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(54) **An eye of simulation toy**

(57) A kind of structure of simulation toy eye comprising the transparent crystal shell (31) the embedded member (32) and installation pin (33), of which the embedded member (32) is installed on the rear of the installation pin (33), with connection of the transparent crystal shell (31) with its section being sector. Comparing with the existing technology, the present invention extrudes and keeps distance with bottom. So, when magnified on arc optical surface of the transparent crystal shell (31), the present invention shows different appearances at various perspectives. That's pretty living. Especially, whatever perspectives you choose, you will feel the eyes are looking at you. With more realistic simulation, the idols are more living and attractive. In addition, the process art is very simple and suitable for assembly line manufacturing.

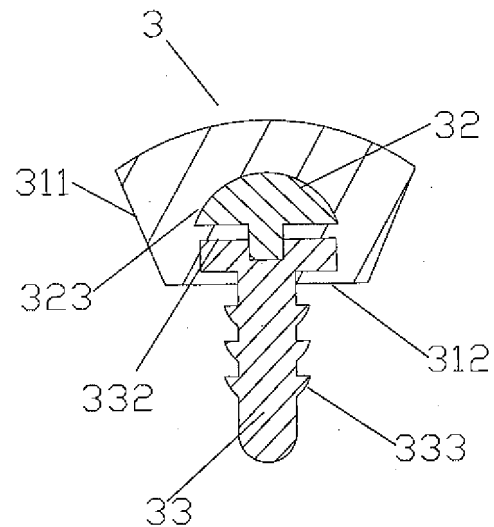


FIG. 4

Description

FIELD OF THE INVENTION

[0001] The present invention relates to a toy, particularly to the structure of an eye of simulation toy.

BACKGROUND OF THE INVENTION

[0002] It is well known that the key art of the animal toys simulation is the artificial eye making. As the Chinese saying goes, "Putting the Finishing Touch to the Picture of a Dragon (eye is the last touch)". The charming artificial eye is key point of simulation toys manufacturing. So, people try all means to find the methods for eye simulation. And the main methods are as follows:

[0003] At first, the integrated plastic installation pin, as Figure 1, includes bolt pole 11 and cap 12. The installation pin is in deep color with cap in figure of semicircle in simulation of the eyeball of human being or animals. And a transparent crystal shell 13 is installed onto the cap 12 so as to make a crystal article eyeball 1 which looks like brilliant and living due to the magnifying principle of the transparent crystal shell 13. But such method requires another injecting mould of the transparent crystal shell 13 besides that of cap 12. In event of a too small product, the operation is quite difficult. Further more, after injecting mould finished, painting 14 is required on the bottom of the crystal eyeball. Any negligence will bring the paint 14 onto the transparent crystal shell 13 and pollute it.

[0004] Moreover, for a more realistic simulation the pupil form of human and animal eyes, people make a integrated installation pin 21 with a deep color pupil 22 embedded in the top of it, as shown in figure 2. Then, on the top, mold plastic transparent crystal shell 23, so that the crystal eye 2 is more living than that in resolution 1. However, there still are some shortages remaining as complicated process art and poor efficiency. Additional, the finished products rate is reduced in the deep-color pupil embedding process.

[0005] In addition, in the public design of Chinese practical new patent CN92225478, with name of Toy Baby or Toy Animal Structure, a complete eyeball shall be manufactured, then embedded with a deep color pupil-like ball which cost much and is not suitable for cheap toys.

[0006] As for existing technology, the semicircle structure is often adopted for the transparent crystal shell, when simulation eyeballs get close on the rear surface of the installation pins. Such a structure design makes the toy eyeball looks like not lively, but dull, and with the same visible effect from all viewpoints, in shortage of attraction.

SUMMARY OF THE INVENTION

[0007] The aim of this invention is to avoid the flexibility shortage of the existing simulation toys eyes, a structure of the simulation toys eyes is coming to enhance the sim-

ulation fidelity.

[0008] Below is a technical proposal for this invention, which is designed to achieve the above purpose:

[0009] To avoid the flexibility shortage of the existing simulation toys eyes, a structure of the simulation toys eyes is coming to enhance the simulation fidelity.

[0010] An eye of simulation toy comprises a transparent crystal shell with a sector section, an installation pin, and an embedded member embedded in the transparent crystal shell and installed on the upper end of the installation pin..

[0011] The upper surface of the embedded member is arched and is embedded in the transparent crystal shell with a matching and mated manner.

[0012] The lower surface of the embedded member keeps a gap with the upper end of the installation pin.

[0013] The lower end of the embedded member has a tenon, the lower end of the installation pin has a slot, the tenon inserts in the slot to connect the embedded member and the installation pin.

[0014] The eye of simulation toy further comprises a paint layer provided on the side surface and the lower surface of the transparent crystal shell, and the outstanding portion of the installation pin spread out of the transparent crystal shell.

[0015] In comparison with the existing technology, the new utility item 32 extrudes and keeps distance with bottom. So, when magnified on arc optical surface of the transparent crystal shell, the style shows different appearances at various perspectives. That's pretty living. Especially, whatever perspectives you choose, you will feel the eyes are looking at you. With more realistic simulation, the idols are more living and attractive. In addition, the process art is very simple and suitable for assembly line manufacturing.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] Fig. 1 a is an exploded view of the eye of the first prior art.

[0017] Fig. 1 b is a plane view of the assembled eye of the first prior art .

[0018] Fig. 2a is an exploded view of the eye of the second prior art.

[0019] Fig. 2b is a plane view of the assembled eye of the second prior art.

[0020] Fig. 3 is an exploded view of the eye of the present invention.

[0021] Fig. 4 is a cross-section view of the assembled eye of the present invention.

[0022] Fig. 5 is a perspective view of the assembled eye of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0023] Below is further explanation on the present invention with reference to the attached drawing and embodiments:

[0024] Referring to figure 3, figure 4 and figure 5, the simulation toy eye 3, including transparent crystal shell 31, embedded part 32 and installation pin 33. The embedded part 32 mounting on the upper end of the installation pin 33 connected the transparent crystal shell 31.

[0025] The section of transparent crystal shell 31 is sector.

[0026] The upper surface 321 of embedded part 32 is a bulgy arc-surface which keeps connected closely with the transparent crystal shell 31. And lower end of the embedded part 32 through the protuberance 322 is assembled in the slot 331 of installation pin 33. Furthermore, the lower surface 323 keeps distance with the rear surface 332 of the installation pin 33.

[0027] There are paints on the lower surface 312 and side surface 311 of the transparent crystal shell 31, and the outstanding part of installation pin 33.

[0028] Integrate injection mould of the installation pin 33 and the embedded part 32 into simulation toy eyeball 3 which get through the installing hole in toy head and get fixed with inner buckle.

[0029] The present invention has an bulgy embedded part 32, which keeps distance with bottom. Then, magnified on arc optical surface of the transparent crystal shell 31, the style shows different appearances at various perspectives. It's pretty living, attractive and flexible.

[0030] Based on the technical know-how in the art, the present invention can also be achieved through other methods that do not deviate from its tent or essential features. Therefore, the implementation plans described above are merely illustrative examples and are not in any limited sense. All alterations that fall within the scope of this invention of a scope equivalent to that of this invention are covered by this invention.

has a tenon, the lower end of said installation pin has a slot, said tenon inserts in said slot to connect said embedded member and said installation pin.

- 5 **5.** The eye of simulation toy as claimed in claim 1, further comprising a paint layer provided on the side surface and the lower surface of said transparent crystal shell, and the outstanding portion of said installation pin spread out of said transparent crystal shell.

Claims

1. An eye of simulation toy, comprising:

a transparent crystal shell with a sector section,
an installation pin, and
an embedded member embedded in said transparent crystal shell and installed on the upper end of said installation pin..

2. The eye of simulation toy as claimed in claim 1, wherein the upper surface of said embedded member is arched and is embedded in said transparent crystal shell with a matching and mated manner.

3. The eye of simulation toy as claimed in claim 1, wherein the lower surface of said embedded member keeps a gap with the upper end of said installation pin.

4. The eye of simulation toy as claimed in claim 1, wherein the lower end of said embedded member

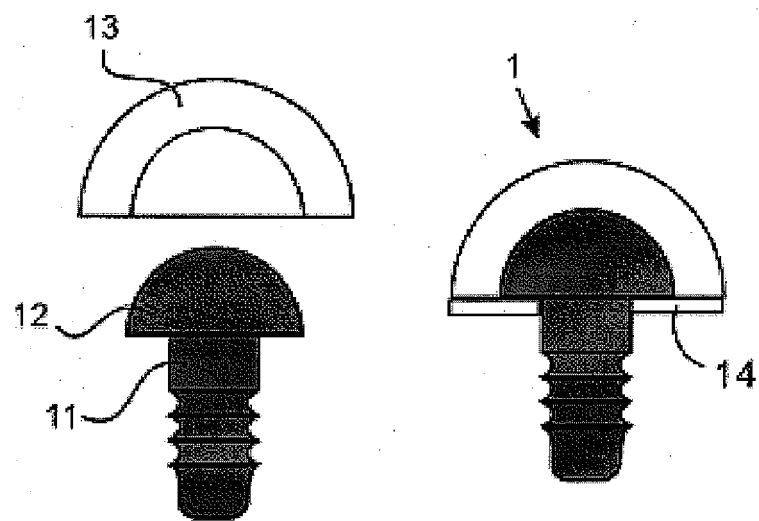


FIG. 1

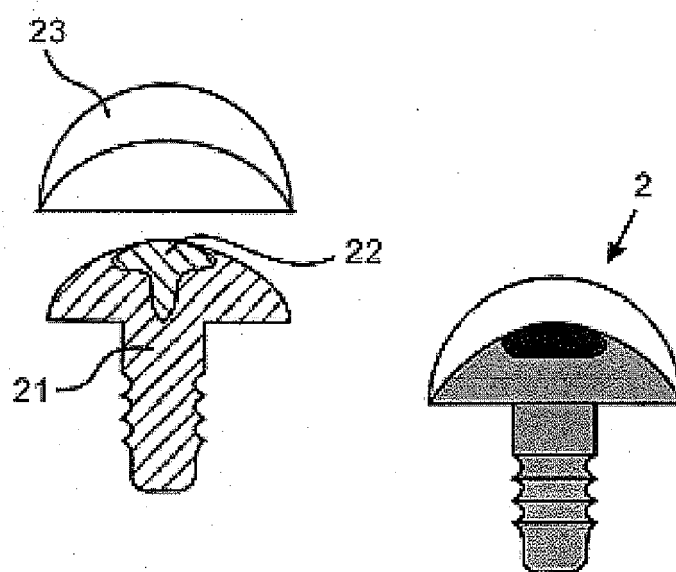


FIG. 2

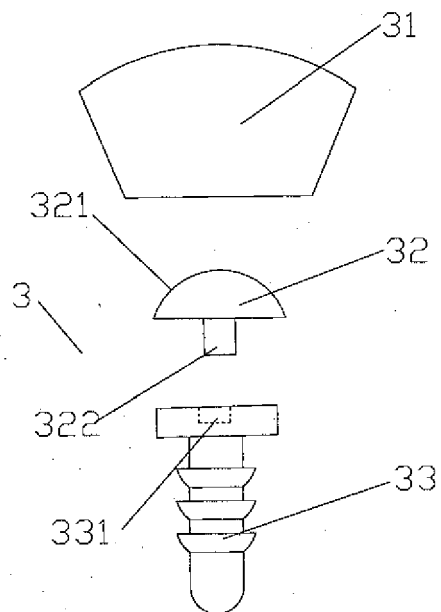


FIG. 3

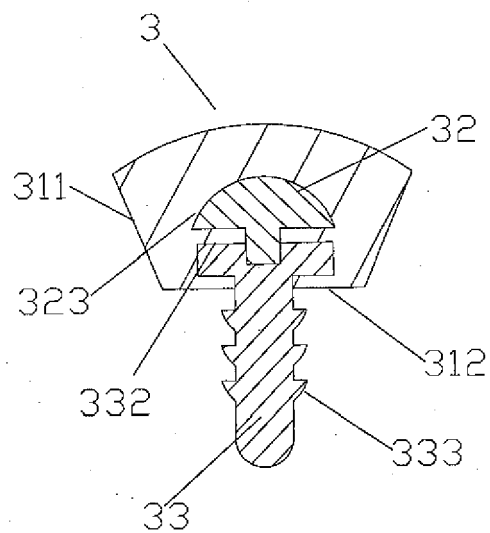


FIG. 4

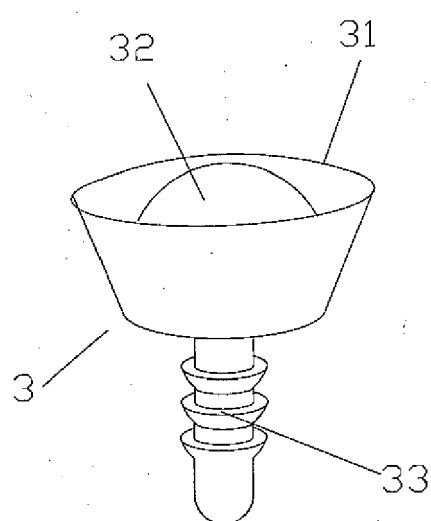


FIG. 5



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 07 10 7238

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 28 August 2007	Examiner Brumme, Ion
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 07 10 7238

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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28-08-2007

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REFERENCES CITED IN THE DESCRIPTION

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