

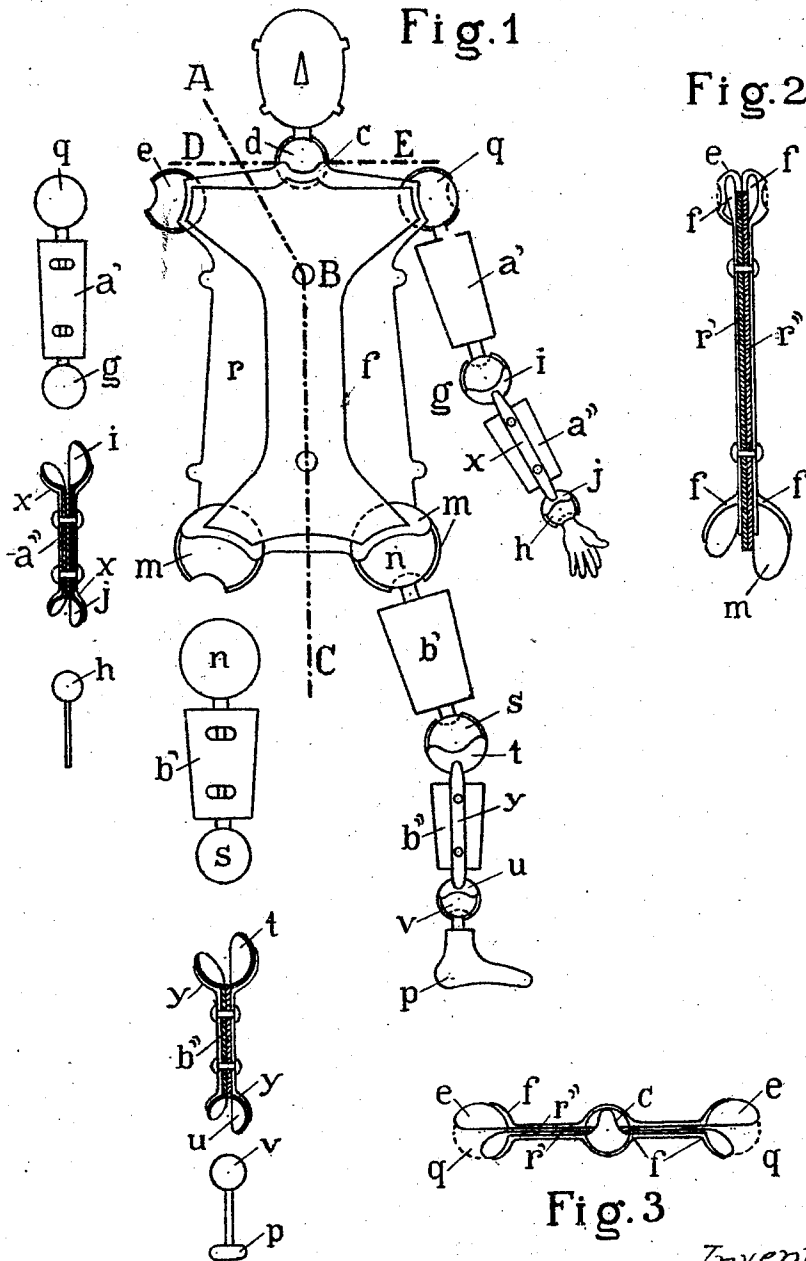
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FRAME OR BODY OF JOINTED DOLLS AND OTHER ARTICULATED OR JOINTED TOYS

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FRAME OR BODY OF JOINTED DOLLS AND OTHER ARTICULATED OR JOINTED TOYS.

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In jointed dolls of the known type balls are inserted between two adjacent body portions, as for instance trunk and the upper part of the leg members, upper and lower part of the leg members, etc., the sockets of these balls being each mounted partly in the one and partly in the other portion of the body. The limb portions belonging to each other, as for instance the upper and lower leg portions, are interconnected and also connected with the trunk generally by means of a rubber band, which passes through the said balls in order to prevent the limbs from being pulled out. As soon as these rubber bands get flabby they no longer fulfill this duty and they are no longer of any use at all.

According to the subject matter of the present invention the framework for jointed dolls and the like is also supplied with ball and socket joints, but these are entirely different in their nature and construction to those already known. One limb is provided at its one end facing towards another end with a ball gudgeon, the socket of which is located in this other limb and is so fashioned that said first limb can be swung in two main directions of movement by at least 90 degrees. In order to prevent the limbs from being wrenched out of position and in order to ensure the maintenance of their different positions, the sockets are divided and the two halves are pressed together by means of two springs facing each other.

The accompanying drawings show a constructional form of the invention as applied to a jointed doll.

Fig. 1 is a front elevation in which the limbs on one side are pulled apart and shown in lateral elevation;

Fig. 2 is a longitudinal section corresponding to the line A—B—C in Fig. 1; and

Fig. 3 is a cross section corresponding to the line D—E of Fig. 1.

The frame or skeleton of the body of the doll is composed of two rigidly interconnected trapeze shaped plates r' and r'' which are provided in the centre of the upper side, and at the four corners, with half-open ball joint sockets forming ball cup sectors. The socket halves on the front plate r' are cut out somewhat further than those on the rear plate r'' , in order to give the limb portions a correspondingly greater freedom of movement to the fore than to the rear. The division or slit be-

tween the two halves of one bush is so calculated that a limb, located in the socket with a ball gudgeon, can be swung in two planes vertical to each other by at least 90 degrees, of which planes one is assumed to be laid through the longitudinal axis of the doll, whilst the other runs parallel to this axis.

In the socket c in the centre of the upper side of the trunk there is inserted a ball gudgeon d which carries the head of the doll. In the sockets e at the two upper ends of the trunk there is inserted in each case a ball gudgeon g , which is located at the upper end of the upper arm a' and forms a shoulder. At the other end of the upper arm there is also provided a ball gudgeon g , which forms the elbow. This ball gudgeon is mounted in a socket i of ball cup sector shape; that is to say similar to e , at the lower arm a'' , which lower arm is composed of two plates connected to each other and also has a similar socket j at the other end. In this latter socket there is mounted a ball gudgeon h to which the hand is attached.

In the ball cup sector shaped sockets m at the two lower corners of the trunk there is mounted in each case a ball gudgeon n , which is mounted at the upper end of the upper part of the upper leg members b' . At the other end of this latter there is also provided a ball gudgeon s , which forms the knee joint; this ball gudgeon is located in a half open socket t at the upper end of the lower leg members b'' , which lower part is composed of two interconnected plates and, at the other end, has also a similar socket u . In this latter socket there is located a ball gudgeon v to which the foot p is attached.

In order to prevent the dislocation of the ball gudgeon d of the neck joint, of the ball gudgeons g at the shoulders, and of the ball gudgeons n of the upper leg members from the corresponding sockets c , e , m respectively, and in order to ensure the maintenance of the different positions of the upper limbs a' and b' , there is fastened to both sides of the trunk, that is to say to the front side of the plate r' and to the rear side of the plate r'' , a plate spring f which, by means of projections, grips over the front and rear socket halves so that these are pressed to-

gether upon the said ball gudgeons. To the fore arms —*a'*— and to the lower leg members —*b'*— there are attached on both sides plate springs —*x*— and —*y*— respectively which, with their ends, press against the sockets —*i*— of the elbow and —*j*— of the wrist, and against the sockets —*t*— of the knee joint and —*u*— of the ankle.

The plates —*r'*— and —*r''*— of the trunk and also those of which the lower arms —*a'*— and lower thighs —*b'*— are composed may be made of spring steel in which case the attachment of the special springs —*f*, *x*, *y*— is unnecessary, as then the sockets themselves act as springs.

I claim as my invention:—

1. A frame or skeleton for jointed dolls and other jointed toys comprising a body portion, a member to be jointed to the body portion, and a ball and socket joint consisting of a ball connected with one of the said parts to be jointed and two laterally movable ball cup sectors connected with the other of said parts to be jointed and forming a socket for and receiving said ball and confining the same, and a pair of opposite springs mounted on the part having the ball cup sectors and arranged exteriorly of the said sectors and pressing against the same at opposite sides of the joint for yieldably retaining the ball therein, one of the sectors being cut away at the outer end and terminating short of the outer end of the other sector and thereby shortened a sufficient distance to permit the part to which the ball is connected to swing between the outer end of the sectors through a right angle in two main directions of movement.

2. A frame or skeleton for jointed dolls and other jointed toys having ball and socket joints comprising a body portion, two laterally movable ball cup sectors on said body portion to form a socket, a pair of springs secured at one end to the body portion at opposite sides of the said joint and having free spaced terminals pressing against the exterior of the cup sectors at opposite sides of the joint, a member to be jointed to the body portion, and a ball on the said member arranged in the ball cup sectors and confined therein by the clamping action of the said springs.

3. A frame or skeleton for jointed dolls and other jointed toys having ball and socket joints comprising a body portion, two ball cup sectors on said body portion to form a socket and movable laterally, a member to be jointed to the said body portion provided with a ball arranged in the ball cup sectors, the latter being composed of sectors of unequal length forming a space at one side of the joint to permit the ball and the member to swing through a right angle in two main directions of movement, an extension element located at the outer end of the said

member, a ball and socket joint connecting the member and the extension element and composed of a ball and two laterally movable ball cup sectors of unequal length having spaced outer ends forming an opening at one side of the joint, and longitudinally disposed springs arranged in pairs and located at opposite sides of the said joints and having free outer terminals bearing against the exterior of the cup sectors and yieldably confining the balls within the same.

4. A frame or skeleton for jointed dolls and other jointed toys having ball and socket joints, comprising a body portion, two laterally movable ball cup sectors on the body portion forming a socket, a member to be jointed to the body portion provided at each end with a ball, one of the balls being arranged in the said cup sectors, the latter being of unequal length and forming between their outer ends a side opening of sufficient size to permit the ball and member to swing through a right angle in two main directions of movement, an extension element, two laterally movable ball cup sectors on each end of said extension element, the cup sectors at one end of the said extension element receiving the other ball of the said member, an extremity element having a ball arranged in the other pair of ball cup sectors of the extension element, and springs arranged in pairs and extending longitudinally of the jointed parts and having free terminals located at opposite sides of each joint and bearing against the exterior of the ball cup sectors and confining the balls therein.

5. A frame or skeleton for jointed dolls and other jointed toys having ball and socket joints comprising a body portion composed of two flat parts connected together, two laterally movable separate cup sectors on said body portion forming a socket, said sectors being of unequal length and forming an opening at one side of the joint between their outer ends, a member to be jointed to the body portion having a ball arranged in said cup shaped sectors and movable in said side opening of the joint, and a pair of plate springs located at the exterior of the said flat parts of the body portion and secured at their inner ends to the same and having free curved outer portions fitting against the exterior of the ball cup sectors and being of unequal length and corresponding substantially to the length of the cup shaped sectors and yieldably confining the ball in the said sectors.

6. A frame or skeleton for jointed dolls and other jointed toys having ball and socket joints comprising a body portion composed of two flat parts connected together, two ball cup sectors on said body portion forming a socket, springs secured to the two parts of the body portion and arranged to press upon

the two ball cup sectors, a member to be jointed to the body portion having a ball arranged in the cup sectors, said ball cup sectors being constructed to permit the ball on the member to swing through a right angle in two directions of movement.

7. A frame or skeleton for jointed dolls and other jointed toys having ball and socket joints comprising a body portion composed of two flat parts connected together, two ball cup sectors on said body portion forming a socket, springs secured to the two parts of the body portion to press upon the two ball cup sectors, a member to be jointed to the body portion provided at each end with a ball, one of the balls being arranged in the cup sectors of the body and said ball cup sectors being constructed to permit the ball held by them to swing through a right angle in two main directions of movement, an extension element composed of two flat parts connected together and provided at each end with two spring pressed ball cup sectors, the cup sectors of one end of the extension element receiving the other ball of the said member and an extremity element having a ball arranged in the other pair of cup sectors of the said extension element.

In testimony whereof I have hereunto set my hand this 8th day of June, 1921.

AUGUST BUCHERER.