April 21, 1936

(Following is a more detailed description of invention made on March 11, 1936)

Modification No. 2 in Converter Type M-134-T-1
(U.S. Patent No. 2,028,772 of Jan. 28, 1936)

1. Instead of the cipher-key or tape transmitter (Fig. 1 of U.S. Patent No. 2,028,772; item 26), employ a set of juxtaposed cam wheels to operate the set of contacts corresponding to the make and break contacts of the cipher-key tape transmitter. There may be 5 cam wheels, or there may be more than 5, interacting to give resultants in the Baudot 5-unit code. The cam wheels bear cams for opening and closing circuits; the peripheries of the cam wheels bearing different numbers of cams, these numbers being prime to one another. The cam wheels are individually rotatable upon separate shafts and are driven stepwise by some power source. Thus, a cipher key of enormous length can be provided for ciphering purposes.

2. The Baudot combinations set up by the cam wheels are caused to interact with Baudot combinations set up by keyboard operation, to give resultants also in the Baudot code. There will be 32 possible resultants and hence provision must be made for 32 indications.

3. Instead of employing a commutator of the type shown in Fig. 1 of U.S. 2,028,772, let there be a rotating drum herein called the "indicator wheel", carrying on its periphery 32 combinations of projecting and nonprojecting pins in sets of 5 tranversely to the drum. (In this respect the present drum is similar to the commutator of U.S. 2,028,772

except that the former has all 32 of the Baudot combinations instead of only 26 combinations representing the alphabet, as in U.S. 2,028,772.)

4. The pins on the rotating drum or indicator wheel are for the purpose of opening and closing circuits to interact with the resultants explained in Par. 2, just as is the case in the comparison circuit of U.S. 2,028,772. But in the present invention, the comparison circuit, instead of stopping the drum in the selected position, merely determines the exact moment at which either a lamp will be lighted or a letter will be printed. In this respect this invention is exactly similar to that described in Modification No. 1 to Converter Type M-134-T-1, dated March 12, 1936. The cipher resultants will embrace 32 characters in the present case.

5. A connection changer, for additional keying purposes, may be interposed in the comparison circuit.

6. Instead of fleeting indications by lighting the lamp 6, it is possible to have a printed record. This can be accomplished by mounting a type wheel on the rotating drum and causing the comparison circuit to actuate a print-stroke magnet at the proper instant, to drive a paper tape against the letter presented at that instant and then to advance the tape one space. The characters recorded would comprise the 26 letters plus 6 other characters to represent the extra permutations.

Witnessed april 27, 1936
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March 11, 1936

Modification in Converter Type M-134-T1

(U. S. Patent 2,028,772 of January 28, 1936)

1. Instead of the cipher-key or tape transmitter (Fig. 1, U. S. Pat. of reference, element 26), employ a set of five juxtaposed cam-bearing rotating wheels to operate the set of contacts corresponding to the make and break contacts of the cipher-key transmitter. The cam-bearing wheels bear cams for closing contacts; the periphery of each wheel bears a different number of cams, with varying numbers of constant-length intervals between adjacent cams.

2. The 5 cam wheels can set up 32 permutations of open and closed contacts. Therefore, the commutator wheel must have 32 stopping positions.

3. Instead of a commutator of the type shown in Fig. 1 of U. S. 2,028,772, let it consist of a circular band divided up into 32 segments of transparent or translucent material, on which the characters are painted or printed.

4. A light source is located within the band, and is so shielded that its light will be visible only through an aperture in a box enclosing the entire wheel.

5. The successive letters or characters will be illuminated and seen through the aperture on stopping the band at the selected position.

6. The five cam wheels are individually rotatable on the shaft,

for key-setting purposes, but once set and locked in position the whole assembly steps forward once per depression of the keyboard keys.

7. Instead of having only 5 cam wheels, a set of 10 or 15 (multiples of 5) can be used, the interaction giving 5-unit resultants.

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Witnessed Mar 16, 1936
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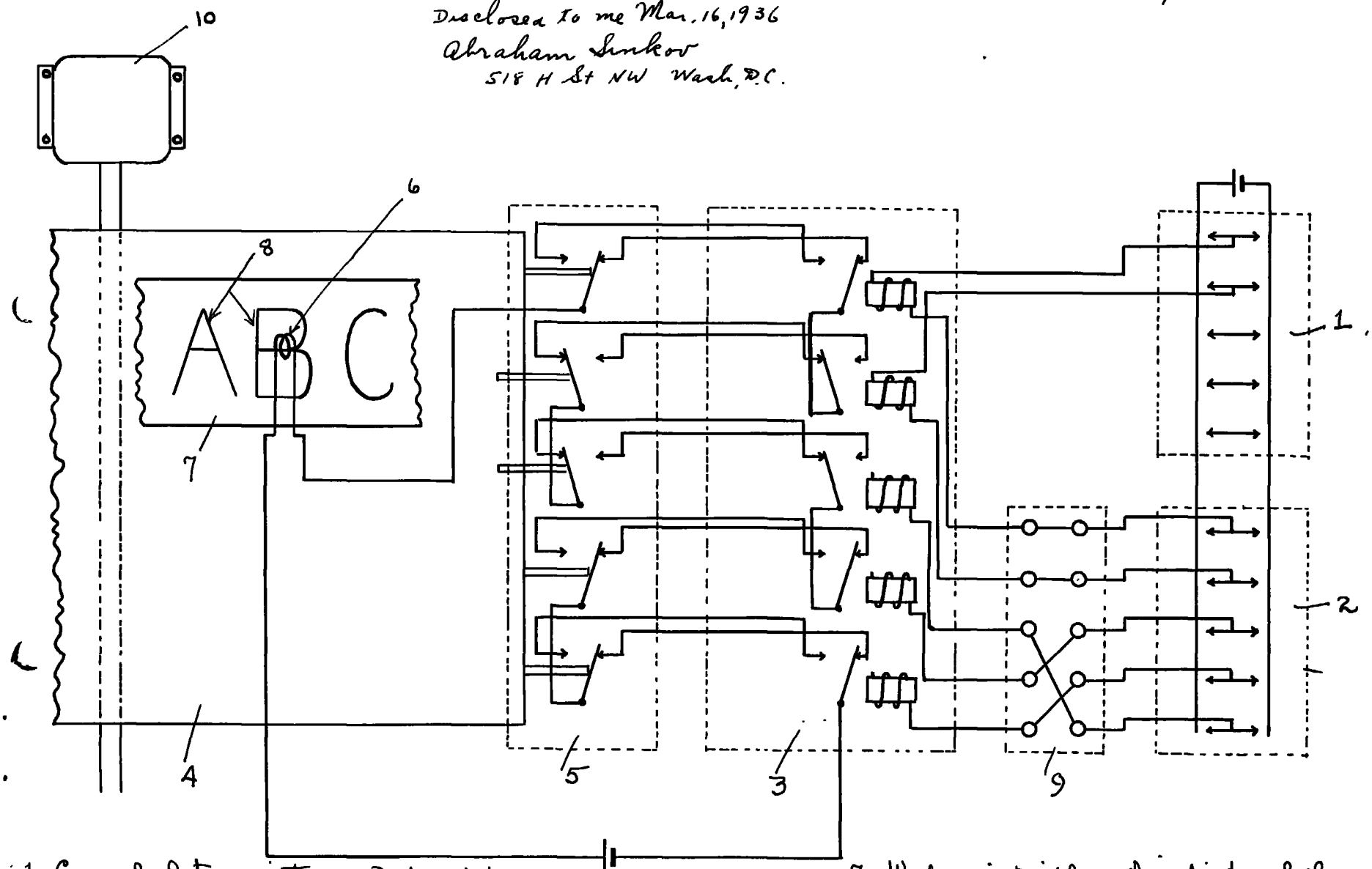

1 = Cam wheel transmitter } interact to produce
2 = Baudot keyboard transmitter } resultants on relays in 3.
3 = Resultant relays and armatures, controlled by 1 and 2 jointly.
4 = Indicating wheel kept in steady rotation by motor 10; wheel has 32 segments and 32 pin permutations on periphery.
5 = Indicating wheel transmitter, acting in conjunction with 3 as a "comparison circuit".
6 = Lamp illuminated when comparison circuit is completed.
7 = Window in periphery of indicator wheel
8 = Characters painted on window, and equally spaced, 32 in number. Or 8 may be a circle of embossed letters mounted on indicating wheel, in which case lamp 6 is replaced by print-magnet in whose circuit a tapa-tapping magnet is also placed.
9 = Connection changer for additional keying purposes
10 = motor to drive indicator wheel.