

UNITED STATES PATENT OFFICE

2,521,338

READING APPARATUS

James W. Bryce, Glen Ridge, N. J., and John N. Wheeler, Hawthorne, N. Y., assignors to International Business Machines Corporation, New York, N. Y., a corporation of New York

Application September 19, 1946, Serial No. 698,032

11 Claims. (Cl. 35—35)

1

This invention relates to apparatus for translating and storing into one record medium, information which has been recorded previously in another record medium, whereby certain advantages are accrued relative to sensing such information; and it has for a broad object to provide apparatus of this type of simplified and improved construction and arrangement of parts.

In particular, this invention relates to a mechanism whereby intelligence previously recorded in a record strip or tape is translated and stored in another record medium which presents such information in the form of raised Braille characters at a rate compatible with the skill and under the control of the operator who is sensing the information. A device of this type is particularly suited for use by those who are blind.

Normally the dissemination of information to the blind has been by means of acoustical devices or by Braille characters embossed into stiff paper sheets bound together into book form. Either of these or similar methods requires a slow and costly process; furthermore, the products of these methods are both bulky and fragile. The invention set forth hereinafter provides for a simple and durable means by which information can be taken from such well known sources as punched tapes, as described in U. S. Patent No. 2,378,371, and translated onto a suitable medium by the way of a simple portable machine to be readily understandable to those who are skilled in reading Braille characters.

Utilization of the invention described herein for providing intelligence to the blind results in the advantages of reduced costs and reduced bulk in publications for the blind. An added advantage is in the simplicity by which information is presented in the form of Braille characters to the reader. The Braille characters are formed continuously, in accordance with translations from the record strip or tape, into a medium in the form of an endless belt which passes at a speed controlled by the reader continuously under the reader's fingers, the characters formed by groups of protruding pins being erased automatically after they are sensed to be replaced by other new characters. Consequently, there are no pages to be turned, no reversal of the line or column scanning as required in some Braille books, and at any time the reader can decrease or increase the rate at which the information is being presented to him with a minimum of difficulty.

It is, accordingly, an object of this invention to provide a device for reading information from

2

a previously recorded record strip and translating such information into a record medium having means to form readable Braille characters.

It is a further object of this invention to provide a device for reading information from a previously recorded record strip and translating such information into Braille characters, which are set into a record medium by mechanism which is continuously under the control of the reader of the Braille characters.

Still a further object of this invention is to provide a record storing medium into which information, which has been sensed and translated into Braille characters, may be stored to be sensed and then erased.

Another object of this invention is to provide an improved storage medium into which intelligence may be stored for an indefinite period of time and then erased to have new information stored therein.

Other objects of the invention will be pointed out in the following description and claims and illustrated in the accompanying drawings, which disclose, by way of example, the principle of the invention and the best mode, which has been contemplated, of applying that principle.

In the drawings:

Fig. 1 is an isometric view of a device embodying the features of the invention, and includes a suggested location for placing the hand of an operator in order to read Braille characters most readily as they are presented.

Fig. 2 is a plan view of the interior of the mechanism of Fig. 1 (cover removed).

Fig. 3 is an electrical circuit diagram illustrating the necessary electrical controls and circuit wiring.

Fig. 4 is a sectional view taken substantially along the line 4—4 of Fig. 2 and showing the pin set-up mechanism and the tape analyzing mechanism.

Fig. 5 is a sectional view taken substantially along the line 5—5 of Fig. 4 illustrating the tape advancing mechanism.

Fig. 6 is a sectional view taken along the line 6—6 of Fig. 2 showing the pin belt path, the pin resetting mechanism and the pin set-up mechanism.

Fig. 7 is a sectional view taken along the line 7—7 of Fig. 2 and showing the drive shaft and mechanism for advancing the pin belt.

Fig. 8 is a sectional view taken along the line 8—8 of Fig. 2 illustrating the tape advancing mechanism and associated mechanisms including electrical circuit contacts.

55