

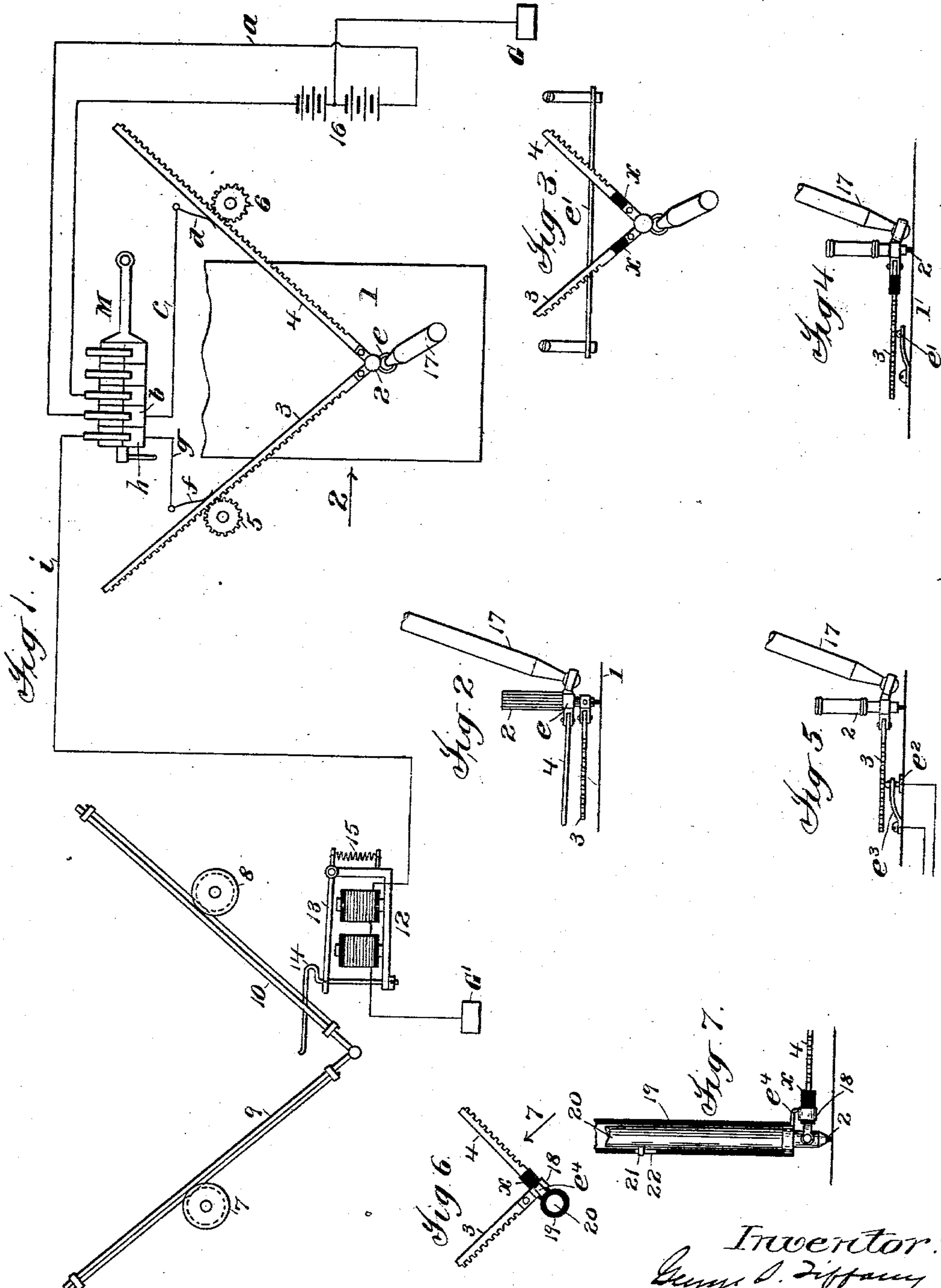
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TELAUTOGRAPH.

APPLICATION FILED DEC. 20, 1900.

NO MODEL.



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UNITED STATES PATENT OFFICE.

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TELAUTOGRAPH.

SPECIFICATION forming part of Letters Patent No. 745,692, dated December 1, 1903.

Application filed December 20, 1900. Serial No. 40,471. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. TIFFANY, a citizen of the United States, residing in the borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Telautographs, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to improvements in telautographs, and particularly to means controlled by the transmitting-tracer for effecting the movement of the receiving-pen to and from its writing surface or platen, according as the transmitting-tracer is so moved by the operator during the operation of writing, it being the object of the present invention to provide means for this purpose which, unlike the means heretofore provided, is controlled by the transmitting tracing implement independently of any movement of the transmitting writing-platen.

In the accompanying drawings, Figure 1 is a plan view, partly in diagram, illustrating transmitting and receiving instruments equipped with one form of pen-controlling means embodying the present invention. Fig. 2 is a side elevation in the direction of the arrow 2 of Fig. 1 of a portion of the transmitting instrument. Fig. 3 is a plan view of a portion of the transmitting instrument, illustrating a modification which will be hereinafter described. Fig. 4 is a side elevation of the same. Fig. 5 is a side elevation of a portion of a transmitting instrument, illustrating a modification; and Figs. 6 and 7 are a plan view and side elevation, respectively, illustrating a modification of the pen-controlling means.

Referring to said drawings, and particularly to Figs. 1 and 2, which embody the present invention in its preferred form, 1 represents the transmitting-platen, while 2 represents the transmitting-tracer, and 3 4 the supporting-arms of the transmitting implement, these supporting-arms carrying and following the writing movements of the tracer in the usual way. The tracer-carrying arms 3 4 are provided on their edges with racks engag-

ing pinions 5 6, so that as these arms follow the movements of the tracer 2 they rotate these pinions and through suitable devices (not shown, but which are well understood) effect changes in the character or strength of the current sent to line to the receiving instrument, (by circuits not shown,) so as to cause the receiving-pen to move in unison with and to reproduce at the receiving instrument the writing traced by the transmitting-tracer. The tracer-carrying arms 3 4 instead of being provided with racks engaging pinions, as shown, may be provided with cords wound upon drums 7 8, as in the case of the carrying-arms 9 10 of the receiving-pen, which is the more common way of connecting the carrying-arms of the tracer to the devices through which the tracer effects the changes before referred to in the currents on line to the receiving instrument, the connections between the tracer-carrying arms and the current-controlling devices being immaterial so far as the present invention is concerned.

Referring now to the receiving instrument, 12 represents the usual pen lifting and lowering magnet, the armature 13 of which is provided with a fulcrumed pen-supporting arm 14, which is moved upwardly by a spring 15 to lift the receiving-pen from the paper when the magnet 12 is deenergized and its armature 13 released and which is moved downwardly when the magnet 12 is energized and the armature 13 is attracted thereby, so as to effect the movement of the receiving-pen downwardly into contact with the paper, these two movements of the receiving-pen taking place according as the transmitting-tracer is raised and lowered by the operator relatively to its writing surface or platen.

The energization and deenergization of magnet 12 are controlled from the transmitting-tracer 2 in the following manner in the system shown in Fig. 1, in which for convenience and clearness of description circuit connections independent of the main lines are shown: At the transmitting instrument is located a battery 16, divided and grounded at G, and the positive pole whereof (with the master-switch M in the position shown) is

connected with the magnet 12 by a circuit consisting of wire *a*, plate *b* of the master-switch, wire *c*, spring-contact *d*, tracer-carrying arm 4, contact *e* thereon, tracer-carrying arm 3, spring-contact *f*, wire *g*, plate *h* on the master-switch, and wire *i*, passing through magnet 12 to ground at *G'*. The arm 4 is movably mounted upon the stem of tracer 2, as shown in Fig. 2, and has connected to it the handle 17, which is usually provided for the use of the operator in guiding the movements of the tracer during the writing operation, so that as said handle is lowered with the tracer to the writing-platen 1 the contact *e*, borne by arm 4, is brought into contact with arm 3, thus completing the circuit from battery 16 through magnet 12 and energizing said magnet and effecting the movement of the receiving-pen downwardly into contact with its writing-surface. When the handle 17, and with it the tracer 2, is moved upwardly, the arm 4, moving with it, withdraws contact *e* from engagement with arm 3, thus opening the circuit through the magnet 12, which is thus deenergized and releases its armature 13, with the result that the supporting-arm 14, moved upwardly with the armature 13 by spring 15, raises the receiving-pen from its writing surface or platen.

Although an independent circuit is shown for the magnet 12—that is, a circuit independent of the main line—the invention is not to be so limited. Neither is it to be limited to any particular type of telautograph, as it is equally applicable to telautographs of the step-by-step or escapement type and telautographs in which the writing movements of the receiving-pen are controlled by variations in current strength on line or “variable-current” telautographs, as they are sometimes called.

The pen-controlling means illustrated in Figs. 1 and 2 embody the invention in its preferred form, as before stated; but it is to be understood that other means than those shown in these figures may be employed without departing from the invention, broadly considered—such, for example, as the means shown in Figs. 3 to 7, which will now be described.

In the construction illustrated in Figs. 3 and 4 the circuit, as in Figs. 1 and 2, passes through the arms 3 4, which are insulated from each other, as shown at *x x*, the circuit in this case, however, being controlled by a stationary contact *e'*, bridging the two arms 3 4, and which contacts therewith to close the circuit through magnet 12 as the arms 3 4 and tracer are lowered and breaks contact therewith to open the circuit as the arms 3 4 and tracer are raised.

In the construction illustrated in Fig. 5 the circuit does not pass through the arms 3 4, but through a post *e²* and spring-contact *e³*, which latter is depressed into engagement with post *e²* to close the circuit through magnet 12 by the arms 3 4 or one of them when they are lowered and is disengaged from said

post to break the circuit when the arms are raised.

In the construction illustrated in Figs. 6 and 7 the circuit passes through the arms 3 4, as in Figs. 1, 2, 3, 4, the arms 3 4 being insulated from each other by insulating material *x* interposed between arm 4 and a collar 18, by which arm 3 is hinged to said arm 4, the circuit between the arms 3 4 being controlled by a contact *e⁴*, carried by a tube 19 of insulating material mounted to slide longitudinally upon the stem 20 (which is of metal) of tracer 2, the tube 19 being guided in its movements longitudinally of stem 20 by a pen 21 in said stem entering a slot 22 in said tube. When the contact *e⁴* is in its lowermost position, as shown in Fig. 7, it is in engagement with collar 18 of arm 3, and the circuit is then closed through said arms, the current passing through arm 4, stem 20, contact *e⁴*, collar 18, arm 3, and thence, as before, to the magnet 12. When the tracer 2, and with it the tube 19, is raised, the contact *e⁴* is disengaged from collar 18, the circuit through magnet 12 being then opened.

In each of the foregoing constructions it will be observed that the electrical connections which control the movements of the receiving-pen to and from its writing-surface are in turn controlled by the transmitting tracing implement independently of any movement of the writing-platen of the latter.

What I claim is—

1. In a telautographic system, the combination with a transmitting-tracer and its carrying-arms and writing-platen, and a receiving-pen and its writing-platen, of devices at the receiving instrument for effecting the movement of the receiving-pen to and from its writing-platen, electrical connections between said devices and carrying-arms and including the latter, and means for controlling said electrical connections, whereby as the transmitting tracing implement is moved to and from its writing-platen like movements of the receiving-pen are effected, substantially as described.

2. In a telautographic system, the combination with a transmitting-tracer and its carrying-arms and writing-platen, and a receiving-pen and its writing-platen, of devices at the receiving instrument for effecting the movement of the receiving-pen to and from its writing-platen, electrical connections between said devices and carrying-arms and including the latter, and circuit making and breaking means for controlling said electrical connections, whereby as the transmitting tracing implement is moved to and from its writing-platen like movements of the receiving-pen are effected, substantially as described.

3. In a telautographic system, the combination with a transmitting-tracer and its writing-platen, and a receiving-pen and its writing-platen, of devices at the receiving instrument for effecting the movement of the re-

ceiving-pen to and from its platen, a pair of
carrying-arms for said tracer, one of said
arms having a circuit making and breaking
contact movable into and out of contact with
5 the other arm, and electrical connections be-
tween the pen-moving devices and said arms,
whereby as the transmitting tracing imple-
ment is moved to and from its writing-platen
like movements of the receiving-pen are ef-
10 fected, substantially as described.

4. In a telautographic system, the combi-
nation with a transmitting-tracer and its car-
rying-arms and writing-platen, and a receiv-
ing-pen and its writing-platen, of devices at
15 the receiving instrument for effecting the
movement of the receiving-pen to and from
its writing-platen, and electrical connections
between said devices and carrying-arms, one
of said arms being movable relatively to the
20 other so as to make and break said connec-
tions, whereby as the transmitting tracing
implement is moved to and from its writing-
platen like movements of the receiving-pen
are effected, substantially as described.

5. In a telautographic system, the combi- 25
nation with a transmitting-tracer and its
writing-platen, and a receiving-pen and its
writing-platen, of devices at the receiving
instrument for effecting the movement of the
receiving-pen to and from its platen, a pair 30
of carrying-arms for said tracer, one of said
arms having a circuit making and breaking
contact movable relatively to the tracer into
and out of contact with the other arm, and
electrical connections between the pen-mov- 35
ing devices and said arms, whereby as the
transmitting tracing implement is moved to
and from its writing-platen like movements
of the receiving-pen are effected, substan-
tially as described. 40

In testimony whereof I have hereunto set
my hand in the presence of two subscribing
witnesses.

GEORGE S. TIFFANY.

Witnesses:

J. A. GRAVES,
T. F. KEHOE.