This invention relates to dolls, and more particularly concerns dolls having replaceable features such as hair, eyes, and the like.

Children who play with dolls obtain much pleasure by changing the appearance of the dolls. At present, they are able to do this chiefly by varying the doll's clothing or by changing the hair-style of the doll. In accordance with the present invention, the degree to which the appearance of a doll can be changed is greatly increased by providing replaceable and interchangeable wigs, eyes, ears, noses, eyebrows and mouths. Therefore, the amount of enjoyment and amusement a child can obtain from playing with a doll is increased many times since, by using appropriate features, the general appearance of the doll can be changed from that of a male person to that of a female, from that of an adult to that of a child, or from one character to another.

Accordingly, an object of the present invention is to provide an improved doll.

Another object is to provide a doll having improved replaceable features.

Another object is to provide a novel and unique doll head.

A further object is to provide an efficient means for removable securing eyes, ears, nose, and the like in the head of a doll.

Other and further objects and features of the present invention will be apparent from the following description taken in connection with the annexed drawings in which:

FIGURE 1 is a more or less schematic perspective of a doll head incorporating the features of the present invention.

FIGURE 2 is a schematic perspective of a basic doll head having the removable features removed from the head.

FIGURE 3 is an enlarged schematic front elevation of the portion of the head of FIG. 1 around one eye socket.

FIGURE 4 is a section taken on line 4—4 of FIG. 3.

FIGURE 5 is an enlarged front elevation of the mouth element used in the head of FIG. 1.

FIGURE 6 is a vertical section taken on line 6—6 of FIG. 5.

FIGURE 7 is an enlarged front elevation of one of the eyebrows of FIG. 1.

FIGURE 8 is a section taken on line 8—8 of FIG. 7.

FIGURE 9 is an enlarged section taken through the ear area in the head of FIG. 1, the section being taken on line 9—9 of FIG. 10.

FIGURE 10 is a side elevation of the ear of FIG. 9.

FIGURE 11 is a vertical section taken through the nose area of a head, that is similar to the head of FIG. 2, but does not have an integral nose.

FIGURE 12 is a fragmentary schematic side elevation of a second form of the head of the present invention, particularly showing a modified replaceable nose.

FIGURE 13 is a more or less schematic perspective of the doll head of FIG. 1 and FIG. 2 but having a set of features different then those of FIGURE 1.

FIGURE 14 is a schematic vertical section taken centrally through a third form of the doll head of the present invention.

FIGURE 15 is a side elevation, partly in section and partly broken away, of a replaceable nose element.

FIGURE 16 is a vertical section through a mouth element that is particularly adapted for use in the head of FIG. 14, the section being taken on line 16—16 of FIGURE 17.

FIGURE 17 is a front elevation of the mouth element of FIGURE 16.

FIGURE 18 is a fragmentary vertical section through the eye area of the head of FIG. 14, the section being taken on line 18—18 of FIG. 19.

FIGURE 19 is a fragmentary schematic front elevation of one of the eye areas of the head of FIG. 14.

In FIGURE 1, an embodiment 20 of the doll head of the present invention is illustrated which comprises a basic head (FIG. 2), a removable wig 24, removable eyes 26, eyebrows 28 and 29, ears 30, and mouth 32. The basic head 22, which may have a conventional neck attached thereto, may be made of the usual plastic or rubber material, and is provided with a plurality of identical sockets (FIG. 2), two sockets 34A being secured in the head to removably receive the eyes, two smaller sockets 34B to receive the eyebrows, two sockets 34C (one only being shown) to receive ears, a socket 34D to receive the mouth, and four sockets 34E (two only being shown) to receive the wig. Each socket consists of an inner annular member 35 (FIG. 4) that is disposed close against the inner surface of the wall 32A of the doll head, and a locking member 36 that has an annular flange 36A disposed against a shoulder formed by a recess 38 in the wall of the head. The locking member 36 has a central tubular portion 36B, that extends through an opening in the wall and through an opening in the inner member 35. The inner end of the tubular portion 36B is peened or bent over to form a flange 36C that bears against the annular member 35 to lock the socket in the wall. The socket 34 may be formed in the same manner as the socket of any of the well-known snap fasteners, used on clothing and the like, is formed. In any form, the socket must have a central longitudinal passage, and the outer flange 36A must be made of a material, such as steel, that can be gripped and held by a magnet.

Each removable element of the doll head, such as the eye 26 (FIGS. 3 and 4), is provided with a positioning member 40 which is disposed in closely guided relation in the central passage of the socket. Two spaced circular flanges 41 and 42 are formed integrally with the positioning rod 40, and the element 44 (FIG. 4) of plastic, rubber or other suitable material, on which the eye image is reproduced, as by painting, is bonded in any suitable manner to the flange 42. An annular magnet 46 is bonded by means of a suitable glue or mastic to the flange 41 so that, when the positioning rod 40 is disposed in the socket 36, the magnet 46 will contact and grip the ferro-magnetic flange 36A. With this arrangement, the eye is accurately positioned by the rod 40 and securely held in place by the engagement of the socket 36 with the magnet. The depth of the eye recess 38 in the wall of the hollow head should be coordinated with the combined thickness of the flange 36A, the magnet 46, and the flange 41 so that the eye element 44 will lie against the front surface of the head. Eye lashes may be painted or otherwise reproduced on the doll's face around the upper edge of the recess 38.

The mouth 32 (FIGS. 5 and 6) comprises a positioning rod 50 having two flanges 51 and 52 formed thereon. A magnet 53 is bonded to the flange 51 while a plastic mouth element 54, on which lips are painted, is bonded to the flange 52. The recess 55 (FIG. 5) in which the mouth socket 34D is locked, should have a depth such that the mouth element 54 lies flat against the face.
The two eyebrows 28 and 29 are identical but oppositely disposed. Accordingly, a description of eyebrow 28 (FIGS. 7 and 8) will be sufficient to disclose the structure of the eyebrow 29 also. The eyebrow 28 comprises a positioning rod 60 on which two flanges 61 and 62 are formed. A magnet 63 is bonded to flange 61, and an eyebrow element 64 of plastic material or the like, on which a representation of fine hair is painted, is bonded to flange 62.

Similarly, each ear 30 (FIGS. 9 and 10) comprises a positioning rod 70 on which flanges 71 and 72 are formed. A magnet 74 is bonded to flange 71, and an ear element 75 of plastic, rubber or the like is bonded to flange 72. The wig 24 may be of typical doll wig construction, having a relatively heavy inner liner, made of buckram, canvas, or the like, to which the hair is secured. The inner liner is secured, as by glue, to the outer flanges of four positioning rods, each of which is substantially identical to the positioning rod 70 of FIG. 9. A magnet is bonded to the inner flange of each positioning rod.

The four positioning rods are secured to the inner liner of the wig at locations corresponding to the locations of the four sockets 34E fixed to the head. Accordingly, to secure the wig to the head, each wig positioning rod is pressed into a corresponding socket until the associated magnet 34A contacts and grips the flange 34E.

When all the above-mentioned elements have been positioned in place on the basic head, the doll will appear as in FIG. 1. It will be evident that the wig may be replaced by other wigs having different colors and different hair-styles. Also, the eyes, mouth, ears, and eyebrows may be replaced by artificial having different characteristics of color, size, shape and the like. It is to be noted that the nose 77 is not replaceable. However, if a different nose is desired, it can be attached to the head in one of two ways. In FIG. 11 a removable nose 78 is shown. This nose is formed around and secured to an outer flange 79 of a positioning rod 80. A magnet 81 is bonded to the other flange 82 of the rod. The magnet 81 is arranged to engage and grip the outer ferromagnetic flange of a socket 83, which is identical to the previously mentioned sockets of FIG. 2, and is secured in a recess 85 formed in a thickened wall portion 87 of the basic head at the nose position.

If the head has the integral nose 77, a second nose such as the ball-shaped nose 90 of FIG. 12 can be positioned over the nose 77 by forming a recess in one side of the second nose 90, said recess conforming exactly to the outer configuration of the nose 77. To secure the nose 90 in the recess, two magnets 91 are secured to the outer surface of nose 90 on each side portion 77a and 77b of the nose, as indicated in dotted lines in FIG. 2. The surfaces of the recessed portion of the nose 90 that abut the nose surfaces 77a and 77b are provided with small plates of ferromagnetic material. The strength of the magnets 91 and the thickness of the nose portions 77a and 77b must be so coordinated that the noses 90 will be firmly held in place even though the plastic or rubber nose portions 77a and 77b come between the magnets and the metal plates of the nose 90.

The use of the magnets to secure the nose 90 to the integral nose 77 provides an arrangement wherein the basic doll head has an integral, natural-looking nose. While the replaceable noses may not be as natural looking as the nose 77, they will be used to achieve unusual or comic characterizations wherein this naturalness is not of prime importance. In FIG. 13 the basic doll head 22 of FIG. 2 is shown provided with such features that give the head the appearance of a clown's head. The ears 100, the eyes 101, the eyebrows 102, the mouth 103, and the wig 104 are similar to the corresponding parts previously described in that they are formed on positioning rods of the type described and are adapted to be held in place by the engagement of a magnet, secured to the positioning rod, with a ferromagnetic flange of a socket. Only the outer appearance of these members has been changed.

In the doll heads of FIG. 1 and 13, the eyes 26 and 101, the mouths 32 and 103, and the eye-brows 28 and 102 lie flat against the outer surface of the head 22. While the head 22 has the general shape of a normal head, the areas in the vicinity of the sockets 34 are generally flat to accommodate the relatively flat replaceable elements. If the areas at the sockets 34 must be curved to give a more pleasing appearance, the inner surface of the element is curved to conform to the curvature of the head. Accordingly, the replaceable elements always lie close against the head.

In FIGURE 14 a basic head 120 is illustrated wherein the head has the configuration of a human head and relatively deep recesses are provided to accommodate elements that are so shaped that they blend in with the contour of the head. A nose recess 125 has a socket 136 locked on its inner wall 125A. The socket has an outer ferromagnetic flange 126A that is adapted to be gripped by a magnet 128 that is bonded on a flange 139A of a positioning rod 130. The nose element 132, which may have the frontal appearance of the nose 77 of FIG. 2, is formed on the other flange 130B of the rod 130 and is the socket 136. The positioning rods 130 are identical to those previously described. The nose element 132 has a shape that blends smoothly with the contour of the face so that the doll has a very natural look. If a spherical clown nose 140 (FIG. 15) is to be used, it is formed on the outer flange 141B of a positioning rod 141 that is identical to the positioning rod 130 and is provided with a magnet 142. The nose 140 is so formed on the positioning rod 141A that the nose fits in the recess 125 as indicated in phantom lines in FIG. 14. It is to be noted that, since the positioning rod 140 and its magnet 141 are identical to the rod 130 and its magnet 128, the outer flanges 141B and 130B will be located in the identical positions in the recess when their associated positioning rods are inserted in the socket 126. Accordingly, if all noses are formed on identical positioning rods, the desired position of each nose relative to the outer edges of the recess 125 can be accurately obtained.

Similarly, a mouth recess 150 (FIG. 14) is provided with a socket 151 having a ferromagnetic inner flange 151A adapted to be gripped by a magnet 153 that is bonded to the inner flange 154A of a positioning rod 154. A pair of lips 155, which is identical to the positioning rod 154B of the rod, fits snugly in the recess 150. Both the recess and the lips may have a configuration of the lips of FIG. 6 when viewed from the front. If a pair of clown lips 160 (FIGURES 16 and 17) is to be used in the recess 150, they are formed on the outer flange 161A of a positioning rod 161 which is identical to the rod 154. The clown lips have a front configuration as shown in FIG. 17 and a cross section as shown in FIG. 16. The lips may have curved rear portions 163 and 164 which fit snugly in the concave portions 165 and 166, respectively (FIG. 14), of the basic head. Accordingly, the clown lips 160 will assume the position indicated by phantom lines in FIG. 14.

In FIGURES 18 and 19 one of two identical eye recesses 170 for the head of FIG. 14 is shown. A socket 171 is locked in each recess 170 and has a ferromagnetic flange 171A adapted to be gripped by a magnet 173 bonded on a flange 174A of a positioning rod 174. An eye element 176 is formed on the outer flange 174B. The eye elements 176 can be replaced by other eye elements which have different colors or configurations and are formed on positioning rods that are identical to the rod 174 (FIG. 18). Eye lashes 178 may be secured to the upper edge of each recess 170 to overhang the eye element in the recess.
Referring to FIG. 12, a head is shown having a mouth recess 184 in which a pair of lips 185 is inserted. A magnet 186, which is secured to the back wall 187 of the recess, magnetically grips a ferro-magnetic plate 188 bonded or otherwise secured to the rear of the pair of lips 185. It will be understood that replaceable ears, wigs, eyebrows, eyes and noses may be held in place on a doll head by a magnet secured to the inner surface of the wall of the doll's face at the several locations indicated by the sockets 34A–34E in FIG. 2. All that is necessary is that the part of the replaceable element that is to be positioned adjacent the magnet be provided with a ferro-magnetic plate, and that the magnet have sufficient power to attract and hold the plate even though the relatively thin wall of the doll head is disposed between the magnet and the ferro-magnetic plate. In one embodiment the doll can have the general appearance of the doll of FIG. 1 with the eyes, eyebrows and mouth painted, or otherwise reproduced on the surface of the head above the magnets which may be embedded in the wall or secured to the inner surface of the wall at these areas. Then, other feature-defining elements, which have ferro-magnetic members thereon, can be removably positioned over the painted areas to give the doll an entirely different appearance.

From the foregoing description it will be evident that the present invention provides a doll having features that can be easily inserted into place or removed from the head. The use of magnets for retaining the elements in place makes the insertion and removal of the elements particularly easy. The interaction of the positioning rods and sockets in which they are inserted assures accurate positioning of each element in the head.

Three forms of the doll head are featured in the present invention, that is, the basic head of FIGS. 1–2 wherein the eye elements hold the removable features close against the front surface of the head, the basic head of FIGURE 12 in which sockets are eliminated and the replaceable elements are held by magnets embedded in or secured to the wall of the head, and the basic head of FIGURE 14 wherein the removable elements are held in recesses in the head so that the doll head has a natural appearance.

It will be evident of course that it is within the scope of the present invention to provide a doll head in which less than all of the features are replaceable; the other features being formed in the manner such elements are usually provided in dolls. For example, a doll may be constructed according to the present invention wherein only the eye is replaceable, or only the nose or mouth is replaceable.

In the appended claims the term “feature-defining” element will be used to generally indicate any of the aforementioned replaceable ears, mouth, eyebrows, nose and eyes.

It will be appreciated that certain changes may be made in the disclosed structure without departing from the spirit and scope of the present invention. Accordingly, it should be understood that the present invention is limited only by the scope and proper interpretation of the annexed claims.

What we claim as our invention is:

1. A doll head comprising a basic head having an integral nose and having eye, ear, and mouth areas, eye, ear and mouth elements associated with said areas respectively, means for removably securing each of said elements of said basic head at the associated area magnets secured to said nose beneath the surface of said nose, and a supplemental nose element having ferromagnetic plates adapted to be removably gripped by said magnets.

2. A doll head comprising a basic head having eye, ear, nose and mouth areas, means defining a recess in said basic head at each of said areas, a retainer member having a flange of ferro-magnetic material disposed in each recess with the face of said flange spaced inwardly from the outer edges of said recess, a feature-defining element associated with each area, a magnet secured to said element and adapted to be placed in the recess at said area and in contact with said flange, the inner surface of said element being held in engagement with said basic head by the engagement of said magnet with said flange.

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