Feb. 6, 1962 F. SCHLEICH 3,019,552

FLEXIBLE FIGURE TOY

Filed Sept. 12, 1958

Fig. 1

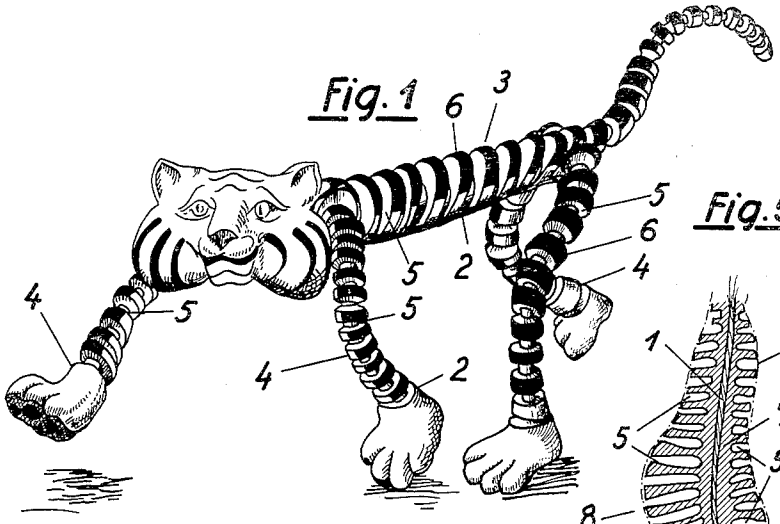


Fig. 5

Fig. 2

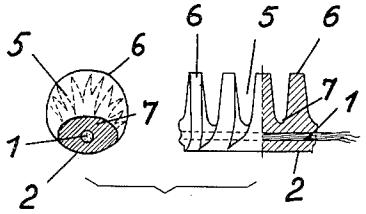


Fig. 3

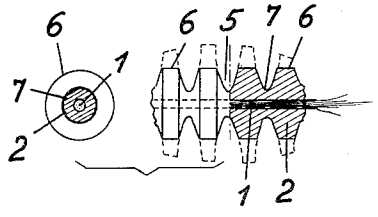
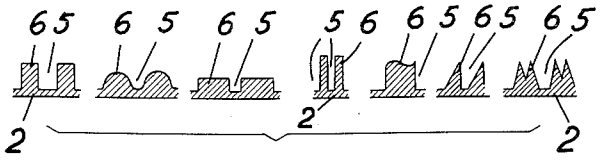


Fig. 4



INVENTOR

Friedrich Schleich

BY Richards & Geier

ATTORNEYS

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FLEXIBLE FIGURE TOY

Friedrich Schleich, Schwabisch Gmund, Wurttemberg, Germany

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This invention relates to a human-like or animal-like figure used as a toy or for advertising purposes and which can have its limbs or its entire body deformed to different positions through bending.

It has already been known to produce figures of this kind of flexible and more or less elastic material, such as rubber, artificial material or the like in such manner that a skeleton-like inner supporting structure, consisting of soft wire, is provided through circum-casting, circum-pressing or in some other suitable way with the aforementioned covering material. In a construction like this the wire-structure serves the purpose of stiffening the figure and to counteract the elasticity peculiar to the rubber or artificial material in order to provide the figure with the non-elastic flexibility obtained through bending of the body or of the limbs and which the figure is to retain at least for a while.

This makes it clear that the ratio of the cross-section of the wire-structure and of the material surrounding it must not exceed a certain proportion in conformity with the elasticity of the covering material, as otherwise the elasticity of the material surrounding the wire-structure would be predominant, so that the figure would not retain the position imparted to it through bending, or that the bending would have to exceed at least initially considerably the required measure before the figure—through partial reaction of the elastic material—takes up the actually desired position.

That is why it is usually not possible to give to the parts of the figure any desired size of cross-section in conformity with the proportions of a natural model if an actually non-elastic flexibility is to be obtained. In addition to this it has to be taken into consideration that the material—when a certain cross-section is exceeded—will get too stiff to permit any bending at all.

According to the invention these disadvantages are overcome by the feature that the material, which completely surrounds the inner wire-structure, is provided with slot-like or notch-like transverse-grooves, whereby these transverse-grooves extend either completely or only partially around the limbs or around the body of the figure, and whereby these transverse-grooves reduce—without losing their coherence—the effective cross-section of the surrounding material to a hose-like inner supporting core in such a way that the figures—in spite of comparatively developed bodies and limbs—react in such manner as if the entire material surrounding the wire-structure were no thicker and stronger than the aforesaid hose-like supporting-core, so that neither the flexibility of the figure nor the required non-elastic action of the figures during the bending is in any way interfered with. The hose-like supporting-core remaining at the ends of the transverse-grooves has preferably the same cross-section throughout the entire figure.

The cross-sections of the transverse-grooves as well as the cross-sections of the surrounding material between the transverse-grooves may be of any suitable shape, and may be so devised that they impart to the figure certain characteristic features existing also at the natural model.

The figure of the invention is suited also for trick-films.

If the figure of the invention is given a human shape it may be provided with a coating of an everywhere elastically yielding material and be employed as a kind of skeleton for show-window figures.

Additional features and advantages of the invention will be understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming a part of this specification and in which several embodiments of the invention have been shown by way of example. However, I wish to say that the invention is not confined to any strict conformity with the showing of the drawings but may be changed or modified, so long as such changes or modifications mark no material departure from the salient figures of the invention as expressed in the appending claims.

In the drawings, in which like parts are referred to by the same reference numerals,

FIG. 1 is a total view of a flexible figure representing a tiger;

FIG. 2 illustrates, at the left, a cross-section and, at the right, a longitudinal section through the body of the figure;

FIG. 3 illustrates, at the left, a cross-section and, at the right, a longitudinal section through one of the limbs of the figure;

FIG. 4 shows several cross-sections through the transverse-grooves and through the surrounding material between the transverse-grooves;

FIG. 5 is a vertical section through a caricature-like human body.

The flexible figure illustrated in FIG. 1 and having the appearance of a tiger is of rubber, artificial material or any other elastic substance. The figure is provided with a skeleton-like inner supporting structure 1 of soft and flexible wire, consisting for example of a plurality of thin individual wires preferably twisted in cable-like or rope-like fashion.

The embedding of the skeleton 1 in the surrounding mass 2 may be effected with the aid of a mould, shaped in conformity with the figure to be produced, through circum-pressing, circum-casting, or through die-casting, whereby the mould has to be so devised that at the body 3 and at the limbs 4—and maybe at the head—slot-like or notch-like transverse-grooves 5 are produced, which reduce the cross-section of the respective part 3, 4 etc. at the contracted places to the diameter of the core 7 of the figure of approximately 4 millimeters.

According to FIG. 2 the transverse-grooves 5 may extend only through a portion of the covering material, while according to FIG. 3 the transverse-grooves 5 extend as annular grooves through the entire covering and around the supporting structure 1. The cross-section of the grooves 5 and of the portions 6 of the covering 2 remaining between the grooves 5 may vary and differ, and the same applies to the width of the grooves and the width of the remaining portions between the grooves. As shown in FIG. 4 the grooves 5 and the intermediate portions 6 may be of either rectangular, triangular, trapezoidal shape or of semi-circular, narrow or wide cross-section. Or the intermediate parts 6 may again be provided with notches or grooves, so that they are of hair-like appearance as shown on the right side of FIG. 4.

Furthermore, the intermediate parts may be complete disks or be provided with recesses or notches in their circumference, so that they assume a thorn-like or prick-like appearance. It is further possible to devise the construction in such a way that differently shaped grooves or intermediate parts are arranged and vary beside one another in the same figure in any conceivable way.

FIG. 5 shows a portion of a body, that is to say, a somewhat caricature-like portion of a human body provided with an exaggerated belly-portion 8. The figure makes it clearly recognizable that it is possible to pro-

duce—regardless of the outer outlines of the figure—by corresponding adaptation of the grooves 5 a hose-like inner core 7 of uniformly sized diameter, and therefore of uniform flexibility for the skeleton-wire, which guarantees the expected advantages. If required by conditions it is, of course, also possible to provide the figure with an inner core of varying width in places.

It is possible, therefore, to produce in this way the figures at complete non-elastic flexibility at a considerably increased volume and to provide them with any desired surface covering and to make them look either very grotesque or considerably more natural than has been customary for similar figures.

According to the invention it is further possible to provide the figures—as indicated in FIG. 5 by the broken line 9—either partly or entirely (for example through pasting) with a coating of an everywhere elastically yielding material, so that they may form the skeleton of a show-window-figure provided with an uninterrupted outer surface and yet have an admirable flexibility and a variety of forms.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A flexible figure toy, comprising a skeleton-like flexible inner wire-structure serving as flexible support for the body, head and limbs of the figure toy, and a single one-piece continuous covering structure completely covering and enclosing said wire structure and having wide portions and hose-like inner supporting cores integral with said wide portions and surrounding the wire structure, said inner cores constituting bottoms of notch-like transverse groves separating said wide portions from each other.

2. A flexible figure toy as per claim 1, in which the covering-structure consists of rubber.

3. A flexible figure toy as per claim 1, in which the covering-structure consists of artificial material.

4. A flexible figure toy as per claim 1, in which said transverse-grooves are arranged at uniform distances from one another.

5. A flexible figure toy as per claim 1, in which said transverse-grooves are arranged at irregular distances from one another.

6. A flexible figure toy as per claim 1, in which said transverse-grooves completely surround the hose-like inner supporting core.

7. A flexible figure toy as per claim 1, in which said transverse-grooves are arranged only in a portion of the circumference of the surrounding covering structure.

8. A flexible figure toy as per claim 1, in which said transverse-grooves are arranged in a plurality of portions of the circumference of the surrounding covering structure.

9. A flexible figure toy as per claim 1, in which the depth of said transverse-grooves is so selected that the diameter of the hose-like inner supporting-core thereby produced is of uniform width.

10. A flexible figure toy as per claim 1, in which the depth of said transverse-grooves is so selected that the diameter of the hose-like inner supporting core thereby produced is locally of different width.

11. A flexible figure toy as per claim 1, in which the covering material positioned between said transverse-grooves is provided at its outer circumference with notches adapted to produce a hair-like appearance of the outer surface.

12. A flexible figure toy as per claim 1, in which the figure is on its outer surface at-least partly coated with an in all directions elastically yielding covering material.

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