

F. W. PARSONS.

DOLL.

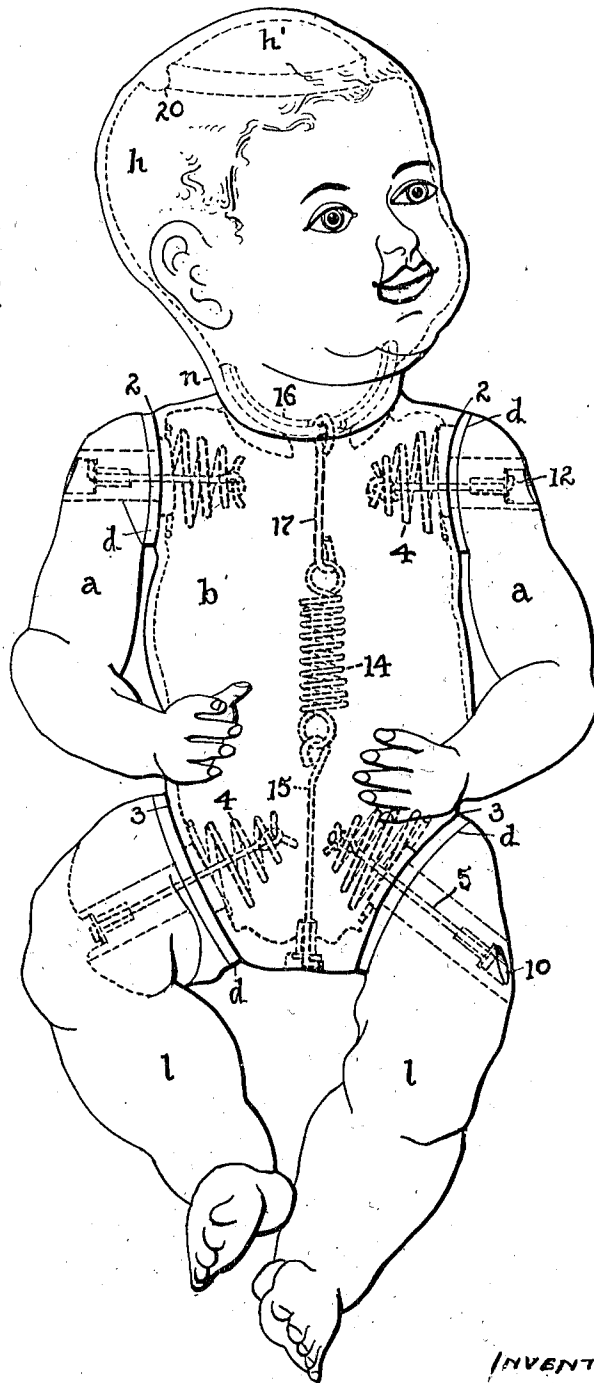
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1,120,331.

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2 SHEETS—SHEET 1.

Fig. 1



ATTEST

E. M. Fisher
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INVENTOR

Frederick W. Parsons

BY

Fisher Museum ATTYS

1,120,331.

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2 SHEETS-SHEET 2.

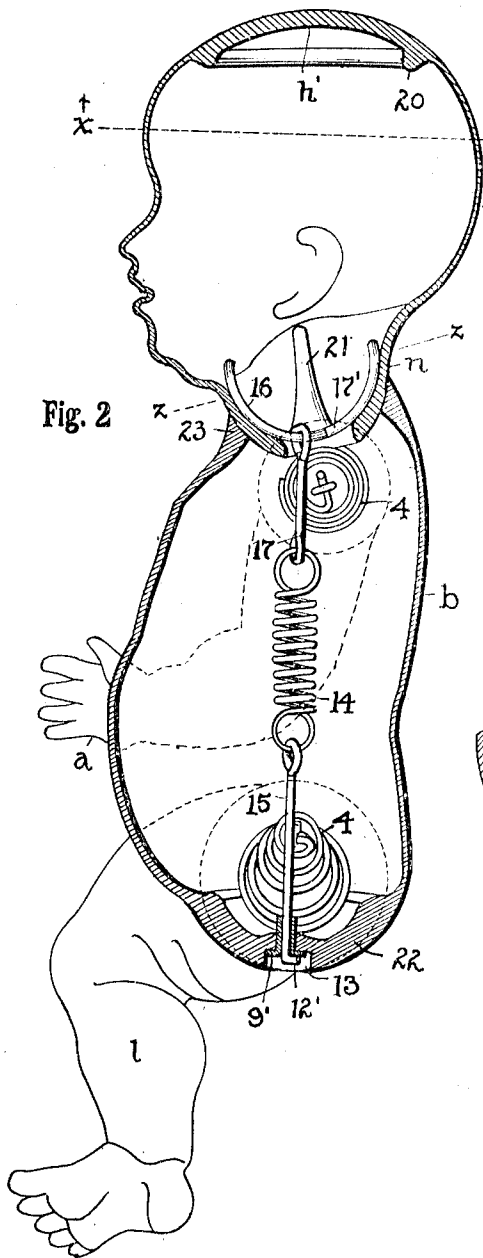


Fig. 2

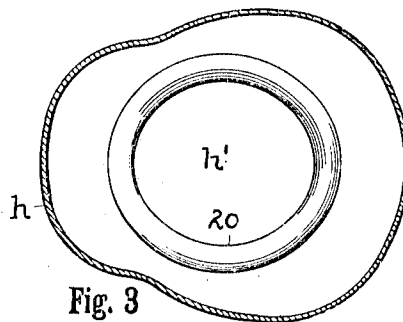


Fig. 3

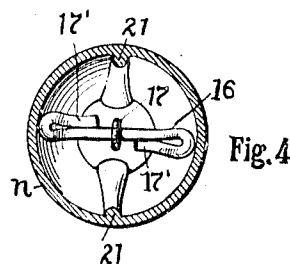


Fig. 4

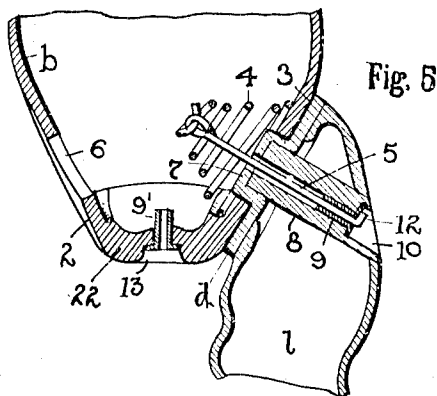


Fig. 5

ATTEST
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UNITED STATES PATENT OFFICE.

FREDERICK W. PARSONS, OF CLEVELAND, OHIO, ASSIGNOR TO THE PARSONS-JACKSON COMPANY, OF CLEVELAND, OHIO, A CORPORATION.

DOLL.

1,120,331.

Specification of Letters Patent.

Patented Dec. 8, 1914.

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To all whom it may concern:

Be it known that I, FREDERICK W. PARSONS, citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Dolls, of which the following is a specification.

This invention relates to an improvement in dolls, and the invention consists in a doll having the construction and combination of parts substantially as shown and described and particularly pointed out in the claims.

The object in view is to provide a doll of exceptional durability, particularly in the places and parts heretofore found to be weak and defective.

In the accompanying drawings, Figure 1 is a front elevation of a complete doll embodying the invention and showing the internal mechanism in dotted lines. Fig. 2 is a central sectional elevation thereof front to rear and showing the means for securing the several attached parts together and especially the connections for the head. Fig. 3 is an inside view of the top or crown on line $x-x$, Fig. 2, and Fig. 4 is a cross section on line $z-z$, Fig. 2. Fig. 5 is a sectional view centrally through one of the leg joints and the portion of the body to which it is attached.

As thus shown the doll is represented as a hollow or shell-like embodiment, having thin walls for the most part except where special reinforcement is required at the joints and elsewhere to give needed strength, and the said doll may be made of any material which combines lightness with strength and firmness and can be molded into the desired shape. Assuming, however, that a suitable material is found for this use, and I would not fix an arbitrary limit to the material, the doll is made up with six distinct and independent parts or pieces comprising the body b , the head h , the two arms a and the two legs l . These parts are made to be united with spring or yielding joints which enable each attached member to be independently mounted and also rotated into different positions on the body and in respect to each other, and to this end the body b has flattened ring-shaped side facings or bearings 2 and 3 respectively, with central holes 6 for the attachment of the arms and the legs, but with said bearings

at such different angles of inclination in respect to each other as the function of each may require. Thus, the flat ring-shaped bearings 2 on the body for the arms are in substantially parallel planes with each other and slightly inclined toward the front, and the flat ring-shaped bearings 3 for the legs are set at an inward and forward inclination in like manner so as to bring the legs into a natural position and relation substantially as seen in Fig. 1. The arms and legs likewise have flat disk-shaped facings d to correspond to those on the body, so that in these respects the limbs lie flat against the body, normally, whatever their position of adjustment or rotation thereon may be. In other words all the legitimate adjustments are on the plane of these flat meeting surfaces and a great variety of positions and combinations are possible. Other movements involving dislocation or tilting of the parts are possible but they are arbitrary and will not stay fixed, particularly in view of the novel means for supporting the said parts in jointed relation with the body.

To illustrate, the arms and legs have each an attachment consisting of a helical wire-spring 4 of conical form and a tension wire 5. The spring is seated at its base against the inside of the body about the hole 6 and the wire 5 is hook-engaged with the returned top or apex-end of the spring and passes transversely through the center of the spring to the outside of the doll where the wire 5 is shown as having its end 12 bent at right angles to secure it against endwise pull or tension. However, other necessary details enter into the construction of these joints. Thus, the disk-shaped part d is made originally in a separate piece and permanently cemented or secured to the leg, becoming a fixed and inseparable working portion thereof in the manufacture. The said disk has an annular cupped boss or projection 7 which fits snugly in the circular hole 6 in the body and has a central aperture for the passage of wire 5, thus affording the equivalent of a ball and socket joint and by which even if the limb be drawn out far enough to withdraw the boss 7 against the comparatively strong tension of spring 4 it will be guided back to place by the spring and wire and the boss when the pull is relaxed. The stock in body b about hole 6 is shown as somewhat heavier

than in other side portions of the body, and the limb itself is further reinforced by a heavy tube or sleeve 8 which is seated and cemented at its inner end in the cup-portion of the boss 6 and also cemented or otherwise secured to the wall of the limb at its outer end where it is cut to conform to the outer contour of the limb. This tube 8, like disk d , is built into the leg as a permanent portion and is the same as if it were originally molded therewith. Finally, I provide an elongated eyelet or a small metallic tube 9 with a flanged outer end and insert it in the outer portion of the sleeve 8 to serve as a rotatable bearing for the wire 5, or in which the said wire may turn when the limb is turned. The said tube is, however, set back from the face of the limb at the bottom of a counter-bored socket or cavity 10 at the end of sleeve 8 and within which the flanged end of eyelet 9 and the bent end 12 of the wire is retired and seated to turn and not contact with anything on the surface of the limb. The tension of the spring is thus distributed directly to the sleeve 8 and disk-plate d and only indirectly to the limb.

The construction shown in Fig. 5 clearly discloses all the parts and features just described, and these are characteristic of all the other joints for the legs and arms respectively.

The head h has a rounded and more or less tapered neck n of the ball pattern and shaped to conform to the round socket-shaped opening in the top of the body. That is, the said opening is adapted to receive the said neck in the relationship of a ball and socket joint and with such freedom of movement that the head can be turned or rotated to any desired inclination or position within limits and turned bodily around horizontally at pleasure. To these ends the head is placed under suitably strong spring tension corresponding to the legs and arms, but with this difference that a spiral spring 14 is used and which comes at about the middle of the body b and is hook-connected by a wire 15 with the bottom of said body and by wire 17 with the yoke 16 in head h . The eyelet 9' at the bottom of body b for wire 15 serves the same bearing purpose as in the legs and arms, and a cavity or recess 13 in the body forms a seat for the flange of the eyelet and retires the right-angled detaining end 12' of wire 15. Yoke 16 is made of fairly heavy wire and of semi-circular shape conforming to the size and shape of the interior of neck n , and wire 17 is secured centrally between the ends of this yoke and prevented from shifting thereon or separating therefrom by the back-turned ends 17'. The yoke is thereby also always centered and held upright within the neck and the strain on the neck

more equally distributed, the ends 17' doubling the seating surface or area of contact with the rounded neck. By this construction and connection of the parts the head is adapted to be rocked in its socket and will slide in respect to the said yoke, but if the head be horizontally rotated the rotation will carry the yoke with it and turning will take place through the wire 15 in rotatable bearing 9' below. Thus, in any event the head is irremovably fastened on the body and there is no way to release it but by straightening the right-angled end 12' of the detaining wire 15. This is so difficult for any one to do without tools that the head as well as the arms and legs are to be regarded as irremovably and permanently fastened in place, and a child can neither pull them nor get them out of working position.

The head h is made in one piece without seam or joint which makes it very durable and strong, and in Fig. 3 I show the crown h' of the head, as reinforced on the inside by thickening the stock, and as further reinforced around the crown by an internal annular bead 20. This gives additional strength where the strain of shocks and blows are centered. I also show opposite ribs 21 at the sides within the neck n which taper upward and serve to strengthen this part and which also provide stops to prevent yoke 16 from turning. The neck n is also gradually thickened from the head downward to take up the strain or pull of the spring 14 which is necessarily stiff, and the ribs 21 also aid in resisting this strain. The pull upward on the body b is also met by the inclined walls having the flat bearing faces 3, as seen in Fig. 5, and by thickening the rounded bottom, as indicated by 22. The neck portion 23 of body b is also gradually thickened to provide a strong and relatively large cup-shaped seat or socket for rounded neck n .

In assembling the parts, either originally or for repairs, the practice is to first engage the wire with the springs and then draw the wire out through the leg or arm so as to bring the spring under the desired tension. The wire is then bent to form the right angled stop 12, thus locking the parts together and holding the tension wanted. The crescent shape of yoke 16 permits the yoke to be easily inserted into head h , and the helical form of the springs 4 make it very convenient and practical to screw the same into openings 6 when entrance into body b at its top is debarred by head h .

What I claim is:

1. A hollow doll body having side facings at its ends at different angles to a vertical plane and inclined toward the front, arms and legs seated on said facings and having transverse bores with outer recesses, wires through the said bores terminating in said

recesses and helical springs in said body having said wires engaged therewith.

2. A doll body having a head provided with a substantially ball and socket connection therewith, a yoke adapted to confine the head rotatably on said body and fastening devices for said yoke comprising a spring having a wire rotatably engaged in the bottom of said body.

3. A doll having a body with holes in its sides and ends and members having substantially disk-shaped face portions with bosses at their center centered in said holes and tubes socketed in said bosses, and wire connections rotatably mounted in said tubes, and having spring connection inside said body.

4. A doll having a hollow body and hollow limb members, said members having tubes transversely through their upper ends and separate tubular bearings therein, and springs having wires provided with bent ends engaged with said bearings and serving as retaining means for the said limbs.

5. A doll having a head with a circular tapered neck having ribs inside tapering from base upward, in combination with a body having a socket seating said neck and means to fasten the head rotatably in place comprising a substantially semi-circular yoke fitting the inside of said neck and disposed between said ribs.

6. In a doll, a body having a separate head, and means to rotatably secure said head in rocking relation with said body, comprising spring tension connections and a curved yoke provided with stops to fix the working relations of the tension connections therewith.

7. A doll body having a hollow limb-member, a tension device to rotatably connect said parts, and said limb-member having a cupped bearing-plate and a reinforcing tube at the joint to relieve the main strain of the tension device from the limb-member.

8. A doll having a body with a seat at its side with a circular opening into said body, a member provided with a raised annular projection seated in said opening, a spiral spring surrounding said projection and means connecting the inner end of said spring through said projection with said

member to hold the member in operating position.

9. In a doll, a hollow body having rotatable members and means securing the same in place comprising helical springs having their wider portion seated against the inside of the body, and wires anchored in the outside of said members and engaging the smaller end of said springs.

10. A doll body having flat annular facings at its outsides and ends and members faced to seat thereon, wires engaged transversely through the upper portions of said members and rotatably mounted therein, and helical springs on the inside of said body seated at their base against the same opposite said facings and the said wires extending through said springs and engaged with the smaller ends thereof, whereby said members are held in place under spring tension.

11. In a doll, a mechanism to secure the head and body of a doll together comprising a crescent shaped yoke made out of a strip of metal of wire shape having its ends lapped back upon the body thereof and forming curved and widened bearing portions, in combination with spring tension devices secured to said yoke between said ends, the said head and neck having ball and socket meeting surfaces overlapped by said yoke.

12. A doll having a neck of concavo-convex shape in its bottom seating portion, a body having a concave socket adapted to seat said neck and means securing said parts together comprising a tension spring anchored in said body, a free slidable yoke in said neck and a link connecting said spring with the said yoke.

13. A doll body having a concavo-convex neck and a head having a socket conforming to said neck, a crescent shaped wire yoke bearing upon the inside of said neck and spring tension connections with said yoke engaged with the bottom of said body.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK W. PARSONS.

Witnesses:

F. C. MUSSUN,
H. T. FISHER.