No. 610,577. Patented Sept. 13, 1898.

# A. W. BALDWIN.

## EDUCATIONAL APPLIANCE.

(Application filed June 9, 1897.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1

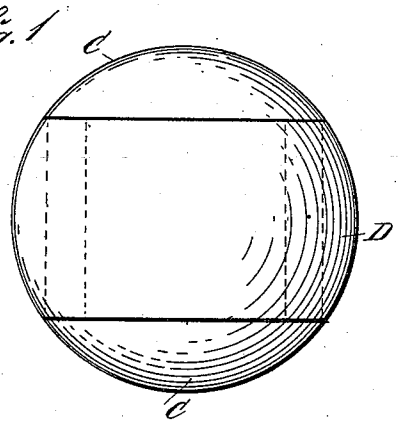
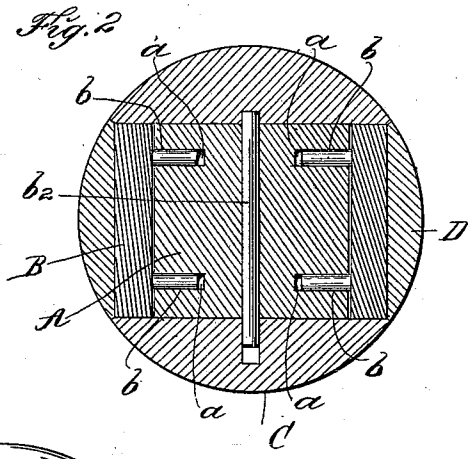



Fig. 2



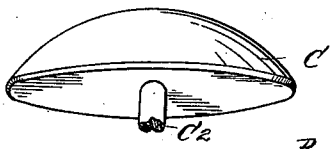
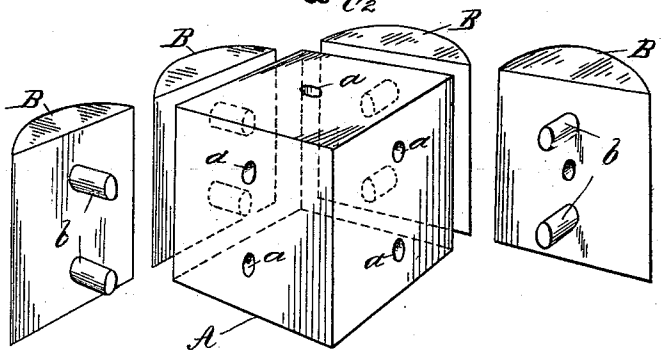
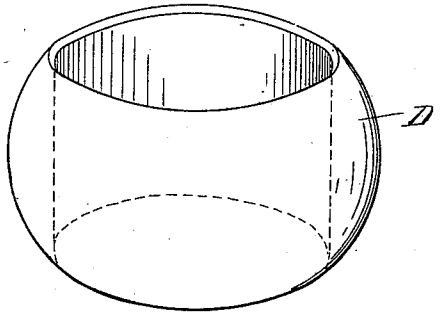




Fig. 3.




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No. 610,577. Patented Sept. 13, 1898.

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## EDUCATIONAL APPLIANCE.

(Application filed June 9, 1897.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 5

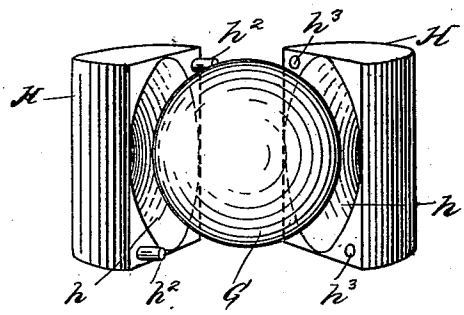



Fig. 6

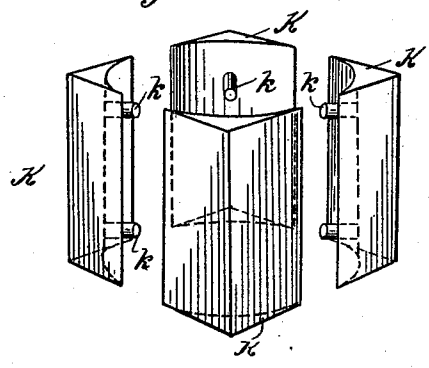



Fig. 4.

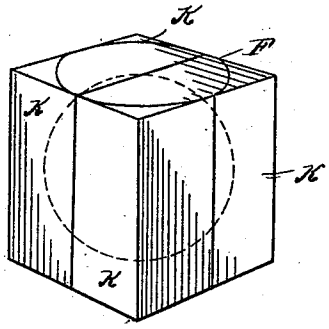



Fig. 7

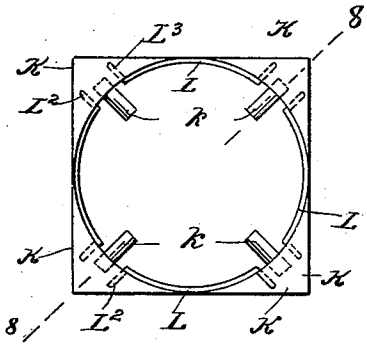



Fig. 9

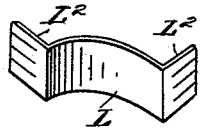



Fig. 8

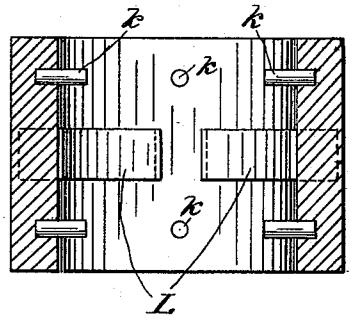
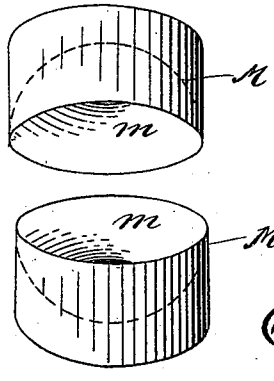



Fig. 10.




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# UNITED STATES PATENT OFFICE.

ANNIE WOOD BALDWIN, OF NEW YORK, N. Y.

## EDUCATIONAL APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 610,577, dated September 13, 1898.

Application filed June 9, 1897. Serial No. 639,984. (No model.)

*To all whom it may concern:*

Be it known that I, ANNIE WOOD BALDWIN, a citizen of the United States, residing at New York, (Hempstead) in the county of Queens and State of New York, have invented certain new and useful Improvements in Educational Appliances, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to a new and useful improvement in educational appliances; and the object thereof is to provide an improvement in this class of devices which is particularly adapted for use in kindergarten schools, but which may be used in private homes and similar places for the instruction and entertainment of children.

Another object of this invention is to provide means for teaching the difference between different geometrical figures—such as cubes, cylinders, and spheres—and also to provide devices by means of which a cube, cylinder, or sphere may be built up from separate parts; and with these and other objects in view the invention consists in the construction, combination, and arrangement of parts hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a view of a sphere composed of separate parts, the central portion being a cube; Fig. 2, a central vertical transverse section thereof; Fig. 3, a perspective view of the separate parts of which the sphere shown in Fig. 1 is composed; Fig. 4, a perspective view of a cube composed of separate parts, one of which consists of a sphere, which is placed in the center thereof; Fig. 5, a perspective view of said sphere and two of the parts which go to make up the cube; Fig. 6, a perspective view of the remaining parts which go to make up the cube shown in Fig. 4; Fig. 7, a plan view of the parts shown in Fig. 6 connected and showing additional means for connecting the same; Fig. 8, a section on the line 8 8 of Fig. 7; Fig. 9, a perspective view of one of the fastening devices employed for connecting the separate parts shown in Fig. 7, and Fig. 10 a perspective view of two separate parts which constitute a modification of two of the parts shown in Fig. 5.

In the construction shown in Figs. 1 to 3, inclusive, I have shown devices by means of which a sphere or a cylinder may be built up of separate parts, the central part consisting of a cube, and said cube is shown at A in Fig. 3, and this cube is provided at each side thereof with perforations or openings $a$, any desired number of which may be employed, and I also provide four similar side pieces B, which constitute segments of a cylinder, each of which is provided with pins $b$, which correspond with the openings $a$ formed in the cube A, and the said side pieces B are adapted to be connected with the cube A by means of said pins, and as a modification of this construction the pins $b$ may be secured to the cube A, and the holes or openings $a$ may be formed in the side pieces B. The side pieces B are convex in cross-section on their outer surfaces and flat on their inner surfaces and when connected with the cube A form a cylinder, and I also provide top and bottom pieces C, which consist of spherical segments, but one of which is shown in Fig. 3, and these top and bottom pieces C are convex on their outer sides and flat on their inner sides and provided with one or more pins $C^2$, which are adapted to enter one of the holes $a$ in the cube A, and when the side pieces B are connected with a cube a cylinder will be formed, and by connecting the top and bottom pieces C therewith the cylinder will be provided with spherical ends, and in Fig. 3 I have also shown, at D, a ring-shaped portion or annulus which has a spherical outer surface and a cylindrical aperture and which is adapted to be connected with the cylinder formed by the cube A and the side pieces B, or said cylinder is adapted to be set thereinto, and then by connecting the top and bottom pieces C therewith the sphere shown in Fig. 1 will be produced.

In Fig. 2 I have shown a pin $b^2$ connecting the top and bottom pieces C, and it is evident that if the cube A and segmental pieces B were removed the said pin $b^2$ would hold the top and bottom pieces C upon the annulus D, thereby forming a sphere.

It will thus be seen that I construct from

the parts shown in Figs. 1 to 3, inclusive, a sphere and that said sphere may be composed of the parts C and D alone or of the parts A, B, C, and D, or that I may construct a cylinder from the parts A and B.

In Figs. 4 to 10, inclusive, I have shown another form of my improved educational appliance, which also consists of separate parts and by means of which a cube may be built up around a sphere or by means of which a cube may be constructed of separate parts independent of the sphere, and in Fig. 4 I have shown a cube F, and this cube F is preferably composed of the parts shown in Figs. 5 and 6, and in constructing the same I provide a sphere G and two semicylinders H. The semicylinders H are provided with semispherical cavities or recesses $h$ in their flat surfaces, which are adapted to receive the sphere G, and one of said semicylinders is provided with pins $h^2$, which are adapted to enter corresponding holes or openings $h^3$ formed in the other, and by forcing these parts together I produce, as will be understood, a cylinder, and in Fig. 6 I have shown four separate parts K, which are oblong in form and substantially triangular in cross-section, the wider side thereof being concave longitudinally, so as to correspond with the form of the cylinder composed of the parts shown in Fig. 5, and the parts K are each provided with pins $k$, which are designed to enter corresponding openings formed in the convex surfaces of the semicylindrical parts H, and when the parts shown in Figs. 5 and 6 are connected in this manner the cube shown in Fig. 4 is produced.

In Figs. 7 to 9, inclusive, I have shown other means for connecting the parts K, so as to form a hollow cube or one provided with a cylindrical opening, and in this case the parts K are also provided with the pins $k$, and in addition thereto I employ segmental locking-plates L, which are provided at each end with radial arms $L^2$, which are adapted to be inserted into corresponding holes or openings in the parts K at each side of the pins $k$, and in Fig. 7 the radial arms $L^2$ are shown in dotted lines, and the position of these locking-plates L is shown in Figs. 7 and 8.

In Fig. 10 I have shown a modification of the construction shown in Fig. 5, and instead of employing the semicylinders H (shown in Fig. 5) I employ in the construction shown in Fig. 10 two similar cylindrical parts M, the adjacent ends of which are provided with semispherical notches or recesses $m$, which are adapted to receive the sphere G, (shown in Fig. 5,) and it will be understood that the parts K may be connected with a cylinder composed of the separate parts M in the same manner as with the cylinder composed of the separate semicylinders H. It will thus be seen that I can form from the parts shown in Figs. 4 to 10, inclusive, a cube the base or central portion of which is a sphere, and from the parts shown in Fig. 5 a cylinder may be formed the central portion of which is a sphere, and when the separate cylindrical portions M (shown in Fig. 10) are employed said parts may be connected with the sphere by means of pin $m^2$, as will be readily understood.

My invention is well adapted to accomplish the result for which it is intended, and,

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

1. In an educational appliance, an annulus having a cylindrical aperture extending therethrough from side to side, and segments of a sphere corresponding with the said cylindrical aperture and adapted in communication with said annulus to form a sphere, said parts being adapted to be assembled and disconnected as and for the purpose set forth.

2. In an educational appliance, the combination with a cylinder, of two spherical segments, the bases of which are equal to, and adapted to be connected with the ends of the cylinder, and an annulus provided with a cylindrical aperture corresponding to, and adapted to receive said cylinder, and provided with a spherical outer surface, said parts constituting when united a sphere, said parts being adapted to be assembled and disconnected as and for the purpose set forth.

3. In an educational appliance, the combination with a cube or other prism, of segments of a cylinder which are adapted to be connected with the sides thereof, so as to form a cylinder, spherical segments which are adapted to be connected with the ends of the cylinder thus formed, and a ring or annulus into which said cylinder may be inserted, said ring or annulus being provided with a spherical outer surface, substantially as shown and described.

4. In an educational appliance, the combination with a cylinder composed of separate parts, of spherical segments adapted to be connected with the ends thereof, and a ring or annulus provided with a central aperture and adapted to receive said cylinder, the outer surface of said ring or annulus being spherical in form, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 17th day of May, 1897.

ANNIE WOOD BALDWIN.

Witnesses:
AGNES M. WARNER,
MARGARET W. BALDWIN.