GEORGE LITTLE.

Improvement in Telegraph Recording Instruments.

No. 120,289. Patented Oct. 24, 1871

Fig. 1.

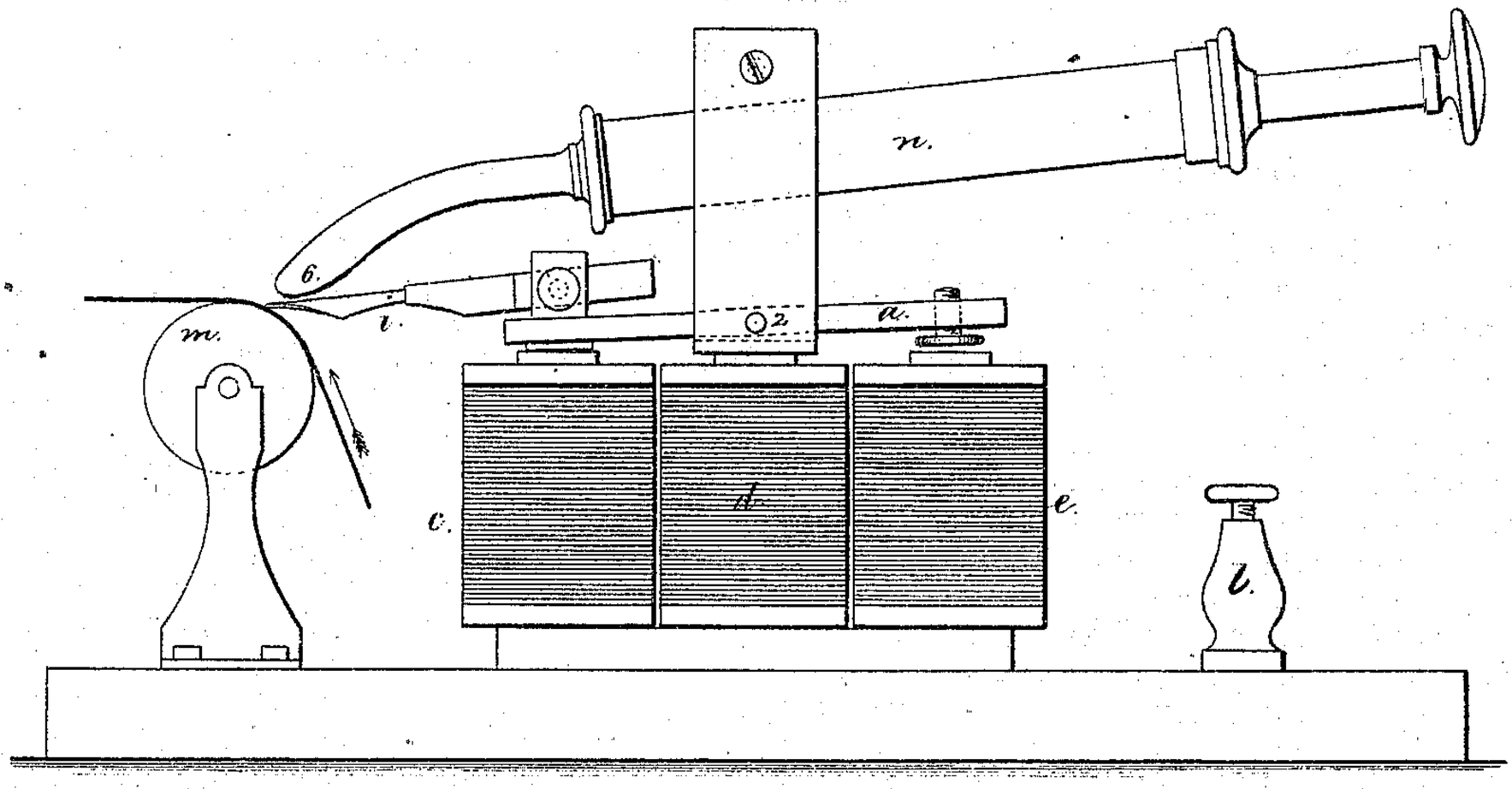
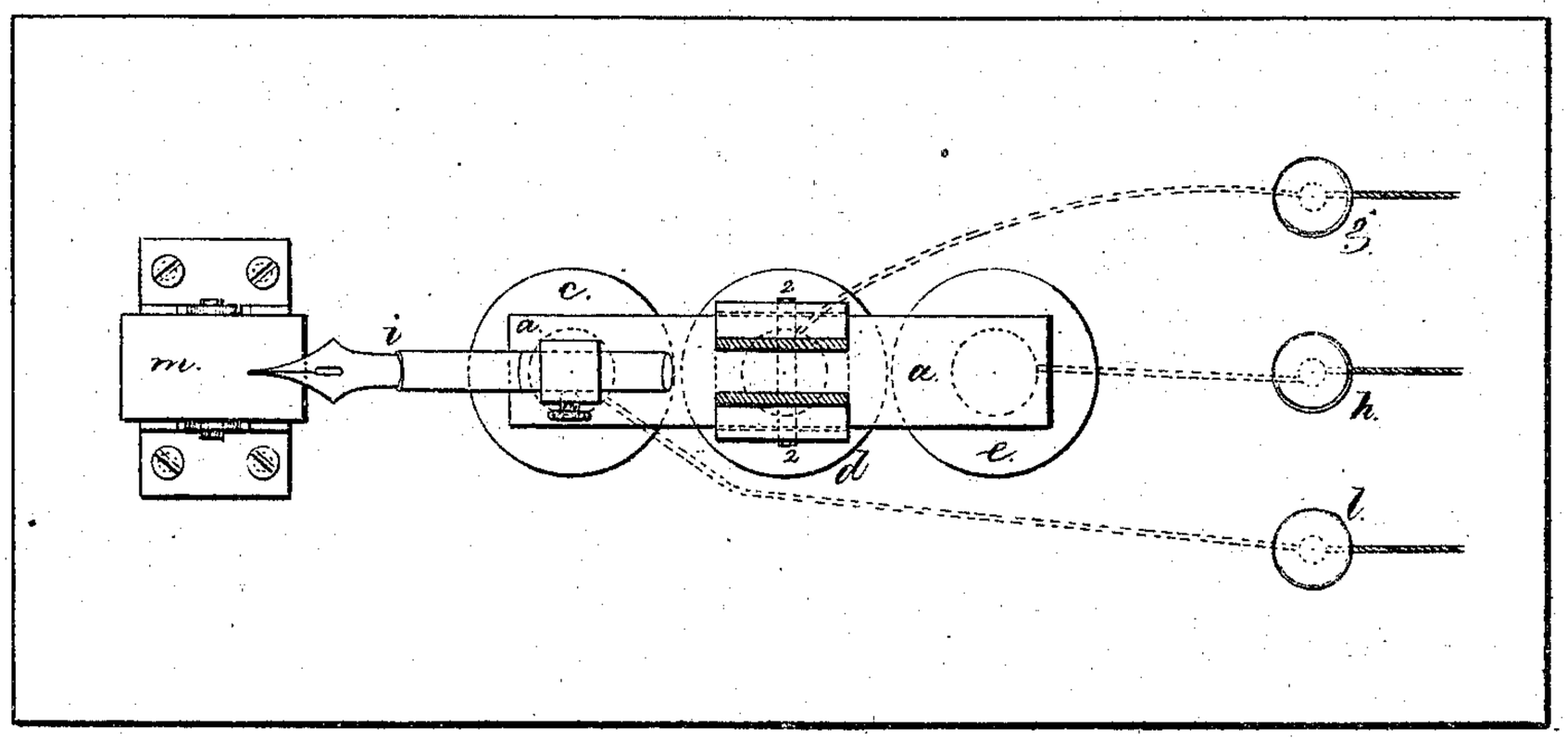


Fig. 2.



Witnesses

Chas. H. Smith

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UNITED STATES PATENT OFFICE.

GEORGE LITTLE, OF RUTHERFORD PARK, NEW JERSEY.

IMPROVEMENT IN TELEGRAPH-RECORDING INSTRUMENTS.

Specification forming part of Letters Patent No. 120,289, dated October 24, 1871.

To all whom it may concern:

Be it known that I, GEORGE LITTLE, of Rutherford Park, in the county of Bergen and State of New Jersey, have invented an Improvement in Telegraph-Recording Instruments; and the following is declared to be a correct description of the same.

This invention is made for marking on a strip of paper, with a pen and ink, in dots and dashes to represent characters or letters; and the same consists in a pen-holder and pen oscillated by an electro-magnet to bring the pen into contact with the paper or lift the same off the surface sufficiently to avoid a mark; and in combination therewith I employ an ink-fountain that is constructed and applied so as to supply ink to the pen.

Pens have been employed in illustrative and toy telegraphs; but two difficulties have rendered their use impracticable—the ink in the pen is speedily used up, and, the vibration being rapid, is liable to blot the writing or characters.

I place the pen nearly horizontal, so that the ink will not accumulate near the point even when subjected to the most rapid vibration; and I place the end of the tube from the fountain in close proximity with the upper side of the pen when lifted, so that the film of ink will remain perfect but be attenuated by the vibration of the pen; and when the ink ceases to remain in contact with the pen the air passes into the fountain and a new supply runs to the pen. In this manner the pen is in condition for use at all times, and the ink-dots and dashes take the place of the indentations heretofore made use of.

In the drawing, Figure 1 is a side view of the recording instrument, and Fig. 2 is a plan of the same with the ink-fountain removed.

The armature *a* is hung to swing upon the centers 2 2, and is operated by an electro-magnet, and its movement limited by adjusting-screws.

I have shown the three magnets *c d e*. The magnet *d* supports the fulcrum of the armature, and the magnets *c e*, being charged alternately, move the pen *i*, that is carried by the armature *a*, up and down, the connections from the binding-screws *g h l* being such that these magnets will be alternately operative—for instance, the magnet *d e* can be slightly charged from a local battery continuously and the pulsations on the main line pass through *c d* of an opposite polarity, or of a sufficiently-increased force to draw down the armature and pen; but I remark that a spring or a permanent magnet might take the place of the magnet *e*. The paper is drawn along progressively over the roller *m* by suitable means, and the dots and dashes will be positioned according to the duration of the electric pulsations. The fountain *n* is of suitable character, and the small orifice at the end 6 of the fountain is above the pen *i* and contiguous to the same when lifted, so as to supply to the said pen the required amount of ink in the manner aforesaid. I prefer ordinary writing-ink with but little gummy material therein.

The armature may be a permanent magnet, and the motion produced by reversing the currents; and said armature may carry more than one pen to record two or more copies; and, where a reverse current is used in connection with transmitting and recording messages, the second pen may be operated by the reverse current, and a magnetized armature operated by a separate magnet, or by one magnet with two armatures—the one of soft iron and the other a permanent magnet. If desired, a connection may be made to a sounding instrument, to be used temporarily in connection with the recorder or separately.

I claim as my invention—

1. The ink-marking pen, extending nearly horizontally from a vibrating armature and contiguous to a roller over which the strip of paper passes, for the purposes set forth.

2. An ink-fountain with a discharge-hole above and contiguous to the vibrating-pen, in combination with a swinging armature and electro-magnet, substantially as set forth.

Signed by me this 29th day of July, A. D. 1871.

GEORGE LITTLE.

Witnesses:

CHAS. H. SMITH,

GEO. T. PINCKNEY.

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