

Sept. 27, 1932.

M. SANDERS

1,880,109

DOLL

Filed Jan. 28, 1931

2 Sheets-Sheet 1

Fig. 1.

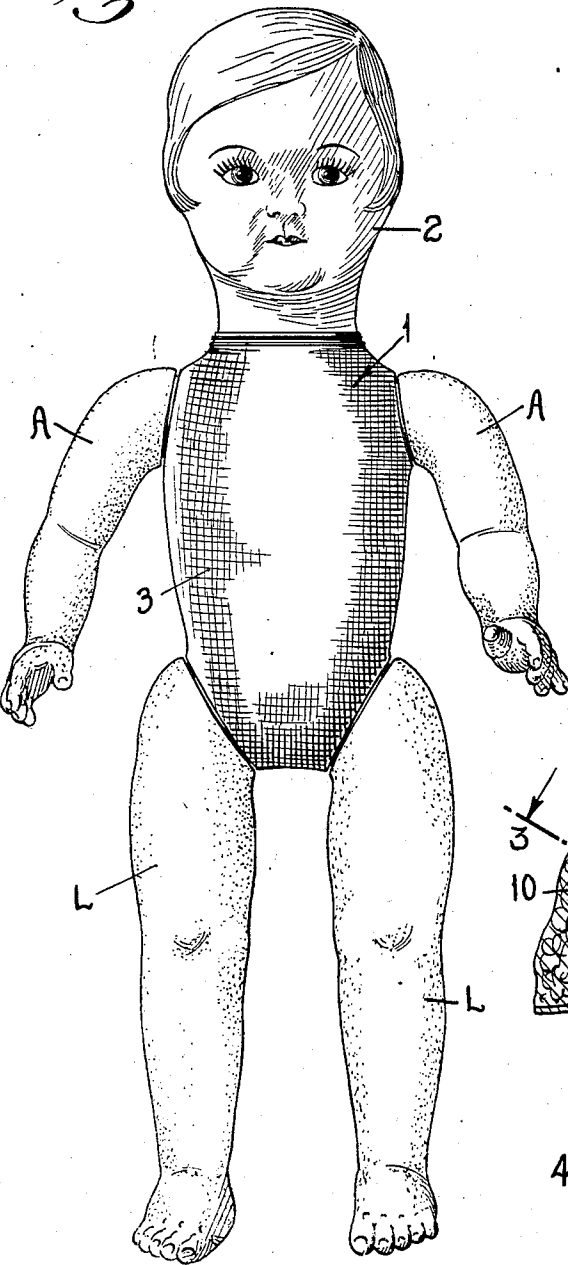
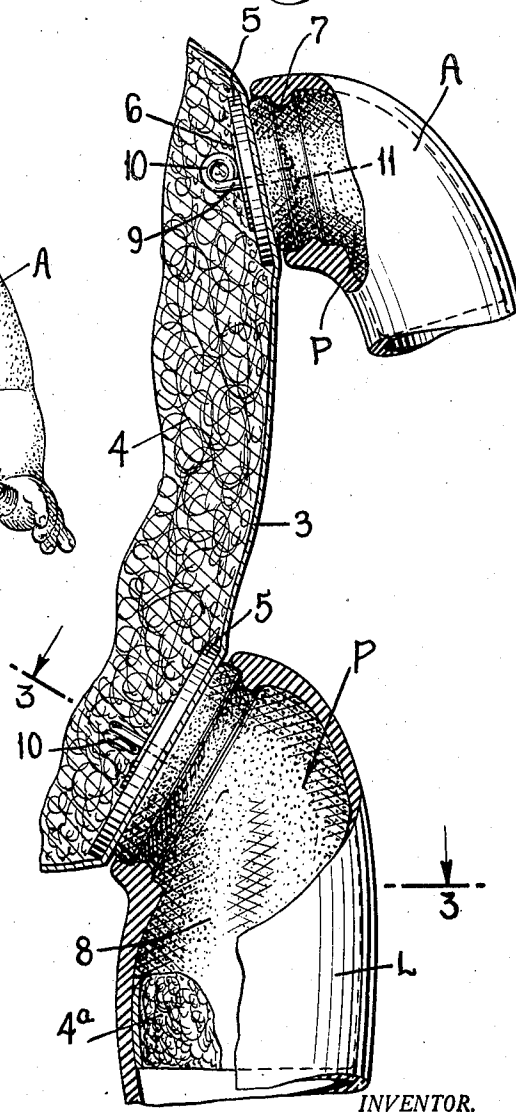


Fig. 2.



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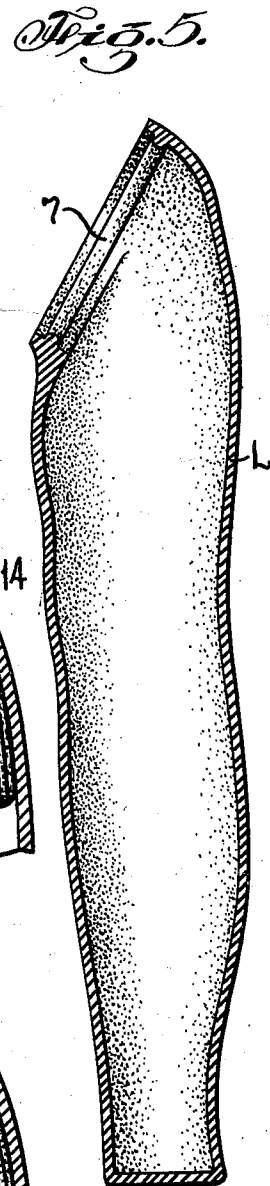
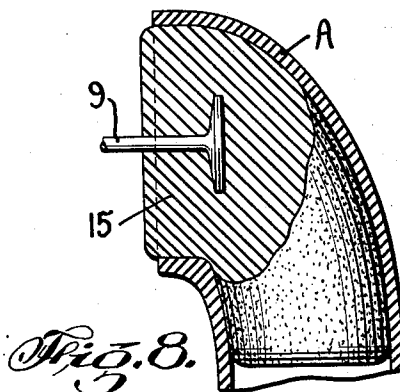
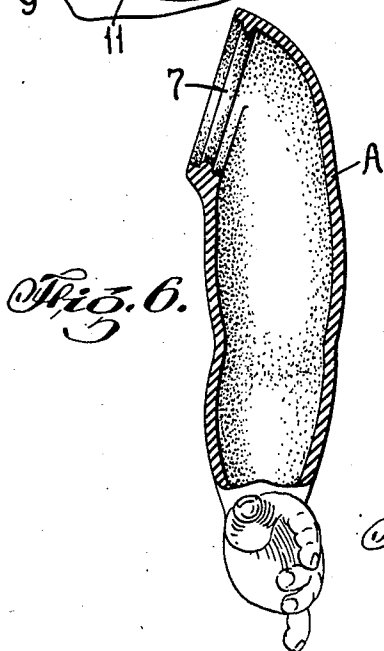
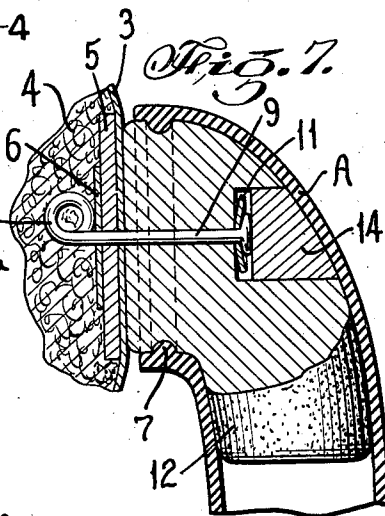
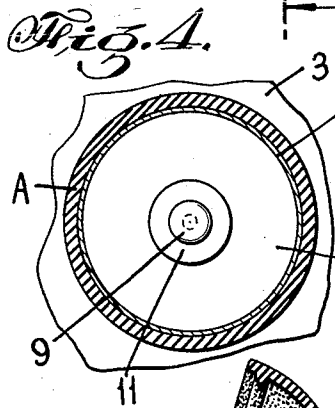
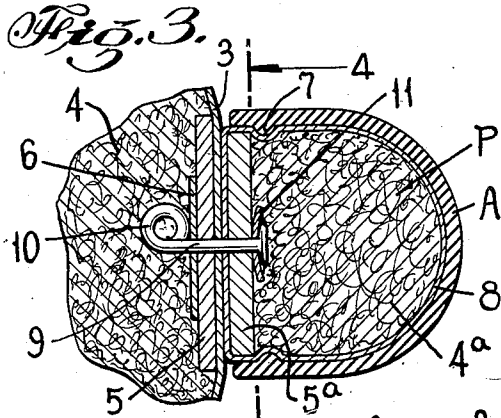
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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DOLL

Application filed January 28, 1931. Serial No. 511,876.

My invention relates to a new and improved doll.

One of the objects of my invention is to provide an improved doll having a rubber limb or rubber limbs.

Another object of my invention is to provide an improved doll having a stuffed fabric body and having hollow limb members connected to said body, said limb members being made of soft, resilient, and bendable rubber so that said limb members can be bent and twisted very freely and in all directions.

Another object of my invention is to provide an improved method of connecting said rubber limb members to the body of the doll.

Other objects of my invention will be set forth in the following description and drawings which illustrate a preferred embodiment thereof, it being understood that the above general statement of the objects of this invention is intended merely to generally explain the same and not to limit it in any manner.

Fig. 1 is a front elevation.

Fig. 2 is an enlarged detail sectional view.

Fig. 3 is a sectional view on the line 3—3 of Fig. 2.

Fig. 4 is a sectional view on the line 4—4 of Fig. 3.

Fig. 5 is a sectional view of a leg member.

Fig. 6 is a sectional view partially in elevation of an arm member.

Fig. 7 shows a different embodiment.

Fig. 8 shows another embodiment.

The doll comprises a body 1 to which a head 2 of any type is connected in any suitable manner. The body 1 comprises an outer fabric covering 3 which encloses stuffing 4 of the ordinary type. Hence, the body 1 is soft, but it is stuffed so that it is somewhat rigid and has a substantially permanent shape.

The arm members A and the limb members L are hollow and they are made throughout of resilient rubber so that said limb members can be freely bent and twisted in all directions.

In the first embodiment of the invention, the inner or body end of each arm member

A and of each leg member L is provided with an annular bead or rib 7 so that shoulders are formed in said inner end at opposite sides of said bead or rib 7. In the first embodiment of my invention, the inner end of each limb member, A and L, is provided with a plug or stuffing member P, which forms a core therein. Each said plug P preferably comprises an outer fabric covering and inner stuffing 4a, so that it is substantially stiff and rigid. When this core-forming plug is inserted into position, the bead 7 forms a complementary groove or recess therein, because the plug P is made sufficiently soft or yieldable for this purpose. However, it is not necessary to initially form the plug P with a groove or recess which can interlock with the rib 7 because the rib 7 is sufficiently stiff to form said groove or recess, so that the plug P is securely locked into position. The inner or body end of each plug is provided with a rigid member 5a which is preferably a disk made of cardboard or other suitable rigid material. Likewise, the arm-pit portions and the thigh portions of the body 1 are provided with similar rigid disks 5 which are underneath the outer fabric covering 3. The disks 5 and 5a are turnably connected to each other by means of pivot pins 9. These pivot pins 9 have heads which are adjacent the disks 5a and these pins 9 can be driven through the disks 5 and 5a and they can then be bent in order to form enlarged ends 10. This can be done before the stuffing is inserted into the body of the doll and before the stuffing is inserted into the plug P. The cardboard disk 5 is reinforced by a metal disk 6 and a bent metal washer 11 is provided to prevent the head of the pin 9 from wearing away the cardboard disks 5a. A secure pivotal connection is thus provided. The plug P thus forms a limb stump which is movably jointed to the body 1. Since the plug P fits tightly within the inner end of the arm or leg, which is elastically stretched circumferentially around this plug, so as to grip the latter resiliently, a secure frictional grip is produced which is reinforced by the action of the rib 7, so that the limb member remains in position, even though it is subjected to severe usage.

The limb members A and L can be formed straight or they can be formed partially bent, in order to simulate an arm or leg which is bent at the elbow or knee. The outer end of each plug P can be suitably closed by means of stitches in order to prevent the stuffing 4a from falling out.

In the embodiment shown in Fig. 7, a plug 12 made of wood or other substantially unyieldable hard and rigid material is used, instead of the stuffed plug P. The action of the rigid plug 12 is the same as that of the plug P. The plug 12 also has a tight frictional fit within the inner end of the arm or leg, which is stretched around the plug. The head of the nail or pin 9 is located within a recess in the plug 12 and this recess is closed by means of a member 14, which is also made of wood or the like, so that the outer contour of the plug 12 is continuous. This rigid plug or core-forming limb stump 12 is shown as having a peripheral groove therein adjacent to its body end into which the annular head 7 fits with interlocking engagement.

In the embodiment shown in Fig. 8, a plug 15 made of rubber is utilized. This rubber plug 15 may be made of hard rubber, but it is preferably made of resilient bendable solid soft rubber, so that it can be forced tightly into position. The frictional hold between the rubber plug 15 and the limb member, with the latter elastically stretched around this plug, is so strong as to make it unnecessary to utilize the interlocking action of the rib 7. The nail or pin 9 can be vulcanized into position within the rubber plug 15, so as thereby to be embedded and securely held therein, while projecting from the inner or body end thereof, for rotatably connecting this plug to a doll body to provide a core-forming limb-stump thereon.

Of course any suitable adhesive can be used to connect the members P, 12, and 15 to the inner ends of the limb members. However, it is an important feature of the invention that since the plug or insert is oversized, the rubber is stretched transversely when the plug or insert is forced into position. This produces a very firm connection between each hollow rubber limb member and the insert, and the tension which is thus imparted to the rubber causes the film of cement to dry while it is in intimate contact with the inside of the rubber member, in order to produce a very firm connection. This is a decided advantage, since dolls are automatically subjected to rough usage. It will be noted that each plug P forms a limb member of abbreviated length alike in contour to that of the complete limb member of full length. The extremities of both members which are located nearest the body of the doll differ in contour for the purpose of furnishing a means of holding both members together.

The preceding description will now be

summed up and attention more particularly directed to salient features of the invention, as embodied therein in cooperating relation, as clearly shown in the drawings.

Each complete limb of the doll includes a substantially stiff core-forming limb stump, such as the respective plug parts P, 12, and 15. This limb stump is adapted to be attached to the doll body 1, being movably jointed thereto, and being shown as secured thereto by means of an attaching device providing for rotative movement. These arm and leg limb stumps, being correctly shaped to a contour for that purpose, desirably give a permanent natural shape to the shoulders and hips of the doll, as is shown in the drawings, more particularly by reason of the body being also of substantially permanent shape. These limb stumps P are only of shaped shoulder length and shaped hip length respectively, as will be clear from the drawings.

It is to be noted of each of the four complete limbs that each arm member A and leg member L constitutes a full limb-length hollow flexible external limb part which is securely carried by the limb stump. This external limb part is open at its upper or body end and in there substantially coterminous with the body end of the limb stump which forms a core therein, which is shown as projecting only slightly, but not noticeably, in order to provide a bearing surface for the rotatable joint. This hollow flexible soft rubber external limb part forms a skin-like sheath for the core-forming limb stump, particularly by reason of being elastically stretched circumferentially around the latter, as well as also by reason of being originally correctly shaped, to form one of the shoulders, or one of the hips, as the case may be.

It is to be further noted that each of these full limb-length hollow flexible soft rubber external limb parts, such as the respective arm members A and leg members L, forms a hollow flexible resiliently deformable limb extension beyond the outer end of its core formed by the limb stump, such flexible extension constituting the major portion of the length of the limb, these extensions being shown as terminating in digital extremities forming hands on the arm members A and feet on the leg members L. Thus each limb presents a continuous unbroken surface from its outer extremity to its joint with the body 1, thereby contributing considerably to a life-like appearance. Furthermore, the natural shape of the shoulders and hips is permanently maintained, together with desirable flexibility outwardly therefrom.

It is obvious that various modifications may be made in the constructions shown in the drawings and above particularly described, within the principle and scope of the invention as defined in the appended claims.

I claim:

1. In a doll, a limb therefor comprising a substantially stiff core-forming limb stump attached to the body of the doll, and a full limb-length hollow flexible external limb part open at its body end mounted on the core-forming stump and forming a skin-like sheath therefor substantially coterminous with the body end of the latter and also forming a hollow empty flexible limb extension beyond the outer end of the core formed by the said limb stump which forms the means for attaching the said full limb-length external limb part to the doll body.

2. In a doll, in combination, a somewhat rigid body, four substantially stiff core-forming limb stumps movably jointed to the body, and a full limb-length hollow flexible external limb part open at its body end secured to each of such limb stumps and secured thereby to the doll body and forming a skin-like sheath for the core-forming stump substantially coterminous with the body end of the latter, and also forming a hollow empty flexible limb extension beyond the outer end of the core formed by the said limb stump.

3. The invention defined in claim 1, in which the said flexible external limb part is of soft rubber elastically circumferentially stretched around the said core-forming limb stump so as to grip the latter resiliently.

4. The invention defined in claim 1, in which the said flexible external limb part is of soft rubber elastically circumferentially stretched around the said core-forming limb stump so as to grip the latter resiliently, the said soft rubber limb part having a continuous smooth outer surface and being thickened adjacent its body end, being there provided with an internal annular bead fitting into a complementary groove in the body end portion of its core formed by the limb stump.

5. The invention defined in claim 1, in which the said core-forming limb stump is formed of substantially unyieldable hard and rigid material and has a peripheral groove therein adjacent to its body end, the said flexible external limb part being of soft rubber elastically circumferentially stretched around the said limb stump and being provided adjacent its body end with an internal bead engaging in the said groove in the core formed by the limb stump.

6. The invention defined in claim 1, in which the said core-forming limb stump is of solid soft rubber with an attaching device imbedded and held therein and projecting from its body end, and the said flexible external limb part being of soft rubber elastically circumferentially stretched around the core formed by the solid soft rubber limb stump so as to have a resilient grip on the latter.

7. In a doll, in combination, a body, limbs therefor, each comprising a full limb-length soft rubber hollow resiliently deformable ex-

ternal limb-shaped part terminating outwardly in a digital extremity and terminating in an open body end immediately adjacent to the body of the doll, and means for attaching the said open end to the body of the doll, the said hollow limb part being provided adjacent its open end with an internal annular bead which thickens it and which is engaged by the said attaching means.

In testimony whereof I affix my signature.
MAURICE SANDERS.

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