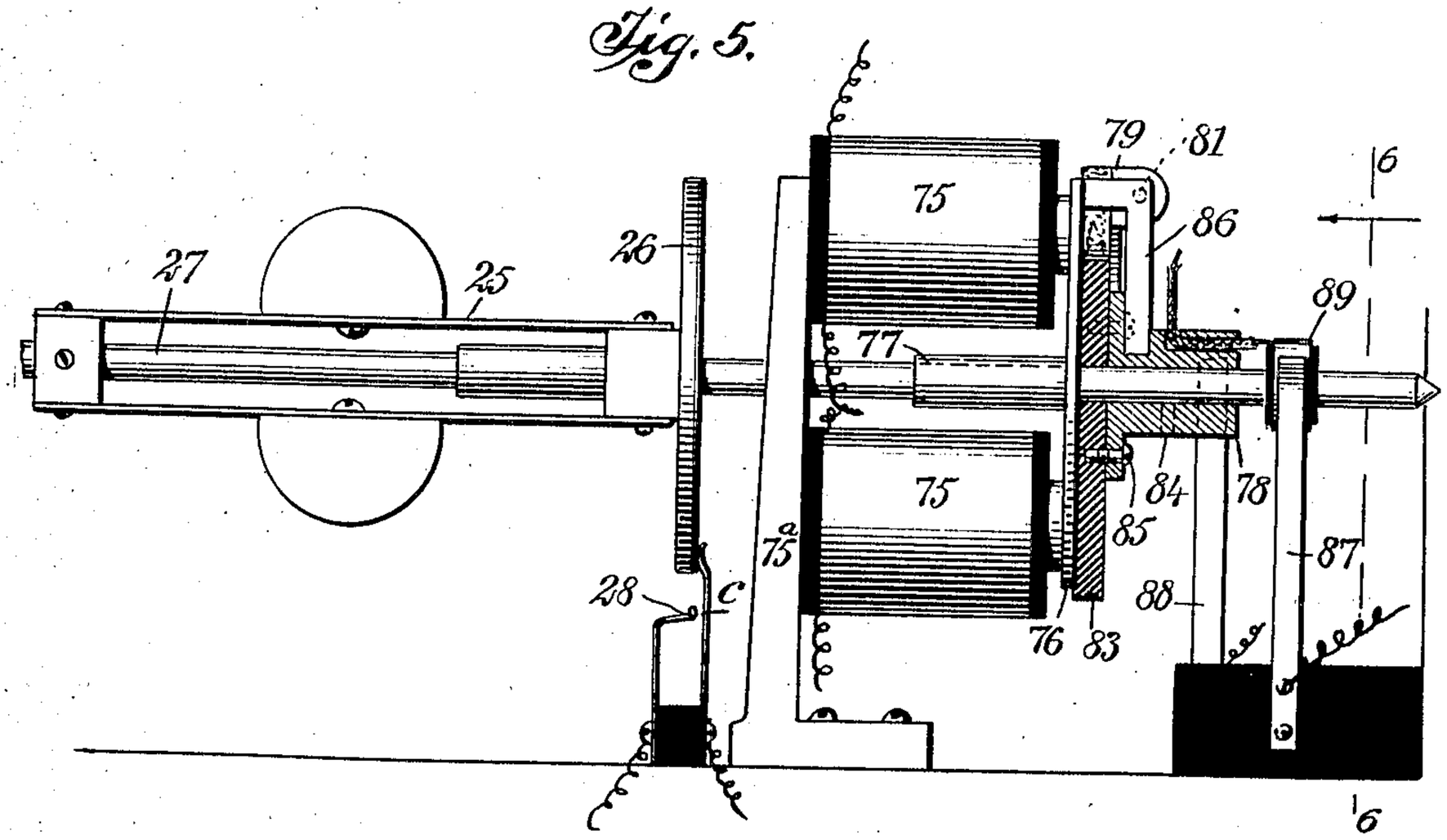


Fig. 6.

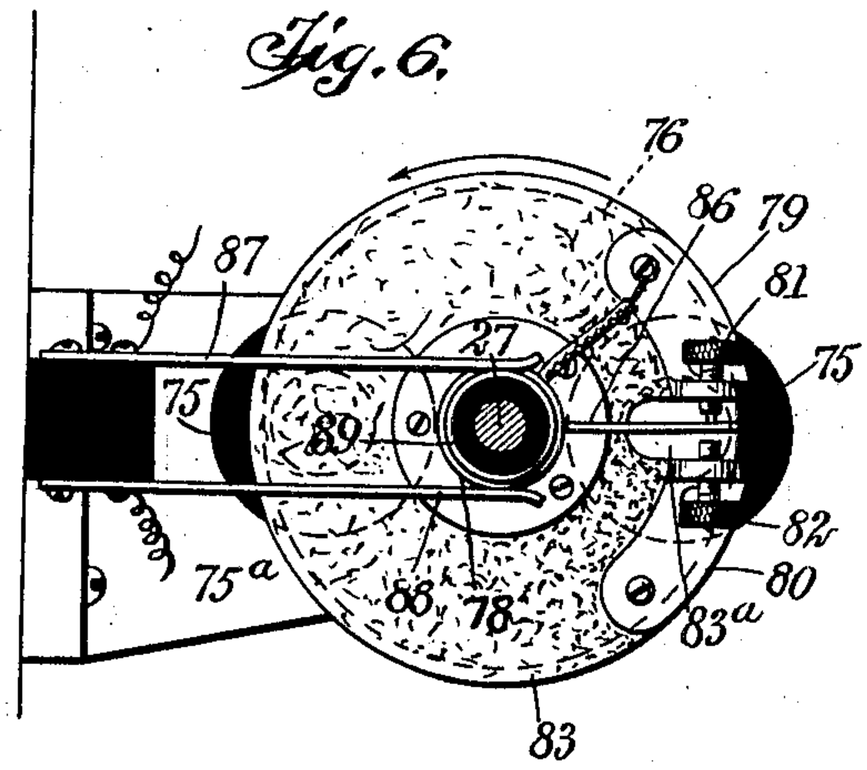
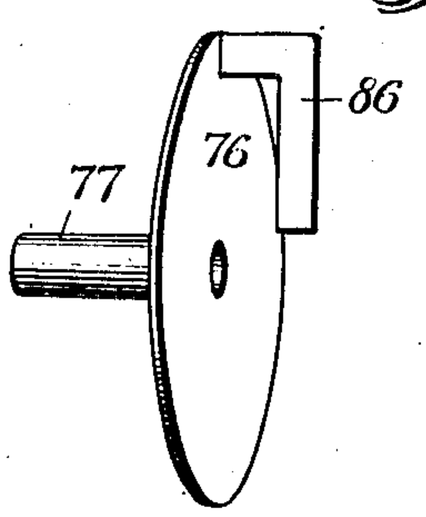


Fig. 7.



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No. 871,726.

PATENTED NOV. 19, 1907.

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TELEGRAPHONE SYSTEM.

APPLICATION FILED JAN. 30, 1907.

6 SHEETS—SHEET 6.

Fig. 8.

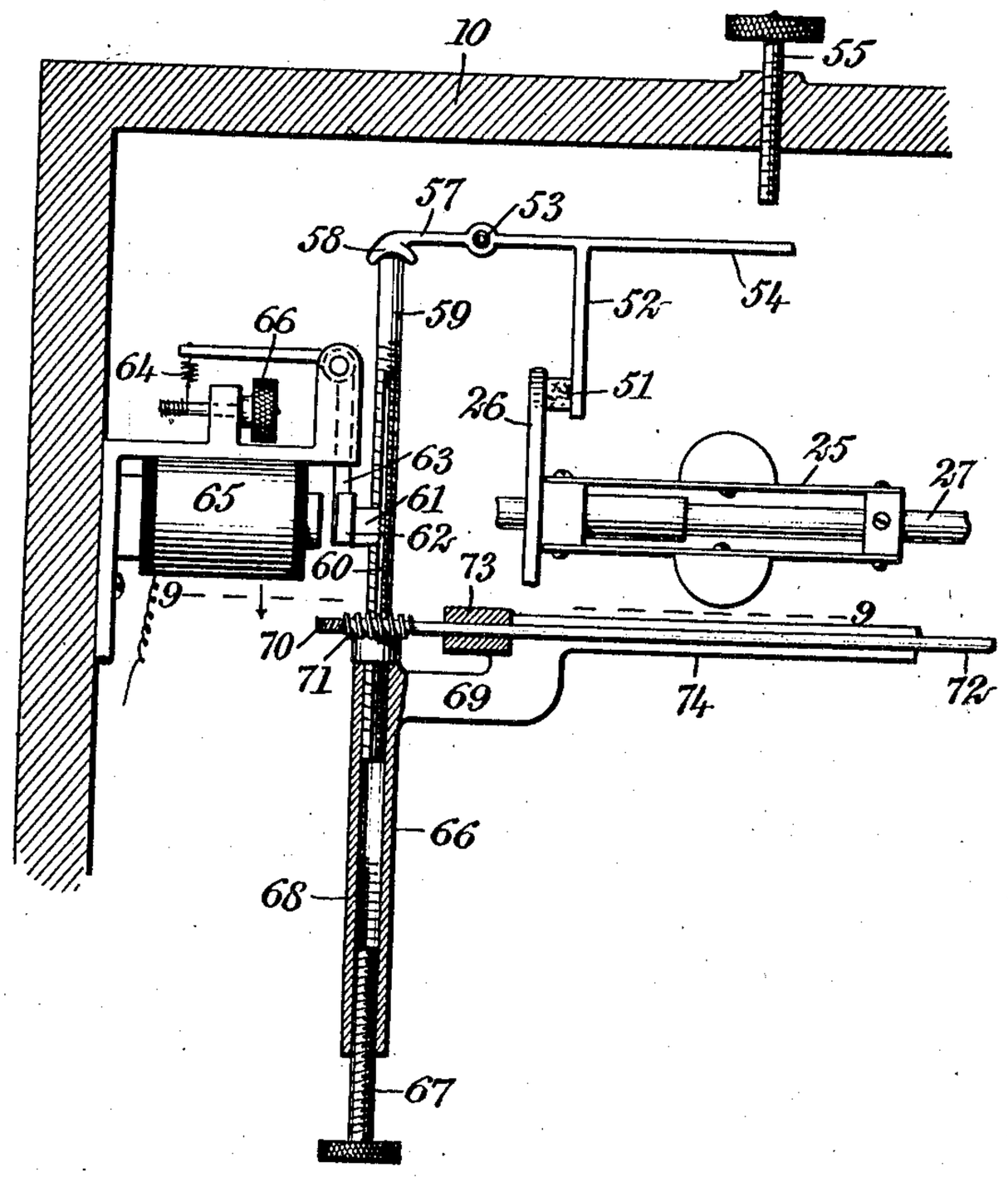
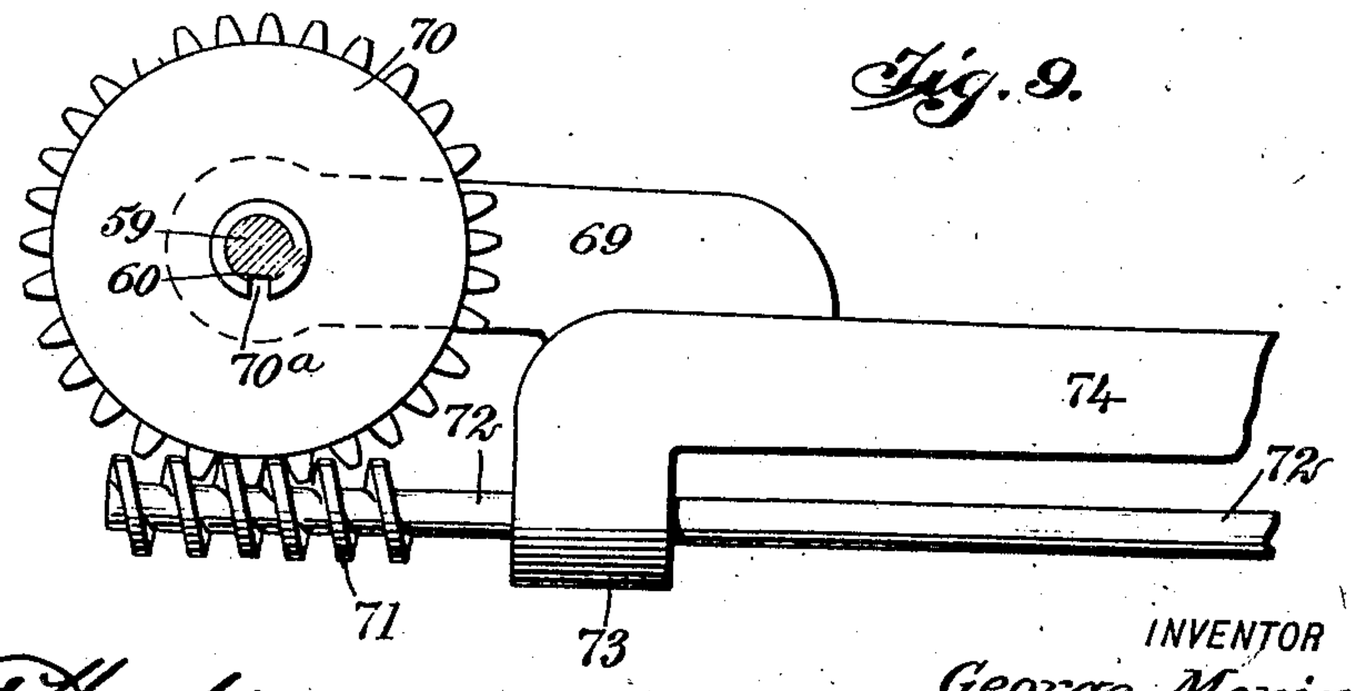


Fig. 9.



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UNITED STATES PATENT OFFICE.

GEORGE MORIN, OF HABANA, CUBA.

TELEGRAPHONE SYSTEM.

No. 871,726. Specification of Letters Patent. Patented Nov. 19, 1907.

Application filed January 30, 1907. Serial No. 354,822.

To all whom it may concern:

Be it known that I, GEORGE MORIN, a citizen of the United States, and a resident of Habana, Cuba, have invented a new and Improved Telegraphone System, of which the following is a full, clear, and exact description.

My invention relates to telegraphone systems, my more particular object being to so connect the telegraphone with line wires as to enable the instrument to be easily controlled from a distance.

My invention further relates to provision for preventing undue waste of the available record space upon the movable member bearing the record.

My invention further relates to means whereby a person may leave a telegraphone in such condition that during absence of the person the telegraphone will automatically receive a message intended for the person and will, under proper conditions, reproduce this message carefully.

My invention further relates to certain details of construction whereby the general efficiency of the telegraphone and parts associated therewith are generally improved.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a diagram showing the wiring of my system, a delicate relay connected with this wiring and adapted to be actuated by the human voice for the purpose of controlling certain movable parts and thereby preventing undue waste of the sound record of the telegraphone, this view also showing means operated electrically from a distance for starting the telegraphone into action and for stopping its action upon the expiration of a predetermined time limit; Fig. 2 is a side elevation showing a part of the telegraphone mechanism and casing containing the same, certain parts being broken away. Fig. 3 is a horizontal section through the casing showing the telegraphone mechanism including a revoluble disk sound record, means for controlling a traveling carriage, and traveling magnetic mechanism co-acting with this record; this view further shows the relay above mentioned, and also a part of the means for starting and stopping the telegraphone; Fig. 4 is an enlarged fragmentary section upon the line 4—4 of Fig. 3, looking in the direction of the arrow and showing the record disk, the magnetic mechanism co-acting therewith for recording and reproducing sounds, and mechanism controllable from a distance for stopping and starting the travel of this magnetic mechanism; Fig. 5 is a plan partly in section, showing the relay controllable by the human voice for governing the motion of the magnets 35 relatively to the center of the disk 22; Fig. 6 is a vertical section upon the line 6—6 of Fig. 5, looking in the direction of the arrow and showing the contact forming a part of the relay 75, this contact being opened and closed by sound-controlled agency from a distance; Fig. 7 is a perspective of the armature of the relay 75, this armature being controllable by so-called "magnetic drag"; Fig. 8 is an enlarged fragmentary elevation of the mechanism operated electrically from a distance for stopping and starting the spring motor of the telegraphone, the casing 10 in this view being shown in section; and Fig. 9 is an enlarged fragmentary plan of the worm 71 and worm gear 70 used for turning the screw 59 (see Fig. 8) incidental to stopping and starting the spring motor of the telegraphone.

A casing 10 is, by aid of hinges 11, mounted upon a base 12. Contained within the casing 10 is a spring motor 13 including various gear wheels 14, 15, and a winding shaft 16, the latter being provided with an outwardly extending portion 17 and with a hand crank 18 whereby the spring motor may be wound in the usual manner. The spring motor also includes a bevel gear 19 which meshes with a bevel pinion 20, the latter being rigid upon a revoluble shaft 21. A record disk is shown at 22 and is of the so-called magnetic type. This disk is mounted firmly upon the shaft 21 and turns when the latter rotates. Mounted firmly upon the shaft 21 is a worm gear 23 which meshes with a worm 24. A governor is shown at 25 and is provided with a revoluble disk 26, the governor and disk being actuated by a shaft 27 integral with the worm 24. A spring contact 28 is located just below the disk 26 and is opened and closed by movements of this disk in the general direction of the axis of the governor shaft 27. When the shaft turns, the governor pulls the disk 26 to the left according to the view shown in Fig. 5 and this closes the contact 28. Hence, while the teleg-

raphone is in action, the contact 28 is closed, whereas this contact is opened when the telegraphone is idle.

Mounted rigidly upon the revoluble shaft 21 is a bevel gear 29 which meshes with a bevel gear 30 mounted rigidly upon a revoluble screw shaft 31. A bracket 32 is located below the screw shaft 31 and is provided with lugs 32ª disposed upon opposite sides of the screw shaft 31. Practically speaking, therefore, the bracket 32 has its upper end bifurcated so as to straddle the screw shaft. A hardened steel blade 33 (see Fig. 4) is disposed in immediate proximity to the screw shaft 31 and is adapted to engage and disengage the latter, for purposes hereinafter described.

Mounted upon the bracket 32 (see Fig. 4) is a horse shoe electro-magnet 34. The telegraphone magnets are shown at 35 and are connected together by a U-shaped spring 36. The magnets 35 are provided centrally with pointed cores 37, the latter engaging the disk 22 so as to confer thereupon or to receive therefrom magnetic impulses corresponding to sound vibrations. A limiting stop 38 (see Fig. 3) prevents excessive travel of the U-shaped spring 36 in one direction. A stationary bracket 39, having substantially the form of a wedge, is employed for the purpose of spreading the U-shaped spring 36 whenever necessary, in order to adjust the tension or position of the pointed cores 37 relatively to the disk 22. For this purpose a handle 40 (see Fig. 3) is provided; the operator merely pulls the handle outwardly so as to force the U-shaped spring member 36 astride of the wedge 39 and thus distend the U-shaped member to any desired extent, the distension being continued until the U-shaped member lodges against the limiting stop 38. A comparatively stiff rod 41 extends lengthwise of the casing. Mounted upon this rod 41 is a tubular slide 42 connected rigidly with the bracket 32 (see Figs. 2 and 4). Mounted upon a screw pivot 43 is a rocker 44 to which the blade 33, above described, is rigidly secured. This blade is provided with a concave edge 45 which is, in effect, a fragmentary threaded nut adapted to engage and disengage the screw shaft 31, so as to force the blade 33 and all parts connected with it, in a general direction parallel with that of the screw shaft.

A leaf spring 46 is mounted upon the bracket 32 and engages the edge of the rocker 44. This rocker is provided with a slot 47 through which passes a screw 48 engaging the bracket 32. This allows the rocker 44 to turn or rock slightly upon the pivot 43 as a center. In doing this the rocker brings the edge or thread 45 into and out of engagement with the screw shaft 31, as above described. Mounted rigidly upon the lower end of the rocker 44 is an armature 49 adapted to be attracted and released by the magnet 34. The lower end of the bracket 32 is connected by a pivot 50 with the U-shaped member 36. This allows the U-shaped member a little freedom and widens its adaptability to conform to accidental variations in the shape of the disk 22, due, for instance, to unavoidable distortion or buckling of the latter. It also allows ease of movement of the bracket 32 and tubular slide 42 relatively to the rod 41.

It will readily be seen that whenever the magnet 34 is energized, the screw shaft 31 being in motion, the bracket 32 and all parts connected therewith, including the magnets 35, must begin to travel toward the center of the disk and that this travel must cease when the magnet 34 is deënergized (see Fig. 4). It will also be seen that the disk may rotate continuously although the travel of the magnets 35 may be intermittent.

The disk 26, carried by the governor 25 (see Fig. 1), in addition to opening and closing the contact 28, serves as a brake disk for stopping and starting the action of the spring motor. To this end a brake shoe 51 is mounted upon a brake rod 52, the latter being rigidly connected with a rocker shaft 53 and provided with a rigid portion 54 extending beneath an adjusting screw 55. By turning the screw 55, the play of the brake rod 52 and brake shoe 51 may be controlled within different limits. A spring 56 tends to retract the brake rod 52 and to remove the brake shoe 51 from engagement with the disk 26 whenever the shaft 53 is rocked in the proper direction for so doing.

Mounted upon the rocker shaft 53 is another brake rod 57 provided with a concave brake shoe 58. Disposed below this brake shoe 58 and adapted to engage the same, is a screw shaft 59 provided with a slot 60 extending throughout a good portion of its length. A threaded shoe 61, constituting in effect a fragmentary nut, is adapted to engage and disengage the screw shaft 59. The shoe 61, together with an armature 62 is mounted upon a bell crank lever 63, the latter being movable and provided with a retracting spring 64. A magnet 65 is disposed adjacent to the armature 62, and, when energized, draws the same. It will be seen that when the magnet 65 is energized, the threaded shoe 61 is removed from the screw shaft 59, and that when the magnet 65 is deenergized, the retracting spring 64 instantly throws the threaded shoe 61 into engagement with the screw shaft 59.

A tube 66 (see Fig. 8) is fitted with an adjusting screw 67, and for this purpose is provided internally with threads 68. This tube is mounted upon a bracket 69. A worm gear 70 meshes with a worm 71, the latter being integral with a revoluble shaft 72.

This shaft rotates within a bearing 73 forming a part of a bracket 74 (see Fig. 9). The upper end of the tube 66 is smooth and the screw shaft 59, while threaded and extending into this tube, does not engage it as a nut would engage a screw, but simply incloses it loosely. By this means the screw shaft 59 has merely a sliding relation to the tube 66, and may be abruptly raised or lowered with reference to the same. The inner diameter of the tube 66 at the point represented by the thread 68 is sufficiently large to enable the screw shaft 59 to be abruptly raised or lowered, independently of any rotative movement of the screw shaft.

When the motor 13 is in action, the shaft 72 and worm 71 rotate and cause the worm gear 70 to return. This gear is provided with a spline 70ª (see Fig. 9) which fits into the slot 60. The relation of the gear 70 to the screw shaft 59 is, owing to the action of the spline, a little peculiar. When the gear 70 turns, the spline 70ª causes the screw shaft 59 to turn at the same rate of speed as the gear 70, but at the same time leaves the screw shaft 59 free to ascend, descend, or to remain at a given altitude, as the case may be. If, now, the threaded shoe 61 happens to be in engagement with the screw shaft 59, the rotation of the latter, of course, causes it to climb or to rise relatively to the shoe 61, and if at any time the threaded shoe 61 be withdrawn by action of the magnet 65 upon the armature 62 (see Fig. 7) the screw shaft 59 drops abruptly downward until stopped by the adjusting screw 67. Hence, all that the gear 70 does is to turn the screw shaft 59 independently of the altitude thereof, and all that the magnet 65 does, acting through the threaded shoe 61, is to cause the screw shaft 59 to rise gradually or to fall abruptly as the case may be. If, now, the magnet 65 be deenergized so that the threaded shoe 61 rests in engagement with the screw shaft 59, for a predetermined length of time, say five minutes, the screw shaft 59 rises until it reaches the brake shoe 58 (see Fig. 8). It thereupon causes the rocker shaft 53 to turn, and this movement brings the brake shoe 51 against the friction disk 26, thereby stopping the motor. By moving the adjusting screws 55, 67, the precise duration of the movement, before the motor is stopped, may be varied within certain limits.

In Fig. 5 is shown the "magnetic drag" relay, controllable electrically from a distance for the purpose of energizing and deenergizing the circuit through the magnet 34, and by doing this, to exert control over movements of the telegraphone magnets 35. The relay magnet is shown at 75 and is mounted upon a bracket 75ª. A revoluble disk 76 is made of magnetic material and constitutes the armature for the magnet 75. This disk is provided with a sleeve 77 integral therewith and encircling the governor shaft 27. A hub 78 also encircles the governor shaft but is immovable relatively thereto. A pair of lugs 79, 80, of the shaft, indicated in Fig. 6, are provided. Revolubly mounted upon the lug 79 is an adjusting contact screw 81. Another screw 82 is mounted upon and movable in relation to the lug 80. These lugs 79, 80 are secured rigidly upon a disk 83 of insulating material, this disk being provided with a radially disposed slot 83ª, as will be understood from Fig. 6.

A set screw 84 permits removal of the hub 78 and yet maintains the hub rigidly in position when in use. A spring tongue 86, preferably of platinum, is mounted rigidly upon the revoluble disk 76 and engages the hub 78, as will be understood from Fig. 5. The arrangement of these parts is such that the rotation of the disk 76 may be retarded slightly and the governor shaft 27 and hub 78 may turn ahead a slight fraction of a revolution, the shaft 27 being loose as compared with the disk 76. In other words, the revolution of the contact spring 86 constitutes an elastic connection from the disk 76 to the shaft 27 and parts connected therewith, so that the relation of the shaft 27 and disk 76 is only approximate as to relative position. Now, as indicated in Fig. 6, the spring tongue 86 normally engages the contact screw 81. If, however, there be a slight motion of the disk 76, the contact screw 81 moves away from the contact spring 86, and thus breaks connection with the screw. When, therefore, the magnet 75 is energized, contact is broken and when the magnet is deenergized, the contact is closed, this being just the reverse of the action of the ordinary telegraphic relay.

By means of screws 85 the disk 83, of insulating material, is at all times maintained rigid in relation to the hub 78. In fact, all parts immediately connected with the shaft 27 rotate therewith and are rigid in relation thereto, aside from the flexibility of the coupling between the disk 76 and the shaft, as above described.

Brushes 87, 88 are disposed adjacent to each other, the brush 88 being in electrical communication with the hub 78 and contact spring 86, the brush 87 engaging a slip ring 89, as will understood from Fig. 5. The brushes 87, 88 are the terminals of the local circuit of the relay, the main circuit thereof being through the magnet 75. The action of the relay is quite simple. The magnet 75 being energized, the disk 76 is drawn toward it and its rotation slightly retarded by its friction against the magnet cores. The shaft 27, continuing its rotation in the direction indicated by the arrow in Fig. 6, causes the contact screw 81 to break

engagement with the contact spring 86. This leaves open the local circuit; that is, the circuit through brushes 87, 88.

Referring again to Fig. 1, a telephone may be seen at 90 which is preferably of considerable power. From this telephone line wires 91, 92 lead to binding posts 93, 94. Adjacent to these binding posts are others 95, 96, and connected with the two latter are wires 97, 98 and a telephonic receiver 99. From the binding post 93 a wire 100 leads to a contact button 101. Another contact wire 101[a] is connected by a wire 102 with the magnet 65. From the latter a wire 103 leads to the relay magnet 75 and from this magnet wires 104, 105, 106, 107 lead down to binding posts 94, 95. Wires 108, 108[a] are connected with the telephone magnets 35. A wire 109 connects the wire 108 with a switch blade 110. A contact button 111 is disposed in the path of this switch blade. From the contact button 111 a wire 112 leads upwardly and connects with a wire 113. The latter leads to a contact spring 114 adapted to engage and disengage another contact spring 115; this last contact spring 115 is connected by a wire 116 with the magnet 34 used as above described, for controlling the travel of the telegraphone magnets 35. From the magnet 34 a wire 117 leads upwardly to the brush 87. The other brush 88 is connected by a wire 119 with the contact 28. From the latter wires 120, 118 lead to a local battery 121. This battery is connected by wires 122, 123 with a pole changer 124; this pole changer has contact buttons 125, 126, 127. The contact buttons 125, 127 are connected with a wire 128, the latter being in turn connected with wires 112, 113. The contact button 126 is connected by a wire 129 with wires 105, 125. The switch blade 110 is provided with an insulated boss 110[a] for forcing the contact spring 114 against the contact spring 115, as will be understood from the lower left hand corner of Fig. 1.

The action of my system is as follows: We will suppose that the mechanism shown in Fig. 1, with the exception of the telephone 90 and line wires 91, 92, represents the outfit of a subscriber, and that the latter wishes to absent himself and have the system take down any message which may be sent during his absence. He moves the switch blade 110 into the position indicated, thereby causing it to close contact between springs 114, 115. The spring motor we will suppose is properly wound up and it makes no difference whether it be left running or idle. If it be left running the rotation of the screw shaft 59 raises the latter until it engages the brake shoe 85, thus causing the rocker shaft 53 to turn and bring the shoe 51 against the disk 26, thereby preventing further rotation of the motor. This occurs in a few minutes, if the switch blade 110 is placed in the position indicated in Fig. 1 and the apparatus *in statu quo* until the call is made. Suppose now that a subscriber at the telephone 90 wishes to make a communication. To all intents and purposes he "rings" in the usual manner. In other words, he sends an alternating magneto current over a line as if he were ringing. The following circuit is thereby completed: magneto of telephone 90, line wire 91, binding post 93, wire 100, contact button 101, switch blade 110, contact button 101[a], wire 102, magnet 65 (I call this for convenience the starting magnet) wire 103, relay magnet 75, wires 104, 105, 106, 107, binding post 94, line wire 92, back to generator of telephone 90. This energizes the starting magnet 65 and causes it to attract its armature 62. The screw shaft 59, being now unsupported, drops down upon the screw 67 (see Figs. 1 and 8). The pressure against the brake shoe 58 being now relieved, the retracting spring 56 causes the withdrawal of the brake shoe 51 from the disk 26. The spring motor mechanism now starts, having been previously wound, as above explained. When the motor mechanism starts, the governor 25 is thrown into action. This causes the disk 26 to move laterally to the right, according to the view shown in Fig. 1, and closes the contact 28. The telegraphone is now in full action, except with reference to movements of the telegraphone magnets 35 and parts carrying the same. Whether or not these magnets 35 and parts carrying the same are in motion must depend upon the position of the rocker 44 (see Fig. 1) and this must in turn depend upon whether the circuit through the magnet 34 is or is not completed, the completion of this circuit being ultimately controlled by the electrical condition of the relay magnet 75, as above explained. The calling subscriber now begins to talk and in so doing he sends talking currents over the following circuit: telephone 90, line wire 91, binding post 93, wire 100, contact button 101, switch blade 110, contact button 101[a], wire 102, magnet 65, wire 103, relay magnet 75, wires 104, 105, 106, 107, binding post 94, line wire 92, back to telephone 90. This circuit is identical with the one above traced, with the exception that at the telephone 90, it is the talking circuit instead of the ringing circuit. The talking circuit, however, being weaker, as usual, than the ringing circuit, is unable to have much effect upon the magnet 65 and consequently is unable to cause this magnet to withdraw the shoe 61 from engagement with the screw shaft 59. The relay magnet 75 being more sensitive, however, is energized by the talking currents and the disk 76 is attracted.

Owing to the "magnetic drag", above described, the disk is retarded and as the shaft 27 rotates under propulsion from the

spring motor, the contact is broken between the contact spring 86 and the contact screw 81. This opens the local circuit which is as follows: Battery 121, wire 122, right-hand member of the pole changer 124, contact button 125, wire 128, wire 113, contact springs 114, 115, wire 116, magnet 34, wire 117, brush 87, slip ring 89, lug 79, contact screw 81, contact spring 86, hub 78, brush 88, wire 119, contact 28 (now closed), wire 120, wire 118, back to battery 121. The battery circuit being thus opened, it follows that the magnet 34 must release its armature 49. This causes the rocker 44 to move under impulse from the leaf spring 46 (see Fig. 4) and therefore throws the fragmentary nut 45 into engagement with the screw shaft 31. The bracket 32, tubular slide 42, and telephone magnets 35 now begin to move toward the center of the record disk. If the talking subscriber continues his conversation quite steadily, there is no interruption of the motion of the telegraphone magnets 35. Slight pauses between the words and at the ends of sentences are not sufficient to interfere with the action in the slightest degree, for the reason that the magnet 34 can not be deënergized until the circuit is opened between the contact spring 86 and the contact screw 81 (see Fig. 6) and this can not occur unless the voice-controlled currents through the line are stopped for a little period of time, sufficient to represent the length of time during which the shaft 27 can travel without causing the electrical connection to break. In any considerable pause in conversation, however, the electrical connection is broken for the reason that the contact screw 81 moves away from the contact spring 86. When this occurs, the local circuit, above traced, is again completed, the rocker 44 assumes the position indicated in Fig. 1, and the magnets 35 are enabled to travel. As soon, however, as the talking subscriber resumes his conversation, the magnet 34 is deënergized and the magnets 35 continue their travel. In this way the available surface of the record disk is saved, there being no waste due to extensive skips made by the telegraphone magnets upon the disk. The apparatus is thus adapted for measured service.

When the record disk is completed, a larger volume of conversation is recorded than would be recorded under conditions where the telegraphone magnets would continue to travel during intervals while the sounds were not being produced. During all the time while the record is being made the screw shaft 59 continues to rise, as above described until it lodges against the brake shoe 58, and this action, as above described, turns the rocker shaft 53 and applies the brake shoe 51, so as to stop the action of the spring motor. This feature may, if desired, be employed in connection with measured service, the idea being that, when a call is made, the telegraphone will be thrown into action and its action will continue for a predetermined period, say five minutes. Suppose now that the absent subscriber returns and wishes to ascertain what message, if any, has come while he was away. He turns the switch blade 110 (see Fig. 1) to the right and into engagement with the contact button 130. This breaks communication between contact springs 114 and 115, thus opening the circuit through magnet 34. Before doing this, however, he adjusts the magnets 35 in the usual manner so as to enable the telegraphone to act as a reproducer. The switch blade 110 now resting upon the contact button 130, the following circuit is completed: Switch blade 110, contact button 130, wire 131, binding post 96, wire 97, receiver 99, wire 98, binding post 95, wire 106, wire 108[a], telegraphone magnets 35, wire 108, wire 109, back to switch blade 110. This circuit is energized by the magnetic action of the disk upon the magnets 35, and, of course, the operator is enabled to read from the receiver 99 the reproduction of the sounds representing the message recorded. If, as is usually the case, the subscriber now wishes to erase the magnetic record from the record disk 22, he simply turns the switch blade 110 to the left, causing it to engage contact button 111. This movement breaks connection between the contact springs 114, 115, and completes the following circuit: Battery 121, wire 122, right-hand member of pole changer 124, contact button 125, wire 128, wire 112, contact button 111, switch blade 110, wire 109, wire 108, telegraphone magnets 35, wire 108[a], wire 106, wire 105, wire 129, left-hand member of pole changer 124, and wires 123 and 118, back to battery 121. This energizes the magnets 35, and by causing them to act powerfully upon the record disk 22, the magnetic impressions upon this disk for representing sound vibrations are effectively erased. During this operation the disk 22 rotates and the magnets 35 travel in the same manner as if the machine were reproducing or recording.

I find it sometimes expedient to reverse the polarity of the battery 121 for purposes of removing magnetic impressions from the disk 22. In order to do this, I simply shift the pole changer 124 to the left, meanwhile turning the switch blade 110, thus completing the following circuit: Battery 121, wire 112, right-hand member of pole changer 124, wire 129, wire 105, wire 106, wire 108[a], magnets 35, wires 108, 109, switch blade 110, contact button 111, wires 112, 128, left-hand member of pole changer 124, wire 123, wire 118, back to battery 121.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent:

1. In a system of the character described, the combination of a movable recording member, means for actuating the same, magnets movable in relation to the general position occupied by said recording member for the purpose of impressing a record thereupon, and sound wave controlled mechanism for stopping and starting said last-mentioned mechanism independently of movements of said movable recording member.

2. In a system of the character described, the combination of a movable record-receiving member, mechanism for impressing a record thereupon, motor mechanism for propelling said recording member, and electrically operated mechanism controllable at will by sounds at a distance for stopping and starting, relatively to said recording member, said means for impressing said record thereupon.

3. In a system of the character described, the combination of a relay, sound wave controlled mechanism connected with said relay for actuating the same, and means connected with said relay and controllable thereby for forming a record surface.

4. In a system of the character described, the combination of a telegraphone provided with a record member, means for impressing upon said record member a sound record, feed mechanism connected with said means for carrying the position thereof relatively to said record member, and sound wave controlled mechanism connected with said feed mechanism for stopping and starting the latter.

5. In a system of the character described, the combination of a telegraphone, means for actuating the same, and mechanism controllable from a distance by sound waves for throwing said telegraphone into and out of action at will.

6. In a system of the character described, the combination of a telegraphone, a motor for actuating the same, a brake for stopping said telegraphone, sound wave controlled mechanism for releasing said brake so as to allow said motor to start, and time-controlled mechanism connected with said motor mechanism for stopping said telegraphone after a predetermined measured service.

7. In a system of the character described, the combination of a telegraphone provided with a record member, means for actuating said record member, magnetic mechanism for impressing upon said record member impressions analogous to sound waves, means controllable electrically from a distance by sound waves for governing the position of said magnetic mechanism relatively to said record member, and a telephone connected with said magnetic member for reproducing sounds.

8. In a system of the character described, the combination of a telegraphone provided with feed mechanism, a magnet for stopping and starting said feed mechanism, a relay having a local circuit connected with said magnet for energizing the latter, and sound wave controlled mechanism connected with said relay for energizing the latter.

9. In a system of the character described, the combination of a telegraphone provided with a revoluble member and with feed mechanism, a magnet for controlling said feed mechanism independently of said revoluble member, a relay provided with a local circuit connected with said magnet, said relay being further provided with a main circuit, and electric mechanism, controllable by sound waves, for energizing said relay.

10. In a system of the character described, the combination of a telegraphone, means for actuating the same from a distance, and sound wave controlled mechanism connected with said last-mentioned means for automatically stopping said telegraphone after a predetermined measured service.

11. In a system of the character described, the combination of a telegraphone, sound wave controlled mechanism for throwing said telegraphone into action, mechanism controllable by movements of said telegraphone for stopping the latter after a predetermined measured service, and adjusting mechanism controllable at will for governing said interval.

12. In a system of the character described, the combination of a feed screw, a bracket movable in relation thereto, magnets mounted upon said bracket, a rocker mounted upon said bracket and provided with a surface for engaging said feed screw, sound wave controlled mechanism operated electrically from a distance for actuating said rocker, and a record member movable in relation to said feed mechanism.

13. In a system of the character described, the combination of a feed screw, a bracket movable in relation thereto, magnets mounted upon said bracket, a rocker mounted upon said bracket and provided with a surface for engaging said feed screw, means for actuating said rocker, and a record member movable in relation to said feed mechanism.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE MORIN.

Witnesses:

VICTOR NORMAND,

O. A. HORNSBY.