

(No Model.)

2 Sheets—Sheet 1.

C. L. HEALY.
PRINTING TELEGRAPH..

No. 333,298.

Patented Dec. 29, 1885.

Fig. 1.

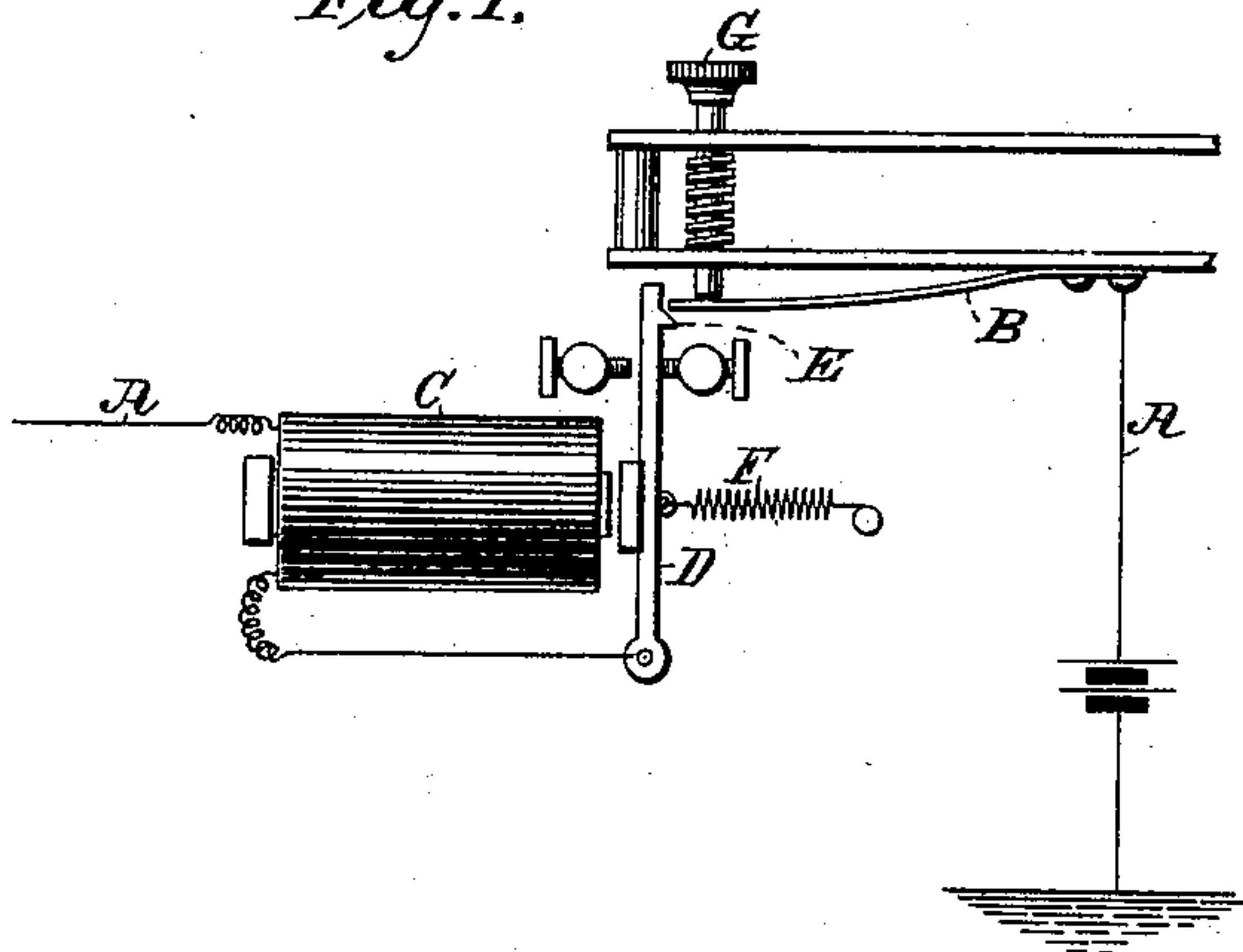
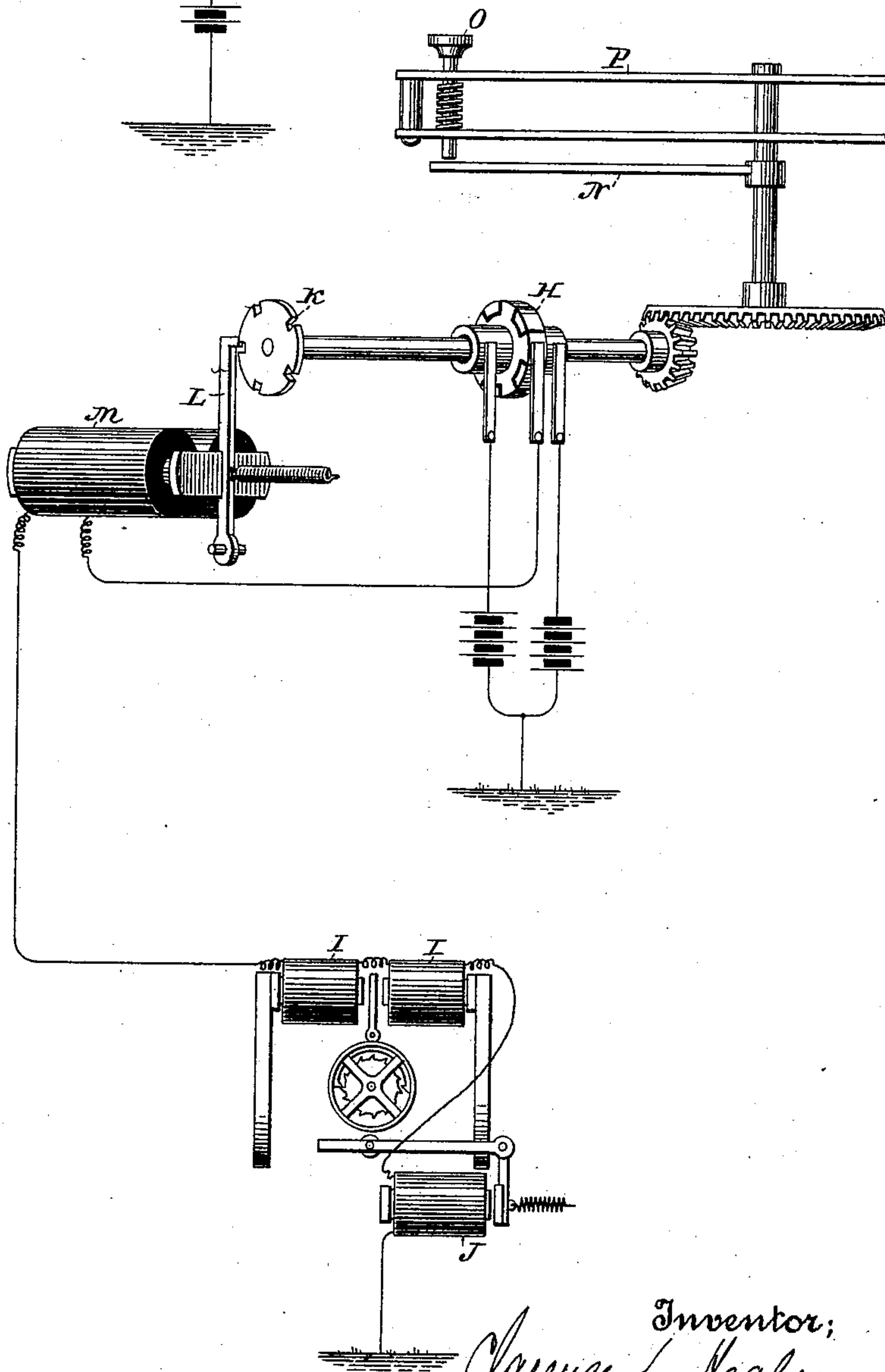


Fig. 2.



Witnesses:

Geo. W. Breck.
R. F. Gaylord

Inventor;
Clarence L. Healy
By his Attorney,
Paul A. American

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3,

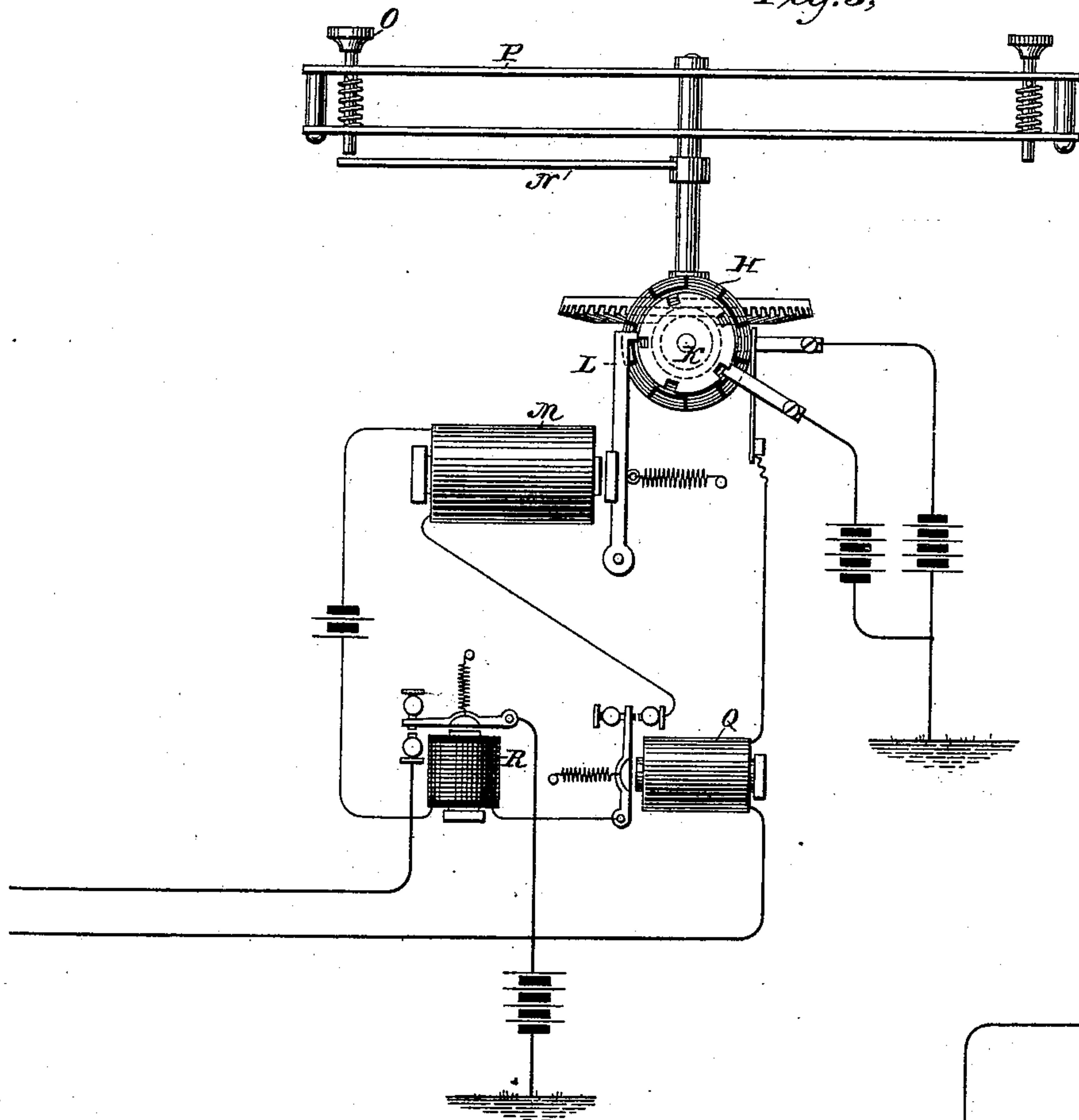
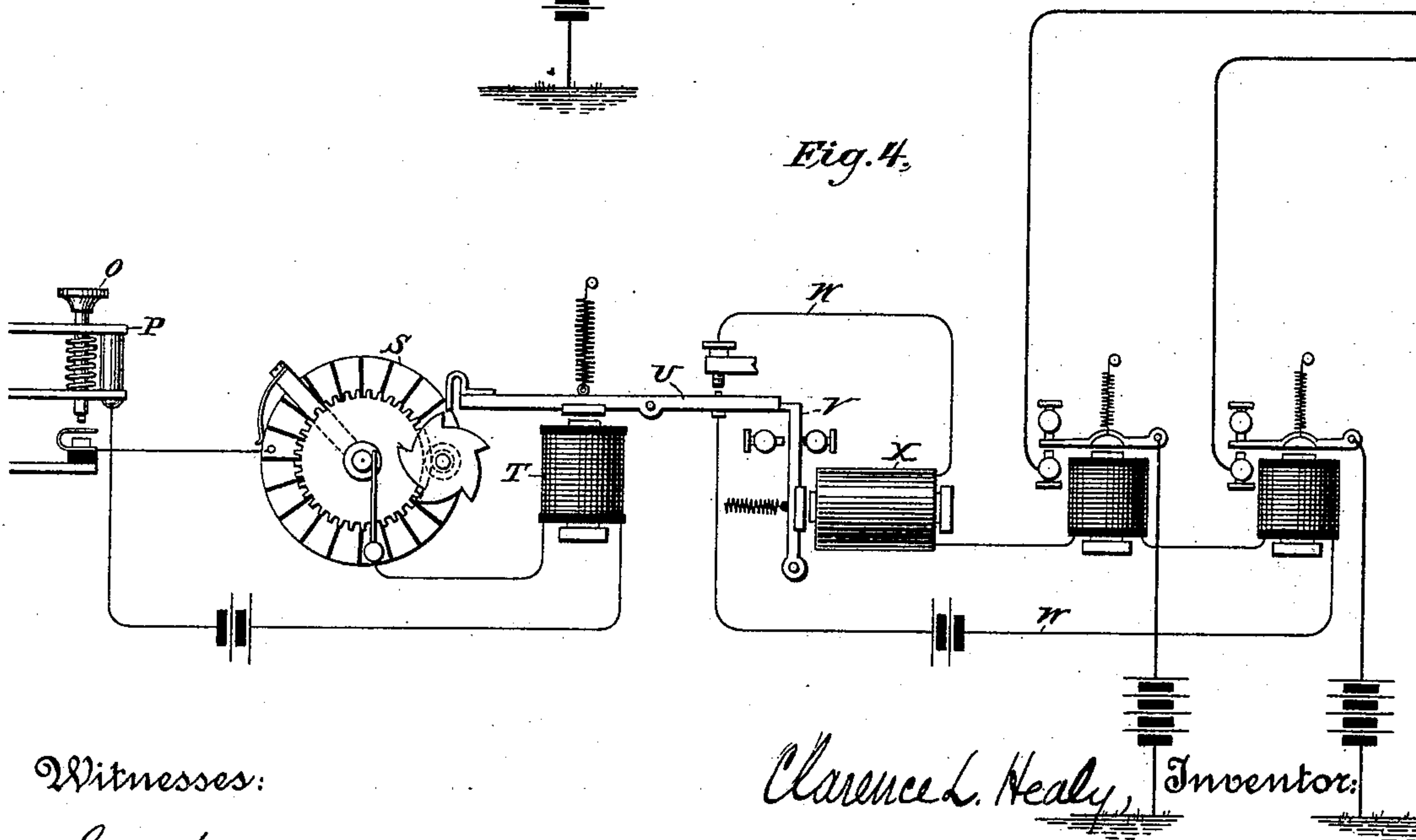


Fig. 4,



Witnesses:

Geo. W. Creek.
R. F. Gaylord

Clarence L. Healy, Inventor.

By his Attorney,
Wm. A. Dineen

UNITED STATES PATENT OFFICE.

CLARENCE L. HEALY, OF BROOKLYN, ASSIGNOR TO STEPHEN D. FIELD, OF YONKERS, NEW YORK.

PRINTING-TELEGRAPH.

SPECIFICATION forming part of Letters Patent No. 333,298, dated December 29, 1885.

Application filed September 4, 1885. Serial No. 176,157. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE L. HEALY, of Brooklyn, in the county of Kings and State of New York, have invented certain new and
5 useful Improvements in Printing-Telegraphs, of which the following is a full, clear, and exact description, and will enable those skilled in the art to which they appertain to make and use the same, reference being had to the
10 accompanying drawings.

These improvements relate generally to that class of printing-telegraphs in which one or more revolving type-wheels bearing the requisite characters are used, with mechanism for
15 pressing a ribbon or strip of paper upon the characters; and the improvements relate particularly to the circuits which run to the printers and which are provided with keys or other similar means for closing them and establishing the press or printing currents.
20

It has been customary for the operator to hold the keys of the press-circuits closed during such time as is necessary for the press or printing mechanism to fully act; but it is found that
25 this is very difficult to properly do, and particularly when high speed is required, experience showing that the circuit will be held closed too long, and thus time will be wasted, or that the circuit will not be held closed long
30 enough, and the press devices will act only feebly and thereby fail to print or print very poorly.

The object of the invention, therefore, is to provide means which will act independently
35 of the operator who puts them into action, to hold the press circuit or circuits closed the requisite time to effect the proper operation of the press devices, and will then break such circuit or circuits.

40 The invention consists in a mechanical lock, which is connected with the circuit-closing key of a press-circuit and is arranged to lock or hold the circuit closed when the key is released, and an electro-magnet connected with
45 the press-circuit and operating to open or disconnect said lock and thereby break the circuit.

Figure 1 shows a simple form of lock embodying the invention, which lock is connected
50 with a key and is located directly in a press-

circuit of a printing-telegraph. Fig. 2 shows the key-boards and transmitting mechanism of a printing-telegraph, which transmitting mechanism is provided with locking mechanism embodying the invention, this form of
55 transmitting mechanism being arranged to work the type and press mechanism of the printers through a single circuit. Fig. 3 shows the same mechanism arranged to work separate type and press-circuits. Fig. 4 shows the
60 press-circuit part of another form of transmitting mechanism, which is provided with a lock embodying the invention. Other forms of transmitting mechanism are possible, but these views suffice to illustrate the applica-
65 tion of the invention.

In Fig. 1, A represents the press-circuit, which is connected with the latch or spring B and runs through the magnet C and to the
70 armature-arm D of the magnet. The armature-arm is provided with a catch, E, and has a spring, F, by which it can be made to respond more or less slowly to the attraction of its magnet. The magnet also is constructed to act rather slowly. G is a key bearing upon
75 the spring, but, preferably, is not fastened thereto, though, manifestly, it might form a part of either the latch or spring B or of the armature-arm D. When it is desired to close the press-
80 circuit to effect the printing of a character in the printing-instruments to which it runs, the key is depressed and thereby causes the spring to be caught and held by the catch on the armature-arm and the circuit to be made. The magnet receives its full charge a short
85 time after the circuit has been made, and when the press mechanism of the printers has operated, and thereupon draws the armature-arm away from the spring and breaks the circuit. It will be seen that by this device the
90 duration of the press-current is automatically regulated and independently of the operator who makes the circuit. He has but to close the circuit, and upon so doing he may at once release his hold upon the key or other device
95 that is manipulated to close the circuit, as the further operation of the circuit is done independently of him. This not only makes the printing certain and uniform, but it also results in a gain in the speed of transmitting news, for
100

the requirements of skill are lessened and the operator is freed from responsibilities that heretofore have acted to retard rapid and accurate manipulation.

5 In Fig. 2, H is a transmitting apparatus driven by any suitable power and arranged to send rapidly alternating currents to the type-wheel magnets I of the printers, the press-magnet J being slow in action and not capable
 10 of responding to such currents. K is a ratchet-wheel on the same shaft as the transmitter, and its pawl L carries the armature of the electro-magnet M, which is in the circuit leading to the printers and is constructed so as
 5 not to be operated by the type-currents. N is a rotating-arm driven from the transmitter-shaft and moving just below the keys O (only one of which is shown) of the key-board P. The transmitter is driven at a speed such as
 10 prevents the pawl L engaging with the ratchet-wheel K. When, however, it is desired to prolong a current sufficiently long to operate the press-magnets, the key representing the character to be printed is depressed and the
 5 arm N is arrested by that key with the corresponding notch in the wheel K directly under the pawl L, which thereupon is drawn into such notch and holds the transmitter inde-
 10 pendently of the key that arrested it, the operator being free to release the key the instant the arm N is arrested. The current that is thus prolonged first charges and causes the press-magnet to operate, and immediately after the printing has been effected the ratchet-
 5 magnet becomes fully charged and releases the transmitter by withdrawing the pawl, thus interrupting the press-current and re-establishing the type currents.

10 In Fig. 3 the last-described mechanism is shown as arranged to work separate type and press lines. The magnet Q is arranged in the type-circuit and is not responsive to the type-currents, and the pawl-magnet M is located in a local circuit which contains the press-
 5 relay R, and is controlled by the magnet Q. When the transmitter is arrested, the sustained type-current brings magnet Q into action and closes the local circuit and the press-circuit, and after the local circuit has been held closed
 50 long enough to insure the proper action of the press mechanism, the pawl-magnet acts to release the transmitter as before.

55 In Fig. 4 the transmitter-shaft is arrested through the medium of a "sun-flower," S, on it, a clutch-magnet, T, connected therewith, and short electric circuits connecting the

clutch-magnet with the keys of the key-board. When a key is depressed and the revolving arm of the sun-flower closes that circuit, the clutch-arm U of the clutch-magnet arrests the
 60 transmitter, and a dog, V, is drawn under its outer end, thus holding the transmitter independently of the key-board. The clutch also acts to close a local relay-circuit, W, which controls the press-circuit and contains a slow-
 65 ly-acting magnet, X, that comes into action in time to withdraw the dog V after the printing is done, and release the transmitter.

It is to be noticed that the devices herein described are mechanical circuit closers or
 70 locks—that is, they act mechanically while holding the press-circuits closed—and by this I mean mechanical locks as distinguished from electric circuit closers or locks, which hold the press-circuits closed through the medium
 75 of an electro-magnet acting upon the locks.

An electric mechanism for maintaining the press-circuits of printing-telegraphs, for the purpose herein described, has already been
 80 patented to me, and does not therefore form any part of the present invention.

What is claimed as new is—

1. In combination, in a printing-telegraph, a press-circuit, a circuit-closing key, a mechanical lock arranged to hold the circuit
 85 closed independently of the operator, and an electro-magnet connected with the circuit and operating to open said lock and interrupt the press-current when the printing has been ef-
 90 fected.

2. In combination, in a printing-telegraph, a press-circuit, a circuit-closing key, a mechanical lock connected with said key and
 95 arranged to close and hold the circuit closed independently of the operator, and an electro-magnet connected with the circuit and arranged to disconnect said lock when the printing has been effected.

3. In combination with a press-circuit of a printing-telegraph, a transmitter for sending
 100 out type-currents, a mechanical lock operated by the keys of a key-board and arranged to arrest the transmitter and hold it independently of said keys while the press-currents are being sent out, and an electro-magnet con-
 105 nected with the press-circuits and arranged to open said lock and release the transmitter.

CLARENCE L. HEALY.

Witnesses:

ROBT. F. GAYLORD,
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