This invention relates to the wire frames used in connection with what are known as soft toy animals, dolls, puppets and the like, and of the kind in which the rods forming the legs or arms and legs are hingedly connected to the body portion so as to be moveable, the object of this invention is to provide an improved frame whereby toy animals, dolls, puppets and the like can be given movements better simulating natural movements than heretofore.

According to this invention I construct a U, V, or equivalent shaped member and to each end I hingedly connect one or more lengths of rod in the form of wire, strip metal, or other suitable material.

In some cases I employ two U-shaped or equivalent members connected together by a length of wire, strip metal, wood or other suitable material to which at one or both ends is hingedly connected one or more lengths of wire or strip metal for the head and/or tail.

My invention will be clearly understood from the following description aided by the accompanying drawings showing several examples of carrying the invention into effect and in which:—

Figure 1 is a side view of a frame operatively located within a suggested toy animal in which the head but not the tail is movable.

Figure 2 is an end view of said frame.

Figure 3 is a plan of said frame.

Figure 4 is a side view of a frame suitable for a toy animal in which both the head and tail are movable.

Figure 5 is an end view of the frame of Figure 4.

Figure 6 is an end view of a simple frame for toy dolls in which only the legs are movable.

Figure 7 is a plan of the frame of Figure 6, and

Figure 8 is a front view of a more elaborate frame for toy dolls or puppets in which, the legs, arms and head are movable.

I construct the frame from one or more U, arch or equivalent shaped members to the ends of which are hingedly connected one or more other lengths of rod, usually in the form of wire or strip metal. In the examples shown in Figures 1 to 5 of the accompanying drawings, which are particularly suitable for toy animals, I employ a length of rod material, such as wire, strip metal, V or C shaped members connected together end to end as at 2 (Figure 3) which enables the body to be bent left or right, or three lengths may be employed hingedly connected end to end as at 2 and 2a (Figure 4), the hinges 2 allowing the body to be bent to the left or right as in Figure 3 and the hinge 2a allowing for upward movement of the front or hind part of the body, similar to a horse rearing up on its hind legs and vice-versa, the hind part being reared up. More than three lengths can be employed hingedly connected together and the hinges can be in any plane to suit the movement required.

To the body portion 1, I connect two inverted U or equivalent shaped members 3, 4 preferably constructed of wire or strip metal, to the ends of which are hingedly connected other pieces or lengths of wire 5, 6 or strip metal, the U shaped members 3, 4 and their connected pieces 5, 6 being positioned so as to occupy the positions of the legs B, C in a toy animal or the arms and legs in a puppet or doll.

To one end of the body portion 1, I connect one or more pieces or lengths of wire rod or strip metal 7, 7a, 7b, hingedly connected together end to end as at 8, 8a, 8b, to form the neck and head portion of the frame and the hinges may be arranged in different directions so that the pieces 7 can be turned in different directions. For example the hinge 8 allows an up and down movement of the neck and head, hinge 8b an up and down movement of the head on the neck and 8a a left and right movement of the neck and head.

I may also provide for a circular movement by incorporating another hinged joint 8c (Figures 1 and 3) in one of the lengths, say 7a, which hinged joint is conveniently made by forming loops in the lengths of wire turned at right angles and rotatably secured together by rivets so that the axes of the joints are parallel with the wires 7a. This allows of the head being turned in a partial circle of about 45 to 60 degrees, the degree of movement being limited by the amount the material forming the cover of the toy can be twisted.

The other end of the body portion 1 may be left plain as in Figure 1, or with a short rigid piece extending beyond the rear U-shaped member 4, but in the case of animals where it is wished to provide a movable tail, this end may also be provided with one or more pieces of wire or strip metal 9 hingedly connected end to end as at 10 (Figure 4) and which occupies the tail portion of the animal.

Where it is only desired that one pair of legs in a toy animal, or only the legs in a doll or puppet should be movable, only one U shaped member 4 (Figure 6) need be employed to which the lengths 5 for the legs are hingedly connected,
and such lengths may be formed in one rod, piece or section for each leg, or in two or more pieces hingedly connected together at the knee joints and/or ankle joints.

For a more elaborate set of movements for a doll or puppet I may employ one substantially U or equivalent shaped member 4 (Figure 8) made longer and preferably strengthened and made more rigid by a cross-bar 4a. To the ends of the U shaped member, are hingedly connected the lengths 5 for the legs, which may be formed as a single length in each case, but are each preferably formed of two lengths hingedly connected together at the knee joint and in some cases, three lengths may be employed hingedly connected at the knee and ankle, as shown in Figure 8.

The top of the U shaped member 4 is constructed with extensions 4b, one on each side, to which are hingedly connected lengths 5 for the arms. These may each be in one piece or two hingedly connected at the elbow joint, or may be in three pieces hingedly connected at the elbow and wrist joints. Preferably each arm piece 5 is connected to its extension piece 4b by double hinges 8d, 8e. Said hinges 8d allow the arms to be moved in a circular path in the same plane as the body outwards with a movement covering 180 degrees, whilst the hinge 8e allows the arm from the shoulder to be moved in a circular motion at right angles with the body with a similar arc of movement either forwards from the hip to above the head or backwards from the hip to level with the shoulders.

To the centre of the U shaped member and projecting upwards may be connected a length of wire for the head, preferably such length is formed as of three rods or sections 1, 1a, 1b, one length 1 being connected to the U shaped member by a hinge 3b which allows of a movement to the right and left, a hinge 3a which allows of a back and front nodding movement of the head and a hinge 3c having its axis parallel with the lengths 1a, 1b, which allows of a partial rotation of the head in either direction.

Hinges could also be inserted in the side members of the U shaped frame so that the body could be moved backwards or forwards from the waist.

The lower ends of the lengths 5, 6 may be left plain or curled and bent at right angles to form feet portions 12 as shown in Figures 1 to 7, or when employed with dolls the ends of the lengths 5 may be curled as at 12a, Figure 8, to form hand portions.

The hinges are so constructed that a friction or other grip between the pieces or lengths is obtained, whereby the pieces or lengths will remain in a placed position in relation to each other, and a convenient and simple connection for wire frames can be made by forming each connecting end as a ring or loop and positioning each pair of loops side by side, and rotatably securing same together by a rivet 11 or eyelet. Inside or meeting faces of the rings or loops may be serrated or corrugated so as to assist in forming a tight joint, and India rubber, spring or other washers may be interposed for the same purpose.

It will be understood that I do not limit myself to the particular positions of the hinges shown in the drawings as such hinges, either more or less in number can be placed at any points in the frame to suit the particular movements required to be given to the toys.

In manufacturing the toy, the frame is positioned in the stuffing of the toy animal, doll, puppet or the like, with the U shaped member or members in the body of the toy and the hinged pieces in the various parts, i.e., limbs, head and tail, the hinges occupying the positions from which it is desired to move the various parts.

By this invention I am enabled to construct soft toy animals, dolls, puppets and the like, either fanciful or in imitation of the natural and to give a much more natural movement than is possible with present constructions, the tight hinges ensuring that the various parts remain in any placed position.

What I do claim as my invention and desire to obtain by Letters Patent is:

A device of the character described including a body supporting frame for toy animals consisting of a main supporting strut having formed therein, loops and a head piece pivotal support, a separate head supporting means mounted in said pivotal support consisting of a plurality of supporting struts mounted for pivotal movement in divers directions with relation to said frame, and auxiliary supporting struts pivotedly mounted in the loops in said body supporting strut, the limbs of the toy animal being pivoted on said auxiliary struts and said limbs being pivotedly jointed intermediate their lengths to provide means for disposing the limbs of said toy animal in divers set positions, the pivotal means of each of said limbs comprising supporting platines on which the parts are pivoted and resilient lock washers arranged to create a frictional pressure against the pivoted parts to maintain same in their pre-disposed positions.

CLIFTON JAMES RENDLE.