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 PROCESS AND DEVICES FOR THE USE
 OF THE PHONOGRAPH IN TEACHING
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FIG. 1

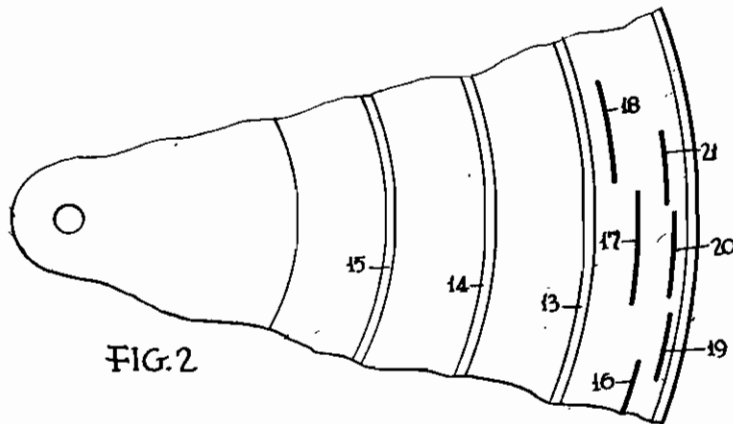
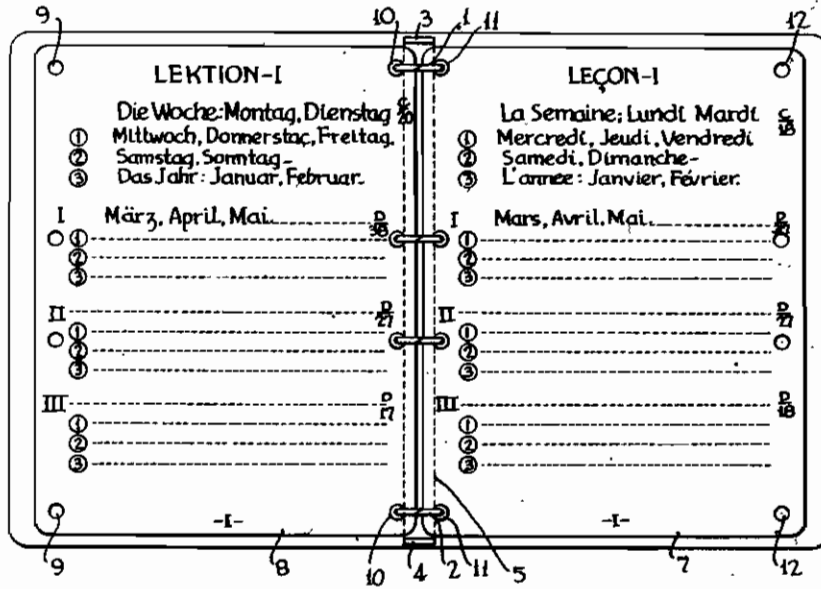


FIG. 2

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PROCESS AND DEVICES FOR THE USE OF THE PHONOGRAPH IN TEACHING

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Application filed November 10, 1941

The invention relates chiefly to the use of the phonograph for teaching foreign languages.

It is well known that the discs of the ordinary type cannot be used by beginners because of the difficulty encountered by them in searching in the foreign text for words which correspond to those which are pronounced by the phonograph.

The invention is based on a new process of setting (in proper position) which overcomes the difficulties by establishing a direct association between the foreign text and the recording.

The invention permits besides, in combination with the process of setting, the use of a means for facilitating the determination of the point on the disc on which the needle ought to be placed at each repetition of the passage being studied.

The invention relates finally, always in combination with the process of setting, to the use of a new means for establishing an association between the foreign text and the text of the mother tongue.

The new process of setting permits, in principle, the inserting in the foreign text of a certain number of signs of separation and, in the phonographic recording, sonorous signals at corresponding points on the disc, the signs and signals being chosen among those indicating the internationality and which can be intuitively associated side by side.

To avoid having to use too great a number of pairs of signs and distinct signals, it is besides provided that the text which corresponds to the recording on each side of the disc can be broken up into several distinct parts.

For example, in the case of recording on one of the sides of the disc 25 cm. diameter a text for beginners, the process can be practically realized in the following manner:

The foreign text is divided into four lessons; each lesson is divided into four sections and each section is in turn subdivided into four fragments. The signs inserted to mark the separations are: for the sections the roman numerals I, II, III and for the fragments, the arabic numerals 1, 2 and 3.

On the disc, the division of the text in four lessons is made visible by arranging between them three annular distinct zones free from all recording. At each sign I, II and III is associated the recording of a short musical note, which is repeated two and three times for the two last signs. At each of the signs 1, 2 and 3 is associated the recording of a short whistle which, for the two last signs is repeated two and three times.

The subdivision indicated below while using only six groups of signs and distinct signals,

4×4×4, has 64 fragments and as the total duration of the audition of a disc of 25 cm. is about 3 minutes, the length of the interval of time which separates two distinct signals is about

$$\frac{3 \times 60}{64}$$

or less than three seconds. From the study supposedly conducted while repeating successively each of the fragments, it is very evident that a system of setting established as it has just been explained assures a direct association between the audition and the foreign text, permitting the student to very easily find on the foreign text the words which correspond to those pronounced by the phonograph.

It is expedient to remark that as it is always possible to take away all that which precedes the signal which marks the beginning of the fragment of the study, it is by no means necessary to search for a precision in the resuming of each hearing.

It is evident that the process establishes, if it is thought useful, a partition separating distinctly each word from the following.

It is equally evident that the adoption of distinct annular zones to separate the recordings of different lessons make the determination of the point of the disc on which the needle ought to be placed at the beginning of each repetition much more easy. It is particularly very easy to determine the points which correspond to the division in four sections, because it is sufficient to estimate the quarter, half or the three quarters of the distance comprised between two annular distinct zones.

The means employed for associating the foreign text and the text of the mother tongue consists in principle in preparing the two texts so that they will be juxtaposed line for line and having on the text in the mother tongue all the signs which have been inscribed on the text in the foreign language with the view to making the relation between this text and the hearing known.

Further, in the case where the edition of a course for the teaching of several languages is considered, each translation of the common text is printed on the separate leaves and a little book is made by the assembling of the text in the mother tongue with the corresponding text in the foreign language which is to be studied.

It is obvious that if m signifies the number of tongues which belong in the course, this manner of composing a bi-lingual little book only requires m different printings, while $m(m-1)$ would have

been necessary in the case of the printing and stitching of the above mentioned little books in the usual form.

For example, according to the invention, the edition of a course for 20 tongues has no more than 20 printings instead of $20(20-1)$ or 380; and it is expedient to remark besides that the very important reduction in the price of the edition has the added advantage of a great simplification of stock at the retail dealers.

The method of setting which is the object of the present invention can be advantageously used in combination with the repeating device described in the U. S. application No. 215,789, filed June 25, 1938, the use of which makes the management of resumption much more easy. This combination ought in theory to bear the inscription in the margin of each text, of the marks read on the graduations of the repeater, which correspond to the source of all the different fragments; but, in practice, it is sufficient to inscribe the marks which open each repetition a little before the signal which corresponds to the source of each section, because, as it has been explained above, it is not necessary when using the new system of setting, which assures direct association, to look for great precision in the repetitions.

Fig. 1 of the attached drawing, given with notes, shows one type of a bi-lingual little book drawn up according to the invention for an elementary course for beginners.

Schematic figure 2 shows a part of a disc formed according to the invention.

For the establishment of these two figures, the division of the text in four lessons is supposed, sixteen sections and 64 fragments made under the conditions indicated above.

In Fig. 1, 1 and 2 indicate two broken rings with a portfolio device of the common type by which the perforated leaves are assembled; 3 and 4 indicate two small levers which open the broken rings; 5 indicates the setting of the known device which is conjointly liable with the cover 6; 7 and 8 indicate two leaves which are only printed on one side and which have respectively the for-

eign text and the text to the mother tongue; 9, 10 and 11, 12 indicate respectively two series of lateral perforations which are arranged in such a manner that each leaf may be made up either as a right-handed page or a left-handed page.

Each leaf has the text corresponding to one of the lessons. In the left margin the signs I, II and III have been inscribed which indicate the division of the lesson in four sections, while the mechanical marks read on the graduations of the repeater of the above-mentioned patent

$$\frac{D}{38} \quad \frac{D}{27}$$

etc.) have been recorded in the margin on the right. The signs 1, 2, and 3, which indicate the subdivisions of each section in fragments, have been interlocated in the text itself.

It is obvious that while using the means described, the student can very easily compose himself a bi-lingual little book of which he has need, because it is sufficient for him to place side by side the leaves which have the same numbers.

It is noted that the typographical composition adopted to indicate the subdivision in sections and fragments could conceal the impression of the signs of separation.

In Fig. 2, 13, 14 and 15 designate the exact annular zones which make the division of the text in four lessons visible; 16, 17 and 18 indicate the points where the signals are registered which divide the first lesson into four sections; 19, 20 and 21 indicate the points where the signals are registered which subdivide into four fragments the first section of the first lesson.

The combination of the two means simultaneously working for the attainment of the disc described above makes a new industrial product which is characterized in one part by the direct association of the hearing with the foreign text and on the other part by the indication of the region in which the needle ought to be replaced in order to obtain the hearing of a determined fragment of the text.

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