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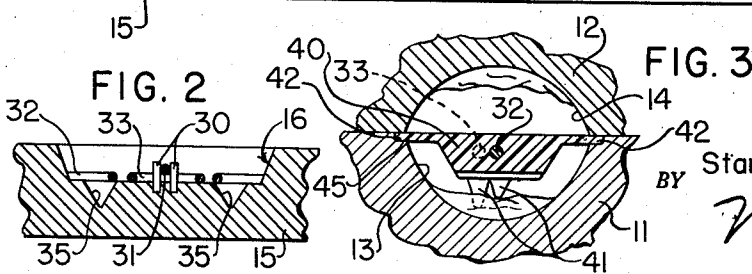
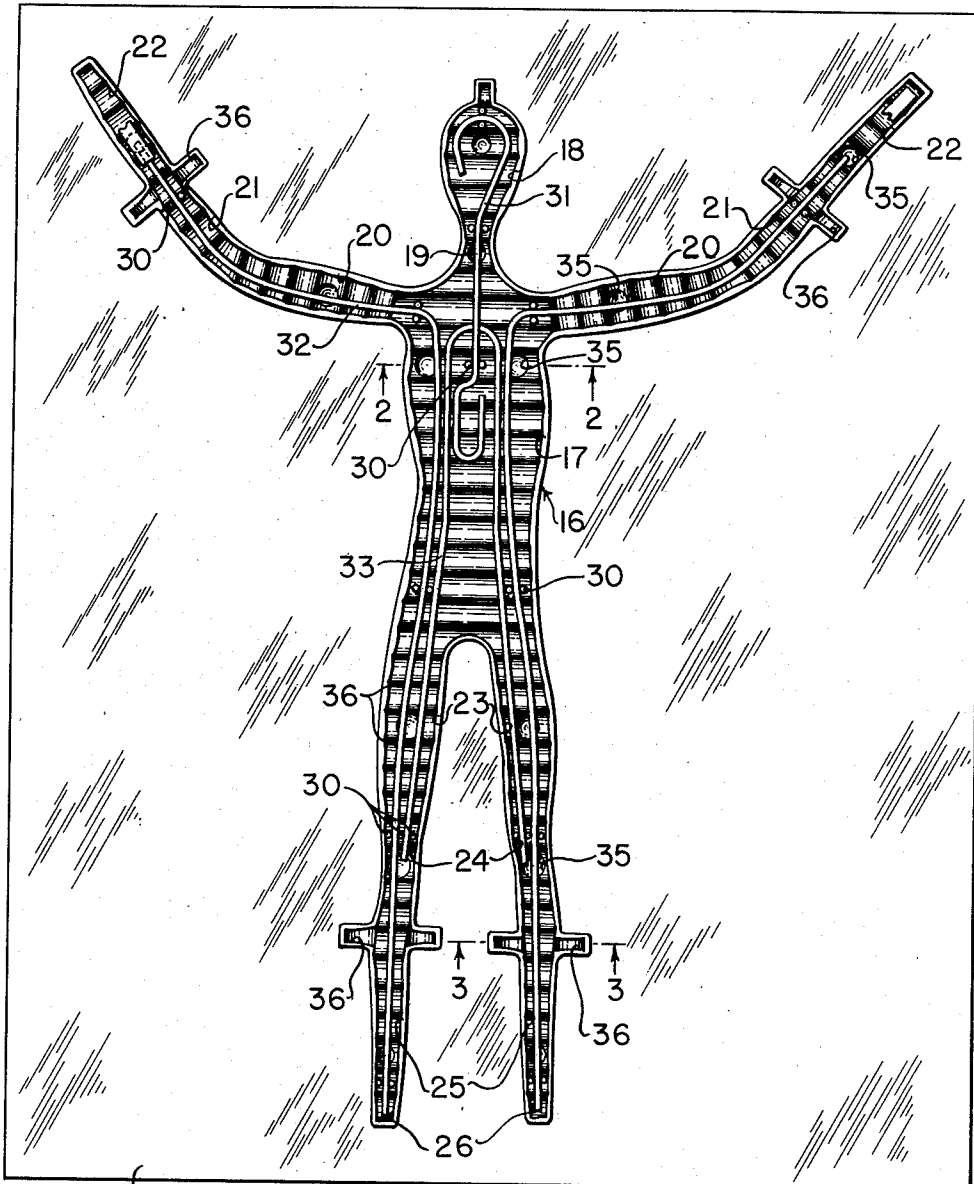
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METHOD FOR MAKING MODELING FIGURINES

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FIG. 1



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METHOD FOR MAKING MODELING
FIGURINES

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2 Claims. (Cl. 18—59)

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The present invention relates to method for forming a modelling figurine for artists, particularly posing mannikins, such as described in my copending application, Serial No. 116,100, filed September 16, 1949, now abandoned.

In my said copending application I have described and claimed a new type of figurine for use by artists as a model which is capable of being posed in completely natural poses, both as to posture and figure contour, with great fidelity to nature, which will retain the posed posture indefinitely until deliberately and manually changed, and in which the posing will not affect the figurine in any manner to limit its usefulness and suitability for further, subsequent, natural posing.

In my said copending application I have described the construction of such figurine as comprising a molded body formed of an elastomeric substance which is resiliently elastic, at the core of which, both in its main body portion and in the appendages of the main body portion, there is arranged an armature or skeletal structure of a material having "dead bend" characteristics, namely, that it is capable of being flexed, but will remain in flexed position and sufficiently resist unflexing to overcome the tendency of the resilient body material to return to the original state.

In my said copending application I have also described the armature or skeletal structure to consist of a plurality of skeletal components or members, formed and arranged to have portions thereof overlap at points in the body where greater skeletal strength or resistance to torque is required. These skeletal components are described as being preferably formed of metallic wire and, preferably, of cables formed of twisted metallic wires.

In the formation of the figurines such as described in my said copending application, it has been found extremely difficult to position the skeletal components properly and accurately within the molded, elastically resilient body and its appendages, since the body was molded from a thermo-setting liquid and the skeletal components had to be arranged, in space, within the mold, that is in spaced relation to the walls of the mold at all points within it. The methods for forming the figurines of the character described, as heretofore practiced, were laborious, time consuming, and not always certain to produce completely satisfactory results.

The present invention relates to method for properly positioning the skeletal components of

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the figurine in the mold so that they will be arranged in natural and effective position in the completed figurine to supply the proper and adequate torque resistance where necessary, to provide proper body and muscular contour, and to remain away from or near the surface of the figurine and to be retained in proper place there-within, without working out through the surface.

It is an object of the present invention to devise methods for positioning the skeletal components of the figurines of the character described which are certain and highly effective in operation and are practically fool proof in effecting the proper and accurate positioning of the skeletal components within the body of the figurine and to accurately produce the desired results.

It is another object of the present invention to devise methods for properly arranging and positioning the skeletal components of the character described which are simple to practice and may be rapidly carried out with a minimum consumption of effort and time or waste of materials.

It is also an object of the present invention to provide apparatus by which the foregoing methods may be easily and conveniently practiced; which are of simple construction; which are easy and convenient to use and do not require any skill and training in their use; which are economical to produce and which enable the practice of great economies in production of the figurines to which the present invention relates.

The foregoing and other advantages and methods and apparatus of the present invention will become more readily apparent to those skilled in the art from one embodiment of the apparatus shown in the accompanying drawings and from the description following. It is to be understood, however, that such embodiment is shown by way of illustration only to make the principles and practice of the invention more readily comprehensible and without any intent of limiting the invention to the specific details herein shown.

In the drawings:

Fig. 1 is a plan view of a skeletal unit mold constituting the apparatus of the present invention, shown with the skeletal elements arranged in place therein in proper relationship to one another and to the outline of the body of the figurine, and in readiness for molding;

Fig. 2 is a fragmentary cross-section taken on line 2—2 of Fig. 1 illustrating the intermediate mold with the provisions for holding the skeletal elements in position and also the provisions for

forming vertical spacing elements for the skeletal unit;

Fig. 3 is a fragmentary section taken across the main figurine mold, along the position of line 3-3 of Fig. 1; shown with the skeletal unit formed in the mold of Fig. 1 positioned therein in properly spaced vertical and lateral relation to the sides of the mold.

Generally stated, the present invention resides in the provision of an intermediate mold of shallow depth and reduced width relative to the main figurine mold, on the bottom of which the skeletal elements may be arranged in proper position and held in such position by suitable retaining means formed in the mold, to be covered by a uniting or binding covering, formed from the same material from which the body of the figurine is to be molded, to provide an integral skeletal unit. The mold includes suitable means for forming spacing elements on the skeletal unit by which the skeletal unit may be spaced on all sides, both laterally and vertically, from the surface of the final figurine mold.

Referring more specifically to the accompanying drawings, it will be seen from Fig. 3 that the main mold for the completed figurine may consist of two mold sections such as the lower mold section, 11, and the upper mold section, 12, with main mold recesses, 13 and 14, respectively, into which the body material of the figurine is poured in the process of casting the same. It will also be seen from the same figure that the skeletal elements of the figurine do not and cannot lie on the surface of the body of the figurine, but must be at the center thereof, for which purpose the skeletal unit must necessarily be spaced on all sides from the walls of the main mold recesses 13 and 14.

To effect an easy and convenient solution for the solving of the problem of supporting the skeletal elements in suspension within the mold recesses 13 and 14, I have provided an intermediate or auxiliary mold in which an intermediate skeletal unit may be formed. Such auxiliary mold comprises a plate, 15, of any suitable material, such as metal, stone or the like, within which is formed a shallow mold recess, generally designated as 16, of the general outline of the figurine or part thereof that is to be formed, and of preferably approximately rectangular cross-section.

In the illustrative embodiment wherein the figurine involved is that of a mannikin, the mold recess, 16, comprises a torso section, 17, a head section, 18, a neck section, 19, upper arm sections, 20, forearm sections, 21, hand sections, 22, thigh sections, 23, knee sections, 24, lower leg sections, 25, and foot sections, 26.

The mold recess 16, with its various sections may be provided with a plurality of positioning pins, 30, set in its bottom at suitable and convenient points between which and around which the skeletal elements may be arranged and held in place in proper relation to one another. Such skeletal elements may comprise the head element designated as 31, extending through the upper portion of the torso, section 17, through the neck section 19 and into the head section 18 of the recess 16; the leg and arm skeletal elements, 32, each extending through a forearm and upper arm recess sections 21 and 20, respectively, through the torso section 17, a thigh section 23, a knee section 24, a lower leg section 25, and a foot section 26 on one side of the body; and the torso skeletal element, 33, of U-shape, extending along the length of the torso recess section 17 into

the thigh recess sections 23 to substantially the knee recess sections 24; as described more fully in my said copending application.

It may here be stated that the representations of the skeletal elements shown in the drawing may be considered as diagrammatic and as representing either single wire construction or multi-wire cables, as also explained in my said copending application.

Formed in the bottom of the skeletal unit mold, recess 16 are a plurality of suitably disposed, preferably conically shaped cavities, 35, which may be of varying depth depending on the thickness of the body of the figurine at the particular point or the distance of its surface from the skeleton at that point. Such cavities 35 may, for instance, be formed in the leg recess sections at or adjacent the knee sections 24, the upper part of the torso recess section 17, the upper arms recess sections 20 and at the recesses at the end of the forearm recess sections 21, at the neck and recess section 19, at the head recess section 18 or in any other suitable desired position.

Also formed in the mold are shallower recesses or grooves, 35, extending laterally in the surface of the plate 15 from the side walls of the recess 16, in perpendicular relation to the said side walls at the point of formation. Preferably such grooves 35 are formed in opposed aligned pairs as at the knee sections, and the arm section of the recess 16, as illustrated, and in any other place where it may be desired.

The bottom of the recess 16 may preferably be formed with grooves or corrugations, 36, to permit the ready flow of liquid under the skeletal elements arranged within such recess.

In operation the skeletal elements as 31, 32 and 33 are arranged in the recess 16, in its several sections, and held in place between the retaining pins 30. Liquid of the same kind from which the body of the figurine is to be formed is then poured into the recess 16 to substantially the level of the surface of plate 15, so that such liquid covers the skeletal elements on all sides, top and bottom, included, and when the liquid cures and sets, as by the application of heat, a skeletal unit, generally designated as 40, is formed, which unit 40 is provided with conical, vertical spacing elements, 41, and flat lateral spacing elements, 42.

The lateral spacing elements 42 are formed to extend to a greater width than the width of the mold recess and the corresponding location in one of the main mold sections, such as recess 13 in mold section 11, and accommodating recess 43 for those lateral spacing elements 42 may be formed in the surface of such main mold section, to receive the ends of such lateral spacing extensions 42.

When the skeletal unit 40 is ready, it is disposed within the mold section 11, with the vertical spacing elements 41 resting on the bottom of the mold cavity 13 and the lateral spacing elements 42 having their ends resting in the recesses 43. The companion mold member 12 is then placed over the mold member 11 with their recesses 13 and 14 in register; the surface of the mold section 12 to the side of the recess 14, holding the lateral spacing elements 42 in place.

It will be readily apparent that the skeletal unit is thus held in appropriate spaced relation from all sides of the mold sections 10 and 11 except for the few points of contact made by the spacing elements 41 and 42. It will also be apparent that when the liquid is poured or cast into the recesses

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13 and 14 it will flow around the skeletal unit, on all sides, to build up the body of the figurine the additional material being the same as that from which the skeletal unit was molded, it will amalgamate with it into a homogeneous mass.

It may here be stated that where the figurine has a skeleton that lies in more than one plane, the skeletal unit may be formed in more than one plane by having its auxiliary mold made of two or more complementary parts in a manner that will be readily apparent or, if desired, if convenient the skeletal unit may be formed in several portions which may be suitably connected to one another before or after placing in the main mold.

This completes the description of the methods of the present invention and the apparatus by which they may be practiced. It will be readily apparent that both methods and apparatus are simple in nature and easy to practice and use, that they are certain and substantially fool proof for the production of the desired and proper results and that they enable the practice of great economies in time and labor as well as material and greatly simplifies the production of figurines of the character to which the present invention is directed.

It will also be apparent that numerous variations and modifications in the methods and apparatus of the present invention may be made in accordance with the principles of the invention hereinabove set forth by anyone skilled in the art, without the use of any inventive ingenuity. I desire, therefore, to be protected for any and all such variations and modifications that may be made within the spirit of the present invention and the scope of the claims hereto appended.

What I claim is:

1. The method for molding a modelling figurine having a molded resilient body and a dead bend skeletal structure which comprises the steps of ar-

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ranging a plurality of skeletal elements having dead bend characteristics in proper relation to one another as they appear in the body of the figurine in an intermediate mold, molding a binding body of lesser width and thickness than said figurine about said arranged skeletal elements to form a skeletal unit, including spacing elements on said skeletal unit for spacing the same from the sides of a final figurine mold, arranging the skeletal unit within a final figurine mold and then casting the body of the figurine about said skeletal unit within the final figurine mold.

2. The method for forming a molded modelling figurine having a molded resilient body and a dead bend skeletal structure which comprises the steps of arranging a plurality of skeletal elements having dead bend properties in proper relation to one another as they appear in the figurine in an intermediate mold, molding a binding body of lesser width and thickness than said figurine about said arranged skeletal elements to form a skeletal unit, integrally molding with said skeletal unit spacing elements for spacing the said skeletal unit from the sides of a final figurine mold, arranging the said skeletal unit in the final figurine mold and casting the body of the figurine about said skeletal unit within the said final figurine mold.

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