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Chen

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(54) **DEVICE FOR SELF-BOUNCING AND SLOWLY CLOSING DRAWER**

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A47B 88/477 (2017.01)

(52) **U.S. Cl.**
CPC ***A47B 88/467*** (2017.01); ***A47B 88/477*** (2017.01)

(58) **Field of Classification Search**
CPC A47B 88/467; A47B 88/477
See application file for complete search history.

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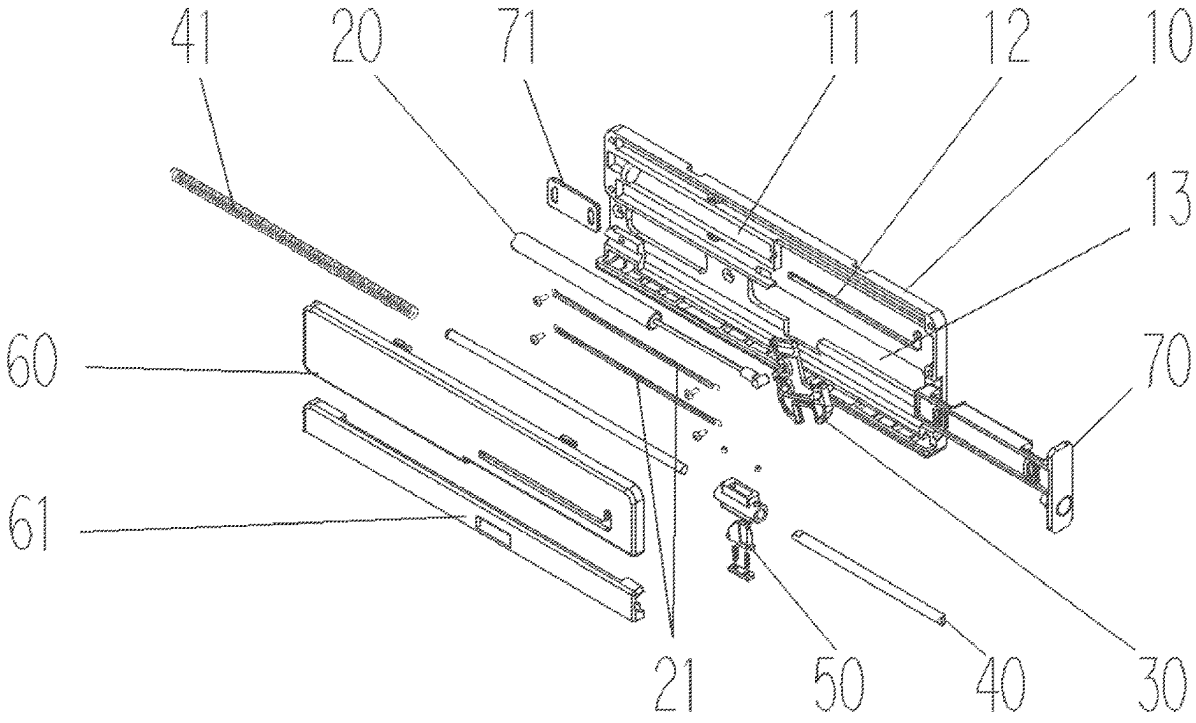
(57) **ABSTRACT**

A device for auto-bouncing and slowly closing a drawer mainly provides a buffer device on a slide rail between a drawer and a left side opposite surface or right side opposite surface of a drawer slot, so that the impact is reduced and the drawer is automatically pulled back when the drawer is closed. At the same time, a door bouncing device is operated in coordination with, so that the drawer can be automatically eject to a specific position when the drawer is pressed, so as to achieve the multiple practicality.

5 Claims, 6 Drawing Sheets



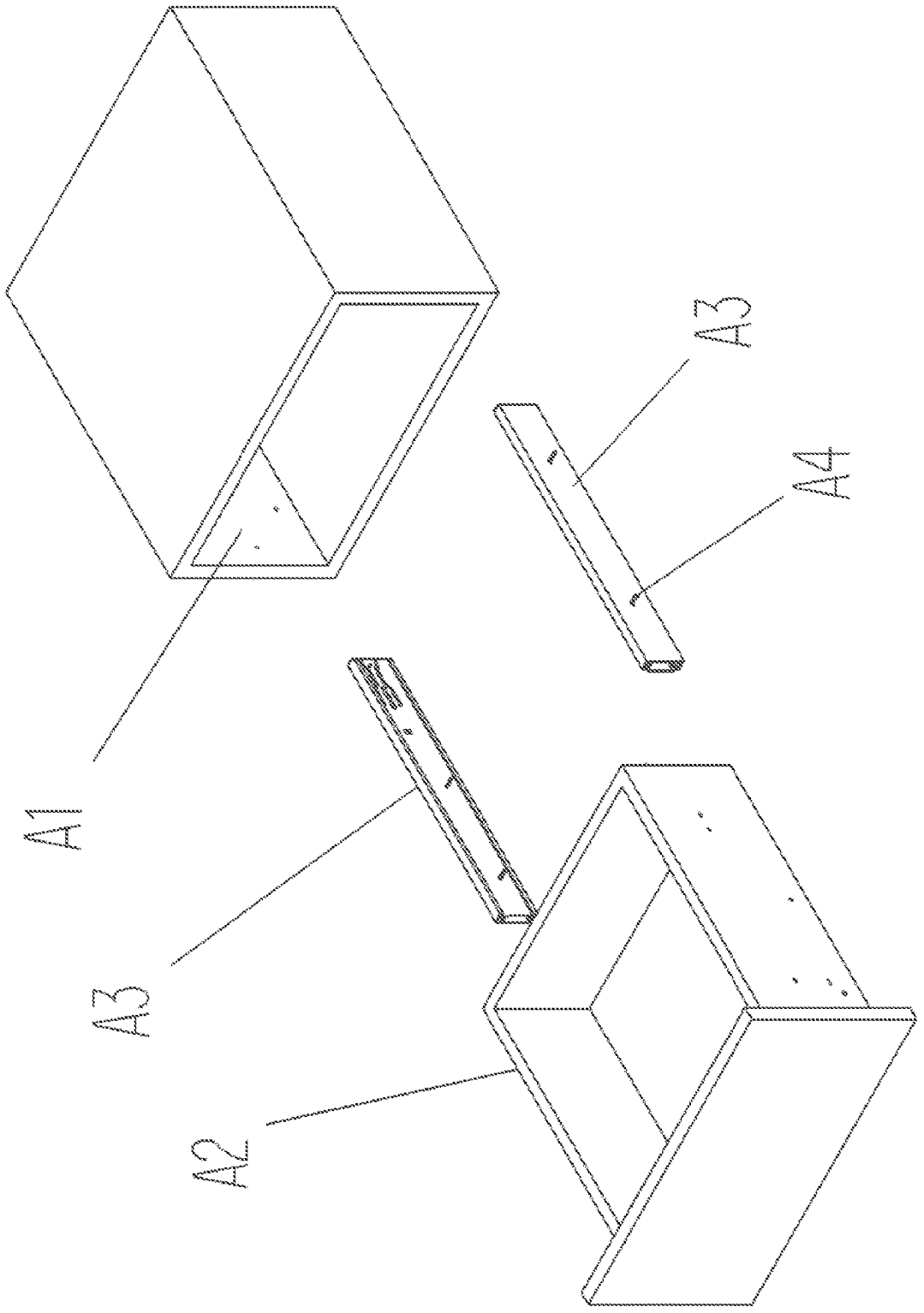


FIG. 1
PRIOR ART

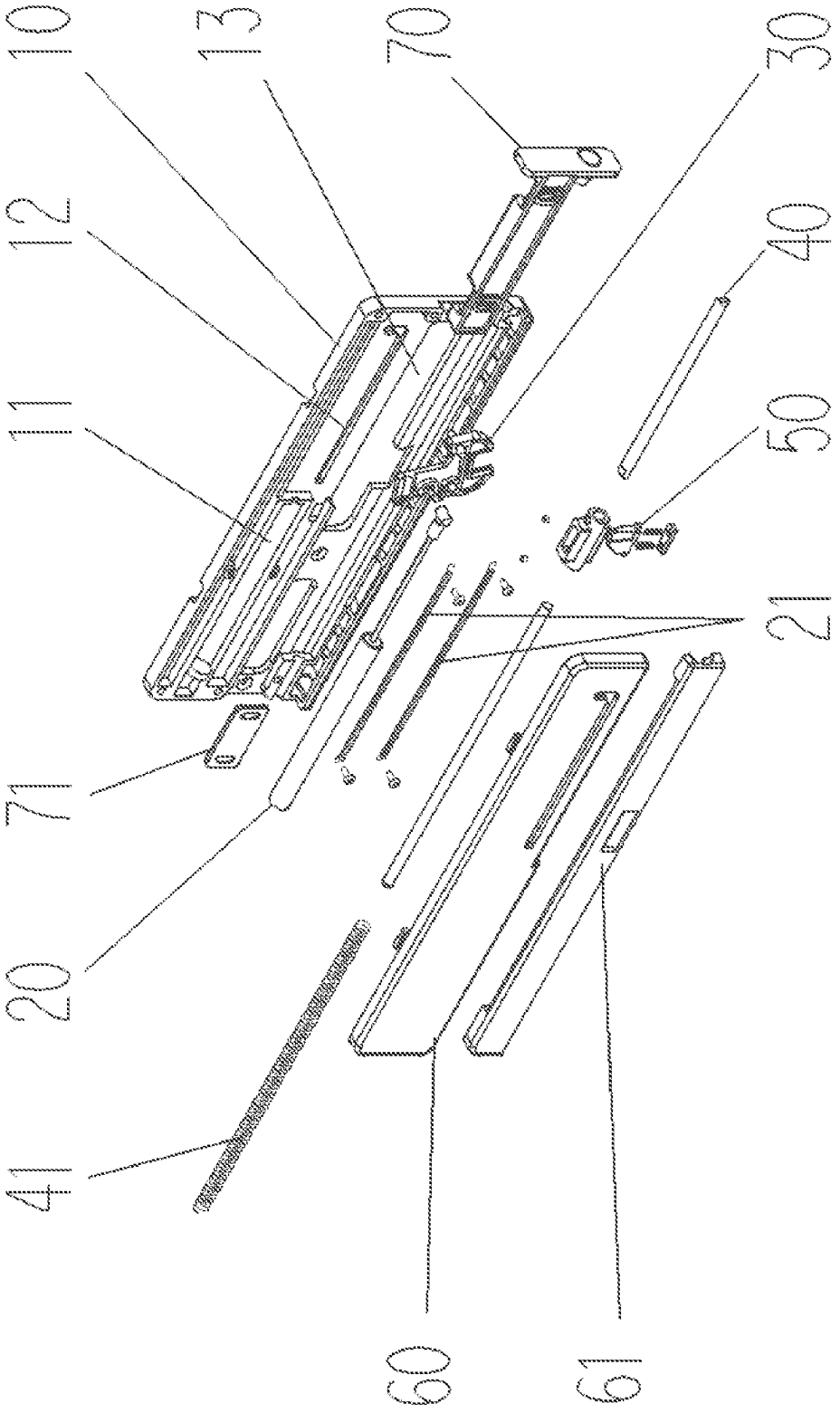


FIG. 2

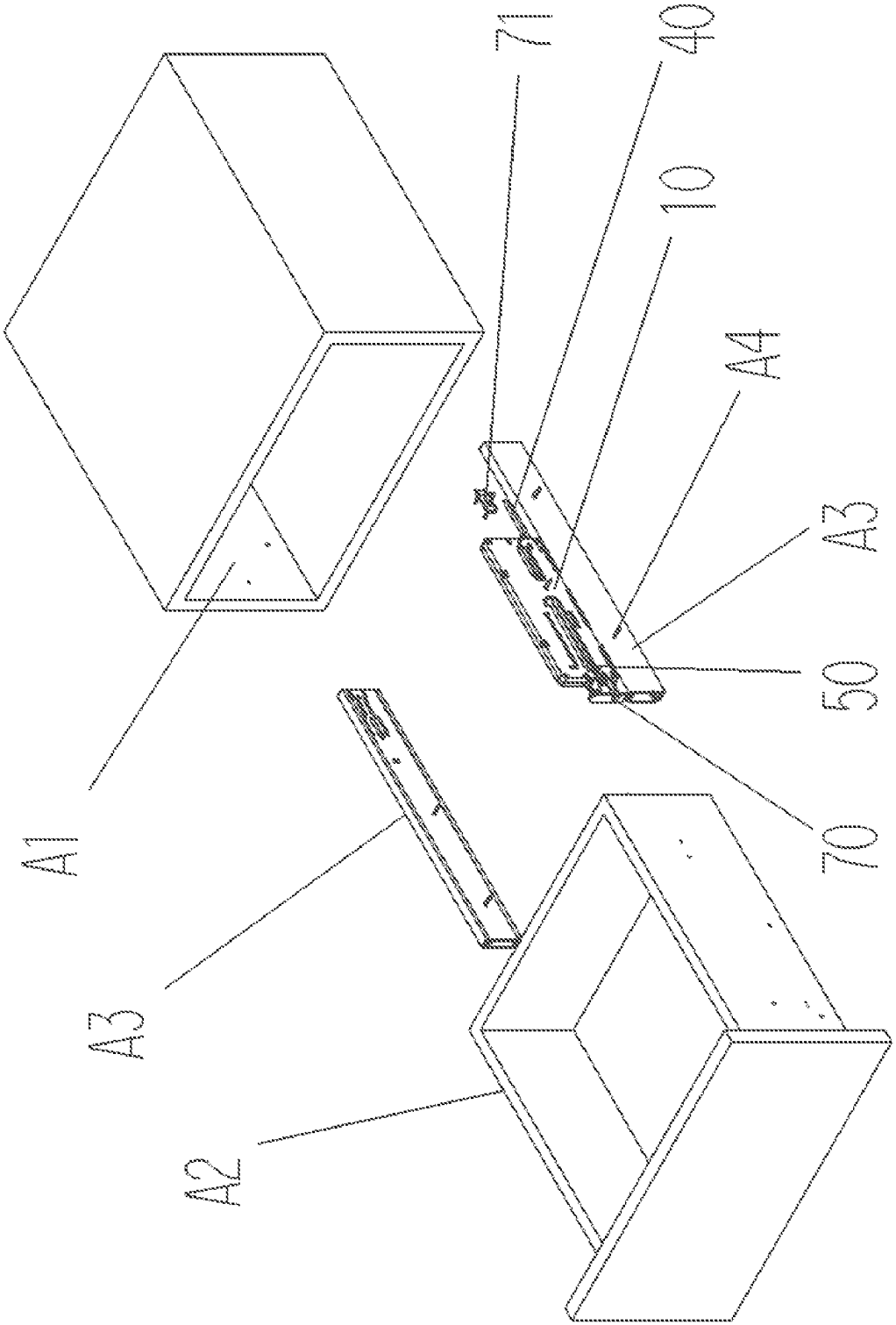


FIG. 3

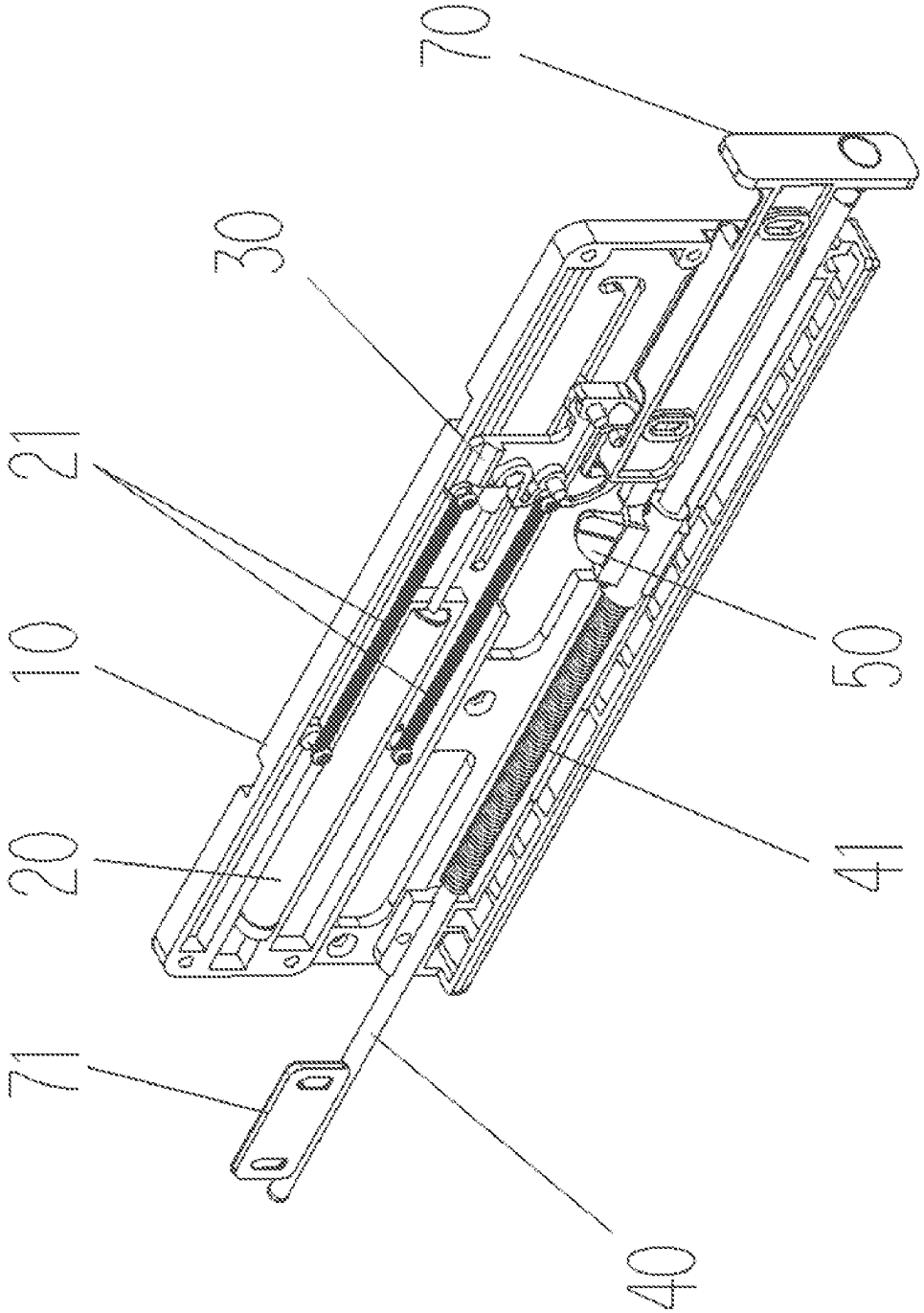


FIG. 4

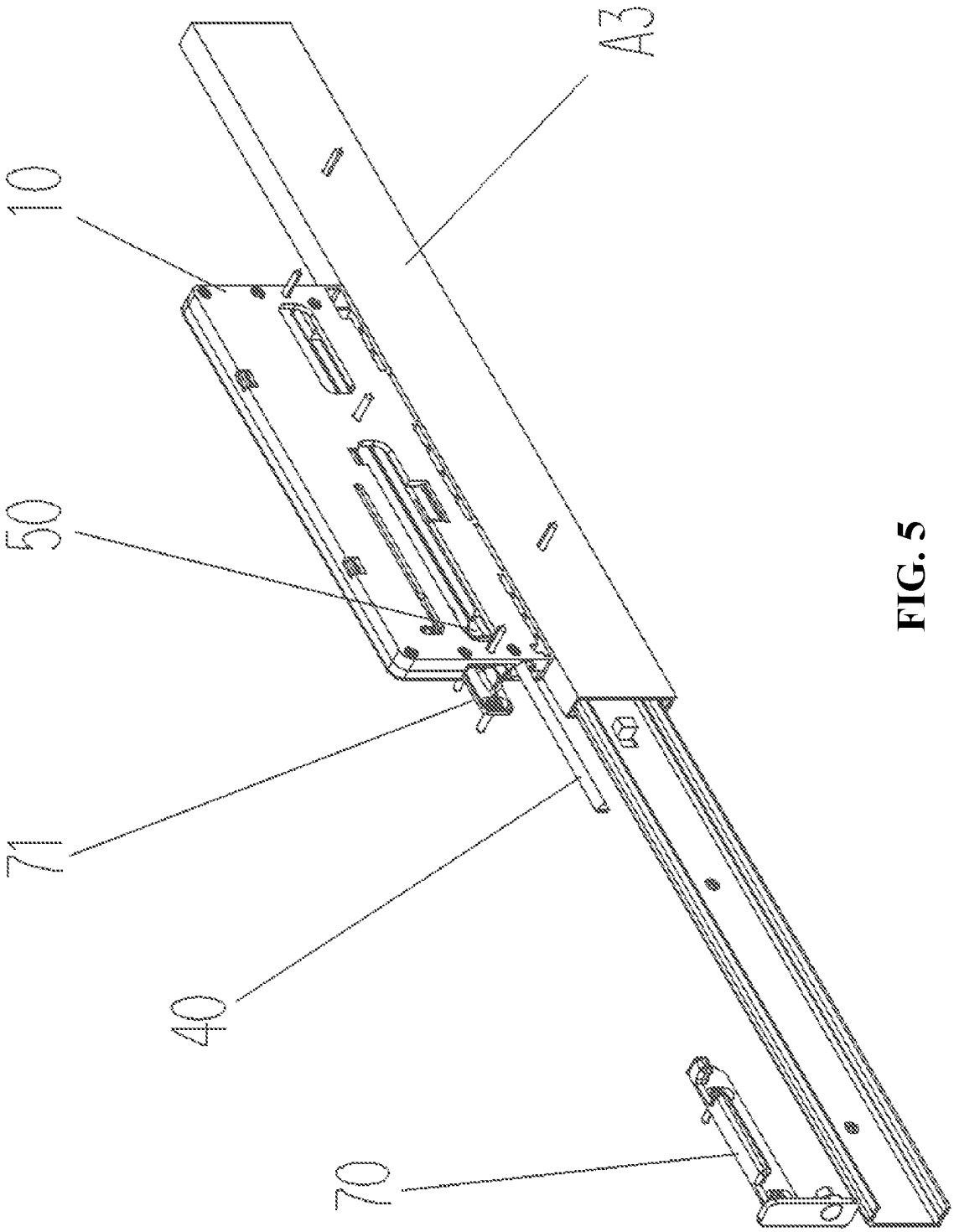


FIG. 5

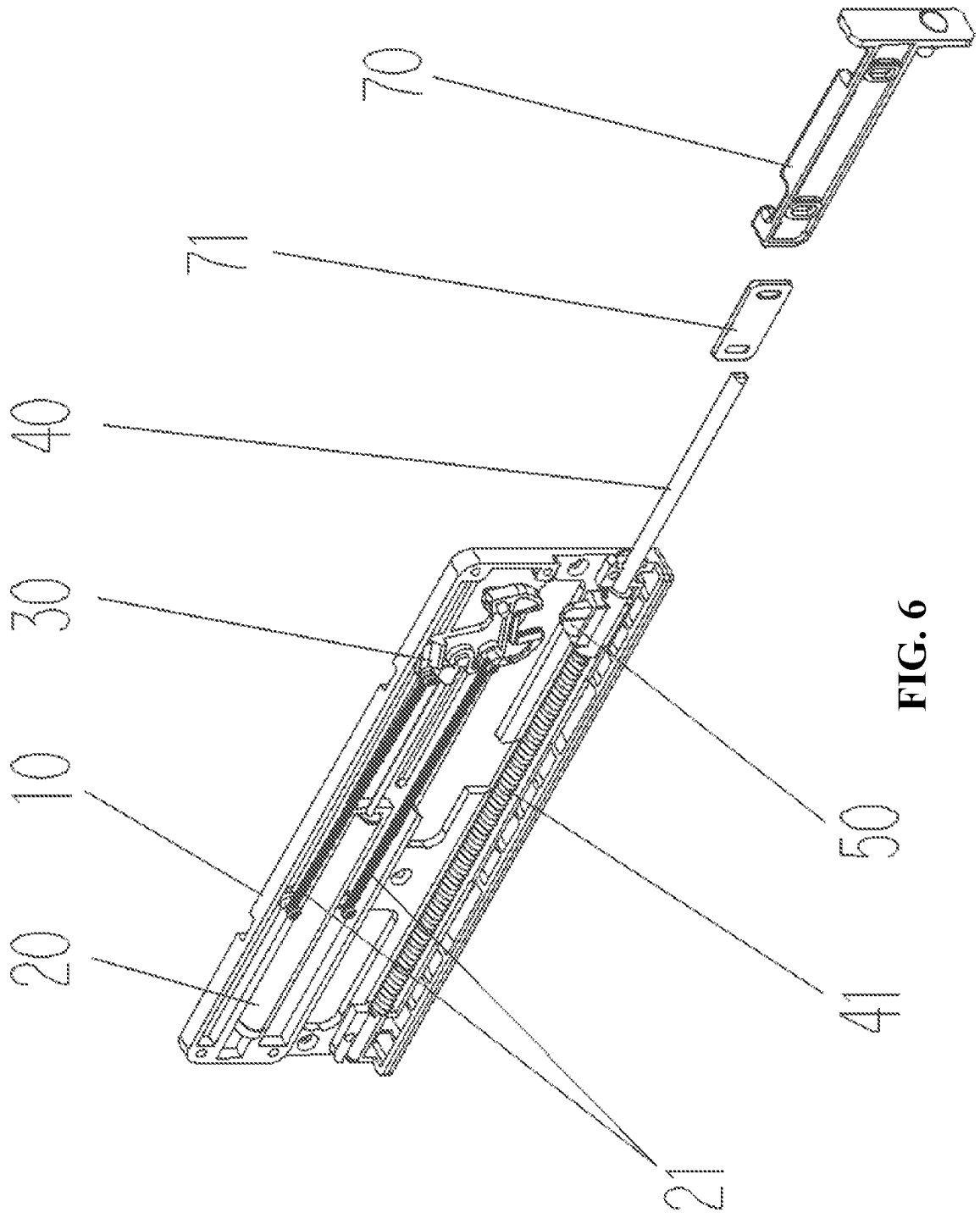


FIG. 6

DEVICE FOR SELF-BOUNCING AND SLOWLY CLOSING DRAWER

BACKGROUND OF THE INVENTION

(a) Technical Field of the Invention

The present invention relates to a device for self-bouncing and slowly closing a drawer that can easily control the automatic opening and closing of the drawers of cabinets of furniture or various storage devices.

(b) Description of the Prior Art

The drawer is a common and indispensable storage device in public life. It is mainly installed in the cabinet of general furniture or various storage equipment. The opening or closing action of the drawer can be manually controlled through the slide rail device so as to take or place items from or in the drawer. The common slide rails are set on both sides of the drawer, and the drawer is limited by the guidance of the slide rails and manual operation, so as to control the opening and closing of the drawer. However, since most of the slide rails only have the guide function of reducing the friction resistance of the drawer opening and closing and limiting slippage, so that the user is very likely to cause damage or a lot of noise due to the uncontrollable force applied during operation. To increase the use convenience of a drawer, the manufacturers only increase the efficiency of the slide rails to reduce slip, but there are only automatic slow-push mechanisms in the market, which makes the drawer open slowly to prevent slippage or noise caused by over-opening, not only inconvenient in operation but limited in practical values.

SUMMARY OF THE INVENTION

The present invention mainly provides a buffer device on a slide rail between a drawer and the left or right side opposite surface of a drawer slot, so that the impact is reduced and the drawer is automatically pulled back when the drawer is closed. At the same time, a door bouncing device is operated in coordination with, so that the drawer can be automatically eject to a specific position when the drawer is touch, so as to achieve the multiple practicality.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of a conventional art;

FIG. **2** is an exploded view of the present invention;

FIG. **3** is a perspective view of the entire implementation of the present invention;

FIG. **4** is a perspective view of the closing implementation of the present invention;

FIG. **5** is a perspective view of the opening implementation of the present invention; and

FIG. **6** is a partly perspective view of the opening implementation of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

As shown in FIG. **1**, which is a perspective view of a conventional structure, a slide rail **A3** is respectively locked and provided between a drawer slot **A1** and the right and left side opposite surfaces of a drawer **A2** through a fixing rod **A4**, so that the drawer **A2** can be opened or closed from or in the drawer slot **A1** of the cabinet by pushing or pulling it, so as to take or store an item from or in the drawer **A2**. The above conventional structure mostly only has the functions of reducing friction resistance when the drawer **A2** is opened or closed or the guidance to limit slippage, such that the damage is caused or a great amount of noise is generated to affect the tranquility of the environment if improper fore is exerted upon operation, the operation being inconvenient and the practical values being expected to improve.

FIGS. **2** to **6** of the present invention are diagrams of an embodiment in which the device for automatic-bouncing and slowly closing a drawer of the present invention is disposed on the slide rail between the right side opposite surface of the drawer **A2** and the drawer slot **A1** for ease of explanation. If it is disposed on the other side, then the direction sequence of the composition is reversed.

Referring to FIG. **2**, where a preferred embodiment of the present invention is shown, the device for automatic-bouncing and slowly closing a drawer of the present invention is constituted as the following: a seat body **10** is provided with a buffer groove **11**, buffer hook groove **12** and door bouncing groove **13**, where the buffer groove **11** of the seat body **10** is provided with a buffer rod **20** provided with a plurality of pull springs **21**, the buffer hook groove **12** of the seat body **10** a buffer hook **30** operated in coordination with the buffer rod **20** and pull springs **21**, and the door bouncing groove **13** of the seat body **10** a door bouncing rod **40**. Furthermore, the door bouncing rod **40** is provided with a compression spring **41** and a door bouncing hook **50** operated in coordination therewith, and the outer end of the seat **10** is respectively covered with a upper cover **60** and lower cover **61**; the outer end of the seat body **10** is respectively provided with a push seat **70** and fixing block **71**. Whereby, a self-bouncing and slowly-closing device with a simple, practical drawer operating manner can be obtained by the control of allowing the buffer rod **20** and door bouncing rod **40** to be operated in coordination with the buffer hook **30** and door bouncing hook **50**.

Referring to FIGS. **3** to **6**, the seat body **10** of the present invention is fixed on the slide rail **A3** locked by the fixing rod **A4** between the drawer slot **A1** of the cabinet and the opposite surface of one side of the drawer **A2**. Therefore, the push seat **70**, fixing block **71** can control the door bouncing rod **40**, door bouncing hook **50** by pressing the drawer **A2**, and the functions of the pull springs **21** and compression spring **41** are cooperated with to easily control the automatic slow opening or closing of the drawer **A2**.

When the opened drawer **A2** is to be closed in the drawer slot **A1** of the cabinet, it only needs to be lightly pressed and pushed into the drawer **A2**, and the fixing block **71** fixed on the drawer slot **A1** and drawer **A2** will then touch and move the door bouncing hook **50** inside the seat body **10**, so that the door bouncing rod **40** and door bouncing hook **50** can be pulled by the pull springs **21** to a specific position, and the door bouncing hook **50** is allowed to be turned and fixed on the specific position. Furthermore, the drawer **A2** is allowed to be closed continuously due to inertia, and the action of the closing of the drawer **A2** is stopped due to buffer when the push seat **70** touches the buffer gook **30**. Furthermore, the pull springs **21** is cooperated to allow the buffer hook **30** to be hooked on the push seat **70**, thereby allowing the drawer **A2** to be easily, automatically closed inside the cabinet **A1**.

During the closing of the drawer **A2** into the drawer slot **A1** of the cabinet, the buffer rod **20** provided inside the seat body **10** can then slow down the speed of the drawer **A2** when returned, and prevent the damage and noise thereof due to impact when closed.

When the drawer A2 closed inside the drawer slot A1 of the cabinet is to be opened, it is lightly pressed, and the push seat **70** of the seat body **10** pulls the buffer hook **30**, allowing the door bouncing rod **40** and door bouncing hook **50** to be released, and the slide rails A3 to eject the drawer A2 with the action of the compression spring **41**, thereby completing the automatic opening of the drawer A2.

To sum up, the above-mentioned elements of the present invention can be configured with any components for various combinations, so as to achieve the purpose of simple filling and packaging.

I claim:

1. A device for self-bouncing and slowly closing a drawer, providing a buffer groove, buffer hook groove and door bouncing groove on a seat body, a buffer rod provided on said buffer groove of said seat body, a plurality of pull springs said buffer rod, a compression spring said buffer hook groove of said seat body operated in coordination with said buffer rod and pull springs, a door bouncing rod said door bouncing groove of said seat body, a compression spring on said door bouncing rod and a door bouncing hook matched thereon, a upper cover and lower cover respectively covered on an outer end of said seat body, a push seat and fixing block respectively provided on said outer end of said seat body, and a simple operation of drawer self-bouncing and slow-closing can be achieved by cooperating said buffer rod and door bouncing rod with the control of said buffer hook and door bouncing hook, so that said cabinet drawer can be simply operated in automatic-bouncing and slow-closing.

2. The device according to claim **1**, wherein said seat body is provided on a slide rail between said drawer of said cabinet and a left side opposite surface of right side opposite surface of a drawer slot, and a push seat, fixing block are respectively fixed on said slide rail, allowing said push seat, fixing block to control said door bouncing rod, door bouncing hook by pressing said drawer of said cabinet, and allowing the automatic slow opening or closing of said drawer to be easily controlled cooperating with the functions of said pull springs and compression spring.

3. The device according to claim **1**, wherein said buffer hook inside said seat body configured on said slide rail between said drawer of said cabinet and a left side opposite surface or right side opposite surface of a drawer slot allows a fixing block of said door bouncing hook to push said door bouncing hook, and said door hook is pulled by said pull spring to fix at a specific position, and said drawer is pulled to return to the inside of said cabinet cooperating with said slide rail, so that a simple, easy drawer closing can be achieved by pushing said drawer in.

4. The device according to claim **1**, wherein said buffer rod provided inside said seat body slows returned speed of said drawer during said drawer is being closed, and prevents damage and noise caused by impact upon closing.

5. The device according to claim **1**, wherein said push seat can act on said buffer hook, allowing said door bouncing rod and door bouncing hook to be released, and said slide rails to eject said drawer cooperating with the function of said compression spring, thereby completing the automatic opening of said drawer.

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