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L. E. MYERS

FOLDING EDUCATIONAL DEVICE

Filed Nov. 19, 1921

Fig. 1.

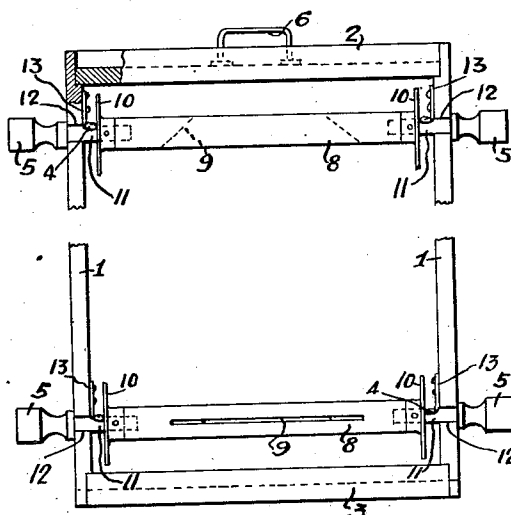


Fig. 2.

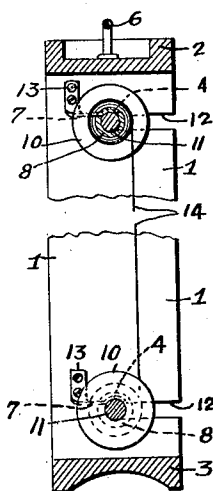


Fig. 3.

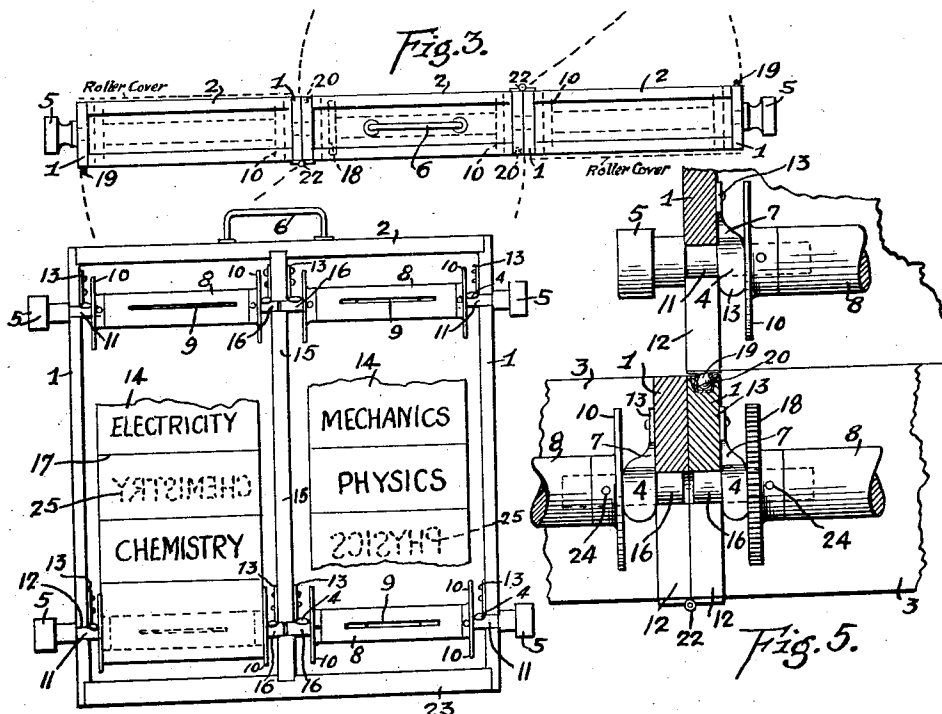
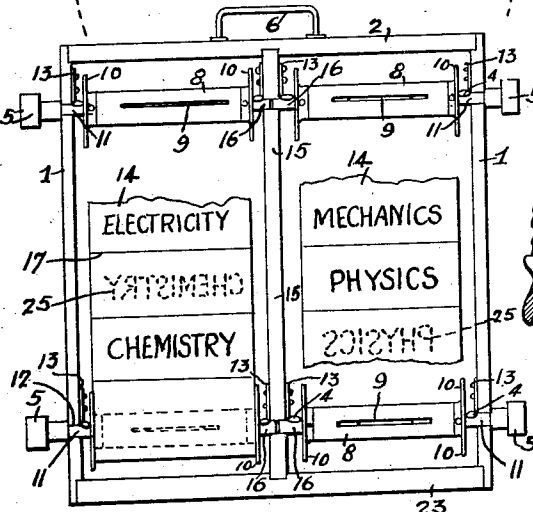


Fig. 4.



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FOLDING EDUCATIONAL DEVICE.

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My invention is related to universal educational devices and it consists more especially of the features pointed out in the annexed claims.

5 The purpose of my invention is to provide an educational device which affords unlimited opportunities for comparative studies in various directions and of divers subjects; that provides removable scroll holding rollers; that also provides attach- 10 able and detachable topical scrolls which may be printed on one or both sides; and further, that in addition also provides twin unit devices and triple unit hinged devices; 15 and furthermore provides the required means for actuating the rollers at will and retaining them against unintentional unwinding and accidental removal from the supporting frame which forms a carrier for the display of the removable scrolls. 20

With these and other ends in view, I illustrate in the accompanying drawing such instances of adaptation as will disclose the broad underlying principles of my invention without limiting myself to the specific details shown in the drawing and described herein. 25

Figure 1 is a front elevation of a skeleton frame showing parts broken away and 30 others in section.

Fig. 2 is a side elevation of Fig. 1, in section, about central of the frame.

Fig. 3 is a top plan of a triple-unit hinged device.

35 Fig. 4 is a front elevation of a twin unit device.

Fig. 5 is an enlarged plan view in section of one of the hinged joints of a triple-unit device.

40 In carrying my invention into practice I may use any desired form of frame, supported in any desired manner and arranged so that the rollers are removable from the frame for storage or filing purposes. In addition, as has already been stated, the 45 scrolls for greater flexibility and freedom of use I may make the scrolls attachable and detachable from the rollers.

In the exemplification shown in Fig. 1 of the drawing, a single unit is illustrated. Such a unit may be combined with one or two other units hinged together to form a more compact device when not in use or when being carried from place to place. 50

55 When three units are hinged together, the

two end units will fold onto the central unit. In Fig. 3, they are shown unfolded.

When a twin unit is made, the frame has three upright members instead of two as used on single units. This is shown in 60 Fig. 4 with the scrolls broken away at places. Whether one form or another is used is in itself immaterial in so far as the broad feature is concerned.

The broad scope of the invention resides 65 in the use of removable rollers held in parallel relation in any suitable frame open front and back and an educational scroll that is transferable from one roller to the other in any direction; so that the rollers 70 may themselves be removed from the frame or the scroll itself removed from the rollers as desired for use in other frames or for filing purposes.

Single unit frames have upright side 75 pieces 1 which are joined at the top by member 2 and at the bottom by member 3. In twin-unit frames the sides 1 are supplemented by the center piece 15 which is let into gains formed in the upper member 2 80 and the lower member 23. This upright is made thicker than the outside pieces 1 so as to allow sufficient bearing for the roller pins 16.

The rollers have some kind of bearing 85 pins at their ends such as 16 shown in Figs. 4 and 5. In Fig. 1 both ends of rollers 8 are provided with pins 11 that are a part of the knobs 5 by means of which the rollers are rotated in either direction. In Figs. 90 3, 4 and 5 only the extreme outside ends of the rollers are similarly equipped. The pins 11 and 16 enter slots 12 formed in the uprights 1 and 15 so as to be readily removable from the frames when another topic or 95 other detail subject is required for further study by the placing of the roller containing the related subject in place of the one removed.

In order that the rollers may not be free 100 to unwind and may also be held in the slots 12 at their innermost end, springs 13 are secured to the inside of the pieces 1 and 15. These have a straight portion 7 shown in Fig. 2, which terminates in a curved part 4 105 that snubs over the upper side of the pins 11 and 16 so as to hold them in the slots 12; and on account of the tension of the portion 7 the springs place enough friction on the pins to prevent the rollers moving ex- 110

cept when they are actuated by means of the knobs 5. These springs may also serve to position the rollers in their endwise relation to the pieces 1 and 15.

Each roller has flanged heads 10 secured to its ends by tacks 24 which may also pass into the pins 11 and 16 and thus hold both securely on the rollers. These heads serve to prevent side traverse of the scrolls 14. The scrolls enter slots 9 having beveled ends to guide the scroll centrally as it is being placed in the slots 9. The ends of the scrolls 14 are similarly beveled.

For convenience in storing and filing the scrolls either on a roller or detached therefrom, they are placed in specially arranged compartments bearing identifying labels, etc. The details of a filing system form the subject of a separate development and are also subject to addition prosecution, in consequence they are not shown.

When the units are combined in groups of three, one of the heads of the center unit rollers is widened and is also knurled so as to be easily turned by the thumb and fingers. This is shown at 18. A handle 6 may be attached to a single unit or the middle unit of a three-unit outfit to facilitate the easy handling of the device. In the latter case the outside frames are folded onto the center one and provision is made for holding them in this folded relation as long as desired. This is accomplished by attaching small knobs 19, as shown in Fig. 3, to the outside members of the frames and on the inner members forming spring plate catches 20. As these expedients are well known they are not shown in great detail.

The combination of two or more units necessitates the use of hinges 22 placed approximately as shown in Fig. 3 and also in Fig. 5. The chart is divided into sections 17 devoted to any desired part of the subject. When printed on both sides, the reverse is shown at 25.

This method of arranging educational material is quite distinct from the use of rollers in maps, cameras, display racks, etc., for the reason that the rollers are made detachable and detachable with respect to a supporting frame, and for the further reason that the scrolls are likewise securable and removable with respect to the rollers; and also that the scrolls contain study material which may be used in prosecuting com-

parative studies, for instance—electricity, in relation to mechanics, or chemistry or physics. History in relation to geography, etc.

When a number of unit devices are grouped together, more than one person can study at the same time from the one face of the scrolls; and others can study from the reverse side of the scrolls, thus producing flexibility and interchangeability of subjects and expanding the field of study greatly.

What I claim is:

1. In educational devices, a group of three frame units, a plurality of detachable scroll carrying rollers in each frame unit, frictional means cooperating with each roller to control their ease of rolling, and hinges at diagonally opposite corners of the central unit adapted to permit the end units to be folded against the other so that the subject matter of each scroll is visible on both faces in side by side relation when the frames are opened.

2. In educational devices, a group of scroll carrying frames comprising a central unit hinged at diagonally opposite corners to two side units, detachable scroll carrying rollers carried by the units those of the central unit having knurled heads and those of the side units having external knobs attached to the rollers, frictional means cooperating with each roller to control their ease of rolling, spring catches for holding the frames closed, and a carrying handle attached to the central unit.

3. In educational devices, a plurality of open frames having top, bottom and side members for each frame the side members having notches formed in their edges, means for hinging three frames to each other so as to limit their open position with the frames engaging each other edge to edge and also permit them to be folded against the center frame face to face, a plurality of rollers removably supported in said notches, scroll guiding heads on the rollers, means for actuating the rollers, means placed on the side members adjacent the roller ends to subject the rollers to friction and also hold them against accidental displacement, and means for holding the folded frames in engagement with each other.

In testimony whereof I affix my signature.

LEWIS E. MYERS.