DOLL WITH ROTATABLE HEAD HAVING INTERCHANGEABLE FRONT AND BACK PARTS

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

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ABSTRACT OF THE DISCLOSURE

The disclosure covers dolls in which the face, head, and limb members may be removed from the torso and replaced with different ones, the interchangeable elements being detachably held in rotatably adjustable position on the torso of the doll by magnetic means which are incorporated in and made an inherent part of the doll construction. The head has interchangeable back and face portions and is rotatably joined to the torso.

BACKGROUND OF THE INVENTION

My invention pertains to the field of art generally described as the doll and toy industry concerned with the amusement and education of children. These are generally found under Patent Office classification 46, subclasses 162 through 173.

The need for dolls which provided for readily changing their appearance and configuration in order to retain the interest of the user has been felt for some time. Numerous dolls have been patented and placed on the market which provide for various types of removable joints in the doll permitting these changes. These have in general involved various mechanical interlocking and snap-on type of connections. These were all objectionable in that they were difficult and cumbersome to use, wore out rapidly and thus terminated their usefulness and in some cases were actually hazardous for the youngsters to operate. Most of the previous dolls were also of an old vintage and were made at a time when the art of molding was not well developed. Advancements in the later art, particularly with regard to many of the new plastics, led the way to the discovery of my invention as set forth more fully below.

SUMMARY OF THE INVENTION

My invention provides for the insertion of permanent magnets and magnetic material into the body of the elements of the doll where the joints are to be made. Modern molding techniques have made it possible to do this very conveniently at the time the doll members are fabricated. Modern techniques have likewise permitted a very simple geometry to be used at these points, thereby making it possible for a youngster to assemble, disassemble, and make changes in the doll with a minimum of skill or effort. A doll constructed in the manner of my invention also has an indefinite life insear as the wear and tear of the joints is concerned and is entirely safe for a youngster to use.

DESCRIPTION OF THE DRAWINGS

Reference should now be had to the drawings in which:

FIG. 1 shows an assembled doll as it appears in a typical embodiment.
FIG. 2 is a side view of one front head embodiment.
FIG. 3 is a side view of an alternate front head embodiment.
FIG. 4 is a side view of one rear head embodiment.
FIG. 5 is a side view of an alternate rear head embodiment.
FIG. 6 shows a cut-away section of the top of a doll torso.
FIG. 7 is a cut-away section showing the bottom of a doll torso and a removable leg member.
FIG. 8 is a partial cross-section showing the member element of my invention.
FIG. 9 is a partial isometric view showing the head element of my invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now specifically to the drawings, there is seen the doll torso or body 1 shown completely in FIG. 1 and partly in FIG. 6 and FIG. 7. The front of the head or face 2 is seen on FIG. 1 and alternate embodiments on FIG. 2 and FIG. 3. The rear or back of the head 3 is seen on FIG. 3 with alternate embodiments on FIG. 4 and FIG. 5. Arm members 4 and leg members 5 are seen completely in FIG. 1 and partly in FIG. 7 and FIG. 8.

An important feature of my invention is the use of the magnetic elements for joining the removable parts. In the case of the head members, these are seen at 6. These may be made of any magnetic material, such as soft iron.

The elements in one of the main parts may be of magnetizable material as mentioned above, while the companion constitutes material which has been magnetized and comprises a permanent magnet. Thus, for example, the element 6 of FIG. 2 may be made of magnetizable soft iron, while the companion element 6 in FIG. 4 comprises a permanent magnet or vice-versa. These magnetizable strips are positioned in the mold prior to the formation of the front or rear of the head and when the molding is complete they are permanently imbedded in the material and form a permanent part of the doll structure. I have discovered that with modern methods of injection molding of most plastics this results in a superior type of construction not hitherto realized.

A similar method is used in connection with the other magnetic joints as will be evident from the rest of the description of my invention.

The head sections described above are equipped with inserting male connecting elements 7a and 7b which form an integral part of the head sections 2 and 3 and takes the general shape of a truncated cone. They are adapted for insertion into the head receiving female junction element 8, as seen on FIG. 6. This head receiving element 8 may be lined with a magnetic liner 9 and the head inserting element 7 may be provided with a magnetic jacket 10.

With these elements, as with the head elements described above, the magnetic liner 9 and the magnetic jacket 10 are made preferably of soft iron which is readily magnetizable, one being merely soft iron such as the other being converted to a permanent magnet. I prefer to make the permanent magnet on the female part of the doll torso since this is less likely to damage and demagnetization from handling.

In like manner the arm or leg members may be removable joined with the torso. Thus the male connecting element for inserting either an arm or a leg member 11, best seen on FIG. 8, is adapted to fit into the receiving female junction element in the torso 12, best seen on FIG. 7. In this case also the male element 11 is equipped with a magnetic jacket 13 and a female element 12 is equipped with a magnetic liner 14. The liner 14 is preferably made of soft iron and treated to comprise a permanent magnet, while the jacket 13 is of magnetizable material to be held in place when inserted.

The many advantages of the construction of my invention should now be evident to those skilled in the art. An important feature is the fact that the head section, as well as the arm and leg members, have means by which they may be swivelled around and changed in position.
relative to the torso without disengaging them or destroying the joints or connections with the body or torso. This means is the particular mating configuration of the junction and connecting elements. The integrity of the doll is thus maintained in any desired position of head or limbs, thus adding to its versatility and flexibility and contributing to the amusement value of the doll. This feature is not attained by any of the previous dolls in this class.

While I have described a preferred embodiment of my invention, I do not limit myself to the embodiments disclosed herein, except as I do so in the claim which follows.

I claim:

1. A doll having interchangeable members comprising:
   a body member;
   removable arm and leg members;
   junction elements positioned on said body member for receiving said removable arm and leg members;
   connecting elements positioned on said removable arm and leg members for connecting with said junction elements;
   permanent magnets fixedly positioned on said junction elements;
   magnetic material fixedly positioned on said connecting elements;
   said permanent magnets being disposed to engage
   said magnetic material;
   a removable head member comprising two vertical sections disposed to join one another along a predetermined line;
   a permanent magnet fixedly positioned on one of said sections along said line;
   magnetic material fixedly positioned on the other of said sections along said line;
   said permanent magnet being disposed to engage
   said magnetic material;
   a connecting element positioned at the base of each of said vertical head sections;
   a junction element positioned at the upper end of said body member for receiving each of said head section connecting elements in joined relation therein;
   permanent magnets fixedly positioned on said upper end junction element;
   magnetic material fixedly positioned on said head section connecting elements;
   said upper end permanent magnets being disposed to engage said head section magnetic material;
   said head section connecting element and said upper end junction element including means permitting relatively rotatable connection of said head members and body;
   whereby said vertical head sections may be removed from and replaced into said body member individually or together and said head member may be rotated with respect to said body member.

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