

July 16, 1924.

This statement is in testimony that we the undersigned on this date conceived a certain new and novel printing telegraph device by which it is possible to insert a code on the transmitted message of that machine known as the Teletype and manufactured by the Markrum Co., Chicago, Illinois. The device is such that while the line impulses will thereby be in code, a similar device at the receiving station will automatically decode the message and present a legible reproduction of the original.

With reference to Figure 1, a Teletype transmitter is diagrammed in phase electrically and mechanically with a Western Union transmitter or any other form of tape transmitter.

Means are provided for stepping forward the tape mechanism of additional transmitter or transmitters by means of some such circuit as d, m, l, k and n.

Magnet 18 is a differentially wound magnet the characteristic of which is that current of the same value in both windings sets up a core flux in opposition in each pertaining part of the core which tends to neutralize each other and armature 17 remains in neutral position. Current in one winding or the other individually will however actuate armature 17. Now while magnet 18 may be directly placed on the Teletype machine in place of the Teletype Coils and bear the same relationship to line as in the case of these coils, it is the intention of this statement to also cover indirect action of this differentially wound magnet, such as action as a relay on the "Teletype Coils" circuit as it now appears, thereby operating the present system from a local circuit.

Applications in this respect may very readily be made for long line work by the insertion in the line of sensitive line relays which in turn operate or are operated by the resultant impulses of the device herein described. Under these conditions the line signals may be single current make and break, using non-polarized relays, or by the use of a transmitting relay the line signals may be polarized and polarized relays used for reception.

It is therefore pointed out that the device lends itself to any of the applications of the usual Teletype machine.

The circuit of Figure 1, will therefore show but one application of this device in which case a typical operation may be considered.

In transmitting letter A (number one and two electrical impulse) with a cipher addition from the tape transmitter of say letter N (number three and four impulses, contact, or pin) the line resultant thru the differential

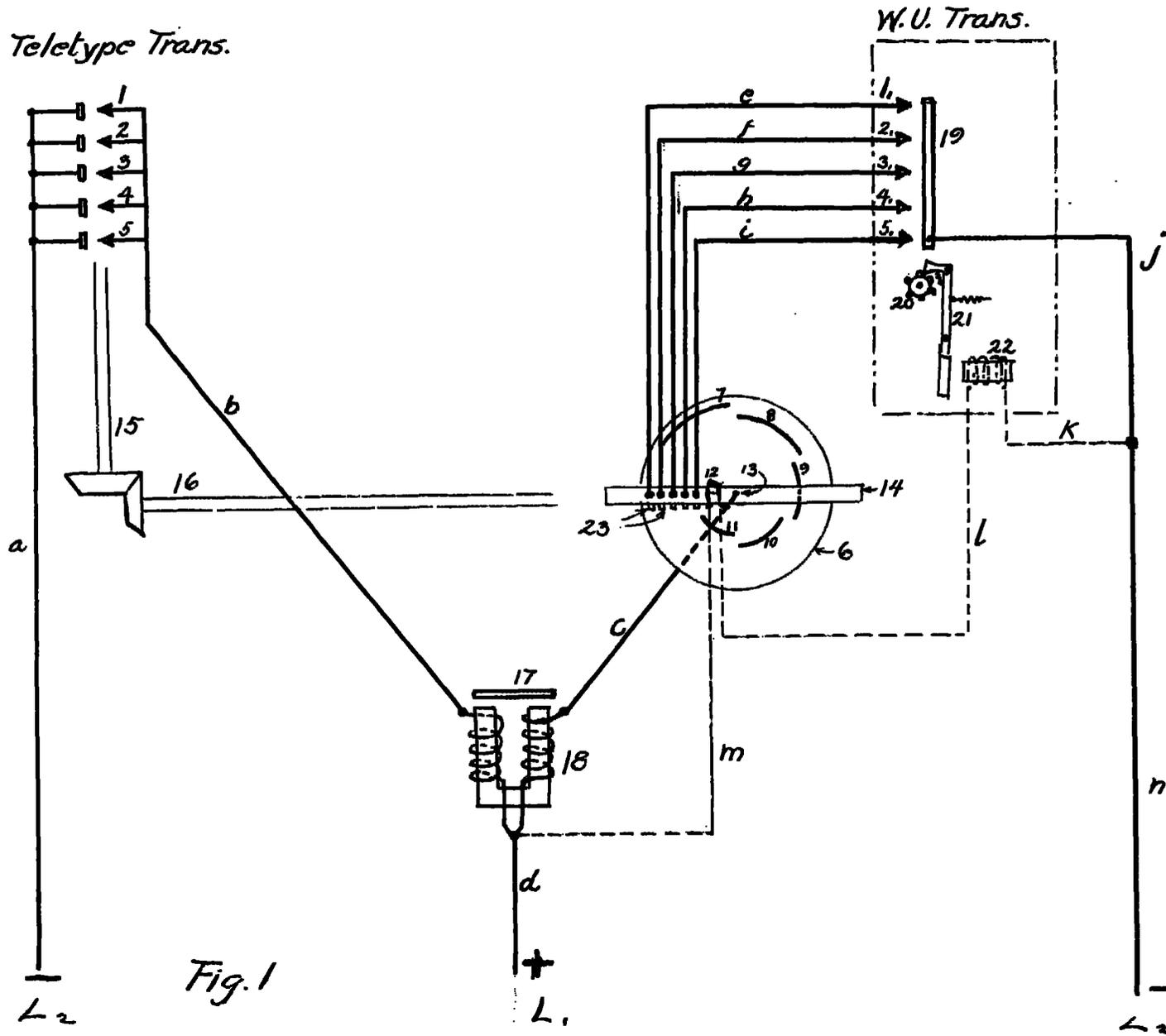


Fig. 1

July 15, 1924  
*F. B. Graham*

coil will be seen to be

|              |             |                       |     |
|--------------|-------------|-----------------------|-----|
| Transmitting | ( 1 2 3 4 5 |                       |     |
|              | ( ++ 0 0 0  | Teletype transmitting | A   |
|              | ( 0 0 ++ 0  | Tape cipher           | " N |
|              | ++++ 0      | Line resultant        | K   |

Now it will be understood that a similar device with identical cipher tape is to be considered at the receiving end of the line.

|           |             |             |   |
|-----------|-------------|-------------|---|
| Receiving | ( 1 2 3 4 5 |             |   |
|           | ( + + + + 0 | Line        | K |
|           | ( 0 0 + + 0 | Tape cipher | N |
|           | + + 0 0 0   | Resultant   | A |

Witnessed

Henry Peterson

W. J. Friedman

Signed Louis M. Brown

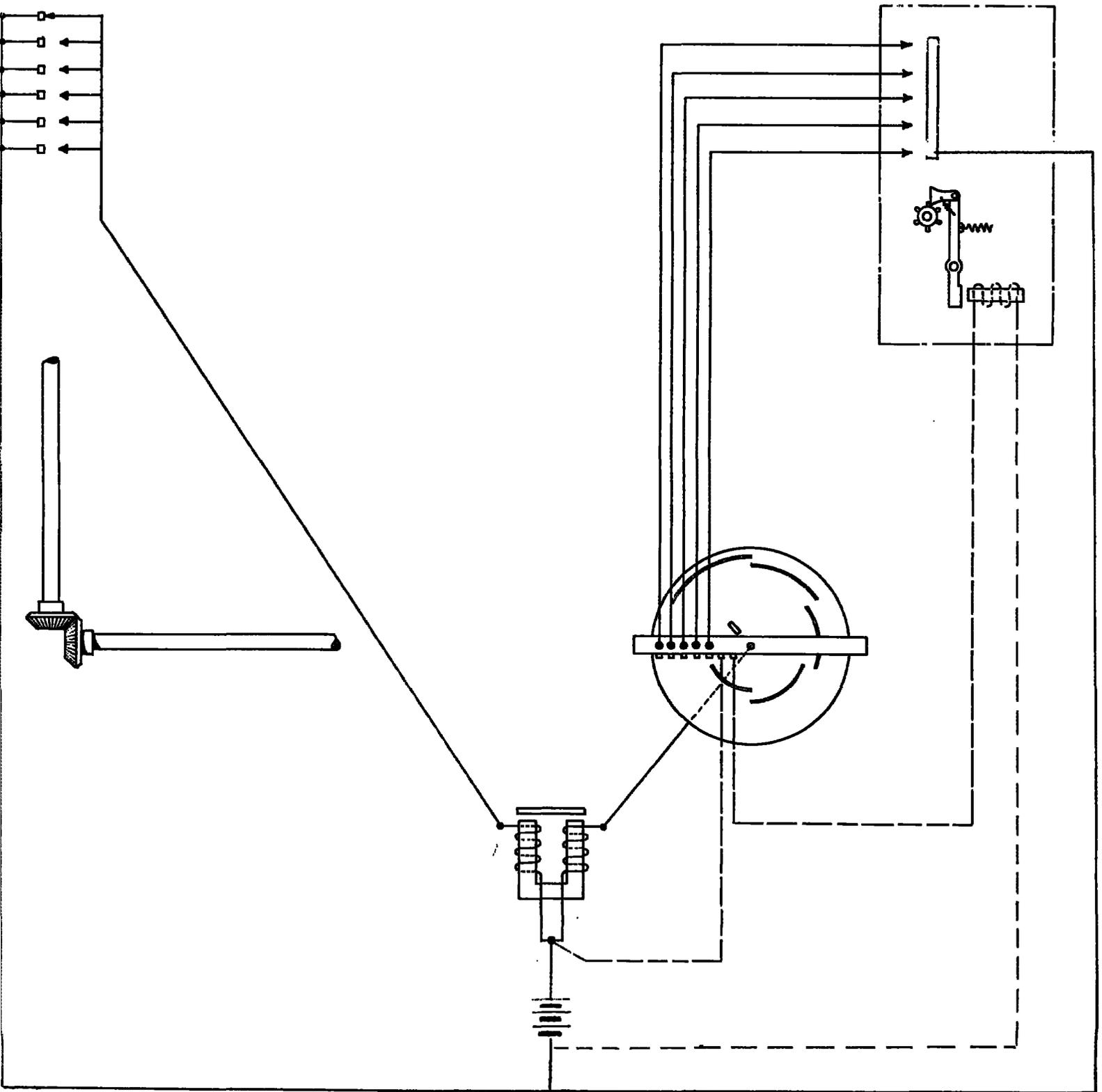
Signed J. A. Graham

Signed W. J. Friedman

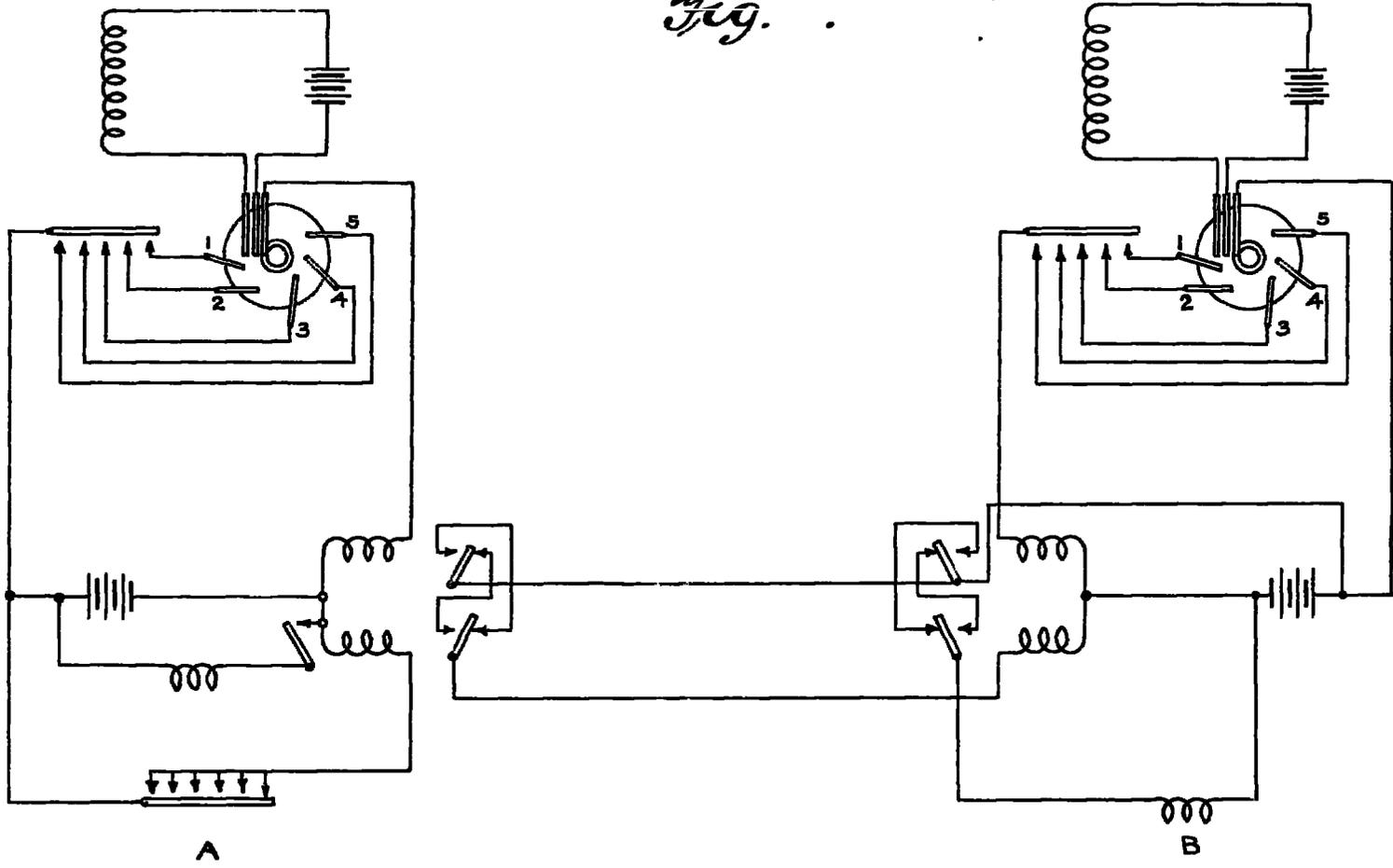


*Fig. 1*

TELETYPE TRANS.



*Fig.*



*Fig. 5.*

