(No Model.) 2 Sheets—Sheet 1.

H. BODEY.

KINDERGARTEN TEACHING APPARATUS.

No. 396,067. Patented Jan. 15, 1889.

Fig. 2.

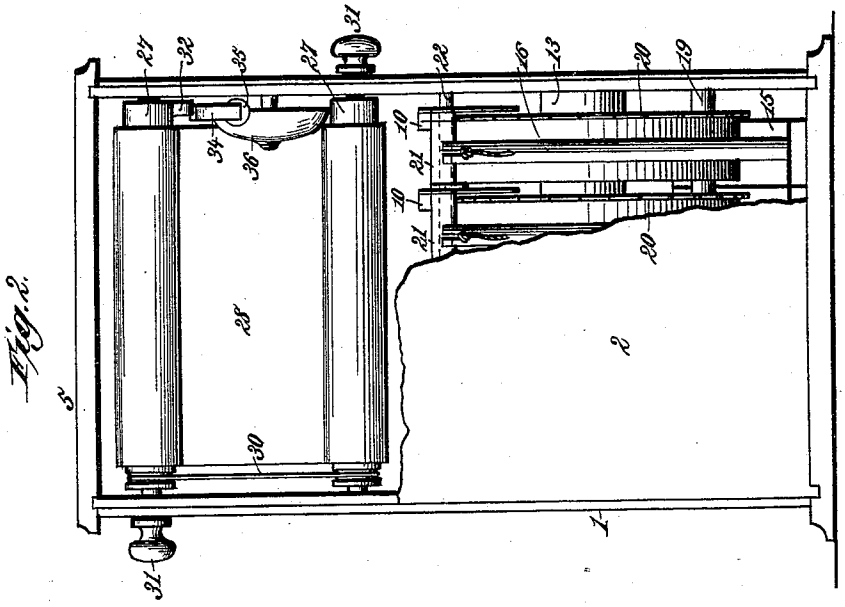
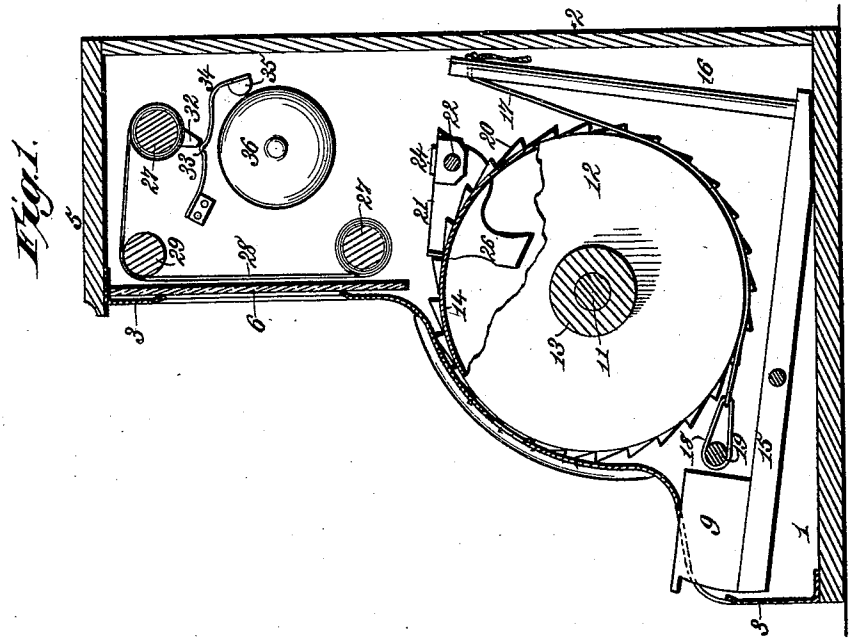


Fig. 1.



Witnesses.
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(No Model.) 2 Sheets—Sheet 2.

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KINDERGARTEN TEACHING APPARATUS.

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Fig. 3.

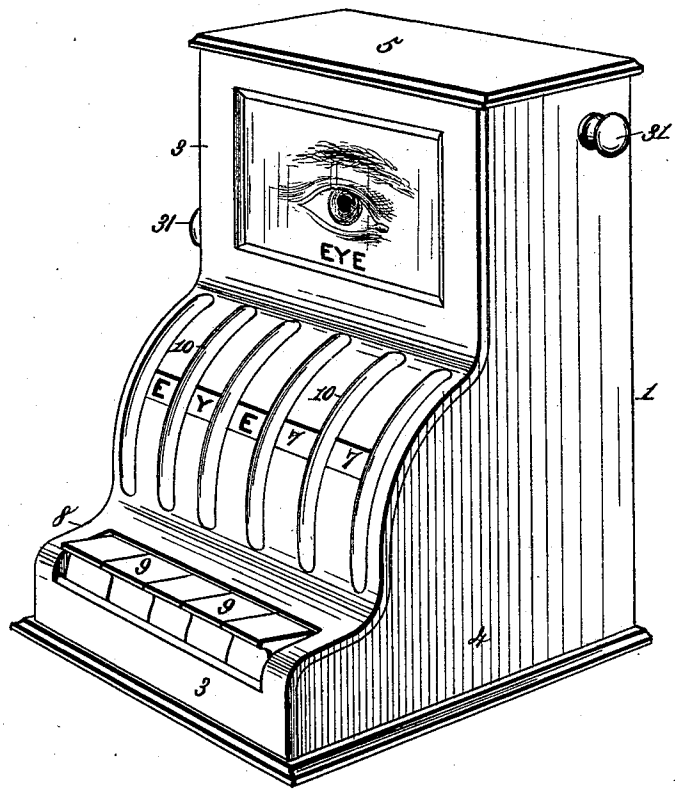


Fig. 9.

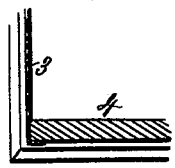


Fig. 4

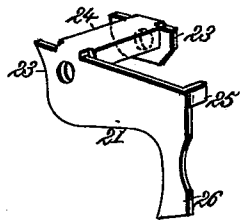


Fig. 6

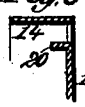


Fig. 7.

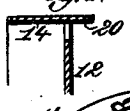


Fig. 5.

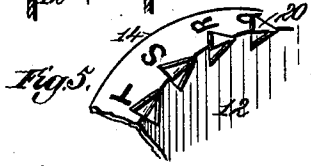
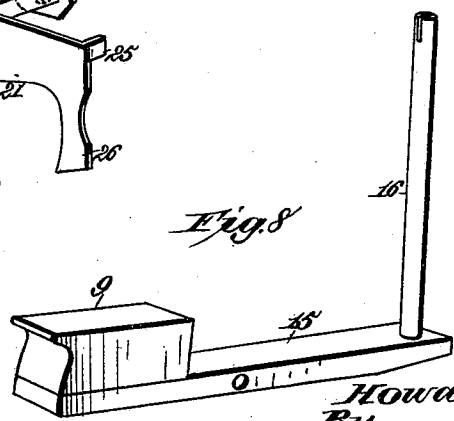


Fig. 8



Witnesses.
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Atty.

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UNITED STATES PATENT OFFICE.

HOWARD BODEY, OF NORRISTOWN, PENNSYLVANIA.

KINDERGARTEN TEACHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 396,067, dated January 15, 1889.

Application filed April 7, 1888. Serial No. 269,953. (No model.)

To all whom it may concern:

Be it known that I, HOWARD BODEY, a citizen of the United States, residing at Norristown, in the county of Montgomery and State of Pennsylvania, have invented new and useful Improvements in Kindergaten Teaching Apparatus, of which the following is a specification.

My invention relates to a kindergarten apparatus for teaching spelling; and it consists in certain peculiarities in the construction and combination of parts, as hereinafter described and claimed.

In the drawings, Figure 1 represents my improved kindergarten apparatus in vertical section from front to rear. Fig. 2 is a rear elevation of the same with a portion of the back broken away. Fig. 3 is a perspective of the apparatus. Fig. 4 to 9 are detail views, hereinafter referred to.

The numeral 1 designates the cabinet or casing that incloses the operative parts of the apparatus. This casing is preferably made of wood, with a removable back, 2, and a thin sheet-metal front, 3, that is suitably shaped to correspond with the contour of the cabinet sides. The metal front 3 is flanged on both lateral edges and at top and bottom to lap over and beneath the cabinet sides 4 and beneath the top 5, as shown in Figs. 1, 3, and 9, whereby the edges of the metal front are concealed.

In the upper part of the front 3 is an opening, 6, for exhibiting pictures. About the center is a series of openings, 7, for exhibiting the letters of the alphabet, and near the bottom is an opening, 8, through which protrude a number of finger-keys, 9, for use in operating the alphabet-wheels. As shown, the sheet-metal front 3 is formed with a series of vertical segmental grooves, 10, to receive ratchet-teeth on the alphabet-wheels, and thus enable the wheels to be placed near the openings 7, as hereinafter explained.

In the casing or cabinet 1 is a stationary horizontal shaft, 11, on which are loosely mounted a number of cup-shaped alphabet-wheels, 12, the periphery of each wheel being in line with one of the openings 7 in the front of the cabinet.

On the shaft 11, between the wheels 12, are spools or washers 13 to maintain a proper space between the wheels. The letters of the alphabet are placed in regular order on the flanged periphery of each alphabet-wheel, so that as the wheel is rotated the letters will be displayed in succession through the proper openings in the front of the casing.

Each finger-key 9 is attached to or formed on the forward end of a key-lever, 15, a number of which are pivoted in the lower part of the casing. To the rear end of each key-lever is attached a standard, 16, that projects upward behind the adjacent alphabet-wheel. A cord, 17, is secured to the upper part of the standard 16, from which it extends downward and forward beneath and in frictional contact with the periphery of the alphabet-wheel and is attached at the forward end to a spring, 18, supported in the lower forward part of the cabinet.

As shown, the spring 18 consists of a rubber band, a number of which may be suspended on a transverse shaft, 19; but it is obvious that any suitable variety of spring can be employed as well. When the key 9 is depressed, the standard 16 will be moved upward and toward the rear of the alphabet-wheel, thereby drawing the cord 17 along the periphery of the wheel against the contractile action of the spring 18, and causing the wheel to rotate upward and forward. By repeatedly depressing the key 9 a series of impulses will be imparted to the wheel 12, whereby it can be rotated sufficiently to display any required letters at the opening in the front of the cabinet. In order to effect a steady movement of the alphabet-wheels and prevent backlash, each wheel is provided with ratchet-teeth 20 to engage a pawl, 21, pivoted above the wheel. The ratchet-teeth 20 are stamped or struck from the metal of which the cup-shaped wheel 12 is preferably composed. These ratchet-teeth are struck from the closed side of the wheel, and preferably bent into a vertical position, or tangentially to the axis of the wheel, as shown in Fig. 5; but, if desired, they may be bent horizontally, either inward or outward, as shown in Figs. 6 and 7. When the vertical ratchet-teeth are used, they are received in the segmental grooves 10, which thus permit the alphabet-wheels to come close to the openings 7 in the cabinet-front. The pawls 21 are pivoted on a shaft, 22, above the alpha-

bet-wheels, and, as shown in Fig. 4, each pawl is provided with two pivotal bearings, 23, connected by a brace or cross-piece, 24, that extends transversely above the alphabet-wheel. By this construction the pawl is strengthened or stiffened and its action on the wheel made more effective and steady. The pawl-tooth 25 is bent laterally in position to engage the ratchet-teeth 20, and each pawl has a depending arm, 26, of sufficient weight to hold the pawl down into engagement with said ratchet-teeth, so as to prevent backlash.

In the upper part of the cabinet is journaled a pair of rollers, 27, for attachment of a pictorial strip band or apron, 28, that is held up to the opening 6 with the assistance of a tension-roller, 29. If desired, the opening 6 may be glazed, as shown in Fig. 1. The rollers 27 are connected by a belt or cord, 30, whereby both rollers can be turned together. One end of each roller projects through the side of the cabinet, and is provided with a knob, 31, through which it can be turned. It will thus be seen that by manipulating the proper roller the pictorial strip can be moved in either direction, as desired, so as to display its pictures in succession.

On one of the rollers 27, beyond the edge of the pictorial strip 28, is a lug, 32, which at each rotation of the roller in either direction will come in contact with a bend or projection, 33, on a spring-arm, 34, that carries a hammer, 35, for striking a gong, 36, the spring-hammer and the gong being supported in the cabinet in any suitable manner. The hammer and gong are so arranged that as each picture is exhibited, without regard to the direction in which the pictorial strip is moved, the gong will sound to attract the attention of the pupil. Each picture may be designated by an appropriate word or title, which can be reproduced at the openings 7 by manipulating the keys 9 until the proper letters are exhibited in correct order. It is obvious, however, that the alphabet-wheels can be used in spelling-exercises without referring to the pictures or characters on the pictorial strip, which can therefore be omitted or be covered by a screen.

What I claim is—

1. In a kindergarten teaching apparatus, the combination, with a flanged alphabet-wheel, of a key-lever having a standard at one end, a cord attached to the upper part of said standard and arranged in frictional contact with the flange of the alphabet-wheel, a spring attached to the other end of said cord, and a support for said spring, substantially as described.

2. In a kindergarten teaching apparatus, the combination, with a cup-shaped or flanged alphabet-wheel having ratchet-teeth struck from its closed side, of a weighted pawl pivoted above said alphabet-wheel in position to engage its ratchet-teeth and prevent backlash, said pawl being provided with a pivotal bearing on each side of the ratcheted alphabet-wheel, and having a cross-piece or brace that extends across the flange of the wheel to stiffen the pawl and connect its pivotal bearings, substantially as described.

3. In a kindergarten teaching apparatus, the combination of a series of flanged alphabet-wheels having projecting ratchet-teeth, pawls engaging said teeth to prevent backlash, means for independently rotating the alphabet-wheels, and a casing having in its face openings to expose the letters or characters on the wheel-flanges, and provided between said openings with segmental grooves projecting from the face of the casing to receive the ratchet-teeth of the alphabet-wheel and permit the letters on the wheel-flanges to be exposed in close proximity to the openings in the face of the casing, substantially as described.

4. A kindergarten teaching apparatus, comprising the wood cabinet containing a traveling pictorial strip rotating alphabet-wheels having ratchet-teeth and key-levers for the wheels, and a front wall to the cabinet composed of a sheet of metal provided with the top opening, 6, for exposing the pictures, a transverse line of openings, 7, for exposing the alphabet-letters, grooves 10, for the ratchet-teeth, and a transverse bottom opening, 8, through which the keys project, and having its top, bottom, and opposite side edges bent inward to form flanges, which are secured to the inner sides of the cabinet, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HOWARD BODEY.

Witnesses:
JAMES A. RUTHERFORD,
GEO. W. REA.