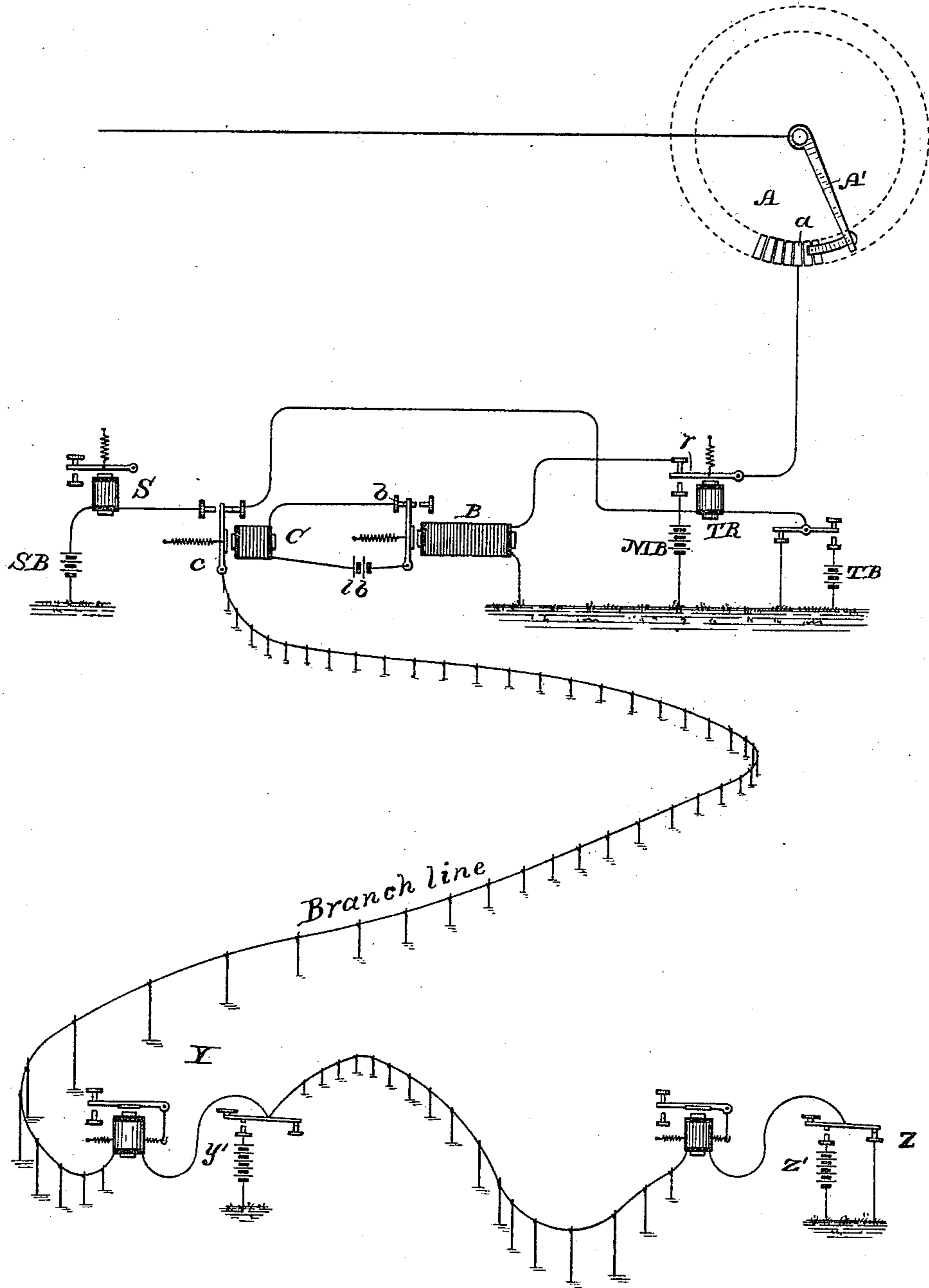


(No Model.)

R. G. BROWN.  
TELEGRAPHY.

No. 355,860.

Patented Jan. 11, 1887.



WITNESSES

*E. A. Newman*  
*Chr. W. Newman*

INVENTOR  
*Robert G. Brown*  
By *his Attorneys*  
*Waldron, Hopkins & Payson*

# UNITED STATES PATENT OFFICE.

ROBERT G. BROWN, OF BROOKLYN, ASSIGNOR TO THE STANDARD MULTIPLEX TELEGRAPH COMPANY, OF NEW YORK, N. Y.

## TELEGRAPHY.

SPECIFICATION forming part of Letters Patent No. 355,860, dated January 11, 1887.

Application filed April 5, 1886. Serial No. 197,873. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT G. BROWN, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Telegraphy, of which the following is a specification.

The object of my invention is to provide a simple means for extending the legs or branch circuits from the main-line terminal station to outlying towns or places situated at any desired distance from the central office and having a number of operators thereon. I make use of but one main battery for all the branch lines, and locate this battery with the principal relays, &c., at the central office.

The accompanying drawing is a diagram illustration of my invention.

A represents a portion of a circle of insulated segments of a synchronous multiplex telegraph system, such as that of P. B. Delany, now so well known; and A' represents the rotating trailer which is connected with the main line.

The instruments at the central or main station are shown as connected with one of the segments *a*.

Assuming that a message is being received from the segment *a*, the main relay B will be actuated, its armature drawn from its back-stop *b*, the circuit of the local battery *b'*, in which the small relay C is included opened, and the armature *c* of said relay drawn by its spring against its back-stop, thus relaying the received message through the branch line by completing the circuit from the battery S B through the sounder or relay S, back-stop and armature *c*, branch line, and its instruments to ground. If the operator at the central office is transmitting, a circuit is completed from the battery T B by the depression of his key through the transmitter-magnet T R, front stop of armature *c*, local line, and its instruments to ground at Z. The actuation of the armature-lever *r* of the transmitter T R puts the main battery M B to line through the segment *a*.

Two sets of operator's instruments, Y and Z, are indicated in the local line. I have shown the sounder or relay, key, and battery in each case. Whenever the operator at Z depresses his key, the current from his battery

Z' is through the coils of his sounder or relay-magnet over the local line to Y through the coils of the sounder or relay at Y, thence over the local line to the armature *c*, front stop, coils of transmitter T R, key, and its back point to earth. This actuates all the sounders or relays and the transmitter at main office, and the latter connects the main battery M B to the main line through the segment *a* and trailer A'. Whenever the key at the intermediate station, Y, is depressed, the current from the battery Y' divides, part going over the local line to earth at Z through the relay and key there, and part over the local line to earth at the central station by way of the transmitter T R and key, and so connecting the main battery to the main line, as already described.

Any desired number of operators may be included in the same local line, and each operator, being designated by a call or number, may be called for the reception of a message, and all the operators may communicate with each other and secure the main line for their individual use.

The invention herein described is equally applicable to ordinary telegraph systems and also to printing-telegraphy.

I claim as my own invention—

1. The combination of a branch or local line, a telegraphic instrument or instruments connected therein, the armature *c*, which forms the terminal of the branch line at the main office, one of the stops of said armature being connected through the main-line transmitter to earth, and the other through a battery to earth, and a main-line relay which controls said armature.

2. In a synchronous multiplex telegraph, the combination of a main line, a synchronously-moving apparatus, the series of segments of said apparatus and operator's instruments connected with the segments devoted to his particular use, the branch or local line, one or more telegraphic stations therein, the armature-lever which forms the terminal of the branch line at the main office, one of the stops of said armature-lever being connected through the main-line transmitter to earth, and the other through a battery to earth, and the main-line relay which controls said armature.

3. In a synchronous multiplex telegraph

system, the combination of a main line, the  
synchronously - moving apparatus, an oper-  
ator's instruments connected with said appa-  
ratus, a branch line running from said opera-  
5 tor's instruments and containing one or more  
stations, a main battery and transmitter com-  
mon to the operators at all the stations, and  
located at the station of the first-mentioned  
operator, an armature-lever which forms the  
10 terminal of the branch line at said station, one  
of the stops of said armature being connected

through the transmitter to earth, the other stop  
being connected through a battery to earth,  
and a main-line relay which controls the arma-  
ture-lever.

In testimony whereof I have hereunto sub-  
scribed my name.

R. G. BROWN.

Witnesses:

G. H. WIRTH,  
WM. W. WIGHT.