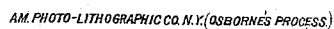


Toy Puzzles.

Patented March 11, 1873.



UNITED STATES PATENT OFFICE.

BENJAMIN F. ELLIS, OF NEWTON, PENNSYLVANIA.

IMPROVEMENT IN TOY PUZZLES.

Specification forming part of Letters Patent No. 136,645, dated March 11, 1873.

To all whom it may concern:

Be it known that I, BENJAMIN F. ELLIS, of Newton, in the county of Bucks and State of Pennsylvania, have invented a new and Improved Puzzle, of which the following is a specification:

My invention consists of a puzzle comprising two or more U-shaped bows of wire, with a ring formed in each end, a cross-bar for each bow passing through the rings, and having a similar ring at each end, the two being connected together by the large bow passing through the rings of the cross-bar of the small bow, with which bows and cross-bars is a large ring made in two semicircular parts, which in working out the puzzle is to be worked on and off the small bow through the rings and over the ends of the bows and cross-bars, as will be hereinafter described.

In the accompanying drawing the several parts of the puzzle are represented in ten different views illustrative of the different operations to be performed in putting the large ring on the small bow in the order of their performance; also for taking it off, the order of the operations being reversed.

A represents the large bow; B, its cross-bar; C, the small bow; D, its cross-bar; and E, the large ring. No. 1 represents the rings of cross-bar B; 2, the rings of the large bow; 3, the rings of cross-bar D; and 4, the rings of small bow C. The cross-bar B passes through the rings 2 of large bow, and has its rings 1 formed on the ends outside of the rings of bow A; they are large enough to prevent the cross-bar from being withdrawn. The bow A passes through the rings 3 of cross-bar D, and its rings 2; also the cross-bar B prevents it from being drawn through rings 3. Cross-bar D passes through rings 4 of the small bow C, the same as the cross-bar B passes through rings 2, and like it the rings 3 are formed on the ends, so that it cannot be withdrawn. The withdrawal is also prevented by the bow A.

The large ring is made in two semicircular halves, which are jointed together at F, so that it can be doubled into the form of a semicircle.

To put the ring E on the small bow C, the large bow A and the cross-bar B are held in the left hand, as shown in Fig. 1, the bow A being horizontal, and the small bow C hanging down; the ring E is then presented by the other hand folded, as shown in the figure, one end passed through ring 3 over rings 1 and 2; then through No. 2 over No. 1, and back out of 2 and 3, which brings it to the position represented at E, Fig. 2. The position E², Fig. 1, and E³, Fig. 2, illustrate the manner of performing this operation. Next the end of ring E is put through rings 4, 3, and 2, over 1 and out of 2, as indicated in Fig. 3; then over 1 and 2, as shown in Fig. 4; then out of No. 3, as in Fig. 6; then over 3, 1, and 2, Fig. 7; then through No. 2 over No. 1, Fig. 8; then out of No. 2 and 4, and through 2 over 1, Fig. 9; then out of No. 2, as in Fig. 10; after which, being swung over rings 1, 2, 3, and 4, it will hang on the small bow C.

To take ring A off these operations are reversed—that is to say, it is swung over rings 4, 3, 2, and 1, and doubled, as in Fig. 10; the end passed through No. 2, over No. 1, and out of No. 2; then through Nos. 4 and 2 over 1 and out of 2; then over 1, 2, and 3, through No. 3, over Nos. 1 and 2, through No. 2, over No. 1, and out of Nos. 2, 3, and 4; then through Nos. 3 and 2, over No. 1, and out of No. 2; then over Nos. 2 and 1, and out of No. 3.

By the same mode the large ring can be shifted onto a third bow and off from it.

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

The combination of two or more bows and cross-bars and a ring, E, the bows and cross-bars having rings in the ends and connected together, as described, and the large ring E being made in two parts jointed together, substantially as specified.

BENJAMIN FRANKLIN ELLIS.

Witnesses:

GEO. A. JENKS,
JOHN STACKHOW.