

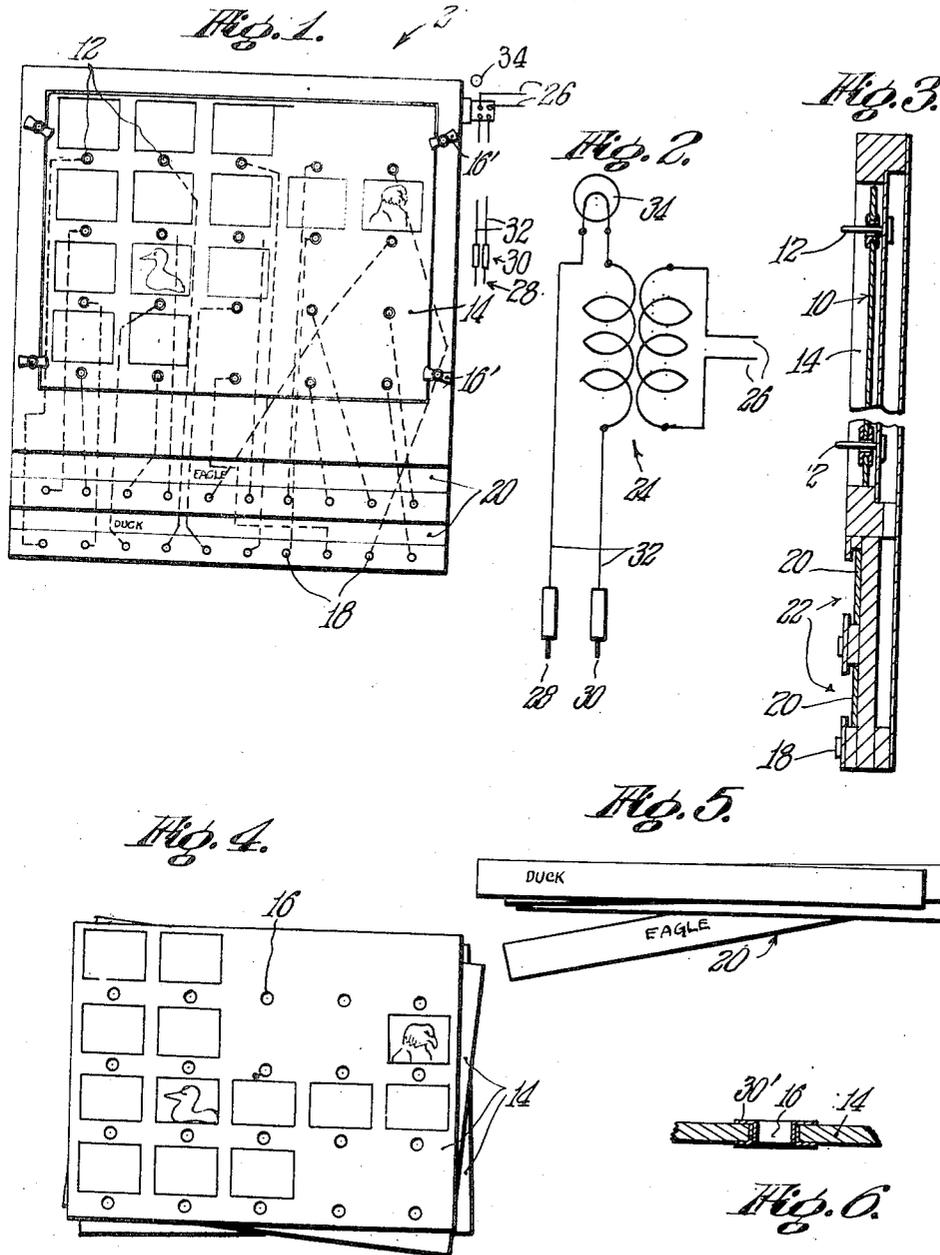
Dec. 19, 1939.

R. E. HARRIS

2,184,120

EDUCATIONAL APPARATUS

Filed July 27, 1938



INVENTOR.
Raymond H. Harris.
BY *Walter C. Ross.*
ATTORNEY.

UNITED STATES PATENT OFFICE

2,184,120

EDUCATIONAL APPARATUS

Raymond E. Harris, Agawam, Mass.

Application July 27, 1938, Serial No. 221,513

1 Claim. (Cl. 35—9)

This invention relates to an educational apparatus which is of value and aid in the educational development of persons of all types, particularly children, and it is especially suitable for school rooms and similar places of learning.

The principal object of the invention is to provide a device which will not only successfully accomplish the above mentioned results but which is economical to manufacture and easy to use.

It is another object to provide a device having an improved mechanism of the type wherein questions and answers and other educational and informative data are correlated by the use of electrical circuits.

A further prime object of the invention includes the provision of an electric "question box" which is neatly designed and attractively constructed so as to appeal to children and hold their attention.

As a special feature, in my improved construction, I provide an apparatus which may be made more economically and with fewer operations in the manufacture of parts as well as in assembling of the same than prior devices known in the art. It has the further advantage of operating smoothly and efficiently with a minimum number of parts which can get out of repair.

Various other objects and advantages of the invention will hereinafter be more fully referred to in connection with the accompanying drawing wherein:

Fig. 1 is a plan view of the apparatus of the invention;

Fig. 2 is a diagrammatic plan of the electrical circuit of the apparatus;

Fig. 3 is a cross-sectional view of the apparatus shown in Fig. 1;

Fig. 4 is a plan view of a plurality or set of cards forming part of the apparatus of the invention;

Fig. 5 is a plan view of a plurality or set of strips forming another part of the apparatus of the invention; and

Fig. 6 is a partial cross-sectional view through one of the cards of the apparatus.

Referring now to the drawing more in detail, the invention will be more fully described.

A board made of any suitable material is generally indicated by 2 and it has a recess 10 in its forward face. The board 2 is also provided with a plurality of contacts 12 extending outwardly from the recess, which contacts are metallic points and may be of any of the more common forms.

The contacts 12 protrude from the recess and the card 14 is provided with holes 16 so that it may be placed in the recess with the holes over the pins 12. The card 14 is removable and is preferably so arranged that when seated in the recess it is substantially flush with the front face

of board 2 with the contacts 12 protruding through and beyond the front face of the card.

Any method for fastening the card to the board may be employed. In the drawing I have shown a plurality of swingable members 16' which are pivoted to the board 2 and have parts adapted to engage the card 14 and hold it in place.

At one end of the board another set of metallic contact points 18 is provided. These contacts 18 may be points or sockets as desired.

As shown in Fig. 3 one or more slots or grooves 22 are also provided in the front face of the board. These are adjacent the contacts 18 and are used to engage other separate cards 20 which will later be described although it is to be understood that only one recess 22 need be provided.

Each contact 12 is in circuit with one contact 18 and the wiring arrangement is preferably such that there is no regular pattern to the wiring. That is, a certain contact 12 is not necessarily in circuit with the correspondingly located contact 18, but is preferably wired to one quite remote in direction and location.

An electrical circuit for this purpose is shown in Fig. 2, and it includes a transformer 24 which steps down a regular 110-volt current from a line 26 to the desired voltage. Contact-making members or plugs 28 and 30 are connected to the circuit by flexible wires 32 which extend therefrom and are led to a signal 34.

The signal 34 may comprise a light or bell, or any other form of indicator adapted to inform the user when the circuit is completed.

There may be any number of the removable cards 14 as shown in Fig. 4. As stated these cards or sheets are provided with punched holes which are located so as to correspond to the contact points 12 on the face of the board 2.

The subject matter of the cards may include printed pictures of birds, animals, different famous people, types of trees or leaves or plants, types of wood, kinds of musical instruments, famous paintings, pictures of United States presidents, and the like. That is to say, each card will bear a set of related representations and adjacent each representation will be a hole 16 for receiving a contact point 12.

Preferably the cards may be printed on both sides so that each card will contain more information than otherwise, thus reducing manufacturing costs and obtaining a maximum amount of benefit from each card.

The cards or strips 20 are intended to bear names or other pictures which correspond to the representations on cards 14. That is to say, the cards 20 will bear the names of or data relating to the birds, animals, famous men, or the like appearing on the correlated cards 14.

It is obvious that either the card 14 or the card

20 may bear questions with the corresponding card bearing answers to those questions. For purposes of convenience in description, I choose to call the cards 14 "question cards" and the cards 20 "answer cards", regardless of the indicia they bear.

Each of the contacts 12 being wired to one of the contacts 18 a circuit is completed when the plug 28 is touching one of the contacts 12 and the plug 30 is touching the correlated contact 18. That is the circuit is only completed, and the signal energized, when the correct or correlating contacts are touched by the plugs 28 and 30.

For example, in Fig. 1 a circuit may be completed when the plug 28 touches the contact 12 adjacent the picture of the duck on card 14 and the plug 30 touches the contact 18 on the card 20 adjacent the word "Duck." That the circuit is completed and that the correct "answer" to the "question" has been given, is indicated by the ringing of the bell or the lighting of the light or whatever means of indication is used.

As a further example, (see Fig. 1) another circuit will be completed when one of the plugs touches the contact 12 adjacent the representation of the eagle and the other plug touches the contact 18 adjacent the word "Eagle" on strip 20.

It will be seen from this explanation that whenever a contact is made with one member 28 or 30 at one point, which we shall call the "Question point", and a contact with the other member is made at the corresponding "Answer point", a connection is formed and a circuit is completed. Each "Question point" corresponds to only one "Answer point" so that circuits are completed only when the correlated points are touched. Thus the device is adapted to indicate only when the correct "answer" is given to a certain "question" whereas when the wrong points are connected, there is no signal made because there is no electrical connection.

Preferably the cards 14 are formed to have reinforcing members, such as grommets 30, around the holes 16.

In operation, the pupil (or another) will apply the plug to the contact point on the "question card", representing the "question" which it is desired to have answered, and will then use the other plug to contact that point 18 which he thinks properly answers the question. If correct, a circuit is made and a signal produced.

The apparatus is so arranged that an instructor can place one plug upon one contact point, and a student can take the other plug and can produce the desired result. The instructor, it is to be assumed, will be intelligent enough to choose a card 20 having names of birds disposed thereon for use in conjunction with and in cooperation with a picture card 14 having pictures of birds disposed thereon. Where the apparatus includes two recesses 22, as shown in the accompanying drawing, and where the arrangement is such that two strips 20 are employed with one card 14, the matter on all of these cards is related and the two name strips 20 and the picture card 14 are all identified by certain indicia which is repeated on each of the strips 20 and on the card 14.

Various other novel features in this device may be introduced and these include among others, the following:

The question and answer cards may be

changed indefinitely so as to include all branches of study from astronomy to zoology.

The question and answer cards may be interchanged so as to lend variety to the apparatus. That is to say, a question card containing the pictures of the presidents of the United States may be correlated with different kinds of answer cards which may include among others: a card containing dates of birth, a card containing dates of administration, a card containing noteworthy achievements, a card containing outstanding characteristics, and the like.

On the other hand the answer cards may include representations of their homes, pictures of their wives, representations of the states which they came from or the like so that the game may be played either way and thus lending to the variety of possibilities of the game. That is to say, it is not necessary that the game be played using the pictures as questions and the names as answers.

It is another novel feature to provide a device which may be so wired that there are several answers to one question or several questions to one answer. Or as another modification, the wiring may be such that the signal will be operated every time that a wrong contact is made instead of a correct answer.

While I have described the invention in great detail and with respect to the present preferred form thereof, it is not desired to be limited thereto since many changes and modifications may be made therein without departing from the spirit and scope of the invention.

What it is desired to claim and secure by Letters Patent of the United States is:

In apparatus of the class described which includes a signal and a source of electrical energy the combination of, a substantially flat support member having a relatively enlarged rectangular recess and an elongated straight-sided slot in its forward face, a rectangular card member removably seated in said recess and having a plurality of various indications thereon, a strip member removably seated in said slot and having a plurality of various other indications thereon, each of the indications on said card member being positively related to one only of the indications on said strip member, said card member being provided with a plurality of spaced openings therethrough and having one opening located adjacent each indication thereon, a plurality of spaced contact members extending outwardly from within said recess, one of said contact members extending through each of said openings in the card member and above the plane thereof so as to be adjacent one certain indication on the card member, a straight row of spaced contacts on said support member adjacent a marginal edge of said slot, one of said contacts being located adjacent each indication on the strip member therein, a pair of relatively movable contact-making members carried by said support member, and a plurality of separate electrical circuits carried by said support member, each of said circuits including the signal and the source of electrical energy and one certain contact member and one certain contact and each of said contact members being in circuit with that one only of said contacts which is located adjacent the certain indication on said strip member which relates to the certain indication on said card member which is located adjacent that particular contact member.

RAYMOND E. HARRIS.