June 10, 1958 L. J. FERNBACH 2,837,839

VOCABULARY STUDY DEVICE

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FIG. 4

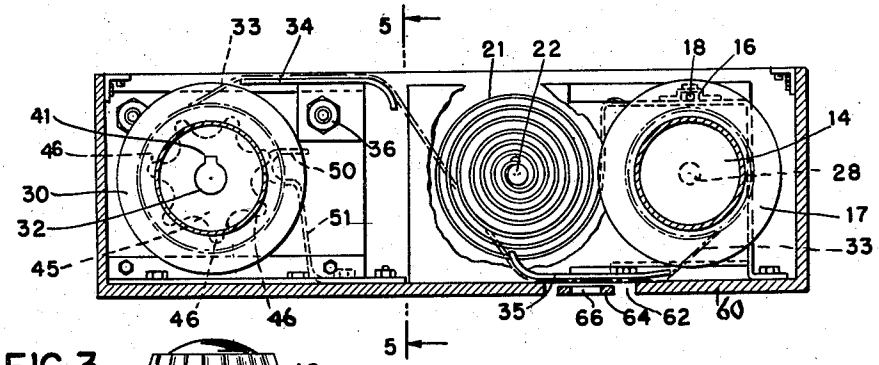


FIG. 3

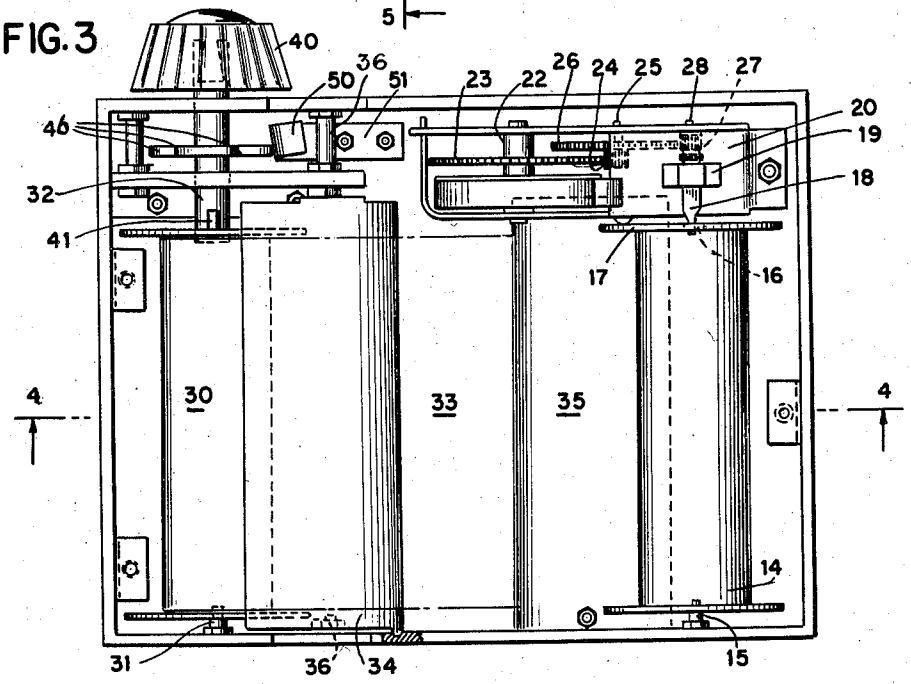


FIG. 1

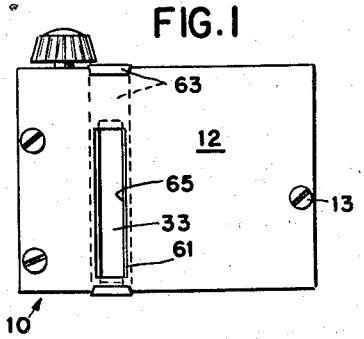
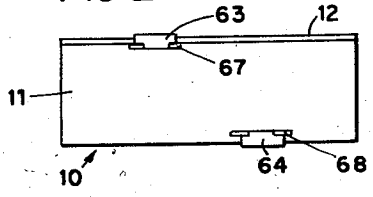


FIG. 2



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FIG. 5

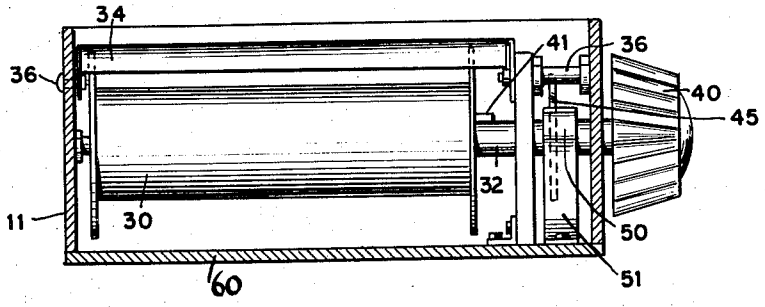
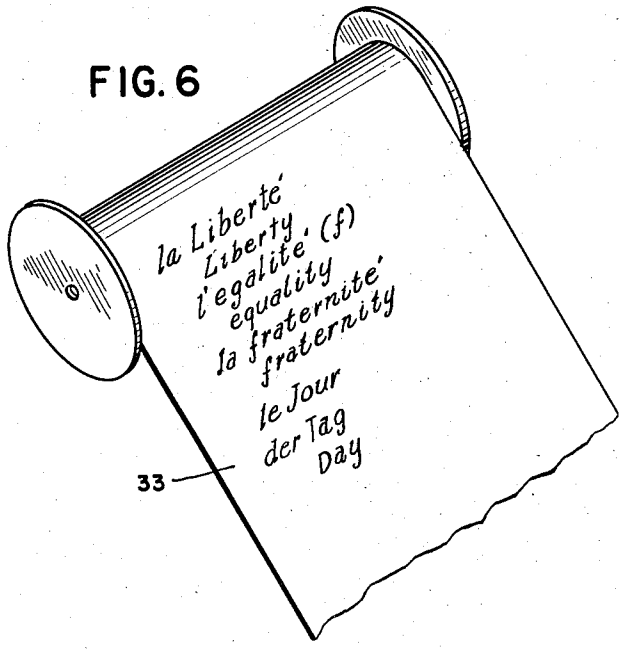


FIG. 6



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VOCABULARY STUDY DEVICE

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1 Claim. (Cl. 35—76)

The present invention relates to a language study device and refers more particularly to the type of device in which a web is supported in a casing between supply and take up rolls for the purpose of exposing selected portions of the web through a window in the casing.

An object of the present invention is the provision of means affording step by step travel of the web in either direction under the control of a single knob, and further providing stationary position of the web in the absence of actuation of the knob.

A further object is the provision of improved means for mounting of the supply spool.

Still another object is the provision of an improved web, inscribed with a vocabulary in two or more languages for the study of one or more foreign language vocabularies according to my theory of study explained herein.

In accomplishing the objects of the present invention, a casing is provided, comprising a removable supply spool, a takeup spool which need not be removable, and a spring connected to the takeup spool through gears, the spring being loaded when the takeup spool is empty and tending to wind the web onto the latter. A wheel with ratchet teeth is fast to a slidable spindle which engages the supply spool and the wheel is engaged by a resilient dog which engages between any two adjacent teeth to stop the supply spool selectively in any one of a multiplicity of rotational positions, the supply spool being actuated from one position to the next in either direction by a hand knob. The spring tends at all times to wind up the web on the takeup spool and thus to unwind the supply spool, and the dog engaging the teeth resists such tendency, however not so forcibly as to prevent winding or unwinding of the supply spool by manual actuation of the knob.

The dog moves radially of the wheel, being displaced outwardly when the wheel is actuated and returning to rest at an inner position. The dog is further biased to have an axial component of engagement with the wheel, urging the same axially inwardly toward the supply spool. In this way the spindle is kept engaged with the supply spool.

A window in the casing permits writing of a word on the web, and the actuation of the web by the knob transports this word out of view and brings a blank portion into view, which may be inscribed with the translation of the word. A web may also be furnished with words and their translations already printed so as to be alternately and consecutively visible in the window, it being essential that a single word be visible at a time in order to promote mental concentration.

The invention accordingly consists in the features of construction, combinations of elements and arrangements of parts which will be exemplified in the constructions hereinafter described. In the accompanying drawing, in which is shown one of the various possible illustrative embodiments of this invention:

Figure 1 is a top plan view of the device.

Figure 2 is a side elevation thereof.

Figure 3 is an enlarged top plan view with the cover removed.

Figure 4 is a section on the line 4—4 of Figure 3.

Figure 5 is a section on the line 5—5 of Figure 4.

Figure 6 is a perspective view of a spool and web, the latter being fragmentary.

Referring now in detail to the drawings, my improved device 10 comprises the substantially rectangular casing 11, having the separate top panel 12 constituting a removable cover held on by screws 13 or in any convenient manner.

The takeup spool 14 is rotatably mounted with its free end on the pin 15, and in the illustrated embodiment spool 14 is not removable, though removability could be provided if desired. Spool 14 is provided with a small hole 16 in its end disc 17, and a slidable pin 18 mounted in the sleeve 19 on the plate 20 can be entered in hole 16 to lock spool 14 against rotation.

A flat spiral coil spring 21 has its outer end anchored in the plate 20 and its inner end is connected to the shaft 22, on which is mounted gear 23 meshing with pinion 24 on shaft 25, on which is gear 26 meshing with pinion 27 on shaft 28 of spool 14.

Supply spool 30 is mounted on the pin 31 and the slidable spindle 32. A web 33 is carried by supply spool 30 and extends therefrom over the tables 34, 35 and to takeup spool 14. Table 34 is pivotally mounted on the bolts 36 so that it may be swung aside to facilitate changing of spool 30.

An operating knob or handle 40 is mounted fast on the outer end of spindle 32, and spindle 32 has the key or feather 41 which locks it against rotation relative to supply spool 30 and permits rotation of the latter in either direction by turning of knob 40.

A ratchet wheel 45 is firmly mounted on spindle 32. A resilient dog 50, which may be constituted of flat spring wire, engages ratchet wheel 45 and tends to enter radially inwardly between teeth 46, and when resting between any two teeth 46, stops wheel 45 against rotation. Dog 50 is approximately U-shaped in side elevation as seen in Figure 4, and has an integral, elongated body 51 which is bolted to casing 11 and constitutes a mounting means providing the movement of dog 50 radially inwardly of wheel 45 as described. Dog 50 is further biased by being twisted, as best seen in Figure 3, so that its engagement with wheel 45 has a component axial of the latter and in the direction of spool 30. Wheel 45 being fast on spindle 32, the latter is maintained in engagement with spool 30 by the bias of dog 50.

The cover 12 and bottom wall 60 are provided with windows 61, 62 respectively, the same being apertures giving access to the web 33 for writing thereon or merely for viewing, as desired. Located between web 33 and the windows 61, 62, and functioning to restrict the effective area of the latter, are the plates 63, 64, formed with the openings 65, 66. Plates 63, 64 are slidable longitudinally of casing 11 in the grooves 67, 68, and extend through said grooves to the exterior of casing 11, so that they may easily be manipulated.

The operation of my device is as follows. A fresh web 33 wound on a supply spool 30 may be inserted after the old web 33 is wound onto its spool 30 and disconnected from spool 14, by pulling knob 40 upwardly of Figure 3, thus disengaging spindle 32 from spool 30. The new spool 30 having been inserted, dog 50 will actuate spindle 32 into locking engagement therewith.

When takeup spool 14 is empty, the spring 21 is under maximum load tending to cause spool 14 to revolve counterclockwise. Such revolution is prevented by insertion of pin 18 in hole 16. Web 33 is next connected to spool 14 in any desired manner and the pin 18 is

disengaged, whereupon spring 21 tensions the web 33 between the two spools, motion of the web and spools being prevented by the engagement of dog 50 with ratchet wheel 45.

The student then writes a word on the web 33, which may be blank paper. He next actuates knob 40 so that the written word disappears from the window 65 of plate 63, moving toward takeup spool 14. Another blank portion of web is thus presented in window 65, and on this portion is written a word which is a translation of the word first written. The procedure of writing another word, and then its translation, is continued until the web 33 is filled up on one side thereof, for instance the top side in Figure 4. The device may then be turned over, the bottom side of the web in Figure 4 thus becoming exposed for use through window 66 in template 64. The plates 64, 66 may be slid longitudinally of casing 11 as required to compensate for fortuitous differences in the length of web transported by one movement of the knob as the web unwinds from spool 30 or rewinds thereonto. For instance, web 33 may have various information printed thereon in laterally extending lines equally spaced longitudinally of the web, as more fully explained hereafter. A single movement of the knob will move takeup spool 14 through a certain angle, depending on the number of teeth on the ratchet wheel 45, and such angular movement will transport the web a certain longitudinal distance. As more of the web winds onto spool 14 and the combined radius of spool and web carried thereby increases, the same angular movement of the spool will be effective to transport the web a greater longitudinal distance. The equally spaced lines of printing on the web will therefore not always register in the openings 65, 66, and the plates 63, 64 are therefore slidable longitudinally of casing 11 in order that they may register with the printed lines. In the case of a blank web 33 on which the student writes words to be studied, fortuitous circumstances can intervene to prevent the manually written words from registering after the web has been transported and when it is again desired to view the particular word. For instance the web may have stretched or contracted due to atmospheric conditions, or the web may have been entirely removed from the casing 11 and have been subsequently replaced thereon, so that the slidability of the plates 63, 64 longitudinally of casing 11 is again necessary to establish registry between the indicia on the web and the openings 65, 66.

The purpose of exposing a single word at a time is to promote concentration on that word. The translation of the word is not in view and must be sought by mental activity, prior to turning the knob to bring it into view. Also, extraneous matters such as other words, page numbers, pictures, and all the distractions present when studying from a book, are avoided. The web 33 may be transported in either direction by the knob 40, manipulation being against the force of spring 21 while winding the web onto spool 30, and being assisted by spring 21 when winding onto spool 14.

The device therefore does not substitute for a dictionary, but is used either in conjunction with a dictionary or as a refresher of memory if the student has some knowledge of the language being studied.

Web 33, instead of being blank, may be inscribed with a succession of words, each spaced from the other longitudinally of the web and each being followed by a word which is the translation of the immediately preceding word, as seen in Figure 6, where the first six words are three French words each followed by its translation in English.

Also as seen in Figure 6, two or more foreign language vocabularies may be studied at once, the seventh, eighth and ninth words forming a group in which the French, German and English words each constitute a translation of the other words of the group. Figure 6 illustrates the sequence of words which applies whether the student writes his own lesson onto the web or studies from a printed web prepared according to my invention.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use. As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

What is claimed is:

In a language study device of the type comprising a casing, supply and takeup spools rotatably supported therein and a web wound on said spools and extending between them, said casing being formed with a window for viewing a particular portion of said web, the improvement comprising a web tensioning spring operatively connected to said takeup spool, said spring being loaded when said takeup spool is empty, a ratchet wheel operatively connected to said supply spool, an operating handle operatively connected to said ratchet wheel, and a dog resiliently engaging the teeth of said ratchet wheel to stop the same and said supply spool and web selectively in any of a multiplicity of positions, said supply spool being mounted between a pin engaging one end thereof and a slidable spindle engaging the other end thereof and said ratchet wheel being mounted on said spindle, said dog further being biased to engage said ratchet wheel with a force exerted substantially axially thereof and in the direction of said supply spool, thereby maintaining said spindle in engagement with said supply spool.

References Cited in the file of this patent

UNITED STATES PATENTS

157,690	Lawrence	Dec. 15, 1874
420,554	Fuller et al.	Feb. 4, 1890
614,383	Gilbert	Nov. 15, 1898
770,841	Barker	Sept. 27, 1904
838,840	Campman	Dec. 18, 1906
1,235,073	Spiro	July 31, 1917
1,918,298	Taylor	July 18, 1933
2,360,255	Mihalyi	Oct. 10, 1944