

(No Model.)

W. H. LEEK.
EDUCATIONAL APPARATUS.

No. 476,468.

Patented June 7, 1892.

Fig. 1

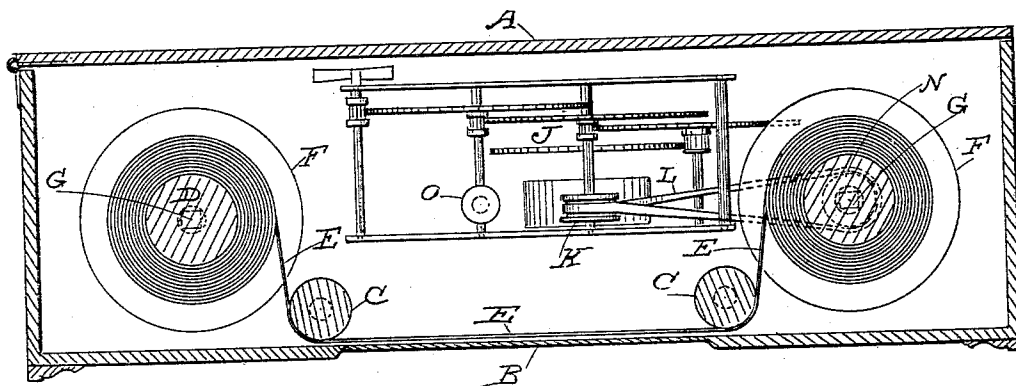
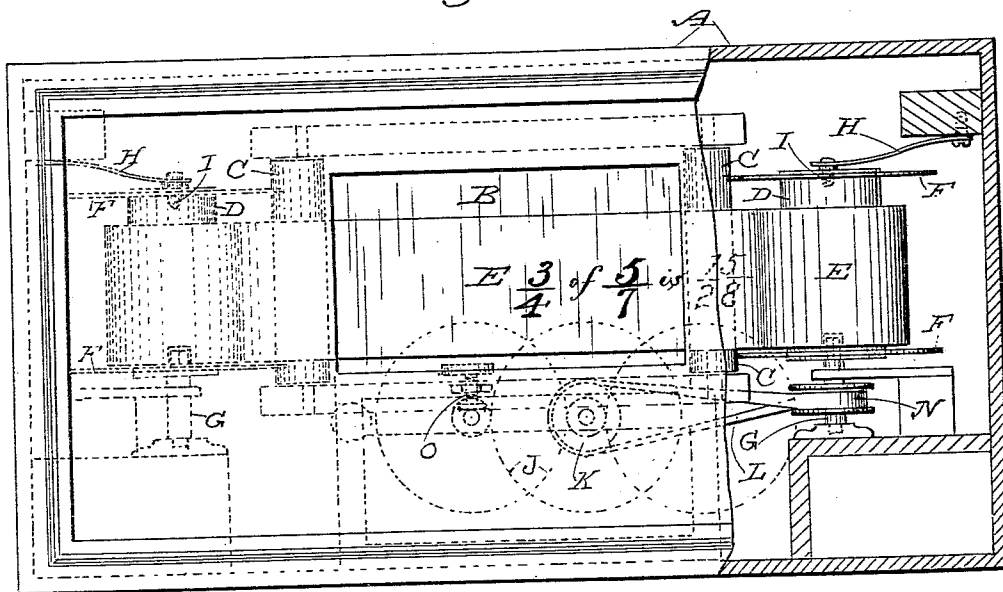


Fig. 2.



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SPECIFICATION forming part of Letters Patent No. 476,468, dated June 7, 1892.

Application filed February 27, 1892. Serial No. 423,087. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HOWARD LEEK, a citizen of the United States, residing at Quincy, Plumas county, State of California, have invented an Improvement in Educational Apparatus; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a device which I call an "educational apparatus."

It consists of a series of interchangeable vertical rollers with belts passing around them, a driving mechanism and shafts to which the rollers are removably attached, and a means for exposing either surface of the belt as it passes from one roller to the other, together with certain details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a horizontal section of my device. Fig. 2 is a front view with one side of the case broken away to show the construction.

The object of my invention is to provide an apparatus by which a series of mathematical problems, words, sentences, or other educational matter may be caused to pass slowly across one or more openings through which they may be seen during the time of passage only, for the purposes of inducing the pupil to concentrate his mind upon the problem during the brief time while it is passing and to correctly catch the combination of figures or words as they pass and rapidly complete the work to be done before another proposition appears.

In carrying out this invention I have in the present case shown a casing A, which may have one or more windows B, made in the side of it. Behind these windows are vertical guide-rollers C and beyond these at each side are the vertical drums D. These drums are adapted to receive belts E, which are wound upon them and are prevented from being displaced by the flanges F of the drums. The belts are of sufficient size to receive words or figures which are large enough to be readily seen through the openings in the side of the case from any part of the school-room. It is designed to make these belts wide enough to receive three or more figures standing vertically one above the other. These belts are

made of cloth, paper, or any flexible material suitable for receiving the figures or words desired. The drums or cylinders upon which they are wound have openings made in each end. Beneath the lower end of each drum is journaled a vertical shaft G, the upper end of which is made polygonal to fit the correspondingly-shaped opening in the lower end of the drum. Above the upper ends of these drums are the elastic arms H, suitably secured at some point within the case and each having one end projecting above the center of the upper end of one of the drums. To these elastic arms are fixed the short vertical shafts I, which extend into the upper ends of the drums and serve as guides about which the drums turn loosely. By this construction I am enabled to remove the drums from the shafts and driving mechanism to reverse them, so that the opposite side of the belt may be exposed, thus enabling me to use both sides of the belt for matter which it is desired to expose to the class, and several sets of belts may thus be used in different stages of the work with one case and driving apparatus. These belts may either be fixed permanently to cylinders, so that each belt and its cylinder may be introduced into the apparatus as needed, or the belts may be disengaged and others placed upon the same cylinders.

In order to rotate the cylinders and cause the belts to travel from one to the other, I have shown a clock-work mechanism J, upon one of the shafts of which is fixed a pulley K. From this pulley a belt L passes around a pulley N, which is fixed to the lower shaft of one of the cylinders.

O is a brake or stop mechanism by which the apparatus may be stopped at any desired point. By loosening this screw, which presses upon one of the wheel-shafts of the apparatus of the driving-gear, the latter is allowed to rotate. By turning the screw so that pressure is brought upon the shaft it will be stopped.

By means of this apparatus I am enabled, also, to regulate the speed at which the belts pass in front of the opening or openings, and thus keep the matter upon the belt before the eyes of the pupil as long as may be required. The speed is gradually quickened as they become accustomed to the work, so that pupils will learn to take the proposition from the

belt, work it rapidly, and be ready to receive the next proposition when it appears before the opening. It enables the teacher to instruct a large number of pupils at one time with comparatively little labor and is valuable from the fact that the pupil must complete each piece of work as it appears before the opening or lose the opportunity altogether.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An educational device consisting of the case having one or more openings or windows upon one side, vertically-disposed reversible drums and guide-rollers upon each side of the opening, a reversible belt having figures and propositions imprinted upon each side, a mechanism by which the drums are caused to rotate, so as to transfer the belt from one drum to the other and cause it to pass across the opening in the case, and a mechanism by which the speed of the driving mechanism and the movement of the belt across the opening are regulated, substantially as herein described.

2. An educational device consisting of a

case having one or more openings in one side, vertical removable and reversible drums with belts wound thereon, having propositions and figures marked upon the belts, guide-rollers by which the belt is caused to pass across the openings from one drum to the other, a clock-work mechanism whereby the drums are caused to rotate to move the belt across the opening, vertical shafts journaled in the lower part of the casing having the upper ends made polygonal, adapted to engage corresponding openings in the centers of the lower ends of the drum, guide-shafts entering corresponding openings in the upper ends of the drums, and elastic arms upon which these guide-shafts are mounted, whereby they may be lifted out and the drums removed to reverse or replace the belts, substantially as herein described.

In witness whereof I have hereunto set my hand.

WILLIAM HOWARD LEEK.

Witnesses:

M. J. GOODWIN,
G. G. CLOUGH.