

PATENT SPECIFICATION (11)

1 544 029

8

1 544 029

- (21) Application No. 48132/77 (22) Filed 18 Nov. 1977 (19)
 (31) Convention Application No. 5736/76 (32) Filed 20 Dec. 1976 in
 (33) Denmark (DK)
 44) Complete Specification published 11 April 1979
 (51) INT. CL.³ A63H 33/04
 (52) Index at acceptance
 A6S 6B 6C1B 6EX
 (72) Inventor ERLING THUE DIDERIKSEN



(54) ROTATABLE ELEMENT FOR TOY BUILDING SETS

(71) We, INTERLEGO A.G., a Company organised and existing under the laws of Switzerland, of 3 Sihlbruggstrasse, Baar, Switzerland, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention generally relates to toy building sets comprising hollow box-shaped elements provided with engagement studs or projections of the kind specified in British Patent No. 866,557 and, more particularly, to a rotatable element of a similar kind to that described in British Patent No. 1,017,034.

According to the present invention, a rotatable element for toy building sets comprise a base plate having a circular recess extending from the top surface and a cylindrical disc pivotally mounted in the recess for rotational movement relatively to the base plate, the base plate having a bottom comprising four side walls and a socket member connected to the side walls co-axially with the circular recess, the disc having a bottom face formed with a pivot rotatably mounted in the socket member and a top face formed with a number of engagement studs disposed adjacent the periphery of the disc, so as to extend partly beyond the periphery for sliding contact with the top face of the base plate during the rotation of the disc. Such an element comprises only two components, viz., a base plate and a disc and is of simple and inexpensive construction, suitable for mass production by injection moulding of thermoplastic or thermosetting materials.

Preferably the base plate is square so as to have four side walls around its bottom face with four ribs extending from the middle of respective side walls to support the socket and the bottom of the base plate comprises four identical openings each defined by the wall of the socket member, two adjacent side walls of the base plate and two adjacent ribs inter-connecting the socket member with the side walls, the shape of the openings being such as to provide coupling means for

engagement studs on an adjacent element of the toy building set. In this way the rotatable element can connect together adjacent elements in a toy building set of the kind referred to so that they are capable of relative rotation.

A construction in accordance with the invention will now be described, by way of example, with reference to the accompanying drawings, in which:—

Figure 1 is a plan view of a base plate forming part of the element;

Figure 2 is an underneath plan view of the base plate;

Figure 3 is a plan view of a disc also forming part of the element;

Figure 4 is an axial section taken on the line IV—IV of Figure 3;

Figure 5 is an underneath plan view of the disc seen in Figure 3;

Figure 6 is a plan view of the complete rotatable element with the disc mounted in the base plate; and

Figure 7 is an axial sectional view taken on the line VII—VII of Figure 6.

In the form shown in the drawings, the rotatable element comprises a square base plate 1, as shown in Figures 1 and 2, having an upper surface 1a and a circular recess 2 therein for a cylindrical disc 3, as shown in Figures 3, 4 and 5. The underface of the disc 3 is provided with a centrally disposed pivot 3c for pivotally mounting the disc 3 in a cylindrical bushing or socket member 6 in the base plate.

The top face of the disc 3 is provided with four engagement studs 3a symmetrically disposed with respect to the centre of the disc, adjacent the periphery thereof and extending beyond the periphery, so as to present bottom faces 3ax for slideable contact with the top face 1a of the base plate during the rotation of the disc.

The top faces of the engagement studs 3a are shown as provided with cylindrical recesses 3ay providing for saving of material during the moulding of the disc. These recesses 3ay may also receive coupling studs on an adjacent element of the building set,

9

so as to provide for assembly of such elements with the disc 3.

As shown in Figures 4 and 5, the pivot 3c is provided with a slit 3cy and a rim 3cx to form a snap lock for preventing axial displacement of the pivot 3c relatively to the socket in which it is pivotally mounted. The arrangement of the socket 6 in the base plate 1 can be seen from Figures 1, 2 and 7.

As shown in Figure 2, the base plate comprises a bottom face 1b which is integral with four side walls 4 defining a cavity. In this cavity, there is mounted a cylindrical bushing or socket member 6 having a cylindrical bore 6z for pivotally mounting of the pivot 3c. The external cylindrical face 6y of the socket member 6 is integral with four ribs 5 which are integral with the side walls 4, extending from the middle of each side, so as to support the socket member 6 in the cavity defined by the side walls. The annular bottom face of the socket member is designated as 6x and co-operates with the rim 3cx of the pivot 3c to provide for the snap locking effect, when the pivot is inserted in the bore 6z with a slight deformation of the material permitted by the slit 3cy.

As shown in Figure 2, the bottom face 1b of the base plate together with the side walls 4, the ribs 5 and the outer cylindrical face 6y of the socket 6 defines four identical sections 7 of the circular aperture 2 in the base plate, and the shape of these apertures is such as to provide coupling means for clamping engagement studs on an adjacent element of the building set.

Thus, the rotatable element according to the invention provides for relatively rotatable connection of a pair of conventional building elements having respective sets of engagement studs for connection to the studs 3a on the disc 3 and for clamping in the apertures 7 of the base plate 1.

WHAT WE CLAIM IS:—

1. A rotatable element for toy building sets comprising a base plate having a circu-

lar recess extending from the top surface and a cylindrical disc pivotally mounted in the recess for rotational movement relatively to the base plate, the base plate having a bottom comprising four side walls and a socket member connected to the side walls co-axially with the circular recess, the disc having a bottom face formed with a pivot rotatably mounted in the socket member and a top face formed with a number of engagement studs disposed adjacent the periphery of the disc, so as to extend partly beyond the periphery for sliding contact with the top face of the base plate during the rotation of the disc.

2. A rotatable toy element according to claim 1, in which there are four symmetrically arranged cylindrical engagement studs on the top face of the disc.

3. A rotatable element according to claim 1 or claim 2, in which the base plate is square so as to have four side walls around its bottom face with four ribs extending from the middle of respective side walls to support the socket.

4. A rotatable toy element according to claim 3, wherein the bottom of the base plate comprises four identical openings, each defined by the wall of the socket member, two adjacent side walls of the base plate and two adjacent ribs inter-connecting the socket member with the side walls, the shape of the openings being such as to provide coupling means for engagement studs on an adjacent element of the toy building set.

5. A rotatable element for toy building sets substantially as described and as illustrated with reference to the accompanying drawings.

For the Applicants:—
GILL, JENNINGS & EVERY,
Chartered Patent Agents,
53/64 Chancery Lane,
London, WC2A 1HN.



1,544,029

2

so as to provide for assembly of such elements with the disc 3.

As shown in Figures 4 and 5, the pivot 3c is provided with a slit 3cy and a rim 3cx to form a snap lock for preventing axial displacement of the pivot 3c relatively to the socket in which it is pivotally mounted. The arrangement of the socket 6 in the base plate 1 can be seen from Figures 1, 2 and 7.

As shown in Figure 2, the base plate comprises a bottom face 1b which is integral with four side walls 4 defining a cavity. In this cavity, there is mounted a cylindrical bushing or socket member 6 having a cylindrical bore 6z for pivotally mounting of the pivot 3c. The external cylindrical face 6y of the socket member 6 is integral with four ribs 5 which are integral with the side walls 4, extending from the middle of each side, so as to support the socket member 6 in the cavity defined by the side walls. The annular bottom face of the socket member is designated as 6x and co-operates with the rim 3cx of the pivot 3c to provide for the snap locking effect, when the pivot is inserted in the bore 6z with a slight deformation of the material permitted by the slit 3cy.

As shown in Figure 2, the bottom face 1b of the base plate together with the side walls 4, the ribs 5 and the outer cylindrical face 6y of the socket 6 defines four identical sections 7 of the circular aperture 2 in the base plate, and the shape of these apertures is such as to provide coupling means for clamping engagement studs on an adjacent element of the building set.

Thus, the rotatable element according to the invention provides for relatively rotatable connection of a pair of conventional building elements having respective sets of engagement studs for connection to the studs 3a on the disc 3 and for clamping in the apertures 7 of the base plate 1.

WHAT WE CLAIM IS:—

1. A rotatable element for toy building sets comprising a base plate having a circu-

lar recess extending from the top surface and a cylindrical disc pivotally mounted in the recess for rotational movement relatively to the base plate, the base plate having a bottom comprising four side walls and a socket member connected to the side walls co-axially with the circular recess, the disc having a bottom face formed with a pivot rotatably mounted in the socket member and a top face formed with a number of engagement studs disposed adjacent the periphery of the disc, so as to extend partly beyond the periphery for sliding contact with the top face of the base plate during the rotation of the disc.

2. A rotatable toy element according to claim 1, in which there are four symmetrically arranged cylindrical engagement studs on the top face of the disc.

3. A rotatable element according to claim 1 or claim 2, in which the base plate is square so as to have four side walls around its bottom face with four ribs extending from the middle of respective side walls to support the socket.

4. A rotatable toy element according to claim 3, wherein the bottom of the base plate comprises four identical openings, each defined by the wall of the socket member, two adjacent side walls of the base plate and two adjacent ribs inter-connecting the socket member with the side walls, the shape of the openings being such as to provide coupling means for engagement studs on an adjacent element of the toy building set.

5. A rotatable element for toy building sets substantially as described and as illustrated with reference to the accompanying drawings.

For the Applicants:—
GILL, JENNINGS & EVERY,
Chartered Patent Agents,
53/64 Chancery Lane,
London, WC2A 1HN.