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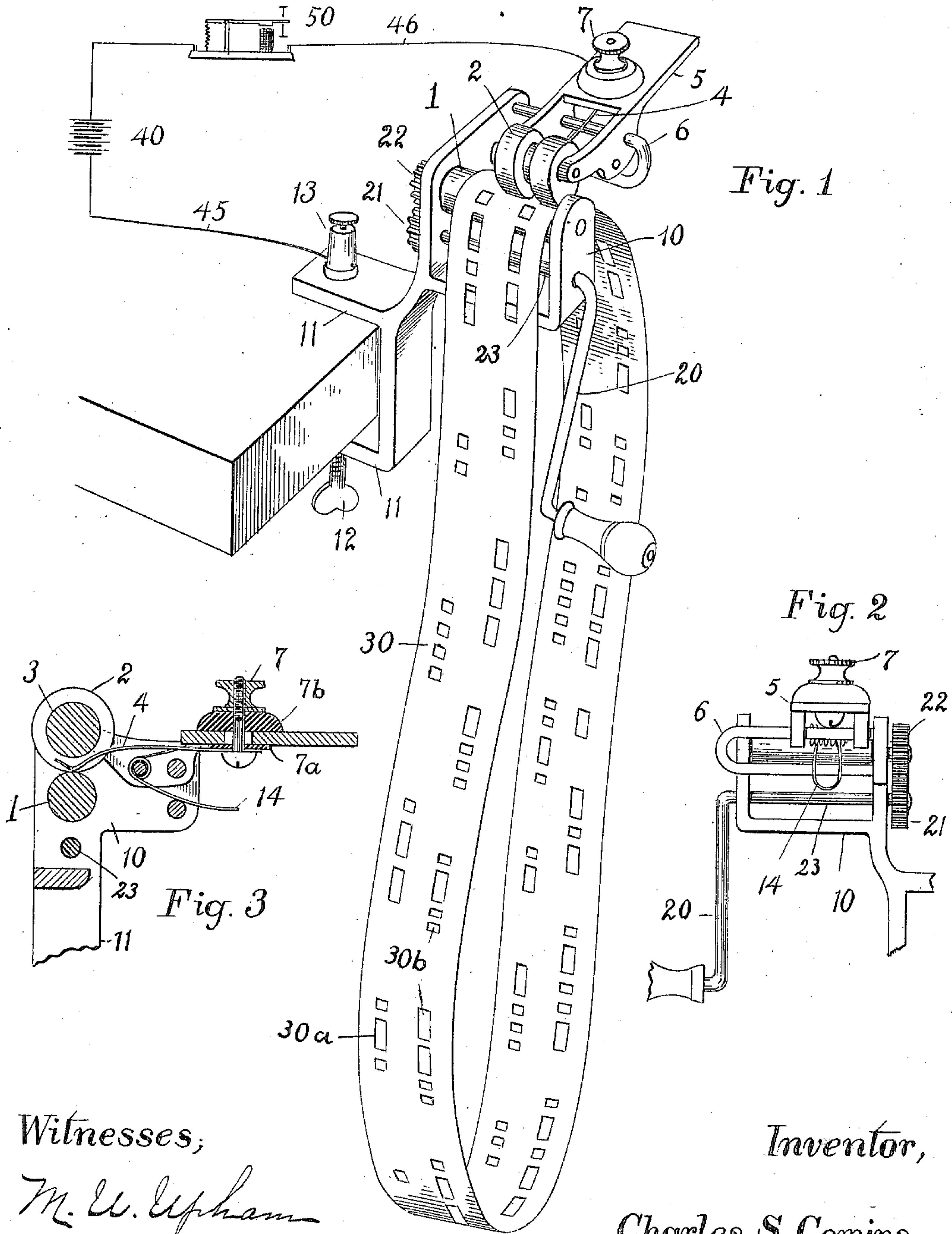
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TRANSMITTER FOR EDUCATIONAL PURPOSES.

(Application filed Mar. 26, 1900.)

(No Model.)



Witnesses;

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UNITED STATES PATENT OFFICE.

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TRANSMITTER FOR EDUCATIONAL PURPOSES.

SPECIFICATION forming part of Letters Patent No. 680,695, dated August 20, 1901.

Application filed March 26, 1900. Serial No. 10,223. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. COMINS, a citizen of the United States, residing at Quincy, in the county of Suffolk and State of Massachusetts, have invented a new and useful Transmitter for Educational Purposes, of which the following is a full, clear, and exact description.

It is exceedingly difficult for one who is studying telegraphy alone to learn the art of receiving messages by sound. The trouble is in transmitting messages to himself that he knows what letters to expect, and hence reads by memory instead of sound.

The object of my invention is the construction of a simple apparatus by means of which the learner can transmit to himself or to others a series of unknown letters, words, or messages which he cannot translate except as his ear detects them. My apparatus for this purpose comprises two elements, a paper strip having the Morse characters cut therein and the transmitter proper, adapted for feeding said strip between the terminals of an electric current in which is the sounder.

Referring to the drawings forming part of this specification, Figure 1 is a perspective view of my complete apparatus. Fig. 2 is a rear elevation of the apparatus without the paper strip, and Fig. 3 is a sectional view of the apparatus.

In the drawings the perforated paper strip is indicated by the reference-numeral 30. This strip has its ends pasted together and so enabled to be carried continuously through the transmitter. As shown, it is provided with two rows of perforations, one of which may comprise the Morse characters in proper alphabetic order and the other row may comprise such characters arranged wholly out of order.

The transmitter consists of the metal roller 1, revolvably mounted in the bearing-frame 10 and adapted to be rotated by means of the crank-handle 20, having at the end of its shaft-section 23 a gear 21, adapted to mesh with the gear 22, connected with said roller. The object in thus having the crank-handle geared to the said roller instead of being rigid therewith is to reverse the directions of rotation of said handle and the paper strip being fed by the roller.

The pressure-roll 2, by which the strip 30 is

held to the feed-roller 1, is given a central annular groove 3, within which projects the contact-tongue 4, as shown in Fig. 3. Said roll 2 is revolvably mounted between the arms forming part of the pressure member 5, and said member is pivotally mounted on the upper of the yoke-rods 6, rigidly projecting from the frame 10. The spring 14, carried by said pressure member and coacting with the lower of said yoke-rods, serves to elastically press the roll downward upon the roller 1. By tilting the outer end of the pressure member downward the roll 2 is raised away from the roller 1 and space given for the removal or application of one of the strips 30. As shown in Figs. 1 and 2, the pressure member 5 is narrower than the strip 30 and the roller 1, the parts being so arranged that when the pressure member is moved to one side of said strip the groove 3, and consequently the tongue 4, are directly over one of the rows of perforations, while when the pressure member is moved over to the opposite side of the strip said groove and tongue are over the other row of perforations. Hence the device is adapted for the transmission of the characters contained in either of the two rows of the strip 30.

Inasmuch as the pressure member 5 is both slidably and revolvably mounted on the yoke-rod 6 it can be easily moved as desired.

The pressure-roll 2 is preferably of wood, rubber, or other non-conducting material in order to prevent danger of its interfering with the proper action of the tongue 4, for were said roll of metal it would by a possible contact simultaneously with both said tongue and the metal frame 10 complete the circuit, and so keep the transmitter from sending the correct signals. The tongue 4 is insulated from direct contact with the remainder of the device by means of the insulating-disks 7^a 7^b, as shown in Fig. 3, but is put in circuit with the binding screw and nut 7. Hence said binding-screw and the binding-post 13, held by the frame-clamp 11, being put into circuit with a battery 40 and a sounder 50 by means of suitable wires 45 46, whenever the tongue 4 reaches a perforation in the paper strip 30 it immediately contacts with the metal roller 1, and thereby completes the circuit with the battery and sounder, while as

the paper strip advances and brings an un-perforated portion between said tongue and roller the current is broken. In this manner as the handle 20 is steadily turned the paper strip 30 is evenly feed between the pressure-roll and feed-roller and all the characters as expressed in dot-and-dash perforations in the said strip are automatically expressed by the sounder.

In using this educational device the learner may first cause the characters to be repeated in the regularly-arranged row until he thinks he has them well fixed in his memory. He then shifts the pressure-roll over to the other row of perforations and causes the irregularly-grouped perforations to be acted upon, thus putting the learner's ears to a far harder test. When the learner has mastered these individual letters, he removes this strip and replaces it with one upon which are formed a series of words in no apparent order and one with a regular message.

I sometimes have my first strip provided with alphabet, numbers, and punctuation-marks all arranged in proper order, then follow it with a strip provided with alphabets in irregular order; third, a strip with numerals miscellaneously arranged thereon; fourth, a strip with intermixed punctuation-marks; fifth, a strip with letters, numbers, and punctuation-marks intermixed; sixth, a strip with non-related words; seventh, a strip with words, punctuation-marks, and numbers jumbled thereon, and, last, strips containing regular messages.

The strip, band, or tape may be formed from paper, celluloid, or thin vulcanized rubber, paper being preferable only on account of its inexpensiveness.

As shown in Fig. 1, the device is formed with clamping-jaws 11, the under of which is provided with the thumb-screw 12, by means of which to clamp the same to a table or other support.

As shown in the left-hand row of perforations in the strip illustrated in Fig. 1, the spaces between the different letters are extended sufficiently to give the learner time to recall each letter before the next is reached.

This enables him when he has become somewhat more accustomed to the alphabet to turn the handle 20 steadily and uniformly and yet be permitted time enough for the sounds to linger in his mind until recognized before the instrument ticks off the succeeding letter. Said left-hand column 30^a is the one in which the letters are arranged in the proper alphabetical order, while the right-hand column is preferably devoted to the dis-arranged letters. In this column 30^b I prefer to lessen the spaces intervening between the different characters as the learner becomes more proficient; but such spaces are greater than in the strips for the learner when he has become more expert still.

What I claim as my invention, and for

which I desire Letters Patent, is as follows, to wit:

1. In a transmitting device, the combination with the perforated endless tape, of the cylindrical members for feeding the same, one of which is a conductor and the other of which is formed with an annular groove, a contact-finger located in said groove, a fixed support for one of said members, and a movable support for the other member, whereby said endless tape can be applied to and removed from between said members, substantially as described.

2. In a transmitting device, the combination of the endless tape having the two rows of perforations therein at equal distances from the respective edges thereof; means for feeding said tape; a metallic support for the tape forming one terminal of an electric circuit; and a contact-finger forming the other terminal of said circuit and raised and lowered into engagement with one of said rows of perforations; whereby the said tape can be removed and replaced with its other row of perforations in engagement with said finger, substantially as described.

3. In a transmitting device, the combination of the endless tape having the two rows of perforations; the metallic cylinder supporting and feeding said tape and connected with an electric circuit; the roll having an annular groove over one of said rows of perforations; the pivoted clip carrying said roll and elastically pressing the same toward said cylinder, and connected with the circuit; and the contact-finger held by said clip in said annular groove and pressed into engagement with the perforations of the tape; whereby the depression of the clip raises the roll and finger away from the tape and permits the latter to be moved to present its other row of perforations into correspondence with the contact-finger, substantially as described.

4. In a transmitter for educational purposes, the combination of the endless tape having telegraphic characters perforated therein, said tape being formed of non-conducting material; a conducting-body supporting said tape and forming part of an electric circuit; means for feeding said tape over said body; a spring-finger forming part of said circuit and pressed against said tape over said body; and a resiliently-impressed, grooved roll located over said tape and body and receiving said spring-finger in its groove, substantially as described.

5. The combination in an educational transmitter, of a tape having a plurality of rows of perforated characters therein, and a transmitter therefor adapted to cooperate with any one of said rows of characters, substantially as described.

6. The combination in an educational transmitter, of a tape having its extremities permanently affixed together and formed with a plurality of rows of perforated characters

therein, and a transmitter therefor adapted to cooperate with any one of said rows of characters, substantially as described.

7. In a transmitter for educational purposes, the combination of the endless tape having a plurality of rows of Morse characters perforated therein; means for feeding said tape; an electric conducting element located beneath said tape and made one terminal of an electric circuit; a transmitter in said circuit; and an elastically-pressed tongue made another terminal of said circuit and transmitter and normally pressing against said conducting element, and adjustable to any one of said rows of perforated characters, substantially as set forth.

8. In an educational appliance, the metal roller revolubly supported and having means for its rotation, the tape having a plurality of rows of Morse characters perforated therein, said rows extending longitudinally along said tape, the pressure-roll elastically pressed upon said roller and adapted for longitudinal adjustment along said roller, and the spring-tongue pressed against said roller and similarly adjustable, whereby the characters in any of said rows can be transmitted to a telegraphic sounder, substantially as set forth.

9. In an educational appliance, the combination of the frame having means for its attachment to a table, the binding-post carried by said frame, the metal roller revolubly supported by said frame and having means for its rotation, the yoke-rods rigidly projecting

from said frame, the pressure member slidably and revolubly mounted on one of said yoke-rods, the pressure-roll carried by said member, the spring coacting with the other of said yoke-rods and adapted to elastically press said roll upon said roller, the spring-tongue carried by said member and elastically pressed against said roller, said tongue being insulated from said member, and the binding screw and nut connected with said tongue, substantially as set forth.

10. In an educational appliance, the combination with the sounder and an electric circuit, of the frame adapted to be clamped to a suitable support, the metal roller revolubly held by said frame, the crank-handle adapted for rotating said roller, the endless tape having the plurality of rows of Morse characters perforated therein, the pressure-roll pressed against said roller, and the tongue pressing against said roller and insulated from other parts of the device and adjustable into cooperation with any one of said rows of characters, said tongue and frame being connected with opposite poles of said circuit, substantially as set forth.

In testimony that I claim the foregoing invention I have hereunto set my hand this 12th day of March, 1900.

CHARLES S. COMINS.

Witnesses:

A. B. UPHAM,
EDWARD C. BATES.