

(No Model.)

2 Sheets—Sheet 1.

C. SELDEN.

AUTOMATIC AND AUTOGRAPHIC TELEGRAPHY.

No. 371,980.

Patented Oct. 25, 1887.

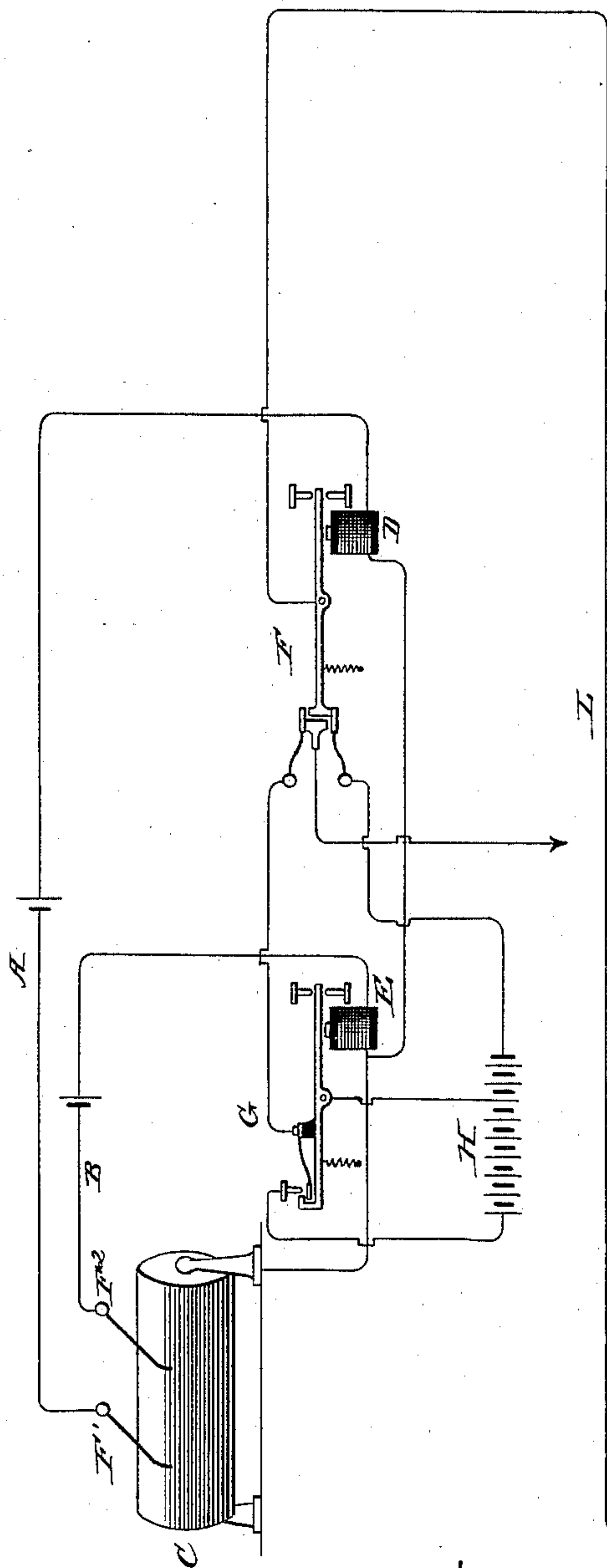
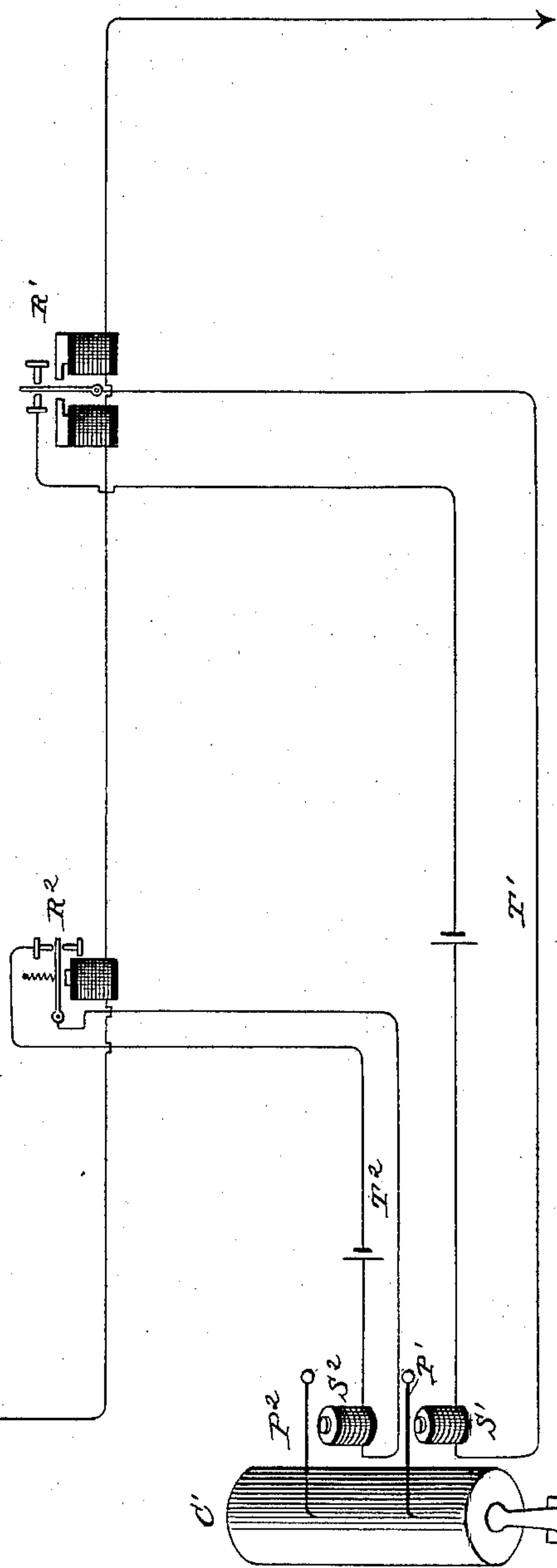


Fig. 1.



Attest:
Jno. G. Hinkley Jr.
Wm. A. Harris

Charles Selden
Inventor: by
Foster & Freeman
attys

(No Model.)

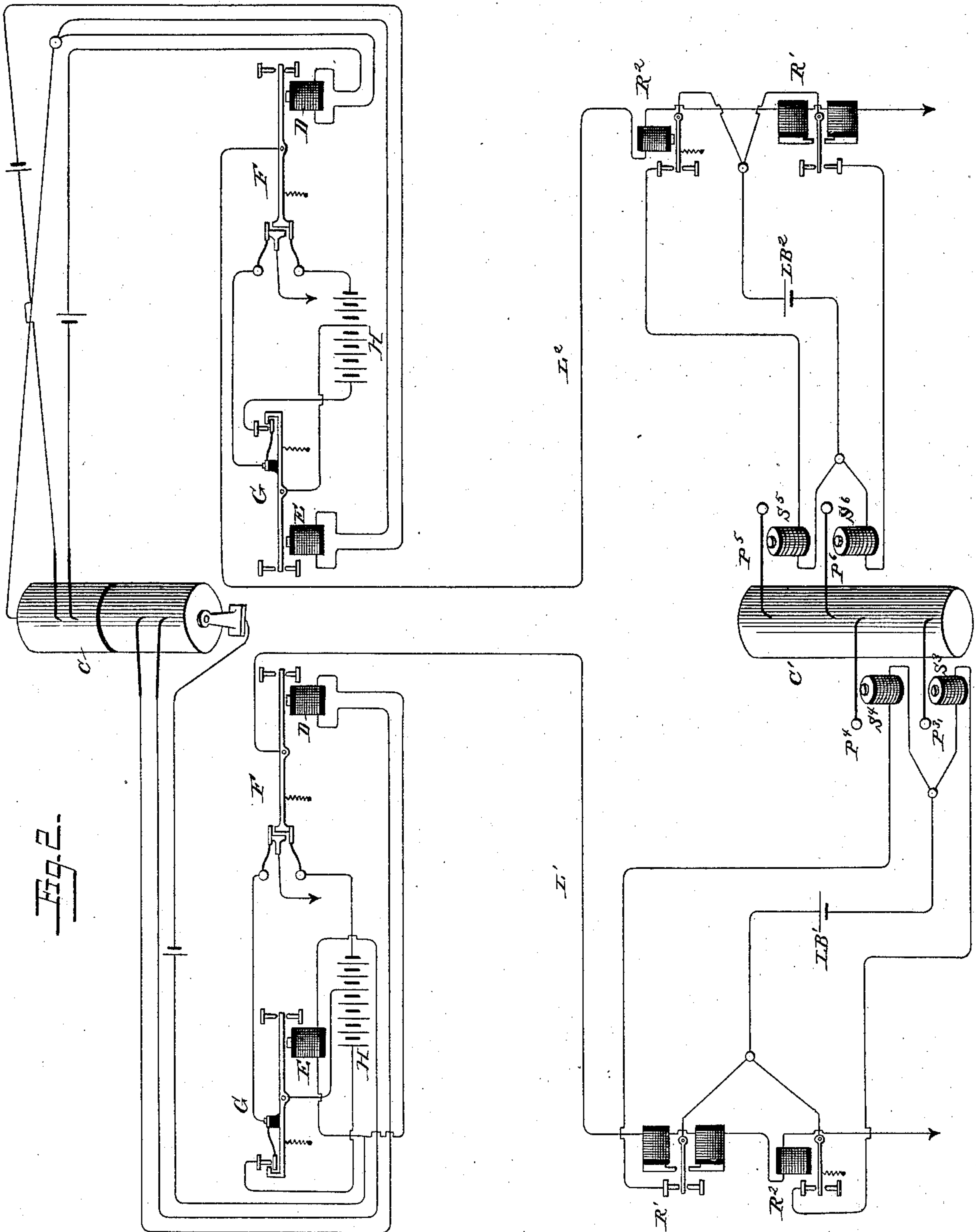
2 Sheets—Sheet 2.

C. SELDEN.

AUTOMATIC AND AUTOGRAPHIC TELEGRAPHY.

No. 371,980.

Patented Oct. 25, 1887.



Attest:
Geo. G. Hinkley
Wm. A. Harris

Inventor:
Charles Selden by
Foster & Freeman
Atty's

UNITED STATES PATENT OFFICE.

CHARLES SELDEN, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF
TO WILLIAM T. BARNARD, OF SAME PLACE.

AUTOMATIC AND AUTOGRAPHIC TELEGRAPHY.

SPECIFICATION forming part of Letters Patent No. 371,980, dated October 25, 1887.

Application filed October 7, 1886. Serial No. 215,577. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SELDEN, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Automatic and Autographic Telegraphy, of which the following is a specification.

My invention relates to the telegraphic transmission of fac-similes automatically, and it has for its object to increase the speed of such transmission by the simultaneous employment of currents of varying strength and polarity, whereby a duplex or quadruplex system is obtained.

In illustrating the principle of my invention I show in the accompanying drawings, in Figure 1 a diagrammatic view of one application of the same to a single duplex line, and in Fig. 2 a similar view applied to two duplex lines.

Referring to Fig. 1, C is an ordinary automatic or autographic telegraph cylinder, covered, as usual, with a message in conducting and non-conducting spaces.

F' F² are contact fingers or brushes resting upon and traversing different portions of the cylinder C, which contains either two contiguous portions of a single message or two independent messages. Each finger is in a separate local circuit, A B, including the magnets D E, respectively. The magnet D controls a polarity-changing key, F, and the magnet E controls a tension-changing key, G, both included in the main-line circuit, having a sectional battery, H, and arranged to operate in the usual well-known manner to send currents of varying polarity and tension, respectively, to the line, as in the ordinary duplex telegraph.

If the cylinder C is rotated by any suitable means, and is covered, for instance, with a message written in conducting-ink upon a non-conducting sheet, the finger F', whenever it comes in contact with a conducting portion of the message-sheet, will close the local circuit A, actuating the magnet D, which in turn will operate the pole-changing key F to send an electric impulse of given polarity to line L, and if finger F² comes in contact with a conducting portion of the message it will in like manner cause an impulse of given strength to be sent to line through the medium of key G.

At the receiving-station there is a recording-cylinder, C', upon which bear two armature pens or pencils, P' P², the one P' being actuated by the magnet S', and the other, P², being actuated by the magnet S². These magnets are respectively in the local circuits T' T². Local circuit T' is controlled by the polarized relay R', located in the main line, and the local circuit T² is controlled by the neutral relay R². It will thus be seen that a current of given polarity upon the line controlled by finger F' will operate the stylus or pen P', while a current of given strength controlled by finger F² will operate pen or stylus P², and thus the message or messages inscribed upon cylinder C will be reproduced upon cylinder C'.

As above stated, there may be two independent messages upon cylinder C, and they will be both transmitted at the same time over one line-wire; or, if there are two contiguous parts of a single message upon cylinder C, the same will be reproduced in one-half the time that is required for ordinary fac-simile transmission as heretofore practiced.

Having described the operation of a duplex autographic telegraph, it will be plain to those skilled in the art that by the use of the ordinary devices—such as differential relays, rheostats, and condensers—the system may be extended to a quadruplex autographic telegraph, and that fac-simile transmission upon a single wire may be had at the same time in opposite directions.

While I have shown the local magnets connected up directly in the circuits, it is evident that I may use differential magnets, or that they may be placed in a shunt or a Wheatstone bridge in the manner well understood.

Referring to Fig. 2, the cylinder C is shown as made in two sections insulated from each other and connected with each section in a system of transmission such as has been described with reference to Fig. 1, and each system has an independent main line, L' L², and the receiving-pens P³ P⁴ P⁵ P⁶ are arranged to operate upon the single cylinder C', these pens being actuated by magnets S³ S⁴ S⁵ S⁶ in the local circuits. I have shown a single local battery, LB' LB², energizing each pair of pens connected with the respective lines. I can thus transmit by means of one transmitting-

cylinder four individual messages at the same time in a single direction, and by duplexing this arrangement in the ordinary way I can double the capacity of the system.

5 I have not indicated any special means of rotating the cylinders, as it will be understood that any usual and well-known means may be used, and the rotation of the cylinder may be effected or controlled by one of the local mag-
10 nets.

It is evident that my invention may be applied to other systems of multiplex telegraphy than that specifically indicated without departing from the spirit thereof.

15 What I claim is—

1. In an automatic autographic multiplex telegraph, the combination of a transmitting-cylinder, a series of contact-fingers bearing thereon, a receiving-cylinder with a like series
20 of recording-pens, a single line circuit between the series of fingers and pens, and circuit-connections, substantially as described, whereby each pen is controlled by a separate finger, as set forth.

25 2. In an automatic autographic multiplex telegraph, the combination of a transmitting-cylinder having a series of contact-fingers bearing thereon, each controlling a current, and a receiving-cylinder having a like series
30 of recording-pens, each actuated by a separate current, and a single-line circuit connecting the series of fingers and pens, substantially as described.

3. In an automatic autographic multiplex telegraph, the combination of a transmitting- 35 cylinder having a series of contact-fingers bearing thereon, local circuits controlled by said fingers, current-controlling devices in the main-line circuit, each actuated by its separate local circuit, and a receiving-cylinder 40 having a series of recording-pens, each controlled by the current-controlling device in the main circuit, substantially as described.

4. In an automatic autographic multiplex telegraph, the combination of the transmit- 45 ting-cylinder, the fingers bearing thereon controlling local circuits, current-controlling device in the main line actuated by said local circuits, a series of relays at the receiving- station, each adapted to a particular current 50 from the main line, and recording-pens bearing upon the receiving-cylinder, controlled by the relays, substantially as described.

5. An automatic fac-simile telegraph consisting of a sectional transmitting-cylinder, a 55 series of contact-fingers for each section, a receiving-cylinder having like series of recording-pens, and lines and circuit-connection for each series, substantially as described.

In testimony whereof I have signed my name 60 to this specification in the presence of two subscribing witnesses.

CHARLES SELDEN.

Witnesses:

THOS. KELL BRADFORD,
L. A. BURCK.