

(No Model.)

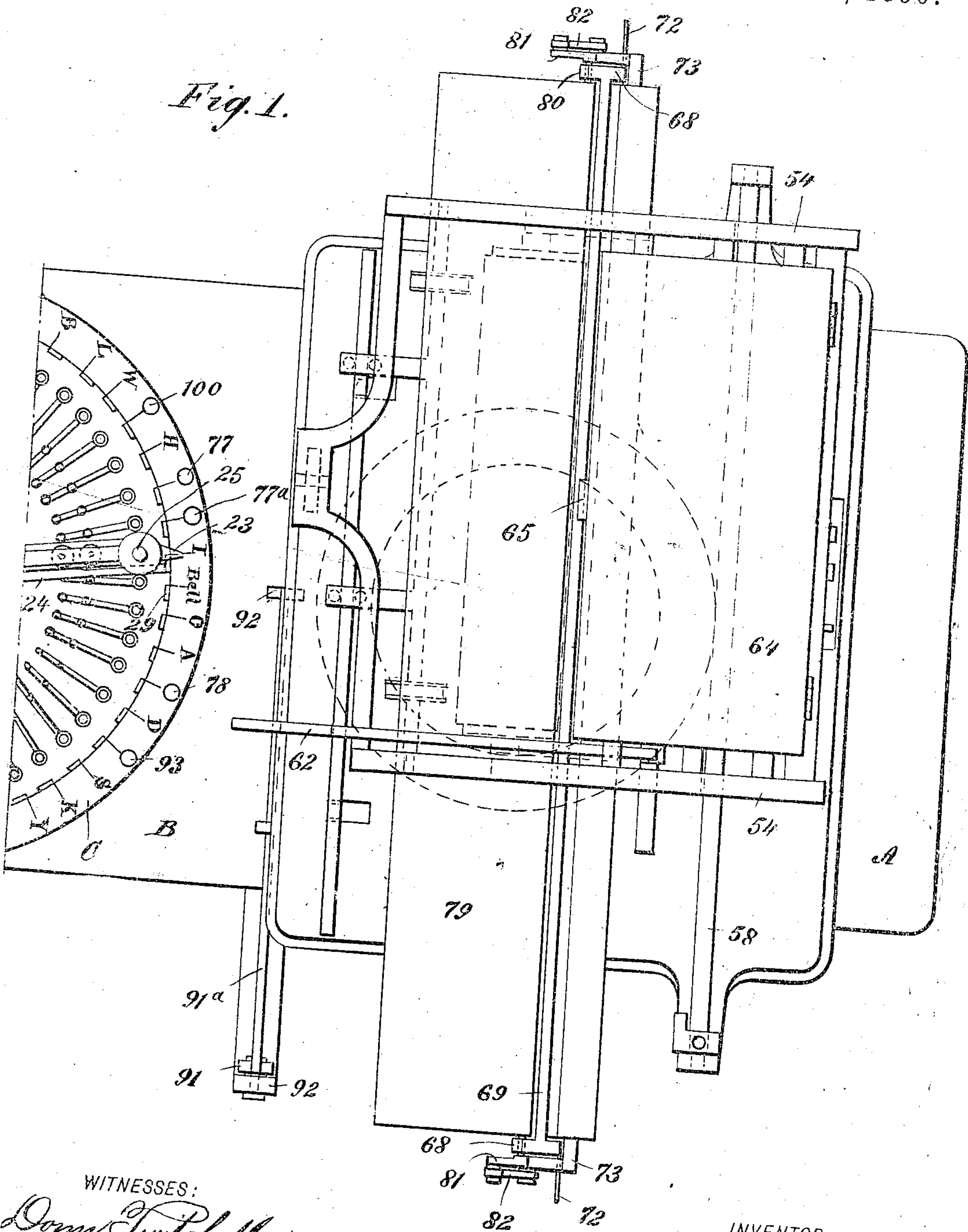
W. W. TAYLOR.
PRINTING TELEGRAPH.

3 Sheets—Sheet 1.

No. 442,497.

Patented Dec. 9, 1890.

Fig. 1.



WITNESSES:

Donn Twitchell
Edgewick

INVENTOR:

W. W. Taylor
BY *Munn & Co*
ATTORNEYS

(No Model.)

3 Sheets—Sheet 2.

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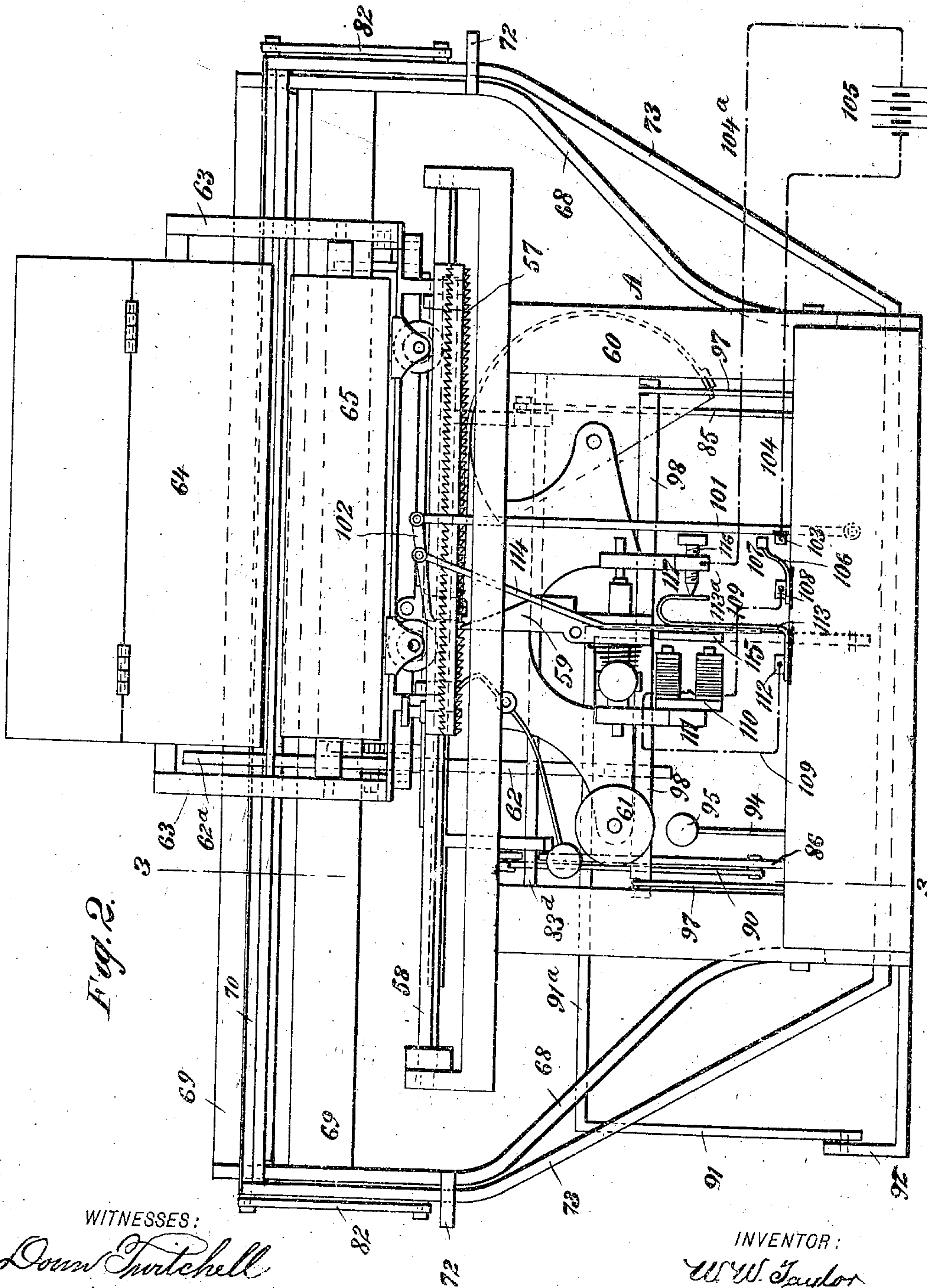


Fig. 2.

WITNESSES:

Donn Twitchell
C. Sedgwick

INVENTOR:

W. W. Taylor

BY

Munn & Co

ATTORNEYS

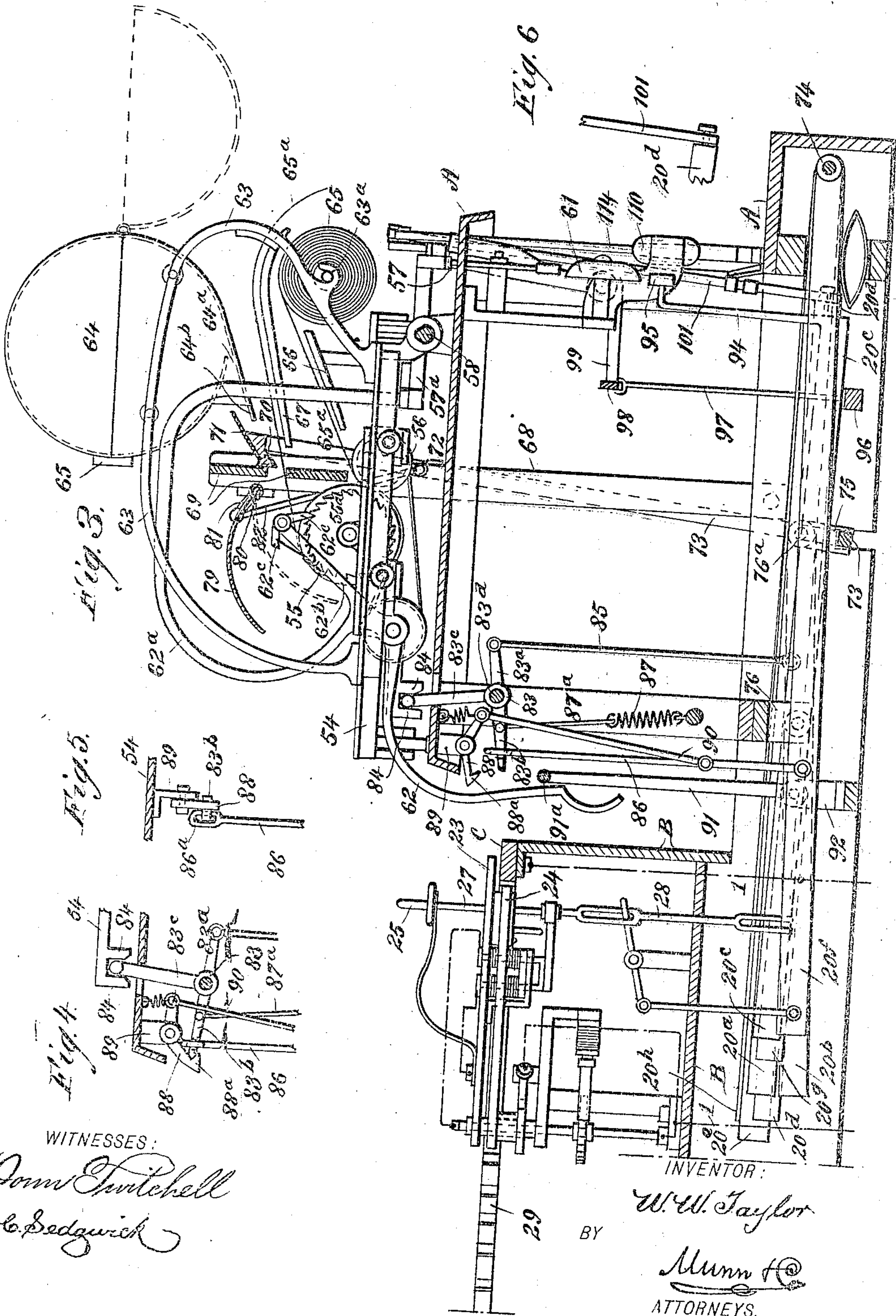
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W. W. TAYLOR.
PRINTING TELEGRAPH.

3 Sheets—Sheet 3.

No. 442,497.

Patented Dec. 9, 1890.



UNITED STATES PATENT OFFICE.

WILLIAM W. TAYLOR, OF MANSFIELD, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO ELLEN MARIA LEAVENS, OF PROVIDENCE, RHODE ISLAND.

PRINTING-TELEGRAPH.

SPECIFICATION forming part of Letters Patent No. 442,497, dated December 9, 1890.

Application filed May 26, 1890. Serial No. 353,210. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. TAYLOR, of the town of Mansfield, in the county of Bristol and State of Massachusetts, have invented a new and Improved Printing-Telegraph, of which the following is a full, clear, and exact description.

My invention relates to improvements in printing-telegraphs, and more especially to electrically-operated type-writers, it being an improvement on the printing-telegraph for which I applied for Letters Patent of the United States November 23, 1889, said application being allowed March 13, 1890; and the object of my invention is to provide means for making the proper line-spaces on the printed message and to automatically print and deliver the messages into a public or private receptacle, as desired.

To this end my invention consists in certain features of construction and combinations of parts, that will be hereinafter fully described, and pointed out in the claims.

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

Figure 1 is a broken plan view of the device embodying my invention; Fig. 2, a rear elevation of the same; Fig. 3, a longitudinal section on the line 3 3 of Fig. 2; Fig. 4, a broken detailed view, partly in section, showing the means for holding the printing-cylinder in position to be operated upon by the upper-case type; Fig. 5, a broken front elevation of the same, showing the loop in the rod connected with the rocker-arm for moving the cylinder; and Fig. 6, a broken detailed view showing the pivot-connection between the lower end of the pawl-rod and the lever in the type-writer to which it is attached.

I have shown my invention in the accompanying drawings as applied to an ordinary No. 2 Remington type-writer; but it may be easily adapted to any style type-writer, the necessary alterations being purely mechanical and not affecting the principle of the invention.

A is the frame of that portion of the machine that supports the printing-cylinder and

carries the type, the type being omitted in the drawings to more clearly show the parts embodying my invention, and said frame is provided with a forwardly-extending portion B, which supports the dial C, said dial having any desired characters inscribed thereon, and the type-writer having type corresponding to said characters. The dial C is provided with a movable pointer 23 and contact-arm 24 to engage contact-pieces 29 on the dial, and thus complete the circuit and cause a similar movement in a machine at the other end of the line. The pointer 23 carries a key 25, which is connected by a spindle 27 and rod 28 with type-levers 20, so that by turning the pointer to a certain character on the dial and depressing the key said character will be printed on the paper at the transmitting end of the line, and the two machines at opposite ends of the line are electrically connected in such a manner that the work of one will be duplicated by the other. This construction is fully described in my former application above referred to, and forms no part of my present invention, the operation being briefly stated to more clearly illustrate the operation of my improvements.

The carriage 54 is of the usual construction and is adapted to slide across the frame, as in ordinary type-writers, being mounted on a suitable rod on the frame A and on suitable trucks in the rear, and being pivoted so that it may swing upwardly in the usual manner. The carriage has the usual printing-cylinder 55, the feed-roll 56 adjacent thereto to regulate the passage of paper over the cylinder, the usual frictional means of operating the feed-roll, the rack 57, connected with the carriage and adapted to slide on the rod 58 of the frame A, the usual means of tilting the rack so as to permit the free movement of the carriage, the spring-actuated pawl 59 to engage the under teeth of the rack and limit the movement of the carriage to one letter-space at a time, the spring-barrel 60, indicated by dotted lines in Fig. 2, to move the carriage, the bell or gong 61, which is sounded at the end of a line, and the lever 62 for raising the carriage and tilting the rack, said lever being connected by the part 62^a, which extends above the cylinder, with the arm 57^a,

which is pivoted on the rod 58 and connected with the rack 57, so that when the lever is raised the arm will be tilted and the rack raised from engagement with the pawl 59.

5 The part 62^a is also provided with an arm 62^b, in which is pivoted the pawl 62^c, which engages the ratchet-wheel 55^a of the cylinder, so that when the lever 62 is raised the cylinder and feed-roll will be turned.

10 The above construction is similar to the ordinary type-writer of the type named, with the exception of the rack 57, and needs no detailed description. The rack 57, instead of being notched on the lower edge only, as in ordinary type-writers, has similar notches upon
15 its upper edge.

Mounted on each end of the carriage 54 is an upwardly-extending curved support 63, and fixed between said supports so as to extend longitudinally above the carriage is a
20 hollow cylindrical box 64, composed of two semi-cylindrical parts hinged together at the rear, as shown, and having a suitable lock 65 in front. The box 64 is to contain private
25 messages and has an opening 64^a in the bottom and a guide 64^b extending outwardly from the lower side of the opening to direct the messages into the box. The supports 63
30 are provided with hangers 63^a, in which a paper-supply roll 65 is hung, and extending forwardly from between the supports are the guides 66 and 67, the lower guide 66 being adapted to direct the paper from the roll 65
35 between the feed-roll 56 and printing-cylinder 55 and the upper guide 67 being adapted to direct a public message from the cylinder 55, above the roll 65 to the rear of the machine. The length of these guides should
40 correspond to the length of the cylinder and feed-roll, and the width should be such as to adapt them to the purpose intended.

Fixed to each end of the frame A is a vertical arm 68, which extends above the printing-cylinder and feed-roll, the upper ends of
45 said arms being connected by the parallel bars 69, which are a short distance apart and in vertical alignment, and which are directly above the central point between the cylinder 55 and the feed-roll 56. The height of the
50 bars 69 above the cylinder is such that the paper that passes over the cylinder will easily pass between said bars to the rear of the machine. A knife 70 is vertically movable
55 against one side of the bars 69, said knife corresponding in length to the length of the bars and being held against the same by the springs 72, which are attached to the arms 68 on each end of the machine, and which press
60 against the back side of the knife-frame. The knife is sharpened upon its upper and lower edges, so that when moved past the opening between the bars 69 in either direction it severs the paper upon which the mes-
65 sages are written. Extending rearwardly and upwardly from the upper portion of the knife is a guide 71, which when the knife is below the opening between the bars 69 di-

rects the message upon the guides 64^b and into the private box 64. When the knife is above the opening between the bars, the mes-
70 sage will pass below the knife and over the guide 67 to the rear of the machine, said message being a public one. A frame 73 is attached to each end of the knife 70, said frame extending beneath the machine and below
75 the type-levers 20, said frame being provided with a pair of upwardly-extending ears 75, by which it is pivoted to a lever 20^a, as indicated by dotted lines in Fig. 3, which lever is pivoted with the type-levers on a rod 74, and
80 which is connected by a rod 28 with the dial C, and is operated like the other levers. In the upwardly-extending ears 75 of frame 73 is also pivoted the end of a short lever 20^b, as shown by dotted lines in Fig. 3, which lever
85 is pivoted in the support 76 and extends beneath the dial C, with which it is connected by the same mechanism as the type-levers. The dial is provided with characters 77 and
90 78 opposite the connections of the levers 20^a and 20^b, said characters being marked "Private message" and "Public message," respectively, so that when the pointer 23 is brought
95 opposite the character 77 the lever 20^a will depress the frame 73 and knife 70, and the message be delivered into the box 64, and when the pointer 23 is brought opposite the character 78 the lever 20^b will raise the frame and knife, thus shutting off the box and delivering the message over the guide 67 to the
100 rear of the machine.

A curved shield 79 is fixed to a shaft 80, which is pivoted to the arms 68 opposite the upper bar 69, said shaft being provided at the
105 ends with cranks 81, which are fixed thereto, and which are pivoted at the ends to the rods 82, which extend downwardly and are pivoted to the knife-frame 73 at each end of the machine, so that when the knife-frame is depressed that a private message may be de-
110 livered, the rod 82 will actuate the crank 81 and shaft 80 and cause the shield to be moved downwardly over the cylinder 55, as indicated by dotted lines in Fig. 3, thus screening
115 the cylinder from view and preventing the message which is being written from being read as it passes over the cylinder.

The dial C has the usual characters indicating upper-case and lower-case type, and opposite these characters is the same mech-
120 anism that operates the type-levers 20; but the levers connected with said mechanism shift the cylinder 55 in the usual manner to adapt it to receive the upper or lower case type. A sleeve 83 is mounted upon a suit-
125 able pivot-rod 83^a, said sleeve having the two opposite and laterally-extending arms 83^b and 83^c and the upwardly-extending arm 83^d, the upper end of which is inclosed by the ears 81 on the carriage 54, so that when the arm is
130 moved the carriage will be moved to bring the cylinder 55 into alignment with the desired form of type. The arm 83^d is connected with one of the levers 20^a by a rod 85, and the

arm 83^b is connected with another of said levers 20^f by the rod 86, which has a loop 86^a in the end that engages said arm, and so permits a limited movement of the rod before the arm is actuated. The arm 83^b is also provided with a spring 87, which is connected by a rod 87^a to the lower side of the arm and to a standard of the frame A, and the tendency of the spring is to hold the carriage and cylinder in position for lower-case type. The levers 20, with which the rods 85 and 86 are attached, are connected with the transmitting mechanism opposite the upper and lower case characters on the dial C, so that when the pointer 23 is opposite the upper-case character on the dial and the key 25 depressed the lever 20, connecting with the sending mechanism opposite said character, will be depressed, thus depressing the rod 85, tilting the sleeve 83, and actuating the arm 83^c, thereby moving the carriage backwardly and bringing the cylinder 55 into position to receive upper-case type. When the pointer 23 is opposite the lower-case character of the dial and the key 25 is depressed, this action will be reversed, the rod 86 will be depressed, the sleeve 83 turned on its pivot, and the arm 83^c and carriage 54 brought forward, bringing the cylinder into position to print lower-case type. A dog 88 is centrally pivoted to a depending lag 89 of the frame A above the arm 83^b, said dog having at one end a hook 88^a to engage the end of the arm 83^b, and having the other end provided with a spring connecting above with the frame, and which serves to hold the dog-hook in engagement with the arm 83^b. A rod 90 is pivoted to the inner end of the dog 88 and extends downwardly therefrom and is pivoted at its lower end to the rod 86. It will thus be seen that when the rod 85 is depressed to throw the carriage into position for upper-case printing the hook 88^a of the dog 88 will engage the arm 83^b and hold the parts in this position till the rod 86 is depressed to put the machine in position for lower-case printing, when the rod 90 will thus be actuated and will depress the inner end of the dog 88 and release the hook 88^a from the arm 83^b, thus permitting the necessary movement of the carriage.

A vertical frame 91 is pivoted in suitable supports 92 of the frame A, said frame having a top piece or rod 91^a, which bears against the cylinder-lever 62, the frame being long enough for the lever to bear against the rod throughout the movement of the carriage 54. The lower portion of the frame is fixed to a short lever 20^g, which extends beneath the dial C parallel with the levers 20, said lever being connected with the same mechanism as the levers 20, the mechanism being arranged opposite a character 93 on the dial marked "Line-space," so that when the pointer 23 is brought opposite said character and the key 25 depressed the lever connected with the frame 91 will be depressed and the frame thrown against the lever 62, thus actuating the

lever and cylinder 55, connected therewith, and turning up the paper 65^a, upon which the messages are printed, the distance of one line in the usual manner.

A lever 20^c extends parallel with the levers 20, is pivoted at the point 76 instead of at 74, and is provided at the rear end with a vertical arm 94, having a hammer 95 at the end thereof, said hammer being arranged beneath the gong 61, which is the ordinary type-writer gong; but a heavier one may be substituted, if desired. The lever 20^c is connected with the same mechanism as the levers 20, so that to sound the gong it is only necessary to turn the pointer opposite the space marked "Bell" on the dial and depress the key 25, when the lever 20^c will be tilted and the hammer 95 forced against the gong. The object of the bell mechanism is to give notice that a message is about to be or has been transmitted. The machine is provided with the usual cross-bar 96, extending beneath the levers 20 and the rods 97, levers 98, and connecting-rod 99, connecting with the pawl 59, so that every time one of the levers is operated the carriage moves one letter-space.

The dial-space C has a character 77^a thereon, which is marked with letters to indicate that it represents a space-key, and opposite this character is the same operating mechanism that is arranged opposite the other characters of the dial, said mechanism connecting with the space-levers 20^h of the type-writer, which are arranged in the usual manner, so that by bringing the pointer 23 opposite the character 77^a and depressing the key 25 the space-lever of the type-writer will be operated.

The following mechanism is employed to return the carriage and cylinder to the left of the machine after a line has been printed and the paper turned up a line-space: A lever 20^d is arranged parallel with the levers 20, so as to extend beneath the dial C, and the end of the lever beneath the dial is provided with the same mechanism as the other levers, said mechanism being arranged opposite a character 100 on the dial, which is marked "Return carriage," or with words or letters of similar import. The lever 20^d is pivoted at the point 76 instead of at 74, and is pivoted at its rear end to a vertical rod 101, which extends up the back side of the machine and has a pawl 102 pivoted to its upper end adapted to engage the notches on the upper edge of the rack 57. The rod 101 is provided near its lower end with a boss 103, which is insulated from the rod and is connected with one of the wires 104 of an ordinary electric battery 105. A spring 106 is insulated on the frame A, so as to extend above the boss 103, said spring having a contact-piece 107 attached at its free end, which aligns vertically with the boss 103, and having at its fixed end a block 108, which is connected by a wire 109 with the magnet 110, which is mounted on a suitable support 111,

and the wire 109, after being wound upon the magnet, connects with the block 112 of the spring 113. The spring 113 is formed at its upper end into a hook 113^a, one side of which presses against the rod 114 and the other against the screw-terminal 116. The rod 114 is pivoted to the pawl 102, and extends downwardly therefrom between the spring 113, to which it is fixed, and magnet 110, the rod being provided on the side next the magnet with a suitable armature-plate 115, which is properly insulated thereon. The screw-terminal 116 is mounted in a suitably insulated support 117, which is connected with one of the battery-wires 104^a. The above mechanism works very similarly to the ordinary electrical push-button for ring-bells, the spring 113 serving to make and break the circuit. When the rod 101 is raised the pawl 102 engages the rack 57, and the boss 103 is brought in contact with the contact-piece 107, thus completing the circuit, the current passing through the boss 103, spring 106, wire 109, magnet 110, spring 113, terminal 116, support 117, and wire 104^a back to the battery. The magnet 110 then pulls forward the armature 115, which actuates the rod 114 and pawl 102, and pushes the carriage one notch or more. When the armature and rod are pulled forward, the spring-hook 113^a leaves the terminal 116, thus breaking the circuit, and the armature and rod fall back into their original position, carrying back also the pawl 102 and rod 101. The circuit is again completed and the action repeated, and it will continue to be repeated while the rod 101 is held in an elevated position and until the carriage 54 is returned to the left of the machine.

As described in my former application above referred to, when the pointer 23 is brought opposite a certain character on the dial the pointer on the dial at the receiving end of the line is likewise moved, the operation being transmitted by the wires 1. If, however, characters are to be printed and the operation is to be duplicated and recorded at the transmitting end of the line, the key 25 must be depressed every time the pointer is moved, in order that the appropriate levers and their connected parts may be actuated, the action being imparted to the type-levers and carriage and bell-levers by the rods 28 connecting said levers with the key 25.

A paper-supply roll 65 is hung in the machine, as described, and the paper 65^a entered between the feed-roll and printing-cylinder, and as the machine is operated the paper is fed between said parts in the usual manner. If a private message is to be sent, the pointer 23 is brought opposite the character 77 on the dial, the key 25 depressed, and the knife and shield will be lowered, as described, and the message delivered into the box 64. If a public message is to be sent, the pointer is brought opposite the character 78 and the message will be delivered to the rear of the machine, the parts operating as described, and

to operate any part of the machine it is only necessary to bring the pointer opposite the character representing said part on the dial and depress the key 25. The desired movement will be accomplished by the type-levers 20 and the corresponding levers extending beneath the dial and connected with the operative parts of the machine in the manner described, the movement being transmitted to the receiving end of the line, as described in my former application above referred to. Said application shows the method of printing and transmitting, and the device above described operates the carriage and message-delivering mechanism of the type-writer.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A printing-telegraph consisting, essentially, of type-writers electrically connected and having means for operating the type-levers thereof, a paper-supply roll mounted in the type-writer carriages and having means for feeding the paper through the type-writers, a box mounted on the type-writer carriages and having a suitable opening therein, a vertically-movable two-edged knife adapted to cut off the paper at a desired time and place, means for moving said knife, and a guide fixed to the back of the knife and adapted to align with the opening in the box, substantially as described.

2. In a printing-telegraph consisting of electrically-connected type-writers having means for electrically operating the type-levers thereof, the combination, with the spacing-levers, of levers similar to the type-levers and having similar means of operation, said levers being pivoted in the machines parallel with the type-levers, and vertical frames fixed at the bottom to said levers and having their upper portions opposite the spacing-levers, substantially as described.

3. In a printing-telegraph consisting of electrically-connected type-writers having means for operating the type-levers thereof, said type-writers having a carriage adapted to be shifted for upper and lower case type printing, the combination, with said machines, of operating-levers similar to the type-levers pivoted therein parallel with the type-levers and having similar means of operation, a sleeve pivoted in each of the type-writer frames and having an upwardly-extending arm to engage the carriage and two oppositely-extending arms, rods connecting said arms with the operating-levers, so that the shifting mechanism may be thereby operated, a spring-actuated dog pivoted in the frame and adapted to engage one of said arms and hold the carriage in a fixed position, and a detaching device connecting said dog with one of the case-shifting connecting-rods, substantially as described.

4. In a printing-telegraph consisting of two electrically-connected type-writers having means for operating the type-levers, the com-

5 combination, with suitable supports mounted on the carriages of said machines and carrying a paper-supply roll adapted to be fed through the machine, and a box mounted in said supports and having an opening in the lower portion thereof provided with a guide, as shown, of arms fixed to opposite sides of each machine and carrying two horizontal bars which extend across the top of the machine and between which the messages pass, and a knife having means for moving it past the opening between the bars, said knife having upon its back side a guide to direct the messages into the box, substantially as described.

15 5. In a printing-telegraph consisting of electrically-connected type-writers having means for operating the type-levers thereof, the combination, with operating-levers similar to the type-levers and arranged parallel therewith and having similar means of operation, and horizontal bars extending above the type-writers and between which the messages pass, of a two-edged knife connected at each end with said operating-levers and adapted to be moved thereby past the opening between the bars and sever the messages, substantially as described.

30 6. In a printing-telegraph consisting of electrically-connected type-writers having means for operating the type-levers thereof, the combination, with a lever similar to the type-levers and arranged parallel therewith and having similar means of operation, of a rod pivoted to the end of said lever and having at its opposite end a pawl engaging with a rack of the type-writer carriage, an insulated boss fixed to the rod and connected with a wire of a battery, a contact-piece adapted to engage said boss when the rod is raised, a magnet suitably supported and connected with said contact-piece, a rod pivoted to the rack-pawl, so as to extend downwardly therefrom and having an armature thereon opposite the magnet, a screw-terminal mounted in a support and connected with a battery-wire, and a spring-hook connected with the magnet and arranged between the pawl-rod and screw-terminal, so as to make and break the circuit and actuate the pawl, rack, and carriage, substantially as described.

7. In a printing-telegraph of the character described, the combination, with the shear frame or arms and the vertically-movable knife-frame, of the shield pivoted on the shear-frame and adapted to cover a message, and a lever mechanism connecting the shield with the knife-frame, so that it will be raised and lowered in unison therewith, substantially as shown and described.

8. In a printing-telegraph of the character described, the combination, with the shear frame or arms and the vertically-movable knife-frame, of the shield fixed to a shaft mounted on the shear-frame, so as to extend over the printing-cylinder, cranks fixed to the ends of the shield-shaft, and rods connecting the cranks with the knife-frame, substantially as described, and for the purpose specified.

9. In a printing-telegraph of the character described, the combination, with the paper-supply roll having suitable feeding mechanism, and the message-box mounted on the machine and provided with an opening in the bottom, of the parallel bars or shears arranged adjacent to the box, the two-edged knives adapted to move transversely to the bars, said knife having on its back a guide adapted to align with the opening in the box, and electrically-operated means for moving the knife, substantially as described.

10. A printing-telegraph comprising electrically-connected type-writers having means for operating the type-levers, levers arranged parallel with the type-levers and having similar means of operating the same, means for feeding paper through the machine, a box mounted on the carriage of each machine and provided with an opening in the bottom, parallel bars or shears arranged adjacent to the box, a two-edged knife adapted to move transversely to the shears, and connections between the knife, the carriage-levers, and the main levers, so that the connected parts may be operated from any point on the line, substantially as described.

WILLIAM W. TAYLOR.

Witnesses:

JACOB A. LEONARD,
ETTA F. LEONARD.