

June 10, 1930.

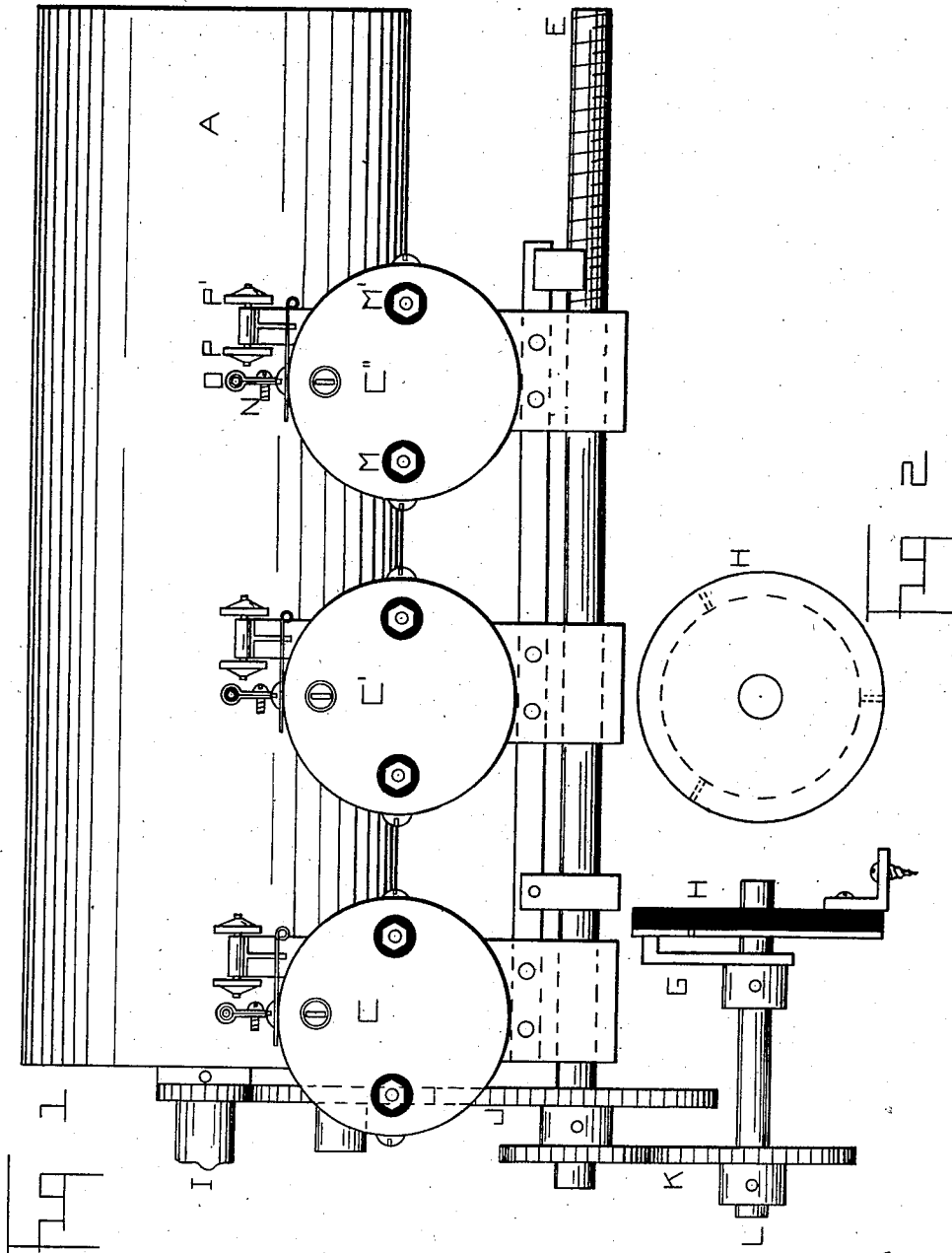
C. F. JENKINS

1,763,358

CODE TRANSMITTER RECEIVER

Filed March 5, 1928

2 Sheets-Sheet 1



Witness

Sylvia R. Almond.

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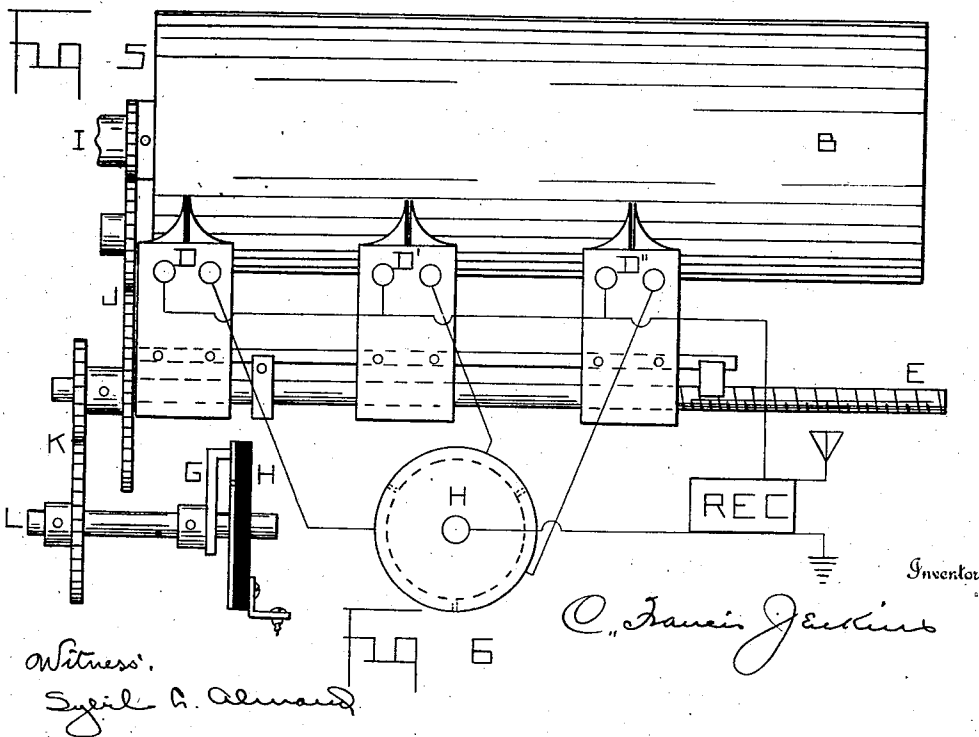
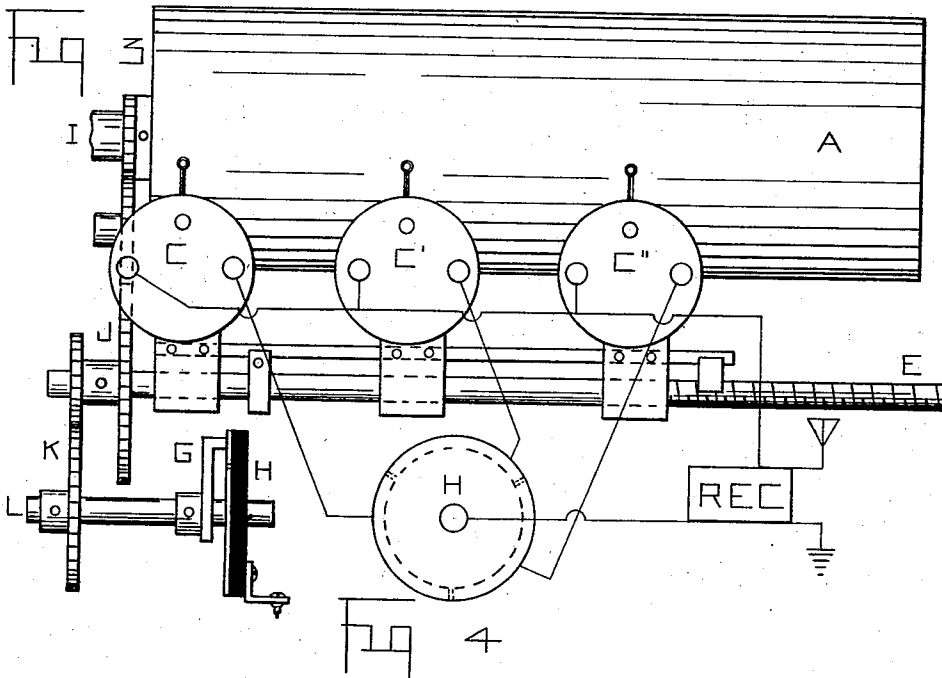
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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

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CODE TRANSMITTER RECEIVER

Application filed March 5, 1928. Serial No. 259,310.

This invention relates to machines for electrically transmitting secret code messages, sketches, maps, and the like, and for receiving the same by radio or by wire.

5 The advantage of this system over any heretofore practiced is that, while the sketch, map, or message is transmitted directly from a pencil or pen-ink autographed original, without "coding" it, and is received as an
10 exact duplicate of the original, needing no "decoding" to be read at once, the same matter received by the unauthorized is illegible, for it consists of a conglomerate of dots hopelessly scrambled.

15 The machine employed to effect this method of secret communication may be the machine regularly employed by applicant in transmitting pencil and pen-ink sketches, with the addition of two or more other pair of contact
20 points on the transmitter, and a corresponding number of pen-boxes on the receivers, and a switching gear on each machine for shifting the signals.

25 Such shifting will create a confusion which is absolutely undecipherable to stations unacquainted with the signal-switching order.

30 With this and other objects in view the invention consists of the novel method and combination of parts herein disclosed, illustrated in the drawings, and more particularly pointed out in the claims.

35 In the drawings Figure 1 is a front view of the pen-box, drum, and switching gear assembly; Figure 2 front view of the switching gear; Figure 3 a receiving machine; Figure 4 front view of its switching gear showing wiring diagram; Figure 5 a transmitting machine; and Figure 6 front view of its
40 switching gear showing wiring diagram.

45 In the drawings like symbols refer to like parts, in which A is a receiving cylinder, and B a transmitting cylinder. C, C', C'' are pen-boxes, and D, D', D'' two-finger transmitter contacts. E is a feed-screw, G a brush which contacts with switching gear H.

50 The shaft I which is driven by a motor (not shown) causes the cylinders A—B to rotate. Engaging gear J in turn rotates the feed-screw, and through gear K, on shaft L, causes

the brush G to sweep over the contact switch-plates of H.

The paper upon which the map is to be received would be wrapped around cylinder A, ready to record in ink the incoming radio signals. The map in pencil or graphite ink to be transmitted is in the same manner wrapped around cylinder B. The pen-boxes C, C', C'' are then put in place at the left end of the cylinder for receiving the incoming radio signals; the order of the reception by the pen-boxes depending on the wiring hook-up of the switching-gear H (shown in Figures 4 and 6), which has three contact-members.

At the sending station, the two-finger contacts D, D', D'' are also put in a corresponding position, namely, at the left end of the transmitting cylinder.

70 The switching-gear hook-up can be changed daily or hourly to either of a plurality of positions, thereby enabling the "friendly" stations to get the desired information, while the "enemy" will get only a jumbled mass of dots.

75 The incoming radio signals, through the wires connected to screws M, M' of the pen-box (Figure 1), cause the pen-arm N to move to and fro. As these signals are received the pen-point O touches the paper wrapped around the receiving cylinder impressing ink dots and strokes thereon to build up the map, sketch, or writing.

80 The pen-point is normally held just clear of the paper, on the cylinder, by the little rollers P, P', as more particularly pointed out in detail in application Serial No. 238,166.

85 The operation of the device is as follows— Assuming that the transmitting machine is carried by a scouting airship, the ship before leaving its base of operations will have arranged a schedule with the receiving station operator, as to the order in which the contact-members are to be employed. Therefore, the receiving machine switching gear will be in perfect harmony with the transmitter at all times.

90 The receiving stations may be advised by code of the time map transmission is to start
100

from the transmitter. As the cylinder of the transmitter rotates, the contact-fingers short-circuit as they pass over the lines of the map, transmitting a signal representing an elementary part of that line, and which repeated with each turn of the cylinder in due course completes the line, as with all other lines.

Assuming a hand-drawn map has been made, in lead pencil or graphite ink, on a piece of paper, it is then wrapped around and fastened on the cylinder B, and a call made on all receiving stations to stand by to get it.

The transmitting machine is then started, as are all the receiving machines at stations interested, and which have a sheet of paper fastened thereon to take the map.

These broadcast signals, incoming at all receiving stations, are sent through the pen-boxes of the receiver, in succession, causing the pen-arm to move to and fro, applying ink to the paper, wrapped around the cylinder, leaving dots in the elementary area corresponding with that part of the message over which the contact-fingers of the transmitter have just passed. In this way the entire map is built up.

If it is arranged that the switch contact-fingers shall transmit in the order 1, 2, 3, then the signals will be transmitted in that order.

The receiving stations knowing this order, the incoming signals switch-distributed in that order will build up a map an exact duplicate of the original.

At stations not knowing this order the record will be hopelessly unintelligible aggregation of dots only.

It is quite obvious that as elaborate a circuit-shifting switch as may be desired can be provided, and which may shift by lines or fractions of lines, as often and in such order as may be selected.

It is not believed an elaborate switching gear is necessary to be illustrated herein, the simpler switching gear shown doubtless being adequate to illustrate applicant's invention.

What I claim, is—

1. The method of electrically transmitting a visual representation, which comprises dividing the representation into a plurality of sections, analysing simultaneously the successive elemental areas of each section, transmitting currents corresponding to said analysis, suspending the transmission of currents corresponding to one section, and transmitting during said suspension the currents corresponding to another section.

2. The method of electrically transmitting a visual representation, comprising simultaneously analyzing a plurality of sections of the representation, producing electric currents corresponding to each analysis, alternately transmitting said currents.

3. The method of electrically transmitting

a visual representation which comprises simultaneously producing series of electric impulses, each series corresponding to a different section of the representation, and alternately suspending the transmission of each series in an arbitrary manner.

4. In a system for electrically transmitting a visual representation, means for continuously analyzing one section of a picture to produce a corresponding continuous series of electric currents, means for transmitting said currents, means for suspending the transmission of said series, and means for transmitting another series of currents corresponding to a different section of the representation during the suspension of the first series.

5. In a system for electrically transmitting a picture, a plurality of picture analyzers, each cooperating with a different section of the picture, means for producing electric currents under control of said analyzers, a transmission channel for said currents, and means for alternately connecting said analyzers to said channel.

6. In a system for transmitting pictures, a plurality of analyzers each associated with a different section of the picture, means controlled by said analyzers for producing series of current impulses corresponding to the elemental areas of the associated picture sections, and commutator means driven at an arbitrary speed for controlling the sequential transmission of said series.

7. In a picture transmission system the combination of a drum, a picture mounted on said drum, a plurality of picture analyzers each associated with different sections of the picture, means for rotating said drum to cause each analyzer to produce a corresponding series of electric impulses, a transmission channel, means for impressing said currents on said channel, and a commutator coupled to said drum for controlling the impression of said current series on said channel.

8. A system according to claim 7, in which the commutator is readily replaceable and is driven at an arbitrary speed.

9. In a picture transmission system a picture to be transmitted, a plurality of picture analyzers each associated with a different section of the picture, a transmission channel, means for connecting said analyzers to said channel in arbitrary succession, and a picture receiving means comprising a plurality of picture integrating devices and means for connecting said integrating devices to said channel in synchronism with the connection of the analyzing device.

In testimony whereof I have affixed my signature.

CHARLES FRANCIS JENKINS.