(No Model.) 2 Sheets—Sheet 1.

# E. A. COOPER & F. SIBLEY.

## EDUCATIONAL TOY.

No. 304,179. Patented Aug. 26, 1884.

Fig. 1.


Fig. 2.

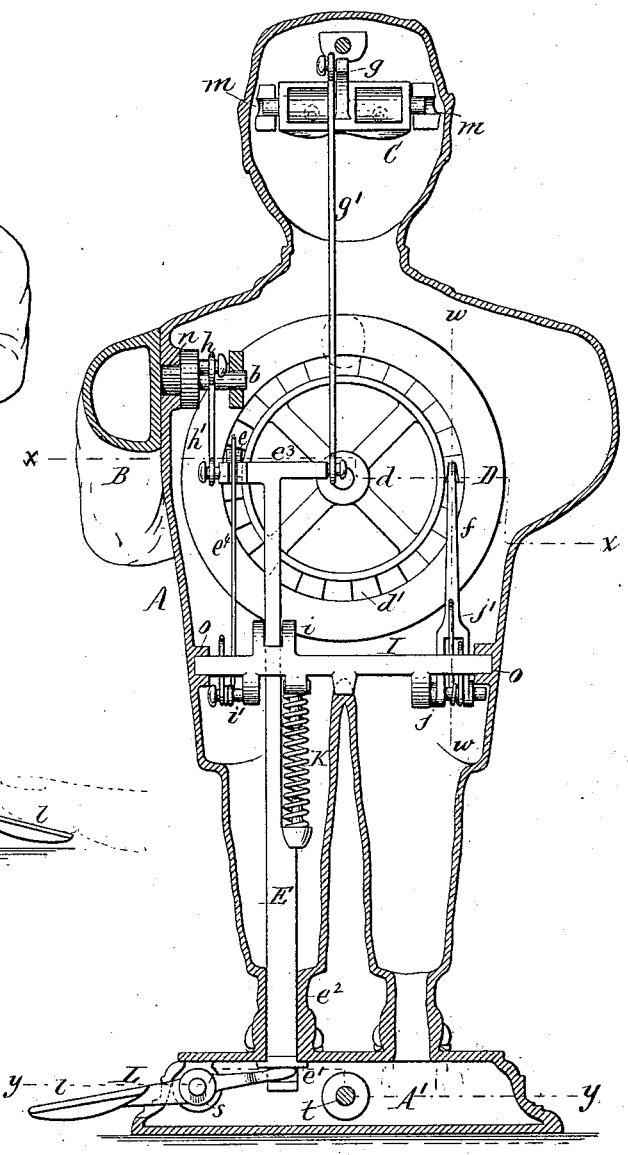
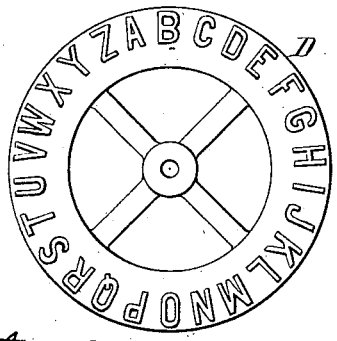



Fig. 3.




Witnesses.
Theo. L. Popp
Geo. E. Pittman

Inventors.
Edward A. Cooper
Frank Sibley

By Wilhelm & Konrad Attorneys.

(No Model.) 2 Sheets—Sheet 2.

# E. A. COOPER & F. SIBLEY.

## EDUCATIONAL TOY.

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Fig. 4.

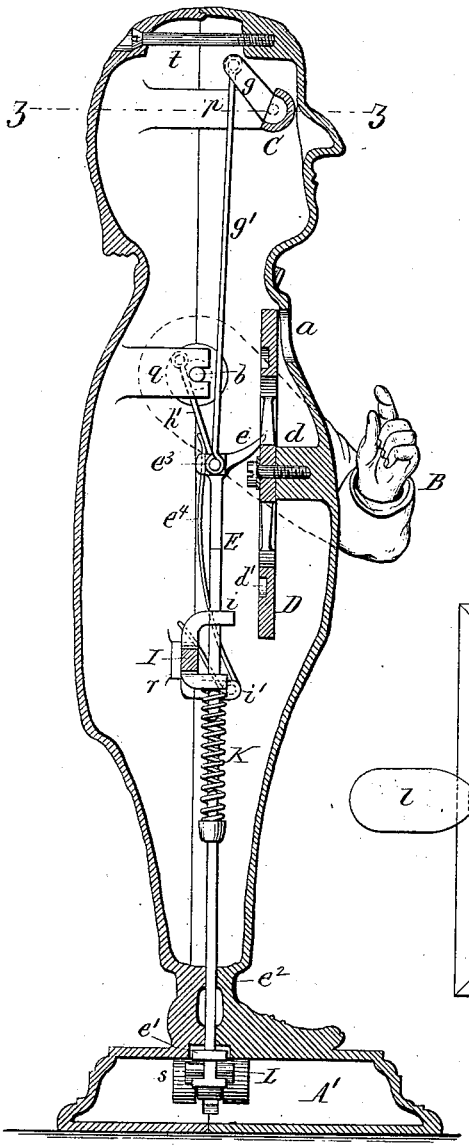



Fig. 5.

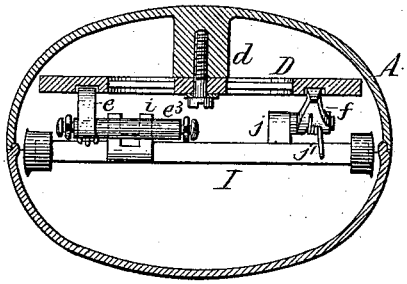



Fig. 6.

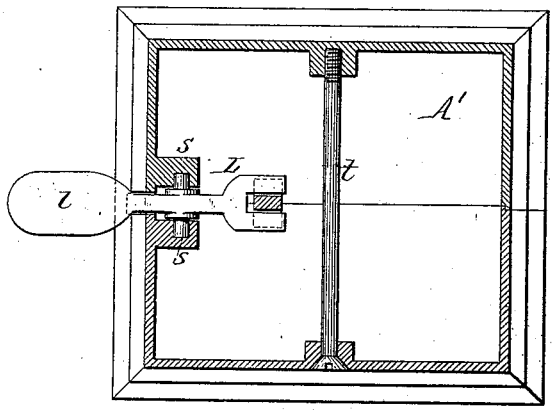



Fig. 7.

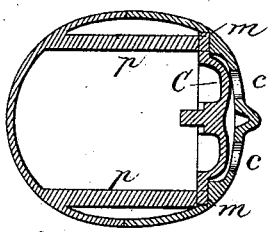
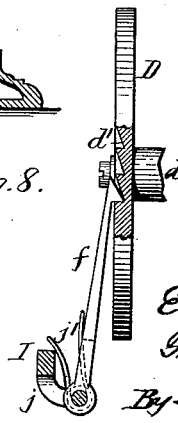



Fig. 8.




Witnesses:
Theo. L. Popp.
Geo. E. Pitman.

E. A. Cooper
Frank Sibley
} Inventors.
By Wilhelm & Bonner
Attorneys.

# UNITED STATES PATENT OFFICE.

EDWARD A. COOPER AND FRANK SIBLEY, OF BUFFALO, NEW YORK.

## EDUCATIONAL TOY.

SPECIFICATION forming part of Letters Patent No. 304,179, dated August 26, 1884.

Application filed May 27, 1884. (No model.)

*To all whom it may concern:*

Be it known that we, EDWARD A. COOPER and FRANK SIBLEY, residing at the city of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Educational Toys, of which the following is a specification.

This invention relates to the construction of a toy figure which exposes the letters of the alphabet in succession by means of suitable operating mechanism, and which is provided with other moving parts, whereby the toy is rendered attractive and amusing to children.

Our invention consists of the improvements in the construction of the toy, which will be hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, consisting of two sheets, Figure 1 is a front elevation of our improved toy. Fig. 2 is a vertical sectional elevation on an enlarged scale. Fig. 3 is a face view of the wheel containing the letters of the alphabet. Fig. 4 is a sectional elevation at right angles to Fig. 2. Figs. 5 and 6 are horizontal sections in lines *x x* and *y y*, Fig. 2, respectively. Fig. 7 is a horizontal section in line *z z*, Fig. 4. Fig. 8 is a vertical section in line *w w*, Fig. 2.

Like letters of reference refer to like parts in the several figures.

A represents a hollow figure representing a schoolmaster or other suitable character, and forming the supporting-frame for the movable parts of the mechanism.

*a* is an opening formed in the front plate or portion of the hollow figure A, and made of the proper size to expose one letter or character at a time.

B is a movable arm pivoted to one side of the hollow figure A, and bent so as to point toward the opening *a*.

*c c* represent the eye-openings in the head of the figure, and C a movable eye-plate pivoted in the head in rear of the eye-openings, so as to expose the eyes, which are painted or otherwise represented on the front side of the plate C through the openings *c*.

D is a wheel, which is provided on its front side with the letters of the alphabet or other suitable characters arranged in an annular row. The wheel D is mounted within the hollow figure A upon a horizontal arbor, *d*, in such manner that one of the letters or characters on the wheel is exposed through the opening *a* at a time as the wheel is turned on its pivot.

*d'* represents a ratchet-ring formed on the rear side of the wheel D concentric with its axis. *e* represents the actuating-pawl, and *f* the detent-pawl engaging with the ratchet-ring *d'* on opposite sides of the arbor *d*.

E represents a vertical sliding bar arranged within the hollow figure A, and projecting with its lower end through one of the hollow legs into the hollow base A' of the figure, where it is provided with stops *e'*, which limit the upward movement of the bar E. The bar E is guided in the lower portion of one of the legs, as shown at $e^2$.

$e^3$ is a cross piece or head formed at the upper end of the bar E. The actuating-pawl *e* is rigidly secured to one side of the cross-piece $e^3$, and held in engagement with the ratchet-ring by a spring, $e^4$.

*g* represents an arm formed on the rear side of the pivoted eye-plate C, and *g'* is a rod connecting the arm *g* with the cross-piece $e^3$, so that the eyes are moved simultaneously with the wheel D.

*h* represents an arm secured to the pivot *b* of the movable arm B within the hollow figure A, and *h'* is a rod connecting the arm *h* with the cross-piece $e^3$, so that the arm is moved simultaneously with the wheel D, thereby calling attention to the new letter, which is exposed by the change in the position of the wheel.

I represents a cross-piece rigidly secured within the hollow figure A, and provided with lugs *i*, between which the bar E is guided. The lower end of the spring $e^4$ is secured to a stud, *i'*, formed on the bar I, and the upper end of said spring bears against the rear side of the cross-piece $e^3$. The detent-pawl *f* is pivoted to a stud, *j*, formed on the bar I, and is held in engagement with the ratchet-ring *d'* by a spring, *j'*.

K represents a coiled spring interposed between the bar I and a projection formed on the bar E, so as to return the latter to its lowest position when it is released.

L represents the actuating-lever pivoted in the base A', and engaging with its inner end with the lower end of the bar E. The outer end of the lever L extends through a slot in the

side of the base A′, and terminates in a thumb-piece, *l*.

The hollow figure, with its base, is composed of a front and rear portion, whose joint is arranged in a vertical plane transversely to the figure. The front portion is provided with sockets *m* for the reception of the pivots of the eye-plate, with a socket, *n*, for the reception of the arm-pivot *b*, and with sockets *o* for the reception of the ends of the cross-bar I. The rear portion of the figure is provided with projections *p*, *q*, and *r*, respectively, which register with the sockets *m*, *n*, and *o*, and confine the parts seated therein. The two portions of the base are provided with sockets *s* for the reception of the pivot of the lever L.

The two parts of the figure are secured together by suitable screw-bolts, *t*. Upon depressing the outer end of the lever L, the bar E is raised, thereby moving the wheel D forward the length of one tooth by means of the pawl *e* and swinging the arm B and the eye-plate C downwardly on their pivots. Upon releasing the lever L, the bar E is moved downwardly and returned to its former position by the reaction of the spring K, and the arm B and eye-plate C are swung upwardly on their pivots. This movement of the arm B tends to draw the attention to the new letter which is exposed through the opening *a* by the movement of the wheel D. The bar E is shown in the elevated position in Fig. 2. As the bar E descends the actuating-pawl *e* slides over the ratchet-teeth, and the detent-pawl *f* prevents any backward movement of the wheel. Every time the hand-lever L is operated the wheel D is moved so as to expose a new letter, and the arm and eyes are moved at the same time, whereby the attention of the observer is particularly called to the change which has taken place, and in this manner the successive appearance of the letters of the alphabet is accompanied by movements of the figure, which render the toy attractive and entertaining to children.

The several parts of the figure are easily constructed of cast-iron, and the moving parts and actuating mechanism are very simple and readily put together.

We claim as our invention—

1. The combination, with a hollow figure provided at its front with an opening, *a*, of a wheel, D, arranged in said figure, and provided with an annular row of characters which are exposed in part through said opening, and mechanism, substantially as described, whereby an intermittent rotary motion is imparted to said wheel, substantially as set forth.

2. The combination, with a hollow figure provided with an opening, *a*, of a wheel, D, provided with an annular row of characters, an actuating-pawl, *e*, bar E, hand-lever L, and detent-pawl *f*, substantially as set forth.

3. The combination, with a hollow figure provided with an opening, *a*, of a movable wheel, D, provided with an annular row of characters exposed in part through said opening, and a movable arm which is actuated simultaneously with said wheel, substantially as set forth.

4. The combination, with a hollow figure provided with an opening, *a*, of a movable wheel, D, provided with an annular row of characters exposed in part through said opening, and a movable eye-plate, which is actuated simultaneously with said wheel, substantially as set forth.

5. The combination, with a hollow figure provided with an opening, *a*, of a movable wheel, D, provided with an annular row of characters exposed in part through said opening, a movable arm, and a movable eye-plate, which are actuated simultaneously with said wheel, substantially as set forth.

6. The combination, with the figure A, provided with opening *a*, and the wheel D, provided with an annular row of characters, of the pivoted arm B, provided with an arm, *h*, the rod E, pawl *e*, connecting-rod *h*, and hand-lever L, substantially as set forth.

7. The combination, with the figure A, provided with opening *a*, and the wheel D, provided with an annular row of characters, of the pivoted eye-plate C, provided with an arm, *g*, the rod E, pawl *e*, connecting-rod *g′*, and hand-lever L, substantially as set forth.

8. The combination, with the figure A, provided with opening *a*, and the wheel D, provided with an annular row of characters, of the pivoted arm B, provided with an arm, *h*, pivoted eye-plate C, provided with an arm, *g*, rod E, connecting-rods *h′ g′*, and hand-lever L, substantially as set forth.

9. The combination, with the hollow figure A, of the cross-bar I, provided with guide-lugs *i*, rod E, provided with pawl *e*, wheel D, spring $e^4$, and detent-pawl *f*, substantially as set forth.

Witness our hands this 20th day of May, 1884.

EDWARD A. COOPER.
FRANK SIBLEY.

Witnesses:
JNO. J. BONNER,
CARL F. GEYER.