

2 Sheets--Sheet 1:

No. 123,984. Patented Feb. 27, 1872.

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Fig. 2.

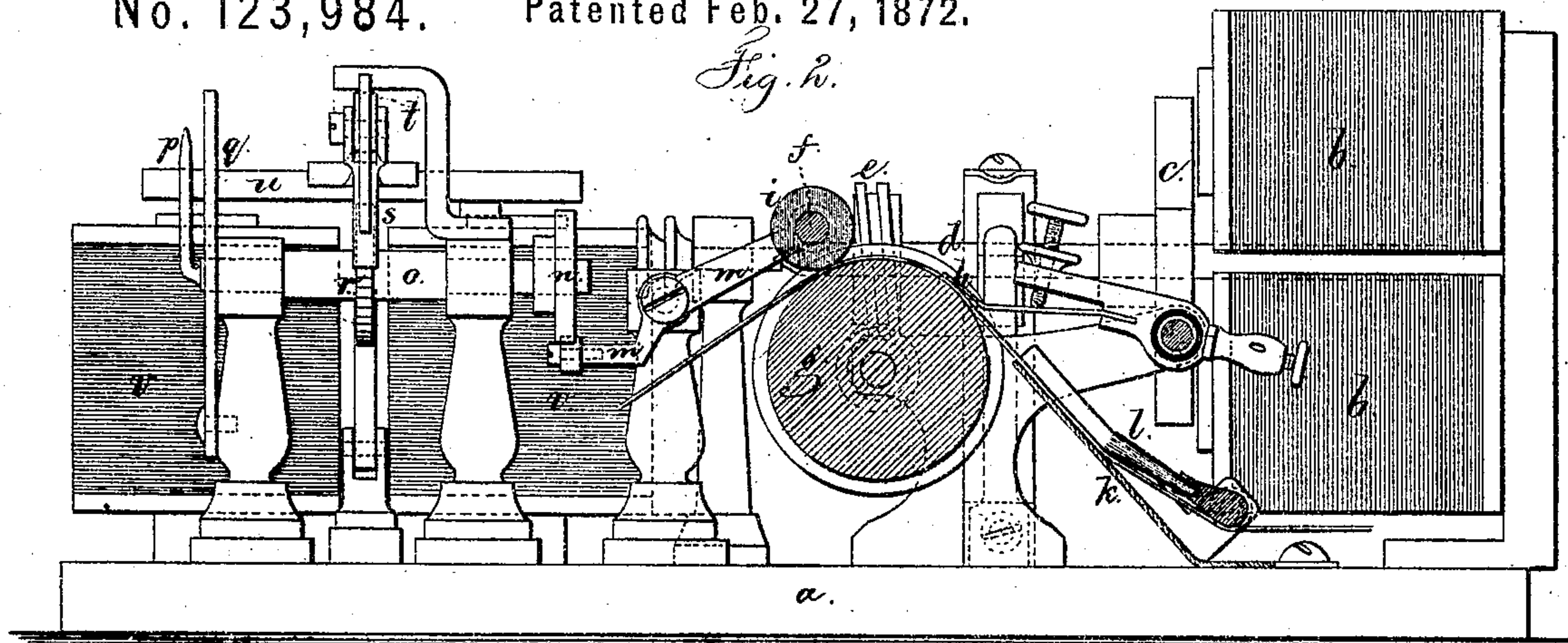
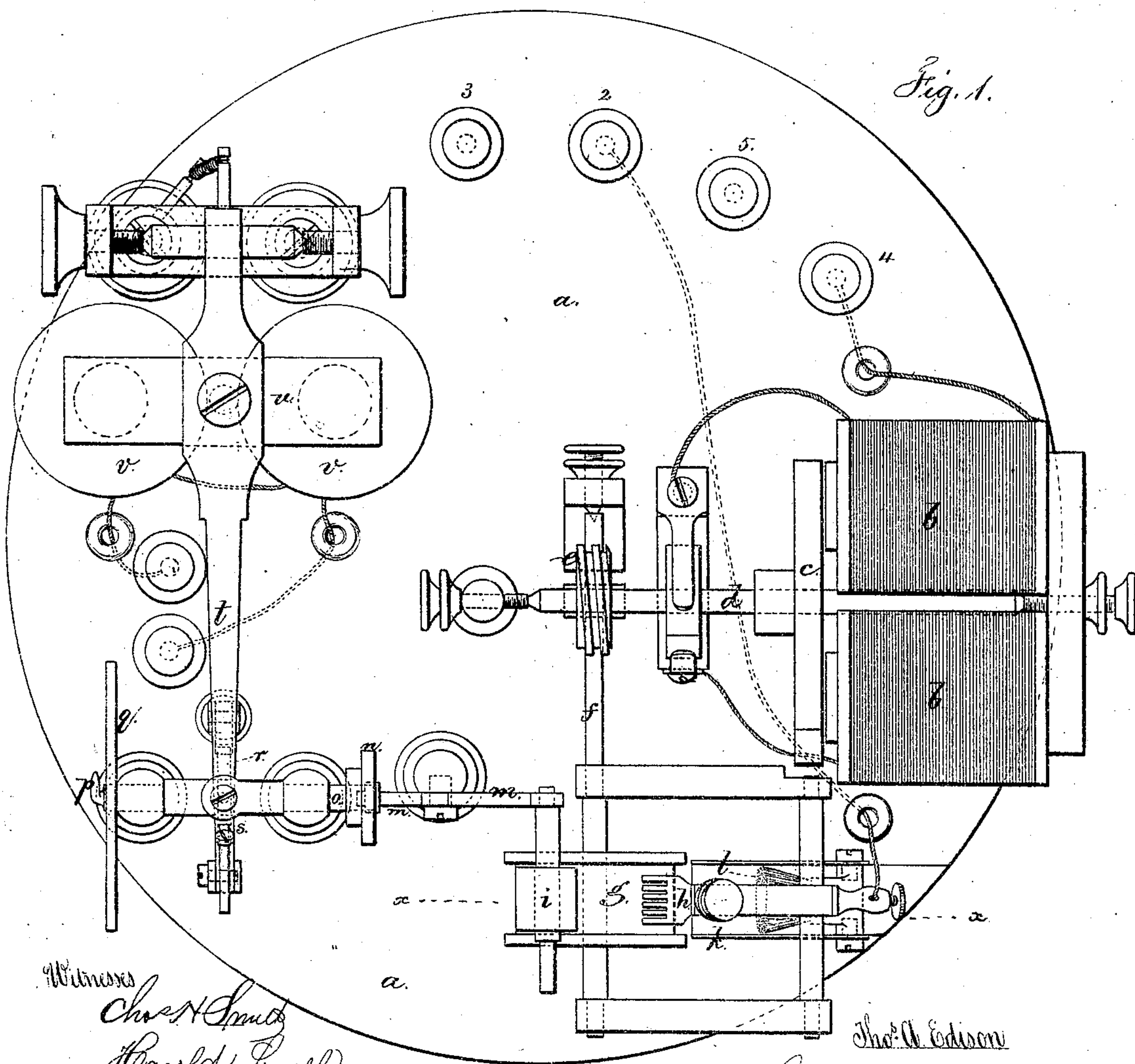


Fig. 1.



Witnesses

Chas H Smith

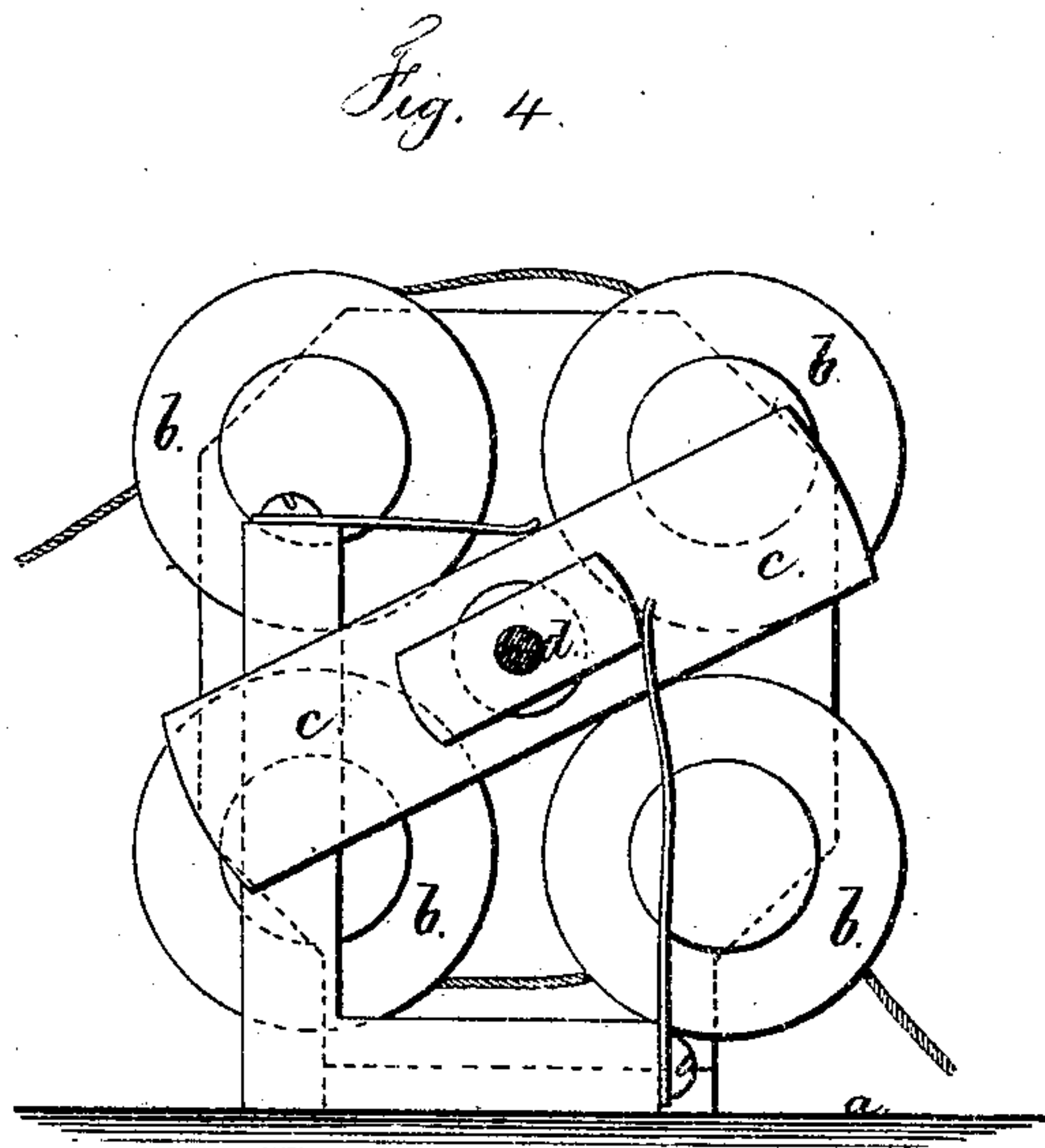
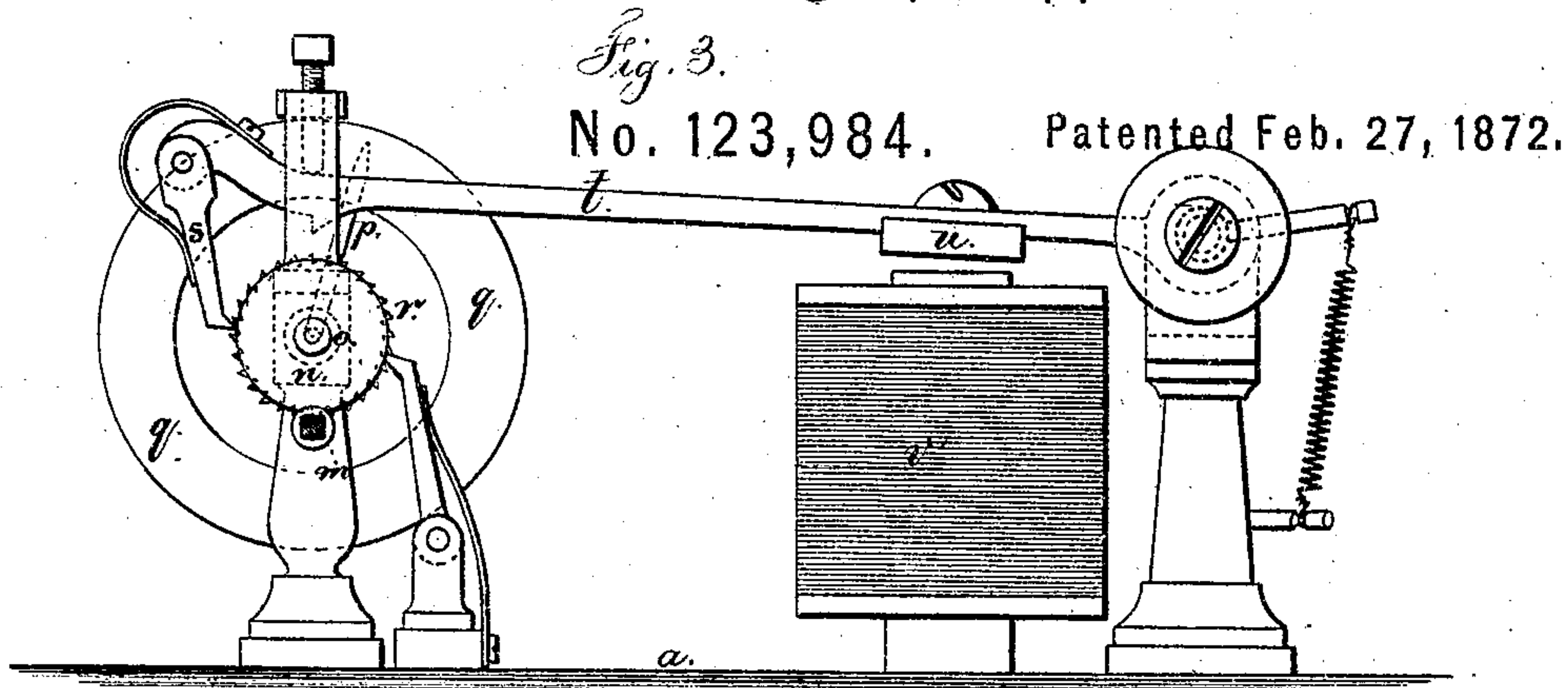
Harold F. Frell

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THOMAS A. EDISON. 2 Sheets--Sheet 2  
Improvement in Telegraph Apparatus.



Witnesses

Chas. H. Smith  
Harold Snell

Thos. A. Edison  
Lemuel W. Terrell *att'y.*



# UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF NEWARK, NEW JERSEY, ASSIGNOR TO HIMSELF  
AND GEORGE HARRINGTON, OF WASHINGTON, D. C.

## IMPROVEMENT IN TELEGRAPH APPARATUS.

Specification forming part of Letters Patent No. 123,984, dated February 27, 1872; antedated February 17, 1872.

*To all whom it may concern:*

Be it known that I, THOMAS A. EDISON, of Newark, in the county of Essex and State of New Jersey, have invented an Improvement in Telegraph Apparatus; and the following is declared to be a correct description thereof.

The object of this invention is to give the operator at the sending station the opportunity to adjust the instruments on the line in such a manner as to bring into action the receiving instrument at any desired station independently of the operator at that station.

This invention is primarily adapted to the transmission of messages automatically by perforated paper, and their reception upon chemically-prepared paper; but the said invention may be employed in other telegraphic apparatus.

In the drawing, Figure 1 is a plan of the instrument complete. Fig. 2 is a section at the line *x x*. Fig. 3 is an elevation of the locking-wheel and its magnet, and Fig. 4 is an elevation of the motor.

The bed *a* is of suitable size, and carries the magnets *b b*, revolving armature *c*, shaft *d*, and worm-pinion *e*, forming a motor for the shaft *f* and transmitting or receiving roller *g*. *h* is the transmitting brush, roller, or pen, or the receiving stylus or pen is substituted for the same. The perforated paper or the receiving-strip passes through the trough *k*, and the brush *l* applies to the same the required friction to keep the paper in position. The binding-screws 2 and 3 are for the main-line wire, one connecting to the stylus and the other to the roller *g* through the metallic bed. The binding-screws 4 and 5 connect a local battery to the magnets *b b*.

I remark that the magnets *b b* and armature simply form a well-known motor for the machine, and that any other motor may be applied to revolve the roller *g*, and that this roller *g* and the parts connected therewith may be of any desired character and adapted to the automatic reception or transmission of telegraphic messages.

My special feature of improvement relates to an actuating mechanism applied to each machine, which, when brought into operation by the party at the transmitting station, causes the machine at the receiving station to become operative.

The roller *i* is mounted upon a lever, *m*, at the other end of which is a lock-wheel, *n*, having one notch. When this wheel *n* is turned around, so that the lever *m* or roller at its end passes into this notch, the roller *i* presses the paper upon the roller *g* by its own weight, or the force of a spring, sufficient to cause the paper to be drawn along between the rollers *g* and *i*; but when the roller *i* is raised by the circular portion of the lock-wheel *n* acting upon the lever *m*, the instrument is thrown out of action, and this movement of the lever *m* may also be made to switch the current away from its machine or direct it through the receiving or transmitting portions thereof. Upon the shaft *o* of this lock-wheel *n* is a hand, *p*, to the dial *q*, and also a ratchet-wheel, *r*, for the pawl *s* of the lever *t*. The armature *u* and magnet *v* are employed to actuate the ratchet *r* and lock-wheel *n*. This magnet *v* is in a separate main telegraph-circuit with a line-wire independent of that leading to the transmitting or receiving apparatus, or else it is placed in a shunt and the spring of the lever *t* set up, so that this apparatus will not be operative by the ordinary rapid pulsations in telegraphing. There are as many teeth in the ratchet *r* as there are stations on the line and on the dial *q*. The names or numbers of the stations are placed, and the position of the notch in the lock-wheel *n* is such in relation to the hand *p* that the notch will receive the lever *m* when the hand indicates the particular station; hence the operator at the transmitting station, by a dial or finger key, turns his own pointer to the name or number of his own station, then holds the lever *t* by his hand or a lock, and proceeds to manipulate the key until the station is indicated to which the message is to be sent; all the dials in the line indicating that same station, only the instrument at that station will be locked into action by the lever *m* and roller *i*; and hence the machines at the transmitting and receiving stations are in position for the message to be sent and received. The strip of paper may be prepared with long perforations of the proper numbers at the commencement and end, so as to move the lock-wheels of the instruments and determine the instrument at which the message is to be received, and the long perforations at the end of the strip will bring the lock-wheels

and indexes around to the nonius or starting points.

In this manner the operator at the receiving station does not have to attend to the reception of the message, and the party at the transmitting station only has to set the dials, and, after sending the message, work his own instrument by hand around so that his index corresponds with the others in the line.

In place of long perforations for setting the instruments of the line, the speed of the transmitting motor might be made sufficiently slow to allow the pulsations to be of the required intensity.

I claim as my invention—

1. The lock-wheel *n*, lever *m*, and roller *i*, operated by an electro-magnet, substantially as set forth, for bringing into action the receiving instrument.

2. The roller *g* and transmitting or recording stylus or brush and the roller *i*, to press upon the paper and cause the movement thereof, in combination with mechanism, substantially as specified, for throwing the receiving instrument out of action by releasing the pressure of said roller *i*, as set forth.

3. A series of automatic telegraph instruments in one main telegraph-line, with locking mechanism and indicators, operated by electro-magnets, and arranged, substantially as set forth, so as to throw into action the desired receiving instrument, as specified.

Signed by me this 26th day of July, A. D. 1871.

T. A. EDISON.

Witnesses:

CHAS. H. SMITH,  
GEO. T. PINCKNEY.