Jan. 16, 1934. S. MARCUS 1,943,736

APPARATUS FOR AND METHOD OF MOUNTING FITTINGS IN FLEXIBLE DOLL HEADS

Filed Nov. 4, 1932 2 Sheets-Sheet 1

Fig.1.

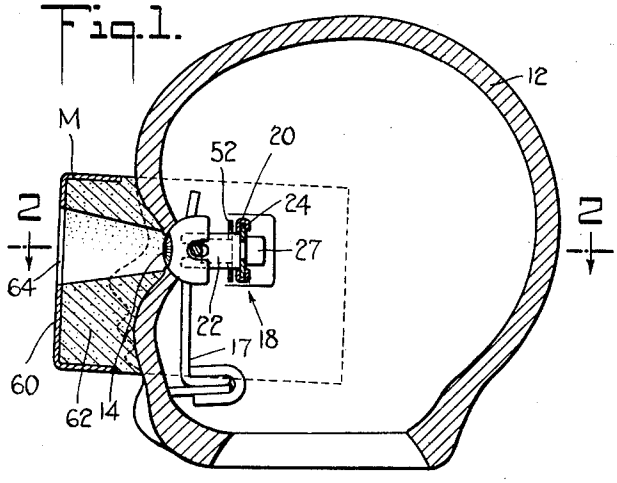


Fig.3.

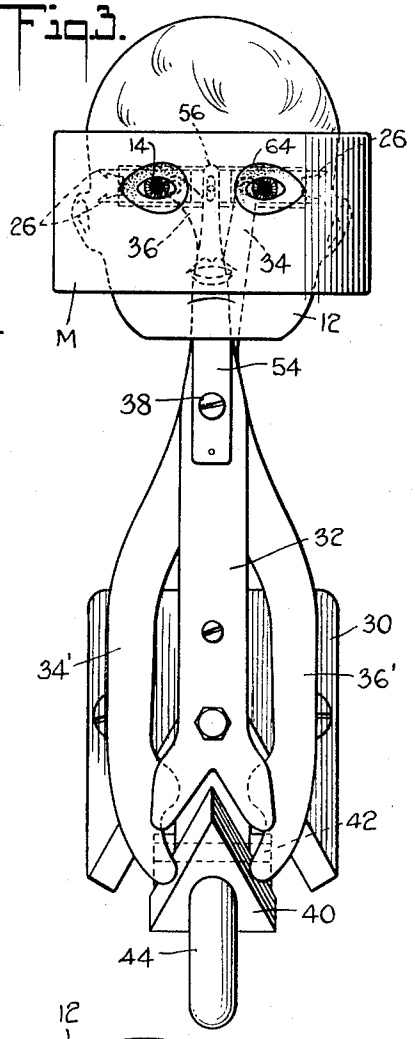


Fig.2.

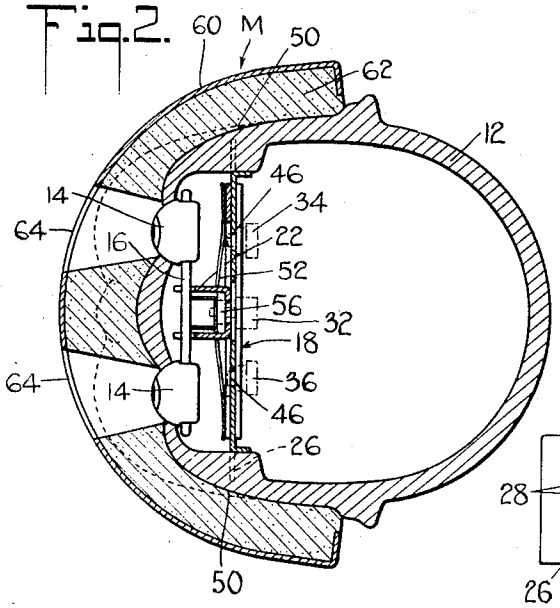
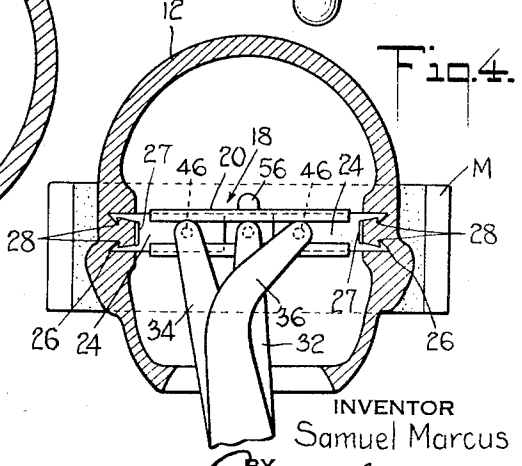


Fig.4.



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Fig. 5.

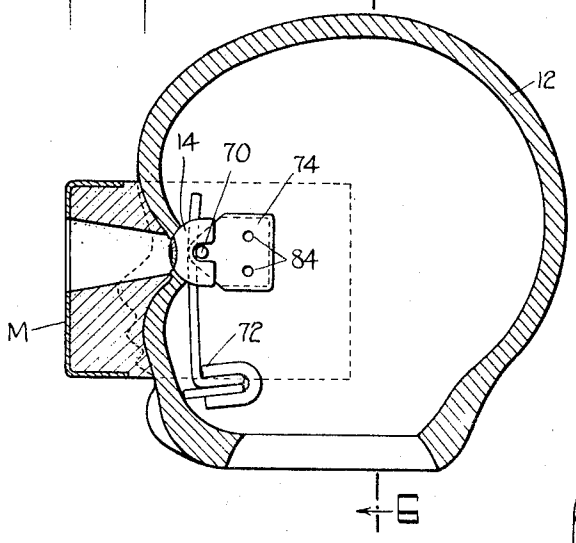
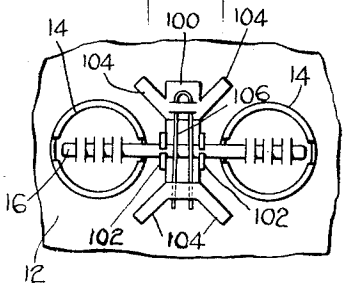


Fig. 11.



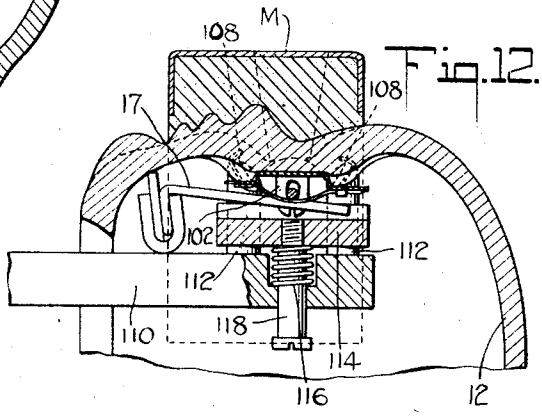


Fig. 12.

Fig. 6.

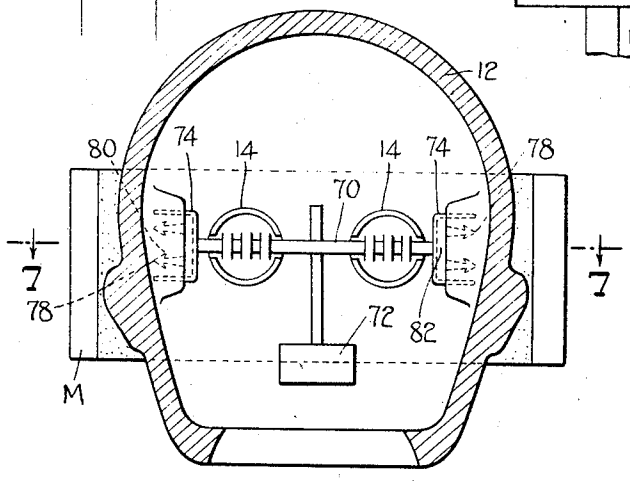


Fig. 8.

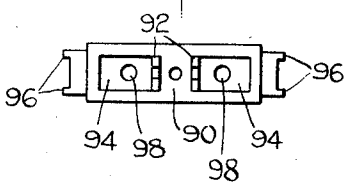


Fig. 7.

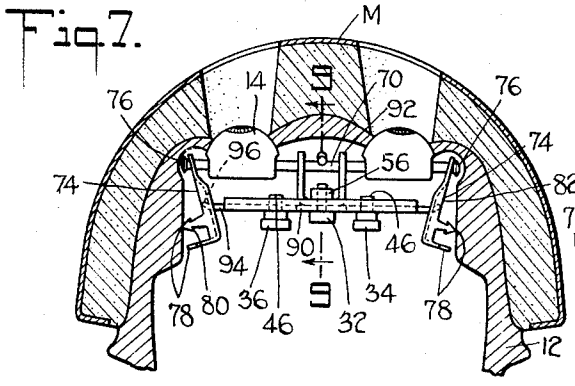


Fig. 9.

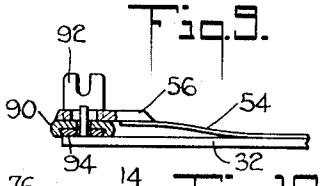
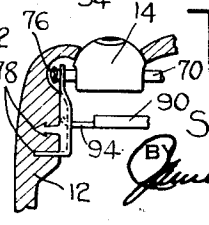


Fig. 10.



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UNITED STATES PATENT OFFICE

1,943,736

APPARATUS FOR AND METHOD OF MOUNTING FITTINGS IN FLEXIBLE DOLL HEADS

Samuel Marcus, Belle Harbor, N. Y., assignor to Margon Corporation, New York, N. Y., a corporation of New York

Application November 4, 1932. Serial No. 641,206

20 Claims. (Cl. 29—84)

This invention relates to dolls and particularly dolls having flexible heads and provided with fittings such as an eye set, and comprises apparatus for mounting such fittings in flexible heads.

Dolls having body or/and head parts made of flexible material such as rubber, have proved popular because of their closer resemblance to a natural child. Such flexible heads may be provided with movable eyes, and appropriate types of fitting for supporting the movable eyes in such flexible heads are disclosed in my copending application Ser. No. 634,315, filed Sept. 22, 1932. The primary and general object of the present invention resides in the provision of appropriate apparatus or tools for mounting eye sets or similar fittings in flexible doll's heads, and more particularly for mounting fittings provided with tangs or prongs in a rubber doll's head by embedding the tangs in the material of the head.

It is evident that a rubber doll's head, because of its flexibility, will tend to stretch or yield when attempting to embed attaching tangs therein, and a more specific object of the present invention is to restrain the parts of the head against such distortion, thereby holding the same to its natural shape and dimension at the parts of the head wall where the tangs are being embedded. As is understood by those skilled in this art, one of the most satisfactory ways of locating the tangs before embedding the same in the material of the head is by preliminarily placing the eye shells in the eye openings of the head and permitting the tangs to properly locate themselves to hold the eye shells in the aforesaid desired location. In dealing with rubber heads it is found that because of the flexibility of the head particularly around the eye openings, the desired relation between the eye shells and eye openings cannot be used as a positive indication for proper location of the support, fitting or mounting. For example, if a head is placed over an eye set and pressed downwardly with increased force, the head yields and the tangs of the fitting will be moved nearer to the eye openings. Accordingly, still another object of the present invention is to overcome the foregoing difficulty and to insure proper location of the tangs when embedding the same in the head. With this object in view I provide restraining or support means not only for the parts of the head affected by the pressure of the tangs when embedding the same, but also for supporting the front wall of the head in the region of the eye openings. More specifically, I preferably employ a restraining mask which engages and accurately fits the surfaces of the head entirely around the front wall portion thereof and preferably extending sidewardly beyond the temples to the side walls of the head.

It is evident that inasmuch as the heads in question are manufactured in various sizes and types, it is desirable to make the aforesaid mask conveniently and inexpensively available and adaptable to changes in size and style of head. With this object in view I have devised a mask comprising an outer casing which is rigid and which is provided with an open side or inner surface facing the wall of the head. This casing is filled with a set molded material as, for example, plaster of Paris, which material is molded in contact with a sample head so as to accurately fit the particular line of heads then being operated upon. By knocking out the plaster, the outer shell may be again used with a new filling of plaster properly molded to fit a different style of head.

It has already been pointed out that the fitting is preferably located by positioning the eye shells in the eye openings of the head. This may most effectively and expeditiously be accomplished by permitting the operator to observe the actual physical location of the eye shells in the eye openings. Such observation further permits the operator to make any necessary preliminary adjustments of the eye shells on the cross rod for proper alignment of the eyes. Accordingly, still another object of the present invention is to so design the aforesaid supporting or restraining mask that it will permit inspection of the eyes during the mounting operation, and for this purpose the mask is cut away to expose the eye openings. Specifically, the outer casing of the mask is provided with enlarged sight windows located near the eye openings, and the plaster filling is hollowed between the eye openings of the doll's head and the aforesaid windows.

Of course, the complete mounting apparatus comprises an appropriate mounting tool for embedding the prongs of the fitting in the material of the head, in combination with a restraining mask as previously described. In some cases the tool may be of conventional type, while in others it may be especially adapted to various kinds of fitting. A further object of the present invention resides in the provision of appropriate mounting tools for use in combination with a supporting mask for mounting selected kinds of eye set fittings in flexible doll's heads, specifically

the fittings already disclosed and described in my copending application heretofore referred to.

To the accomplishment of the foregoing and such other objects as will hereinafter appear, my invention consists in the mounting apparatus or tool elements, and their relation one to the other, as hereinafter are more particularly described in the specification and sought to be defined in the claims. The specification is accompanied by drawings in which:

Fig. 1 is a vertical section taken through a head supported by a mask embodying features of my invention;

Fig. 2 is a horizontal section taken in the plane of the line 2—2 in Fig. 1;

Figure 3 is a plan view of the complete mounting apparatus as used with a head;

Fig. 4 is a section explanatory of the tool shown in Fig. 3;

Fig. 5 is a vertical section taken through a head protected by my mask and provided with a modified form of eye set;

Fig. 6 is a vertical section taken in the plane of the line 6—6 in Fig. 5;

Fig. 7 is a horizontal section taken in the plane of the line 7—7 in Fig. 6, but adds an attachment used in conjunction with the tool of Fig. 3 for mounting the said eye set;

Fig. 8 is a plan view of the aforesaid attachment;

Fig. 9 is a detail showing the manner in which the attachment is applied to the end of the tool of Fig. 3;

Fig. 10 is a detail showing the side plate of the eye set in Figs. 5 to 7 after it has been embedded in the side wall of the doll's head by the mounting tool;

Fig. 11 is a rear elevation explanatory of a third form of eye set utilizing a spider plate mounted on the front wall of the head; and

Fig. 12 is a vertical section through a head and mounting apparatus for attaching the said eye set to the front wall of the head.

Referring to the drawings and particularly which, instead of being simply pointed in the 12 is shown provided with an eye set comprising eye shells 14 mounted on a cross rod 16 having a depending gravity weight 17 (shown only in Fig. 1) and carried on an appropriate support here exemplified by an extension bridge 18. This extension bridge may be of the type described in my copending application Ser. No. 634,314 heretofore referred to, which itself is conventional in comprising a channeled cross member 20 having forwardly extending bifurcated arms 22 for supporting the cross rod 16, and tang plates 24 which are slidable in channeled member 20. The outer ends of tang plates 24 are provided with tangs 26 doll's head. In mounting the eye set in the conventional manner, are preferably provided with rearwardly directed barbs or spurs 28 in the manner described in my aforesaid copending application. As is there explained, the use of barbs or spurs 28 is desirable so that the tangs will embed themselves in the flexible material of the head and hold to the side walls of the head despite extreme bending and distortion of the head, which might otherwise readily dislodge the carrier or bridge from the side walls of the head.

However, it will be understood from the description which follows that the use of such barbs is immaterial to the practice of the present invention which is equally valuable and necessary for mounting the eye set in the head regardless of whether or not the attaching prongs are barbed.

The tang plates 24 are initially retracted, and are spread apart when mounting the bridge in the head by an appropriate tool or expanding plier mechanism. A typical tool is shown in Figs. 2, 3, and 4 and comprises a base or standard 30 on which there is fixedly mounted a forwardly extending arm 32 arranged to act as a support for the bridge or eye set during the mounting operation. The tool further comprises arms 34 and 36 which are pivoted to arm 32 at a fulcrum 38. The arms 34 and 36 extend rearward respectively, as indicated at 34′ and 36′, the ends of said arms forming camming surfaces bearing against a movable wedge 40 which is journaled at 42 and operated by an upwardly projecting handle 44. It will be evident that by pulling handle 44 toward the doll's head, the wedge 40 will move toward the doll's head and spread arms 34′ and 36′ apart, thereby spreading the inner arms 34 and 36 apart. Arms 34 and 36 are preferably provided with pins 46 which engage mating holes in tang plates 24 and thereby serve to spread the tang plates apart.

It will be evident that because of the flexible nature of the head, it will tend to spread apart or bulge outwardly upon operation of the tool, thus preventing the tangs 26 from becoming deeply and properly embedded in the material of the head. It should be noted that for most effective utilization of barbed tangs, the tangs should preferably be forced excessively into the material of the head so that the rubber between the barb and any appropriate reaction surface, such as the lugs 27 on tang plates 24, will be compressed and thereby insure secure anchorage of the tangs in the material of the head. In accordance with the present invention the head is restrained against the outward pressure caused by the mounting tool, by the use of an appropriate mask M. In essence this mask consists of bearing surfaces 50 located outside of the head in the neighborhood of tangs 26 and rigidly related to insure maintenance of the proper initial dimension of the head during the entire mounting operation.

In order to permit free oscillation of the eye shells, it is customary to provide the bridge 18 with resilient means, here indicated by leaf spring 52, for yieldably urging the eye shells 14 into contact with the eye openings in the doll's head. In mounting the eye set in the head, it is convenient and desirable to locate the bridge 18 by preliminarily setting the eye shells 14 into the eye openings in the head, or, in other words, by locating the eye set as a whole in proper relation to the eye openings, and then expanding the bridge while maintaining the said desired location. To prevent excessive compression of spring 52 during such a mounting operation, it is desirable to block or positively limit the yieldability of the spring, and this is most conveniently accomplished by providing the arm 32 of the previously described tool with a spring member 54 the forward end 56 of which is dimensioned to act as a suitable block. For this purpose the block 56 is positioned between the spring 52 and the bridge 18, as is best shown in Fig. 2 of the drawings. At the same time, the spring member 56, by reason if its yieldability serves to hold the bridge 18 on the arm 32 of the tool, and permits removal of the bridge from the tool after the bridge has been anchored in the head. In operation the bridge 18 is first

placed at the end of the tool between block 56 and arm 32. Spring 52 is then laid in place and is surmounted by eye shells 14 on cross rod 16. The head is then placed over the eye set, with the eye openings properly located around the eye shells. When dealing with a rigid head it then would be necessary simply to operate the tool while pressing the head downwardly upon the eye shells, for, afterward, upon removing the head and eye set from the tool, the spring 52 would be provided with a clearance (initially established by block 56) permitting yieldability of the cross rod and eye shells. When dealing with a flexible rubber head, however, the situation is entirely altered, for no definite relation can be established between the eye openings and the bridge. Specifically, if the head is pushed downwardly on the eye members, it will simply become deformed around the eye openings, and the bridge 18 will be brought nearer to the front wall of the head instead of being stopped at the desired predetermined position.

In accordance with a further feature of my invention the mask M is preferably provided with additional supporting surfaces located directly around the eye openings and preferably entirely across the front wall of the head, thereby serving to support and rigidify the entire front wall of the head during the mounting operation. With this arrangement it will be evident that for purposes of locating and mounting the eye set, the head is in effect temporarily made to act as a wholly rigid unyieldable head.

To insure best results and to guard against distortion of any of the parts or features of the face of the head during the mounting operation, I prefer to provide the mask with a bearing surface which fits closely against and mates accurately with all of the detailed features of the head. Despite this accurate fit it is desirable that the mask be inexpensive in construction because the heads may be provided in numerous sizes and styles or types, and in each case a different mask is needed in order to accurately and properly conform to the particular kind of head with which it is used. In accordance with a further feature of the present invention, the mask is made of a rigid outer casing 60 which is filled with a set molded material 62. The casing 60 provides a rigid support for the molded material, and reinforces the same against the possibility of breakage. The casing, however, is open at its inner side, thereby exposing the molded material. The latter in turn is readily conformed to the exact configuration of the doll's head by molding it in contact with a sample head. Specifically, the casing 60 may consist of relatively heavy gauge sheet steel formed in a U shape to encompass the front and side walls of the head, the said casing being channeled in cross-section, as is best shown in Fig. 1, thereby strengthening and rigidifying the casing and at the same time providing top and bottom as well as outside walls for confining the filling 62. The latter may consist of any appropriate molding material a commonplace example of which is plaster of Paris. When a new line of heads is to be operated upon, it is simply necessary to select an appropriate casing 60, to mix a small batch of plaster of Paris and spread the same around the inside of the casing, and to then gently press the front surface of the head against the plastic filling. When the plaster has set, a mask is provided which, on the one hand, possesses rigidity and strength ample for its intended purpose, due to the protection provided by metallic casing 60, and which, on the other hand, accurately conforms to the surface of the head.

It is desirable that the eye openings of the head be exposed to view during the mounting operation. This greatly speeds up the location of the head on the eye set before operating the tool. It further permits the operator to check up on the alignment of the eye members which, if maladjusted, may be altered in relative position before finally securing the eye set to the head. It further permits the head to be accurately located with respect to the eye shells, and this, with the aid of the rigidifying mask M, insures precise and accurate location of the bridge in the head. Accordingly, the mask is so shaped as to clear or expose the eye openings, and, as applied to the preferred form of mask here shown, the desired result is obtained by the provision of windows or enlarged openings 64 in the outer casing 60, these windows being approximately aligned with the eye openings of the head. The plaster filling 62 is cut away to form tunnels extending between the windows 64 and the eye openings of the head, and the eyes are readily observable through the resulting openings, as will be recognized from an inspection of Figs. 1, 2, or 3 of the drawings.

The invention is shown applied to a different form of eye set mounting in Figs. 5 to 10 of the drawings. Referring to the said figures, the head 12 is again a flexible head ordinarily made of rubber. The eye set comprises eye shells 14 mounted on a cross rod 70 provided with a depending gravity weight 72 and journaled at its ends in side plates 74. The ends of cross rod 70 are preferably upset, as is shown at 76, in order to anchor the side plates 74 to the cross rod. (See Figs. 7 and 10.)

Side plates 74 are each provided with a plurality of tangs 78 adapted to be embedded in the side walls of the head. These tangs are preferably arrow-shaped or provided with rearwardly directed barbs 80, as is described in my copending application aforesaid. If desired, the plates may also be dished or provided with flanged edges 82, as is also described in my aforesaid application, these edges being compressed into the rubber material of the head and in turn operating to compress the material of the head between the barbs 78 and the side plates, thereby improving the security and rigidity of attachment to the head. The side plates may, if desired, also be provided with one or more holes 84 intended to facilitate cooperation between the side plates and an appropriate mounting tool.

To mount the eye set in the head, it is simply necessary to expand or press the side plates oppositely outwardly so as to change the same from the position shown in Fig. 7 to that shown in Fig. 10. The head may meanwhile be positioned over the eye shells 14, and a certain amount of recession or looseness of the eye shells in the eye openings is obtained by reason of the change in angularity of the side plates during their outward movement, this change in angularity drawing the cross rod rearwardly slightly from the initial position.

It will be evident that any appropriate expanding plier mechanism may be used to force the plates sidewardly, but that for convenience it is desirable to employ a supporting tool or fixture which will hold the eye set through the neck opening of the head during the mounting operation. For convenience and for purposes of

standardization, I have devised an attachment which may be used in conjunction with the tool heretofore described, in order to permit the plier mechanism of said tool to be used for the present purpose. This arrangement is desirable because the aforesaid tool shown in Fig. 3 is a standard tool which may be used even in connection with rigid heads. An appropriate attachment is illustrated in Figs. 7 and 8, and greatly resembles the bridge 18 described in Figs. 1 to 4. The attachment comprises a channeled member 90 provided with upwardly or forwardly extending bifurcated arms 92 for receiving and supporting the cross rod of the eye set. The channeled member 90 also has slidably mounted therein a pair of plates 94 the outer ends of which are provided with lugs or hooks 96 appropriately shaped and bent for cooperation with the mating holes 84 shown in Fig. 5. Plates 94 are also provided with apertures 98 which cooperate with the pins 46 on arms 36 and 34 of the plier mechanism. The channeled member 90 is supported on stationary arm 32 and is held in place by the block 56 and spring 54 already described, the arrangement being shown in Fig. 9. In effect, the attachment becomes a part of the tool, and it is simply necessary to place the eye set on the attachment, the cross rod 70 nesting in bifurcated arms 92 while the side plates 74 rest upon the ends 96 of reciprocable plates 94. The head is then placed over the tool and the handle of the tool operated to force the side plates 74 outwardly against the side walls of the head.

It will be understood without further detailed description that here again the mask M serves the important functions, first, of bracing the side walls of the head at the temples to prevent outward movement during the mounting operation; and secondly, of rigidifying and supporting the front wall of the head, particularly around the eye openings, so that the head will not be distorted when pressed upon the eye shells in order to locate the eye set prior to attachment of the same. It will further be understood that the mask is preferably made similarly to that heretofore described, and that it is similarly provided with sight windows. In fact, if the heads are similar, the identical mask is equally useful for either form of eye set and mounting tool. Regarding the sequence of operation, it may be mentioned that the head may be and preferably is inserted in the mask before being placed over the mounting tool, so that the mask and head are, in effect, handled as a unit.

A third form of eye set mounting and mechanism for attaching the same may be described as typifying still another example of the manifold uses of the present invention. This form will be described with reference to Figs. 11 and 12 of the drawings. Inspection of Fig. 11 will show that the eye set comprises eye shells 14 mounted on a cross rod 16 which is provided with a depending gravity weight 17 (shown in Fig. 12, but omitted in Fig. 11), much as was described in connection with Figs. 1 and 2 of the drawings. In the present case, however, the cross rod is mounted upon a spider plate 100, this plate being provided with rearwardly extending arms 102 for carrying the cross rod, and being further provided with outwardly or radially extending pronged arms 104 for attaching the spider plate 100 to the front wall of the doll's head. The plate 100 preferably additionally carries resilient means, here exemplified by a hairpin spring 106, for yieldably urging the cross rod of the eye set toward the front wall of the head. The ends of the arms 104 are provided with tangs or prongs 108 (see Fig. 12), and these are preferably so directed as to converge toward one another when embedded in the material of the head so that they come into mutually locking relationship. The tangs 108 may be barbed or not, as desired. If barbed, the eye set corresponds to that described in greater detail in my copending application already referred to.

The mounting apparatus again comprises a tool, indicated generally at 110, and a mask M for rigidifying and supporting the head against distortion. The tool 110 consists of a generally horizontal arm adapted to extend through the neck opening of the head and mounted upon any appropriate rigid base or bench mounting (not shown). The end of arm 110 is provided with four upwardly extending pins 112 on which there is slidable a locating block 114. Block 114 is resiliently urged upwardly by a compression spring 116, its upward movement being limited by a central guide post 118. When block 114 is in its upward position it extends above the ends of pins 112. These pins are located to mate with the ends of pronged arms 104. The upper surface of block 114 is provided with appropriate recesses and notches to receive and locate the eye set in definite position on the tool. The head 12 is protected by the mask M just as in the cases already described, and is then placed over the end of the tool, with the eye openings of the head located properly on the eye shells 14 of the eye set. The mask M is then forced downwardly, thus compressing the head and pushing the same with the block 114 relative to the stationary pins 112, the ends of the latter meanwhile bending the arms 104 upwardly and embedding the prongs 108 in the material of the head.

It will be understood that the support plate 100 may be provided with a different number of pronged arms, and in such case the number of pins 112 and their location will be appropriately altered so that each pin will operate directly upon one of the arms. It will further be understood that the support plate 100 is typical of other fittings used in dolls' heads; and, for example, if it is desired to provide the head with a mouth opening and an artificial mouth or tongue member to be anchored in back of the mouth opening. the said member may similarly be provided with two or more pronged arms, and may in turn be attached to the front wall of the doll's head by a tool similar to that shown in Fig. 12. In such case it will again be not only desirable but essential to use the mask M, for the entire operation of the tool is predicated upon a downward pressure of the head, which downward pressure would result in extreme distortion without the beneficial protection afforded by the rigid protective mask.

It is believed that the mode of constructing and using the apparatus of my invention for mounting various forms of eye set or like fittings in flexible doll heads, and the many advantages thereof will be apparent from the foregoing detailed description. In each case the head is protected by a mask which includes support surfaces rigidly related to one another and shaped to conform to the true dimension of the head and to restrain the head to that dimension during the mounting operation. This mask may be made of an outer casing and a molded filling, thereby making it readily possible to obtain accurate detailed conformation between the head and the mask,—all with a minimum of expense. The complete mounting apparatus in each case com-

prises such a supporting mask used in combination with an appropriate tool which itself includes relatively movable parts adapted to embed the tangs of the eye set into the walls of the head, the tool operating against the restraining support provided by the mask. At the same time the mask may be and preferably is designed to support the entire front wall part of the head, so that no distortion will result even from locating the eye set with respect to the eye openings, aside from the main distortion caused by the mounting operation itself. Various tools may be provided to accommodate specific forms of eye set, and typical examples of such tools have been disclosed, as well as their mode of operation in combination with the protective mask.

It will therefore be apparent that while I have shown and described my invention in preferred forms, many changes and modifications may be made in the structures disclosed, without departing from the spirit of the invention, defined in the following claims.

I claim:

1. A restraining mask for supporting the flexible walls of a rubber doll's head during the mounting of an eye set therein, said mask comprising rigidly related support surfaces shaped to conform to the outer surface of the particular size and model of doll's head with which the mask is to be used, said mask being so shaped as to expose to view the eye openings of the doll's head.

2. A restraining mask for supporting the flexible walls of a rubber doll's head during the mounting of an eye set therein, said mask comprising an open-sided metal casing filled with a set molded material, the exposed surface of the filling being shaped to conform to the outer surface of the particular size and model of doll's head with which the mask is to be used, said mask being further provided with sight windows located at the eye openings of the doll's head.

3. A restraining mask for supporting the flexible walls of a rubber doll's head during the mounting of an eye set therein, said mask comprising a generally U-shaped piece of metal formed with channeled cross-section and filled with a moldable material such as plaster of Paris, the inner exposed surface of the filling being shaped to conform to the outer surface of the particular size and model of doll's head with which the mask is to be used, said mask being further provided with sight windows located at the eye openings of the doll's head and permitting an operator to observe the location of the eye shells in the doll's head.

4. Apparatus for mounting a fitting provided with tangs in a flexible doll's head, said apparatus comprising, in combination, a restraining mask and a tool, said mask including rigidly related support surfaces shaped to conform to the outer surface of the doll's head with which the mask is to be used, and said tool including relatively movable parts adapted to embed the tangs of the fitting into the walls of the head against the restraining support provided by the mask.

5. Apparatus for mounting an eye set provided with tangs in a flexible rubber doll's head, said apparatus comprising, in combination, a restraining mask and a tool, said mask including rigidly related support surfaces shaped to conform to the outer surface of the doll's head with which the mask is to be used, said mask being further so shaped as to expose the eye openings of the doll's head, and said tool including relatively movable parts adapted to embed the tangs of the eye set into the walls of the head against the restraining support provided by the mask.

6. Apparatus for mounting an eye set provided with tangs in a flexible doll's head, said apparatus comprising, in combination, a restraining mask and a tool, said mask including a rigid open-sided casing filled with a set molded material, the exposed surface of the filling being shaped to conform to the outer surface of the doll's head with which the mask is to be used, and said tool including relatively movable parts adapted to embed the tangs of the eye set into the walls of the head against the restraining support provided by the mask.

7. Apparatus for mounting an eye set provided with tangs in a flexible rubber doll's head, said apparatus comprising, in combination, a restraining mask and a tool, said mask including an open-sided metal casing filled with a set molded material, the exposed surface of the filling being shaped to conform to the outer surface of the doll's head with which the mask is to be used, said mask being further provided with sight windows located at the eye openings of the doll's head, and said tool including relatively movable parts adapted to embed the tangs of the eye set into the walls of the head against the restraining support provided by the mask.

8. Apparatus for mounting an eye set provided with tangs in a flexible rubber doll's head, said apparatus comprising, in combination, a restraining mask and a tool, said mask including a generally U-shaped piece of metal formed with channeled cross-section and filled with a moldable material such as plaster of Paris, the inner exposed surface of the filling being shaped to conform to the outer surface of the doll's head with which the mask is to be used, said mask being further provided with sight windows located at the eye openings of the doll's head, and said tool including relatively movable parts adapted to embed the tangs of the eye set into the walls of the head against the restraining support provided by the mask.

9. Apparatus for mounting in a flexible doll's head an eye set including a cross member fitted with outwardly movable tang plates, said apparatus comprising, in combination, a restraining mask and an expansion tool, said mask including rigidly related support surfaces shaped to conform to the outer surface of the doll's head with which the mask is to be used, said tool including oppositely movable expansion plier members adapted to engage the tang plates, and a manually operable means for expanding said plier members in order to extend the bridge and embed the tangs in the material of the head.

10. Apparatus for mounting in a flexible rubber doll's head an eye set including a channeled cross member fitted with outwardly expansible tang plates frictionally slidable therein, said apparatus comprising, in combination, a restraining mask and an expansion tool, said mask including a rigid open-sided casing filled with a set molded material, the exposed surface of the filling being shaped to conform to the outer surface of the doll's head with which the mask is to be used, said mask being cut away at the eye openings of the doll's head, said tool including an arm for supporting the eye set, oppositely movable expansion plier members adapted to engage the tang plates, and a manually operable means for expanding said plier members in order to extend the bridge and embed the tangs in the material of the head.

11. Apparatus for mounting in a flexible rubber doll's head an eye set including a channeled cross member fitted with outwardly movable tang plates frictionally slidable therein, said apparatus comprising, in combination, a restraining mask and an expansion tool, said mask including a generally U-shaped piece of metal formed with channeled cross-section and filled with a moldable material such as plaster of Paris, the inner exposed surface of the filling being shaped to conform to the outer surface of the doll's head with which the mask is to be used, said mask being further provided with sight windows located at the eye openings of the doll's head, said tool including an arm for supporting the eye set within the head, oppositely movable expansion plier members provided with pins adapted to engage the tang plates, and a manually operable wedge member for expanding said plier members in order to extend the bridge and embed the tangs in the material of the head.

12. Apparatus for mounting in a flexible rubber doll's head an eye set including a cross rod bearing eye shells and supported on a pair of side plates each provided with tangs adapted to be embedded in the side walls of a flexible rubber doll's head, said apparatus comprising, in combination, a restraining mask, an expansion tool, and an intermediate support, said mask including rigidly related support surfaces shaped to conform to the outer surface of the doll's head with which the mask is to be used, said intermediate support including oppositely movable plates having means for engaging and supporting the side plates of the eye set, and said expansion tool including oppositely movable plier members arranged to engage the movable plates and to spread the same in order to force the prongs of the side plates into the side walls of the head.

13. Apparatus for mounting in a flexible rubber doll's head an eye set including a cross rod bearing eye shells and supported on a pair of side plates each provided with tangs adapted to be embedded in the side walls of the head, said apparatus comprising, in combination, a restraining mask, an expansion plier tool, and an intermediate attachment, said mask including a rigid open-sided casing filled with a set molded material, the inner exposed surface of the filling being shaped to conform to the outer surface of the doll's head with which the mask is to be used, said mask being cut away at the eye openings of the doll's head, said attachment including a channeled member provided with oppositely slidable plates having means for engaging and supporting the side plates of the eye set, and said expansion tool including a supporting arm for supporting the attachment and oppositely movable plier members arranged to engage the slidable plates of the attachment and to expand the same in order to force the prongs of the side plates into the side walls of the head.

14. Apparatus for mounting in a flexible rubber doll's head an eye set including a cross rod bearing eye shells and supported on a pair of side plates each provided with tangs adapted to be embedded in the side walls of the head, said apparatus comprising, in combination, a restraining mask, an expansion plier tool, and an intermediate attachment, said mask including a generally U-shaped piece of metal formed with channeled cross-section and filled with a moldable material such as plaster of Paris, the inner exposed surface of the filling being shaped to conform to the outer surface of the doll's head with which the mask is to be used, said mask being further provided with sight windows located at the eye openings of the doll's head, said attachment including a channeled member provided with oppositely slidable plates having means for engaging and supporting the side plates of the eye set, and said expansion tool including oppositely movable plier members arranged to engage the slidable plates of the attachment and to expand the same in order to force the prongs of the side plates into the side walls of the head.

15. Apparatus for mounting on the front wall of a flexible rubber doll's head a fitting including pronged arms, said apparatus comprising, in combination, a restraining mask and a mounting tool, said mask including rigidly related support surfaces shaped to conform to the outer surface of the doll's head with which the mask is to be used, said tool including a support arm provided with upwardly extending bearing pins, and locating means for the fitting, the bearing pins being so located as to press against the individual arms of the fitting when the mask and head are forced downwardly toward the supporting arm.

16. Apparatus for mounting on the front wall of a flexible rubber doll's head an eye set including oscillatable eyes supported on a plate having pronged arms, said apparatus comprising, in combination, a restraining mask and a mounting tool, said mask including a rigid open-sided casing filled with a set molded material, the exposed surface of the filling being shaped to conform to the outer surface of the doll's head with which the mask is to be used, said mask being cut away at the eye openings of the doll's head, said tool including a support arm provided with upwardly extending bearing pins on which a locating block is reciprocably mounted, and resilient means urging said block upwardly, the block being dimensioned to receive the aforesaid plate, and the bearing pins being so located as to press against the individual arms of the plate when the mask, head, and block are all forced downwardly toward the supporting arm, in order to embed the prongs in the material of the head.

17. Apparatus for mounting on the front wall of a flexible rubber doll's head an eye set including oscillatable eyes supported on a spider plate having pronged radial arms, said apparatus comprising, in combination, a restraining mask and a mounting tool, said mask including a generally U-shaped piece of metal formed with channeled cross-section and filled with a moldable material such as plaster of Paris, the inner exposed surface of the filling being shaped to conform to the outer surface of the doll's head with which the mask is to be used, said mask being further provided with sight windows located at the eye openings of the doll's head, said tool including a support arm provided with upwardly extending bearing pins on which a locating block is reciprocably mounted, and resilient means urging said block upwardly, the block being dimensioned to receive the aforesaid spider plate, and the bearing pins being so located as to press against the individual radial arms of the spider plate when the mask, head, and block are all forced downwardly toward the supporting arm, in order to embed the prongs in the material of the head.

18. The method of mounting an accessory fitting in a flexible doll's head, which includes forming a mask mating with the head, and applying

the mask to the head to support the same against deformation while mounting the fitting thereon.

19. The method of mounting an eye set provided with tangs in a flexible rubber doll's head, which includes forming a mask having rigidly related support surfaces fitting the doll's head in the region of the eyes, applying the mask to the head to support the same against deformation, and mounting the eye set in the head by forcing the tangs into the material of the head while reinforcing the head with the mask.

20. The method of mounting an accessory fitting in a flexible doll's head, which includes molding a mask out of moldable material in contact with a head of the particular size and model with which the fitting is to be used, permitting the molded material to set and to thereby form rigidly related support surfaces mating with the head in the region of the fitting, and applying the mask to a head to support the same against deformation while mounting a fitting thereon.

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