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(54) **MODEL HELICOPTER**

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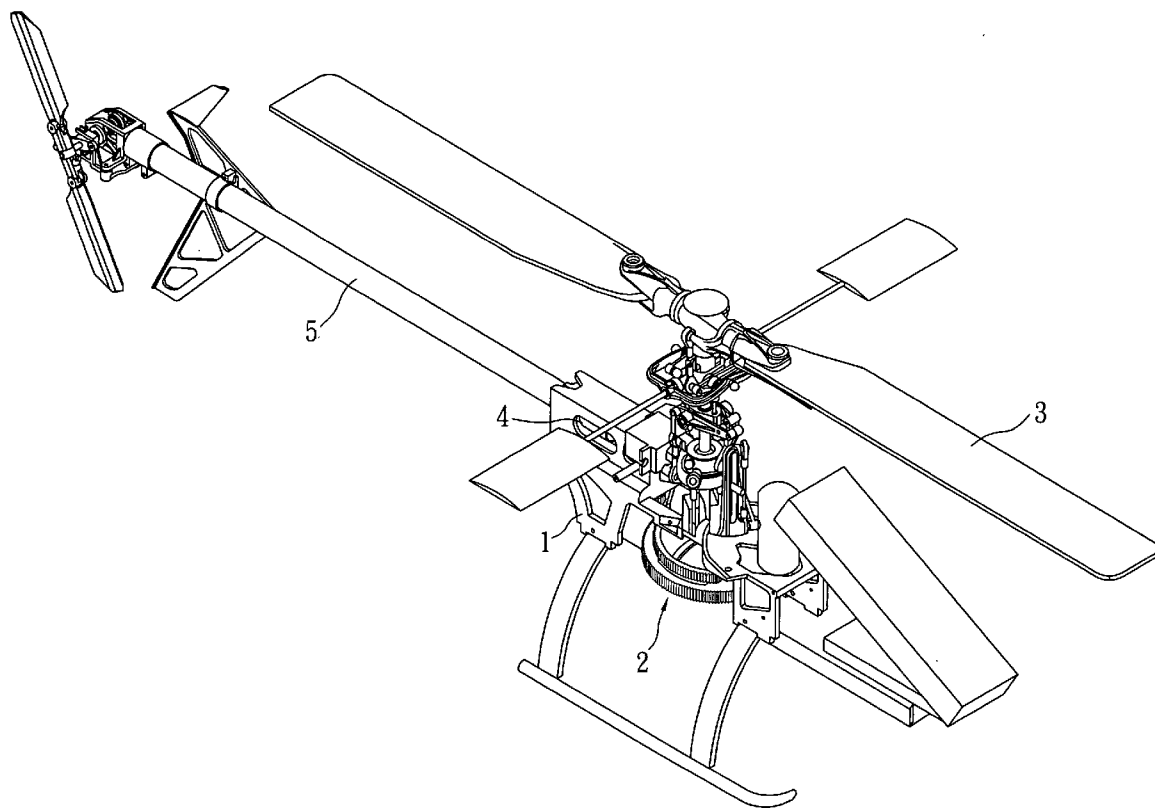
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(57) **ABSTRACT**

An improved model helicopter includes a main body and a tail pipe connecting base, and the main body has a containing space for containing a rotor transmission mechanism of a model helicopter and a connecting track transversally disposed on the main body, and the tail pipe connecting base is connected to a tail pipe, and a transmission module is pivotally connected to an end of the pipe connecting base without the tail pipe, and the tail pipe connecting base is detachably installed into the connecting track of the main body.



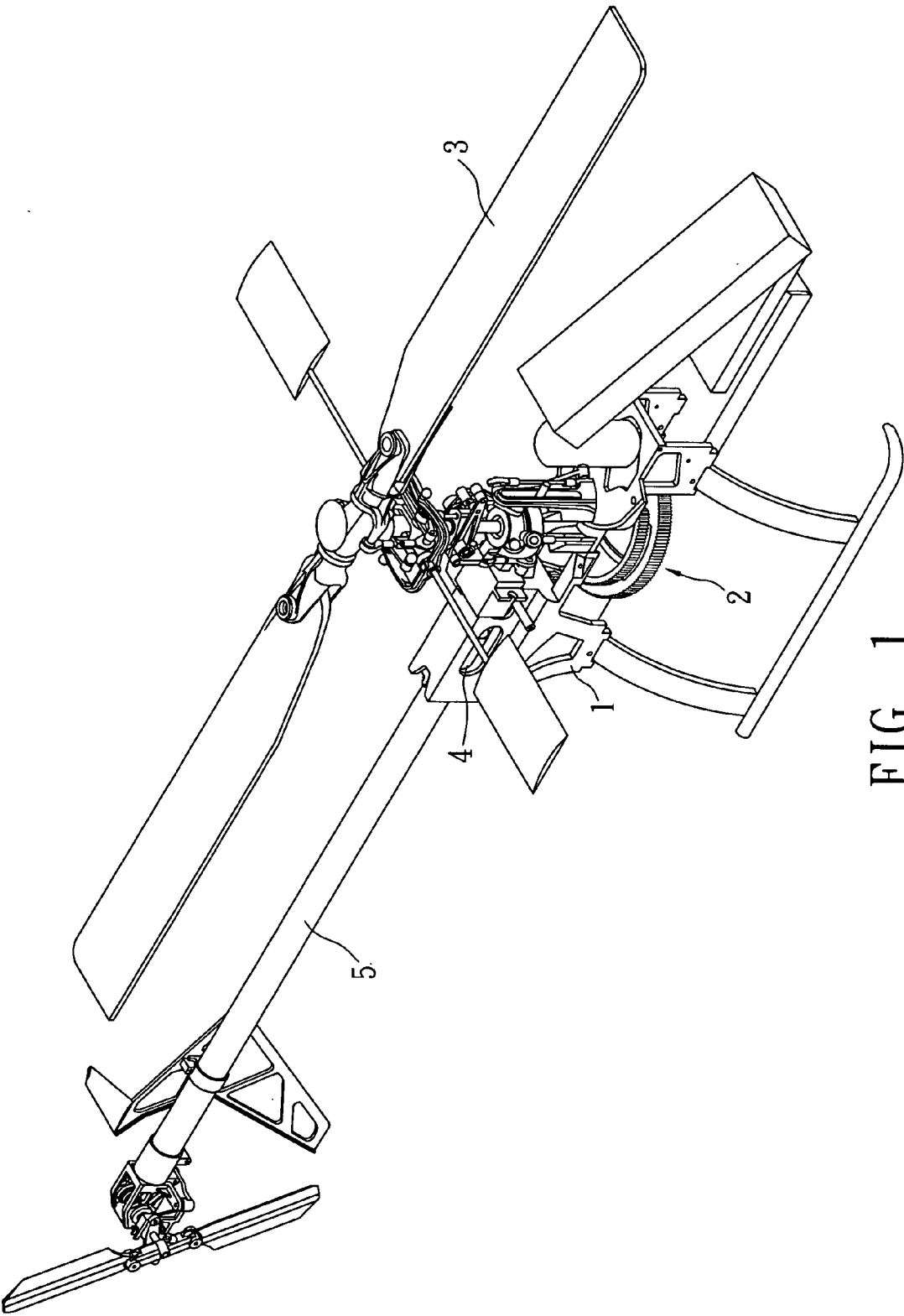


FIG. 1

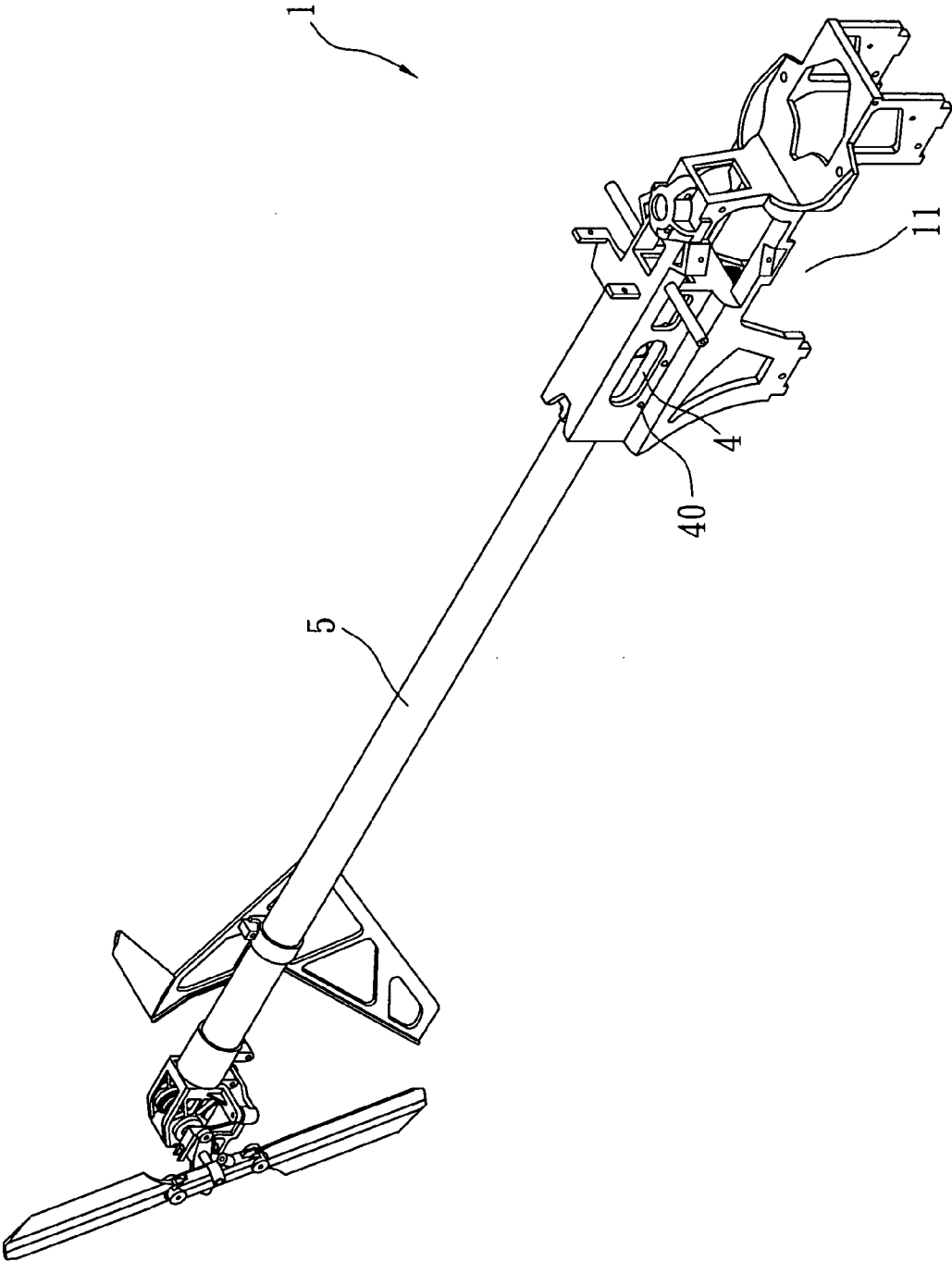
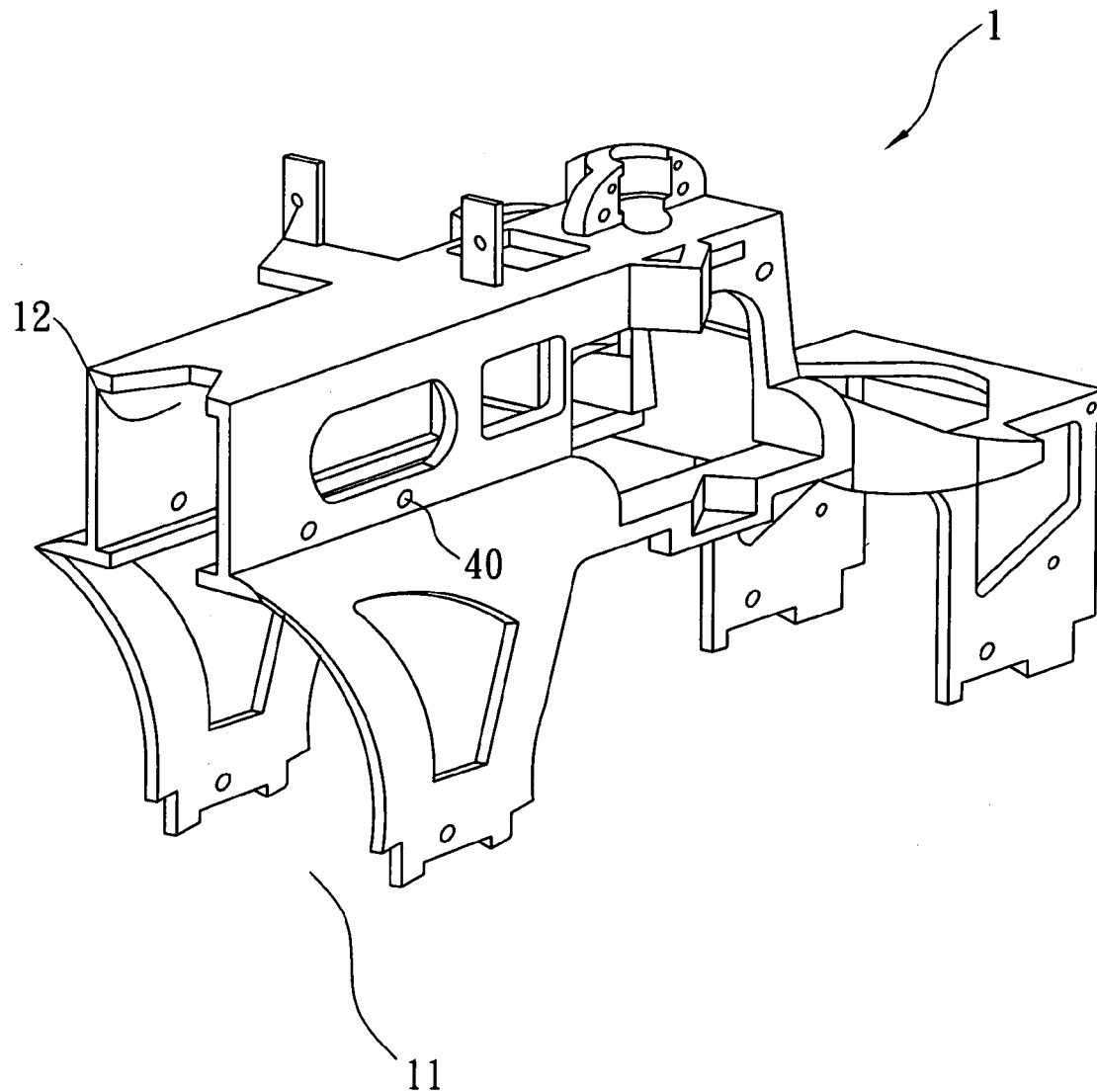
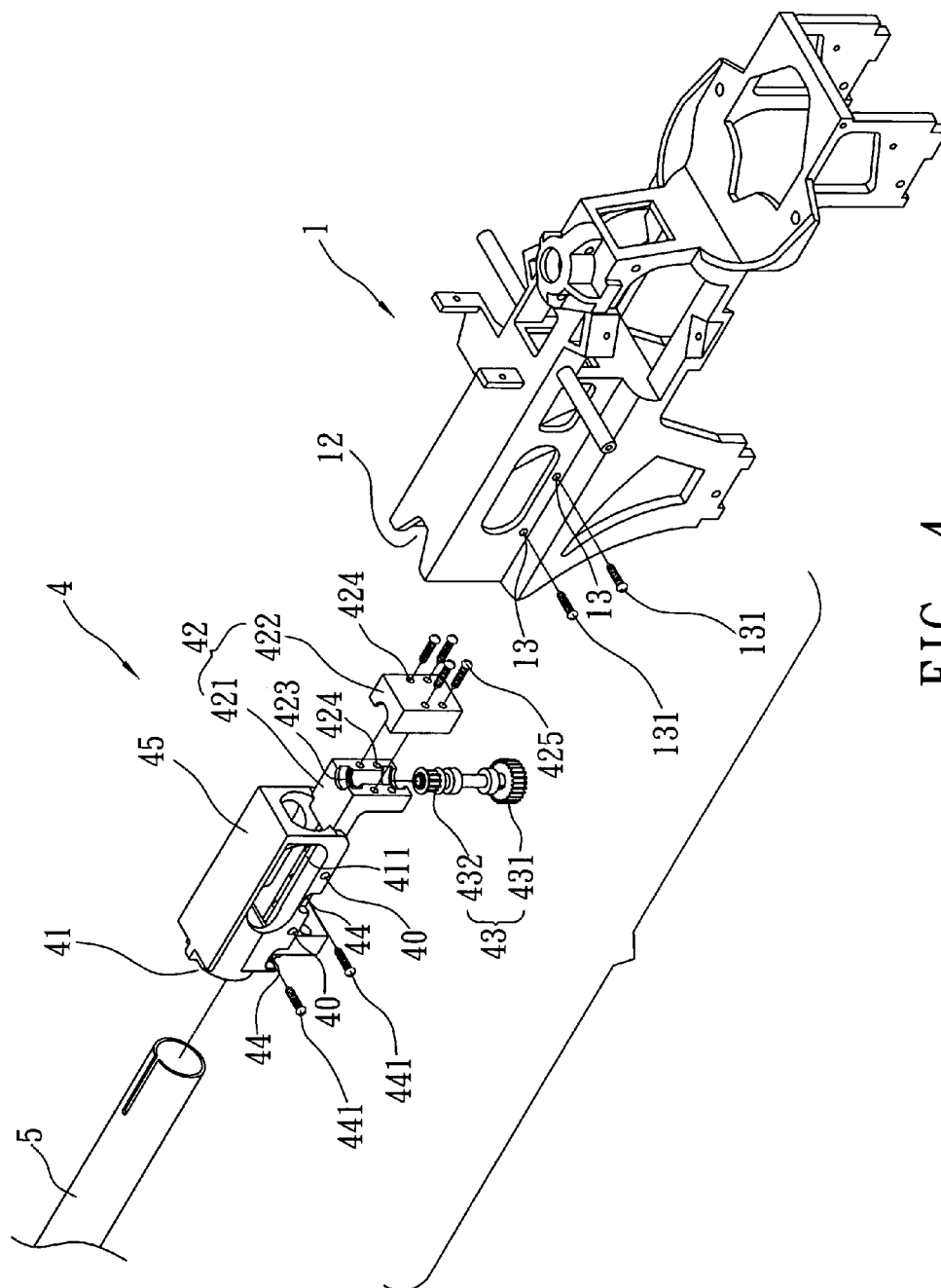


FIG. 2



**FIG. 3**



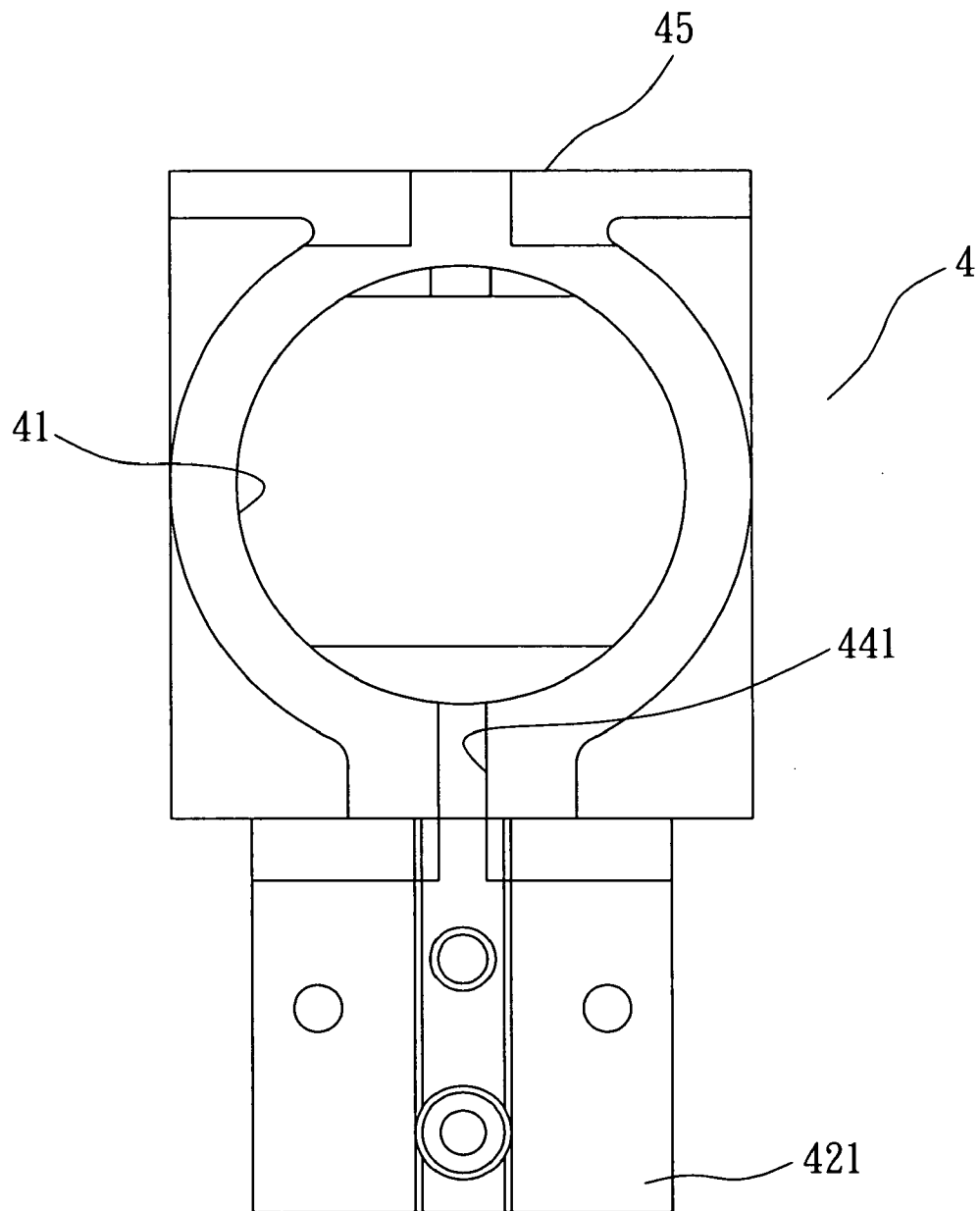


FIG. 5

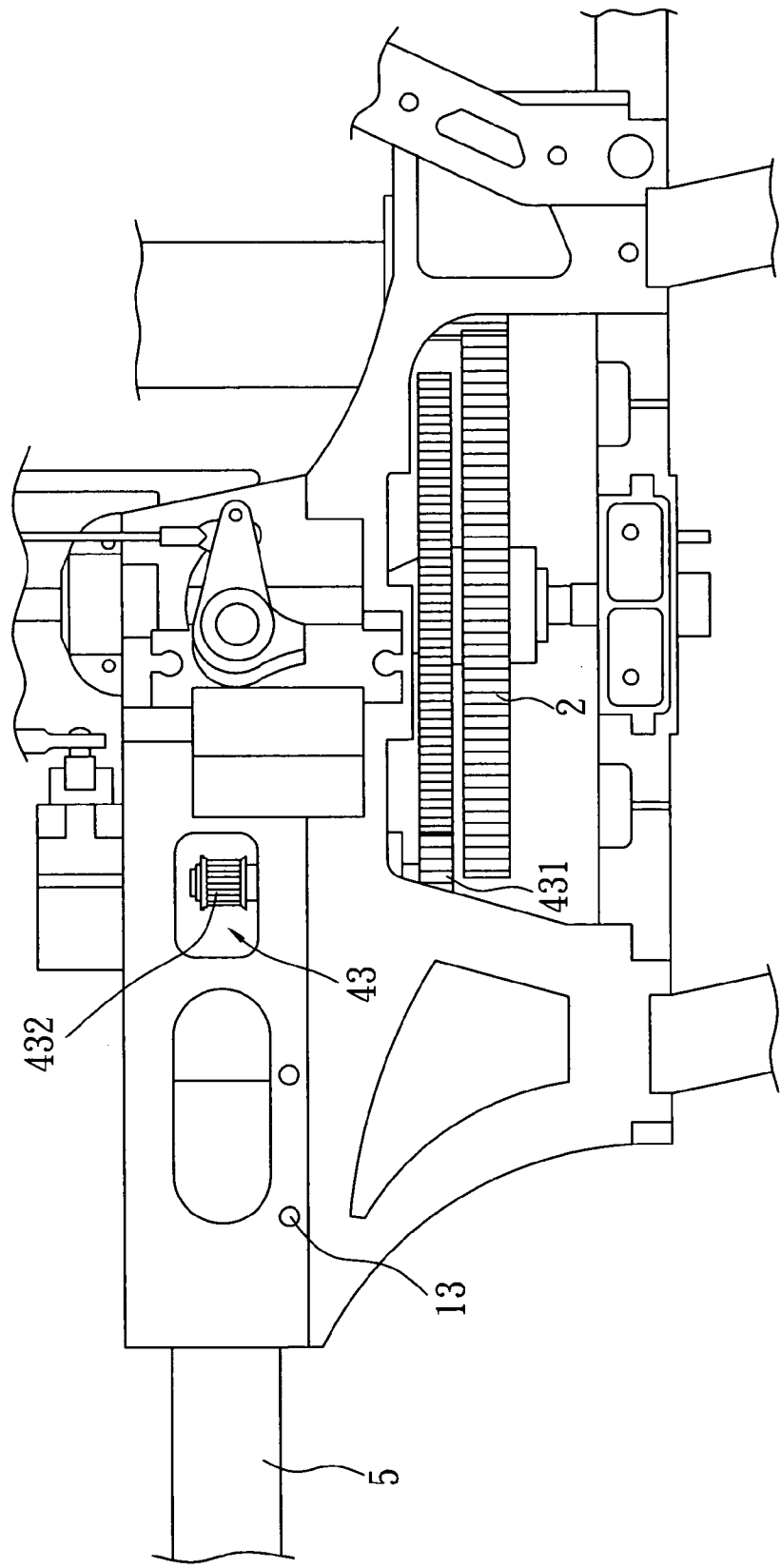


FIG. 6

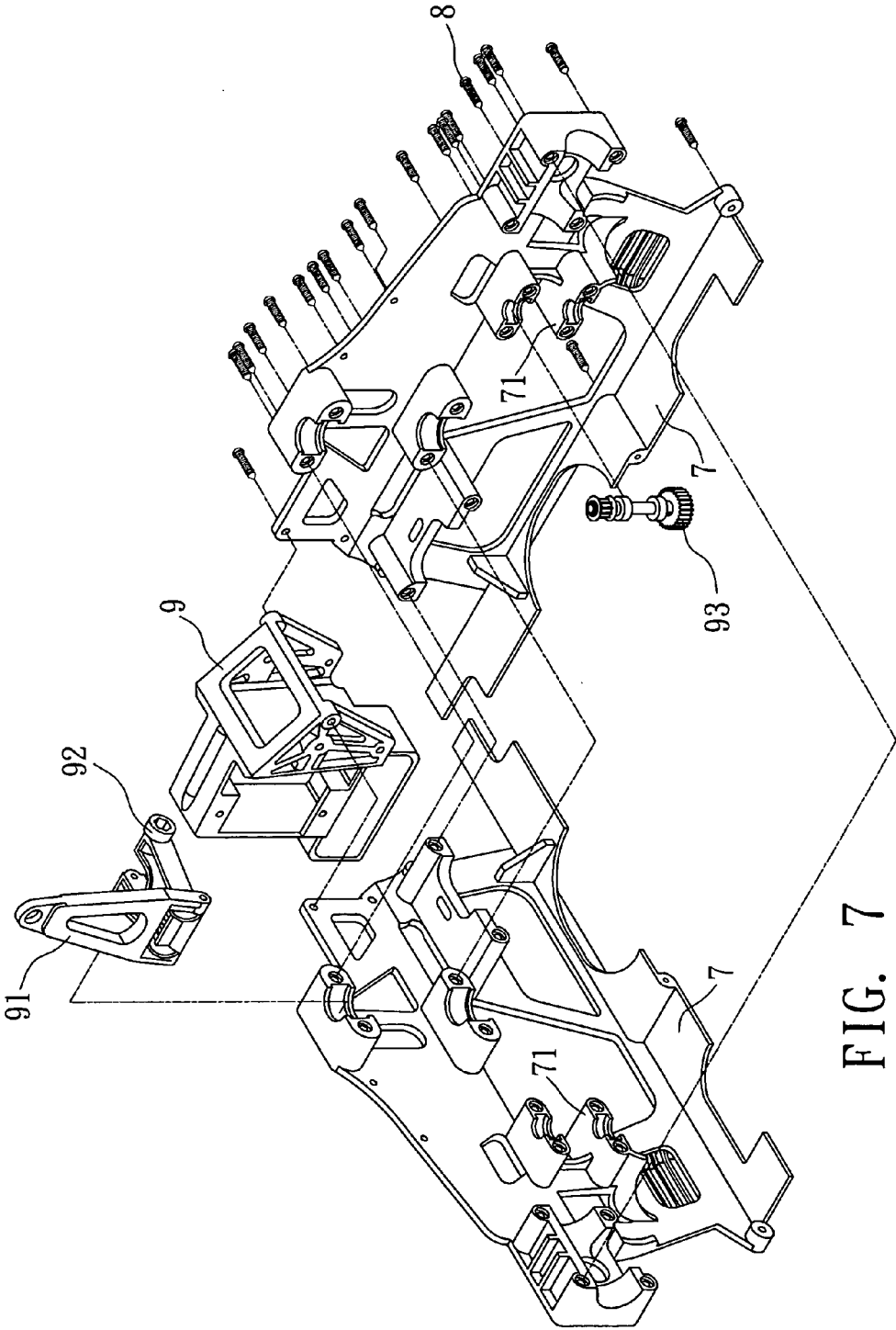


FIG. 7  
PRIOR ART



## MODEL HELICOPTER

### BACKGROUND OF THE INVENTION

#### [0001] 1. Field of the Invention

[0002] The present invention relates to an improved model helicopter, and more particularly to an improved model helicopter having an easily detachable tail pipe connecting base.

#### [0003] 2. Description of the Related Art

[0004] Referring to FIG. 7 for the helicopter casing structure of a prior art model helicopter, the structure includes two corresponding casings 7 engaged with each other, and the two casings 7 are engaged with each other by a plurality of screws 8, and the two casings 7 include a rotor transmission mechanism (not shown in the figure) of the model helicopter, a servo base 9, a control cantilever 91, an elevation control base 92 (since the two casings includes many components that are not related to the present invention, therefore only the related components are shown in the figure for illustrations), and the two casings separately include pivotal bases 71 that can be engaged with each other and pivotally connected to a tail rotor transmission module 93.

[0005] However, the tail rotor transmission module 93 will be damaged easily, if the model helicopter is fallen down accidentally. If a user wants to repair the tail rotor transmission module 93, it is necessary to remove the two casings 7 first and then loosen the plurality of secured screws 8 one by one before the user can repair or replace the tail rotor transmission module 93. Such arrangement causes inconvenience to the user. Furthermore, the user has to reinstall the two casings 7 and secure the screws back to their original positions after the repair is made, and thus the design causes tremendous inconvenience and waste time for the maintenance and repair.

### SUMMARY OF THE INVENTION

[0006] The primary objective of the present invention is to overcome the aforementioned shortcomings by providing an improved model helicopter, wherein a main body for containing a rotor transmission mechanism of the model helicopter and a tail pipe connecting base are detachably connected with each other, such that if the tail rotor transmission module installed at the tail pipe connecting base is damaged, users can remove the tail pipe connecting base directly to facilitate the maintenance, repair, or replacement of the tail rotor transmission module.

[0007] To achieve the foregoing objective, the improved model helicopter of the invention comprises:

[0008] a main body, having a containing space for installing a rotor transmission mechanism of a model helicopter, and a connecting track transversally disposed at the main body;

[0009] a tail pipe connecting base, having a positioning groove for connecting a tail pipe of the model helicopter, a pivotal base disposed at an end without the positioning groove, and at least one pressing surface pressing against the connecting track of the main body and detachably connecting the connecting track of the main body to produce a relative pivotal rotation between the tail pipe connecting base and the main body; and

[0010] a transmission module, pivotally coupled to the pivotal base of the tail pipe connecting base, and having a first transmission portion disposed at an end of the transmission module and linked with the rotor transmission mechanism, and another end of the transmission module having a second transmission portion.

### BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1 is a perspective view of a model helicopter adopting a tail pipe connecting base according to the present invention;

[0012] FIG. 2 is a perspective view of a tail pipe connecting base connected with a tail pipe according to the present invention;

[0013] FIG. 3 is a schematic view of a tail pipe connecting base according to the present invention;

[0014] FIG. 4 is an exploded view of a main body according to the present invention;

[0015] FIG. 5 is a schematic view of the structure of a tail pipe connecting base according to the present invention;

[0016] FIG. 6 is a schematic view of the structure of a tail pipe connecting base connected with a tail pipe according to the present invention; and

[0017] FIG. 7 is an exploded view of a casing of a prior art model helicopter.

### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0018] Referring to FIGS. 1 to 6, the structure according to a preferred embodiment of the present invention is used for illustrations only, but not intended to limit the scope of the present invention.

[0019] In FIG. 1, a perspective view of a model helicopter adopting a tail pipe connecting base according to the present invention is shown, and the structure of the model helicopter includes a main body 1, a rotor transmission mechanism 2, a rotor 3, a tail pipe connecting base 4, and a tail pipe 5.

[0020] Referring to FIGS. 1 to 3, the main body 1 of the embodiment is formed integrally, and the main body 1 has a containing space 11 for installing the rotor transmission mechanism 2 of the model helicopter and a containing track 12 transversally disposed on the main body 1. It is worth pointing out that the main body 1 could be made by engaging two side panels.

[0021] In FIGS. 4 and 5, the tail pipe connecting base 4 includes a positioning groove 41 for connecting the tail pipe 5 of the model helicopter, and the tail pipe connecting base 4 has a pivotal base 42 disposed at an end without the positioning groove 41.

[0022] The connecting track 12 of the main body 1 is corresponsive with an external periphery of the tail pipe connecting base 4 for fixing the tail pipe connecting base 4 into its position, and the top of the tail pipe connecting base 4 has a pressing surface 45 for pressing against the connecting track 12 of the main body 1 and being detachably coupled to the connecting track 12 of the main body 1 and preventing corresponding pivotal rotations between the tail pipe connecting base 4 and the main body 1.

[0023] The tail pipe connecting base **4** and the main body **1** separately have screw holes **13**, **40** for fixing both of the tail pipe connecting base **4** and the main body **1** into their positions by screws **131**, so that when a user wants to conduct a maintenance or repair, the screws are loosened to separate the tail pipe connecting base **4** and the main body **1** directly. The maintenance and repair are very convenient and can save the troubles caused by the removal and reinstallation of the parts of the model helicopter.

[0024] The pivotal base **42** includes a first connecting portion **421** integrally connected to the positioning groove **41** and a second connecting portion **422** corresponding to the first connecting portion **421**, and the first connecting portion **421** and the second connecting portion **422** are detachably combined with each other, and the first connecting portion **421** and the second connecting portion **422** respectively have two pivotal grooves **423** facing with each other, so that the first connecting portion **421** and the pivotal groove **423** of the second connecting portion **422** are engaged to pivotally couple the transmission module **43** at an area formed by the two pivotal grooves **423**.

[0025] The tail pipe connecting base **4** includes a slot **411** extended longitudinally along the positioning groove **41**, and the tail pipe connecting base **4** includes an adjusting hole separately disposed on both sides of the slot **411** for adjusting the screw **441** to change the size of the positioning groove **41**, so that the tail pipe **5** and the positioning groove **41** can be combined closely.

[0026] Referring to FIGS. **4** to **6**, the tail pipe connecting base **4** is pivotally coupled to the transmission module **43**, and the transmission module **43** of this preferred embodiment is a tail rotor transmission module pivotally coupled to the pivotal base **42** of the tail pipe connecting base **4**, and an end of the transmission module **43** includes a first transmission portion **431** linked to the rotor transmission mechanism **2** and another end of the transmission module **43** includes a second transmission portion **432**.

[0027] The first connecting portion **421** and the second connecting portion **422** separately include corresponding fixing holes **424** to be fixed by screws **425**, such that after a user removes the main body **1** and the tail pipe connecting base **4**, the first connecting portion **421** and the second connecting portion **422** can be separated directly for maintaining, repairing, or replacing the transmission module **43**. Therefore, the invention not only provides a convenient and quick detachable structure of a tail pipe **5**, but also saves the time for removing and reinstalling the tail pipe **5** and the tail rotor transmission module.

[0028] While the invention has been described by way of example and in terms of a preferred embodiment, it is to be understood that the invention is not limited thereto. To the contrary, it is intended to cover various modifications and similar arrangements and procedures, and the scope of the

appended claims therefore should be accorded the broadest interpretation so as to encompass all such modifications and similar arrangements and procedures.

What is claimed is:

1. An improved model helicopter, comprising:

a main body, having a containing space for installing a rotor transmission mechanism of a model helicopter, and a connecting track transversally disposed at said main body;

a tail pipe connecting base, having a positioning groove for connecting a tail pipe of said model helicopter, a pivotal base disposed at an end other than said positioning groove, and at least one pressing surface for pressing against said connecting track of said main body and detachably connecting said connecting track of said main body to produce a relative pivotal rotation between said tail pipe connecting base and said main body; and

a transmission module, pivotally coupled to said pivotal base of said tail pipe connecting base, and having a first transmission portion disposed at an end of said transmission module and linked to said rotor transmission mechanism, and another end of said transmission module having a second transmission portion.

2. The improved model helicopter of claim 1, wherein said main body is formed by engaging two side panels.

3. The improved model helicopter of claim 1, wherein said main body is integrally formed.

4. The improved model helicopter of claim 1, wherein said connecting track of said main body corresponds with an external periphery of said tail pipe connecting base for positioning said tail pipe connecting base to prevent said tail pipe connecting base and said main body from being rotated and swung pivotally.

5. The improved model helicopter of claim 1, wherein said pivotal base includes a first connecting portion integrally coupled with said positioning groove and a second connecting portion corresponding to said first connecting portion, and said first connecting portion and said second connecting portion are detachably connected, and said first connecting portion and said second connecting portion respectively include two pivotal grooves facing with each other, such that said pivotal grooves of said first connecting portion and said second connecting portion are engaged with each other to pivotally connect said transmission module to an area formed by said two pivotal grooves.

6. The improved model helicopter of claim 1, wherein said transmission module is a tail rotor transmission module.

7. The improved model helicopter of claim 5, wherein said tail pipe connecting base includes a slot extended longitudinally along said positioning groove.

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