

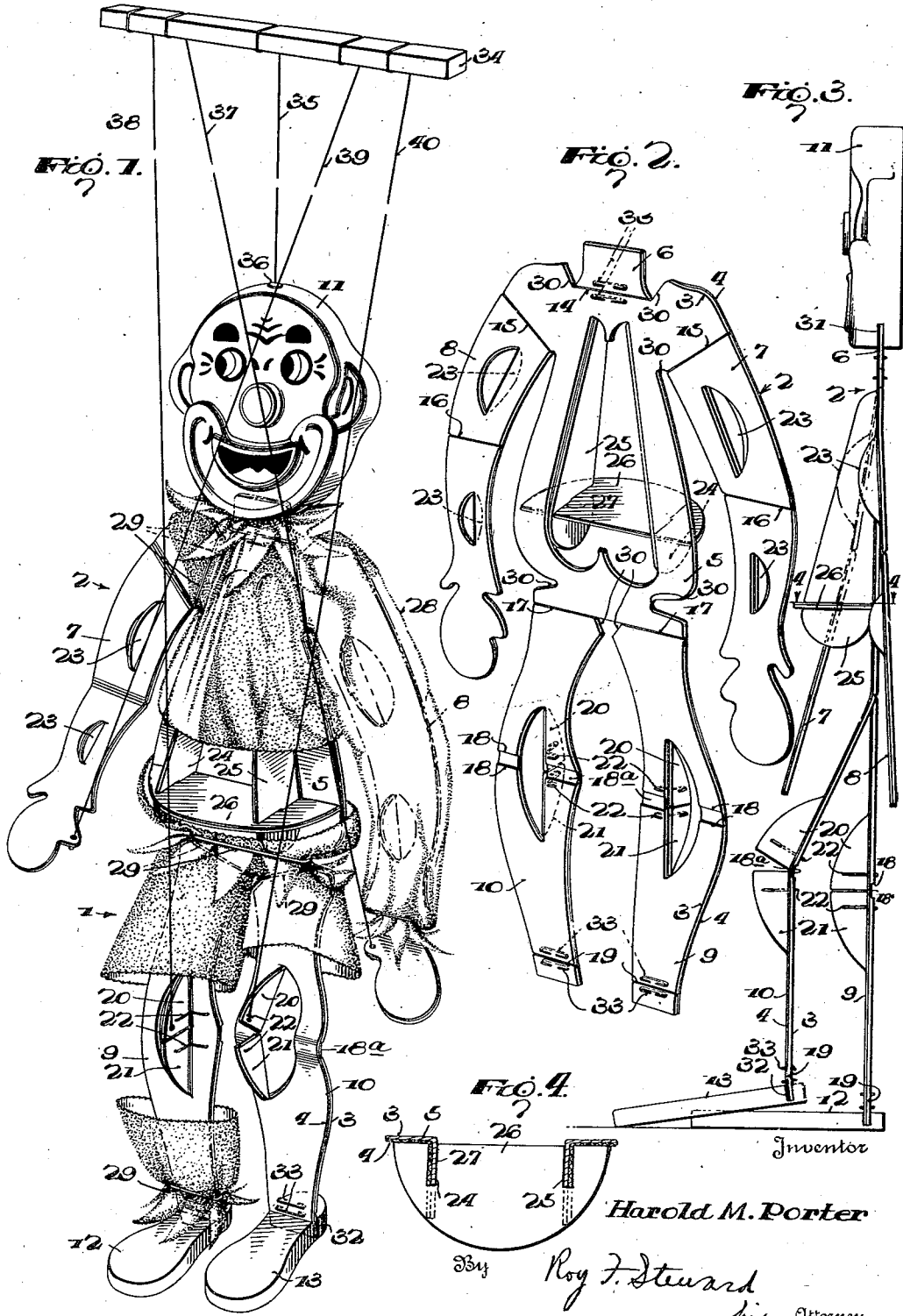
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FIGURE TOY AND PROCESS OF MAKING SAME

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FIGURE TOY AND PROCESS OF MAKING SAME

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This invention relates generally to figure toys and processes of making the same, and it relates more particularly to figure toys or dolls of the jointed member type.

Although of general application, the invention is especially applicable to jointed figure toys or dolls of the type known as puppets or marionettes, which are representations of human or animal figures and which are movable by strings or equivalent means to simulate human or animal movements. Accordingly, for convenience in explaining the principles of the invention, reference will be made, for the sake of a concrete example, to the invention as applied to marionettes and processes of making the same, but it is to be understood that the invention is not limited to this particular use.

One of the objects of this invention is to provide a doll or marionette of simple, durable, inexpensive construction which is attractive in appearance and which can be readily manipulated to reproduce and simulate life-like movements of the person or animal represented.

Another object of the invention is to provide a process of constructing or producing a doll or marionette at minimum expense, the cost of both materials and labor being very low, the number of hand operations or steps being reduced to a minimum and many of the operations being performed at one time by machine.

Other objects of the invention are to provide an improved joint construction, to provide a costume which can be made and put on at low cost, to provide a new head construction, to provide a body or framework of flat, inexpensive sheet material formed to give lift-like thickness to the body, and to provide an improved method of making these parts.

With the foregoing objects in view, as well as others which will become apparent as the disclosure proceeds, the invention consists in the novel combinations and features of construction and procedure which will first be described and explained in connection with certain illustrative embodiments of the broad principles involved and will then be more particularly pointed out in the claims.

A practical embodiment of the invention, in the form of a marionette, and of a method of making the same, will now be described in detail and illustrated in the accompanying drawing, it being understood, however, that the description of these specific embodiments of the invention is merely illustrative and is not restrictive. In this drawing:

Fig. 1 is a perspective view of the front of a marionette embodying this invention, the figure being turned slightly to its right, with its left leg and right arm slightly raised, parts of the costume being broken away,

Fig. 2 is a perspective view of the rear of the framework of the figure, without the head and feet and with the arms and legs unbent,

Fig. 3 is a side view of the framework, including the head and feet, but without the costume, the left leg and right arm being slightly raised as in Fig. 1, and

Fig. 4 is a detail view, in section, taken on the line 4—4 of Fig. 3.

Referring in detail to the drawing, 1 indicates generally a doll or marionette embodying this invention and having a skeleton framework or body 2. This skeleton framework or body comprises a base 3 formed or cut from a single piece of substantially rigid sheet material, such as cardboard or the like, having adhesively secured to one face thereof a layer or sheet of flexible reinforcing material or fabric 4, such as muslin or the like, and shaped to provide a trunk 5, a neck 6, arms 7, 8 and legs 9, 10 in representation of a human figure which, in the present instance, is a clown. The framework is also provided with a head 11 and feet 12, 13, to be referred to more fully hereinafter.

In order to permit movement of the various parts of the framework or body to simulate human movements, the framework is provided with a plurality of bending lines or score marks or cuts 14, 15, 16, 17, 18 and 19 to provide neck, shoulder, elbow, thigh, knee and ankle joints, respectively. These bending lines or score marks are provided in one side of and extend through or substantially through the entire thickness of the cardboard base 3, but not through the layer or sheet of flexible reinforcing material 4, whereby extremely flexible, reinforced joints are provided, the flexible material or fabric 4 acting as hinges for the joints.

In order to permit realistic reverse action or swinging of the lower or calf portions of the legs toward the rear of the figure, two closely-spaced, parallel bending lines or cuts 18 are provided at each knee joint and the cardboard between these cuts or score marks is removed to provide a slot or space 18^a in the cardboard at each knee joint. In order to limit forward swinging of the calf portions of the legs, independently of the thigh portions, as in the human body, abutments or stops 20, 21 are provided in the thigh and calf portions, respectively, of the framework adjacent

to and on opposite sides of each of the knee joints 18. In the example illustrated, the abutments 20, 21 are formed by tongues which are cut or stamped out of the cardboard base 3 and the flexible material 4 and bent up at right angles and in alinement so as to abut and limit forward movement or swinging of the calf portions relative to the thigh portions of the legs, opposed tongues or abutments being in engagement when the calf and thigh portions are in alinement. It will be observed that the bending lines of the tongues 20, 21 are reinforced by the flexible material 4 and to provide additional reinforcement and to hold the tongues in bent or set position, said tongues are provided adjacent said bending lines with bendable non-resilient metallic reinforcing means 22 which, in the present instance, comprise wire staples which are inserted in the cardboard base material 3 and the flexible material 4 across the bending line and bent with the tongues 20, 21 to hold them in set position.

The tongues or abutments 20, 21 function not only to limit movement of the knee joints, but also to strengthen and give realistic thickness to an otherwise substantially flat body or framework. Somewhat similar tongues 23 are provided in the arms 7 and 8 and bent to strengthen and give thickness to these parts. The trunk 5 is provided with two vertically extending tongues 24, 25 which are bent up at right angles toward the front of the figure and held in this position by a brace member 26. Brace member 26 is preferably made of sheet material, such as cardboard or the like, provided with a reinforcing layer or sheet of fabric, like other parts of the framework, and is substantially semi-circular in shape. It is secured or connected to the trunk 5 and the tongues 24, 25 so that it is at right angles to said trunk and tongues, with its straight edge against the trunk, the rounded edge of said brace and the free edges of said tongues defining the shape or contour of the front portion of the trunk 5 as well as strengthening and giving thickness thereto. The brace member and tongues can be connected or secured together by any suitable means, as, for example, by slots or cuts 27 provided in the meeting edges of these parts and arranged so that the brace member and tongues will frictionally fit together at right angles to each other.

28 indicates generally a costume or garment which, in the present instance, is a clown suit and which, when applied or put on the framework, is filled out in a manner simulating the natural thickness of the human body by the peripheral edges of the framework, including the tongues 20, 21, 23, 24, 25 and the brace member or piece 26. The specific construction and arrangement of costume 28 may differ widely, but in the particularly desirable embodiment here shown it comprises a plurality of separate tubes or sleeves of flexible sheet material or cloth, one for each of the arms and legs and another for the trunk, the latter tube or sleeve being cut or slit on opposite sides at the top to provide openings or slits for the arms. After slipping the tubes or sleeves over their respective parts of the framework, they are held in place by elastic cords or rubber bands 29 which fit around and gather the terminal portions of each sleeve to secure it to the body or framework, the latter being provided with opposed peripheral indentations or notches 30 into which the gath-

ered terminal portions of the sleeves and the rubber bands fit.

As previously pointed out, the framework is provided with a head 11 and feet 12 and 13, the construction and arrangement of which may be of any suitable character within the scope of the broad invention. However, the novel head here disclosed has distinct practical advantages and, together with the process of making the same, constitutes an important feature of this invention. It comprises a solid block or flat piece of wood which is cut out and then embossed to provide a face or features in relief, both the cutting or stamping and the embossing or feature-forming operations being performed at the same time on a punch press or the like by one die cutting and shaping operation. It is desirable to use rather soft wood, such as sugar pine, for example, and to press the features into the end grain of the wood. After the head has been formed, it is appropriately painted to simulate the head of the person to be represented, in this case a clown, and is then secured to the framework. For this purpose, the lower part of the head is provided with a slot 31 to receive the neck 6 of the framework and which is secured in the slot by an adhesive or other suitable fastening or securing means.

Thus it will be seen that a durable, inexpensive head, which is both pleasing and striking in appearance, is provided, the process of manufacturing the head making it possible to keep the cost of both material and labor very low.

The feet 12 and 13 may be of any suitable construction. In the example illustrated, they are made of wood and are of such size and weight that they cause the jointed legs to hang down straight, like pendulums, when the framework is held in a vertical position. Each foot is provided with a slot 32 in the upper rear portion thereof, the terminal or ankle portions of the legs of the figure each fitting into one of the slots and being secured therein by an adhesive or other suitable fastening means.

As the neck joint 14 and ankle joints 19 are so close to the upper and lower terminals of the framework, respectively, additional reinforcing means 33 in the form of wire staples are provided at these points; said staples passing through both the cardboard base and the flexible sheet material on both sides of and adjacent the neck and ankle joints, respectively, to reinforce and securely hold together the layers of sheet material at these points.

The control for supporting and operating or manipulating the doll or figure as a marionette comprises a handle bar or stick 34, to the center of which is secured one end of a cord or string 35, the other end of which is secured to the head 11 by means of a tack 36 or similar fastening means. Strings 37 and 38, are secured to one end of the bar 34 and to one arm and one leg of the marionette, respectively; strings 39 and 40 being secured to the other end of the bar and to the other arm and leg, respectively. The arrangement is such that the marionette is supported or suspended by the string 35 and the arms and legs are manipulated or operated by the strings 37, 39 and 38, 40, respectively, the strings 37, 39 for the arms being crossed, in the example illustrated, so that as one arm is raised, the opposite leg is also raised, and vice versa, to give a very realistic and life-like movement of the marionette. By manipulating the different strings, various movements and gestures

of the human body, such as walking, dancing, etc., can be simulated with great ease, the jointed framework bending at the different joints to make these movements very natural and life-like.

It is obvious that a marionette constructed and arranged as described is durable, inexpensive and attractive in appearance whereby it is especially adapted for use as a toy for children.

In constructing a marionette according to the process of this invention, a sheet of cardboard or the like, forming the base 3, is first covered with a sheet of flexible material 4 which is pasted or otherwise adhesively secured to one side of the cardboard. This laminated sheet is then die stamped or cut to form the skeleton framework 2 having the trunk 5, neck 6, arms 7, 8 and legs 9, 10 (see Fig. 2). At the same time the cardboard base 3 is scored or cut to form bending lines 14, 15, 16, 17, 18 and 19 for the neck, shoulder, elbow, thigh, knee and ankle joints, respectively, and the tongues 20, 21, 23, 24 and 25 are also cut or punched out, horizontal slots 27 being provided in the tongues 24 and 25 for attachment of the brace piece 26. As previously described, two closely spaced parallel lines 18 are provided at each knee joint and the cardboard between these lines is removed to form the slot 18^a. The bending lines forming the various joints as well as the bending lines of the tongues are not cut through the flexible reinforcing material 4 so that the latter joins and reinforces the cardboard on opposite sides of these bending lines. From the foregoing, it will be seen that substantially the entire jointed framework is formed in one stamping operation from one piece of laminated, reinforced sheet material.

The wire staples 22 and 33 are then applied. The head 11 and the feet 12 and 13 are then attached to the framework, the various tongues are bent out at right angles, and the body brace piece 26 is secured in place. The various tubes or cloth sleeves constituting the costume 28 are then placed on the framework and the rubber bands 29 are applied to gather and hold these tubes or sleeves in place. The strings 37, 38, 39 and 40 are then attached to the marionette and to the control bar 34, after which the completed marionette is ready for operation.

It will be understood that the invention is not limited to the details of structure and procedure shown and described and that various changes may be made without departing from the spirit and scope of the broad invention as defined in the appended claims.

What is claimed is:

1. A doll of flat sheet material provided with a bending line to form a bendable joint movable in opposite directions, said sheet material being provided with abutments on opposite sides of said bending line to limit bending of said joint in one direction but permitting bending in the other direction.

2. A doll of sheet material provided with a bending line to provide a joint, said sheet material being provided with integral abutment tongues on opposite sides of said joint to limit movement of said joint in one direction but permitting movement in the other direction.

3. A doll of sheet material provided with a bending line to form a bendable knee joint, said sheet material being provided with integral abutment tongues cut out of said sheet material on opposite sides of said joint to limit movement of said joint in one direction, and reinforcing means

of bendable non-resilient metallic material for retaining said abutment tongues in desired position.

4. A doll comprising a body of flat sheet material such as cardboard or the like having a sheet of flexible reinforcing material secured to one side thereof, said body being provided at spaced points with a plurality of single score lines and a plurality of double closely-spaced parallel score lines which extend through said flat sheet material but not through said flexible reinforcing material to form bendable joints hinged together by said flexible material, the sheet material between said double score lines being removed whereby joints bendable in opposite directions are formed, and abutments cooperating with said last-mentioned joints to limit movement thereof in one direction.

5. A doll comprising a framework of sheet material provided with integral tongues cut out of said sheet material and bent at right angles thereto to reinforce and give thickness to said framework, the peripheral edges of said framework, including said tongues, defining the shape of said doll.

6. A doll comprising a flat body of sheet material such as cardboard or the like provided with integral tongues cut out of said sheet material and bent at right angles to said body to reinforce and give thickness to said body, and a piece of sheet material arranged at right angles to said body and said tongues and secured to said tongues to hold said tongues in position and give thickness to said body.

7. A doll comprising an internal framework of cardboard provided with integral tongues cut out of said cardboard and bent at right angles to reinforce and give thickness to said framework, a piece of cardboard arranged at right angles to said framework and said tongues and secured to said tongues to hold the same in position and give thickness to said framework, the peripheral edges of said framework, including said tongues and cardboard piece, defining the shape of said doll, and a garment on said framework.

8. In a marionette, a pair of body members composed of relatively stiff sheet material, and a tubular member composed of flexible sheet material secured about and supported by said body members, the plane of one of said body members extending at an angle to that of the other, one of said body members being formed with downward extensions comprising legs for the marionette.

9. In a marionette, a tubular portion composed of a sheet of flexible sheet material, and means within the tubular portion for supporting the same and lending shape thereto, said means including a pair of flat members of relatively stiff sheet material disposed across the interior of said tubular portion, the plane of one of said members extending at an angle to the other.

10. In a marionette, a tubular portion composed of a sheet of flexible sheet material, and means within the tubular portion for supporting the same and lending shape thereto, said means including a pair of flat members of relatively stiff sheet material disposed across the interior of said tubular portion, the plane of one of said members extending at an angle to the other, one of said members being formed with lateral and downward extensions forming respectively arms and legs for the marionette.

11. In a marionette, a pair of body members

composed of relatively stiff sheet material, the plane of one of said body members extending at an angle to that of the other, a tubular member composed of flexible sheet material and forming an article of clothing secured about said body members, one of said body members having a portion projecting above the upper end of the tubular member, and a head connected to the projecting portion of said body member.

12. In a marionette, a body portion comprising a pair of members formed of relatively stiff sheet material to provide a body framework, the plane of one of said members extending at an angle to that of the other, a tubular member composed of flexible sheet material secured about said trunk portion and forming an article of clothing for said marionette, one of said body members being formed with downward extensions comprising legs and an upward extension, and a head connected to said upward extension.

13. A marionette having a tubular portion

composed of a sheet of flexible sheet material, a body member composed of relatively stiff sheet material disposed within said tubular portion for supporting the same and lending shape thereto, said body member being provided with extensions forming arms and legs, said arms having transverse bending lines forming shoulder and elbow joints and said legs having transverse bending lines forming hip, knee and ankle joints, and a head articulatively attached to the upper end of said body member.

14. A doll comprising a plurality of pieces of relatively stiff sheet material assembled at angles to each other to form an internal framework, the peripheral edges of said pieces cooperating to define the shape of said doll, and a tubular member composed of flexible sheet material and forming an article of clothing secured about said framework.

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