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(54) **BED WITH ROTARY OPENING AND CLOSING SYSTEM FOR RESTRAINING AT ANY DESIRED
ROTARY OPENING AND CLOSING POSITION A MATTRESS-BASE**

BETT MIT DREHÖFFNUNGS- UND -SCHLIESSSYSTEM FÜR LATTENROST ZUR
ZURÜCKHALTUNG EINES LATTENROSTS IN JEDER GEWÜNSCHTEN DREHÖFFNUNGS- UND
-SCHLIESSPOSITION

LIT AVEC SYSTÈME D'OUVERTURE ET DE FERMETURE ROTATIF PERMETTANT RETENIR À
TOUTE POSITION D'OUVERTURE ET DE FERMETURE ROTATIVE DÉSIRÉE UN SOMMIER

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Description

BACKGROUND OF THE INVENTION

[0001] The present invention relates to a bed comprising a rotary opening and closing system for restraining at any desired rotary opening and closing position. Driving systems for rotary opening and closing a mattress-base and allowing the mattress-base to be restrained at a plurality of desired rotary positions both in the opening and closing movements of said mattress-base are already known.

[0002] However, the above prior systems are very construction-wise complex since they usually comprise a plurality of levers or linkage mechanisms.

[0003] In particular, in a bed including an article storing mattress-base the bed operating mechanical means have a large size and must necessarily be made of iron materials because of the high forces required for operating the mattress-base. A further drawback of prior mattress-base rotary operating or driving mechanisms is that, at the start of the mattress-base opening movement, it is necessary to apply a high force and, for closing the mattress-base it is also necessary to apply a high restraining power to prevent the mattress-base from abruptly falling-off.

[0004] Yet another drawback of prior rotary mattress-base operating mechanisms is that they comprise large size and powerful gas springs applying a very strong force to the mattress-base operating mechanism with a possible failure thereof.

[0005] Yet another drawback of prior art mattress-base rotary operating mechanisms is that they comprise a large number of mechanical parts which must be assembled by very complex and slow assembling operations.

[0006] Yet another drawback of prior rotary mattress-base operating mechanisms is that, as the mattress-base must be changed, it is also necessary to change the actuating gas springs.

[0007] Yet another drawback of prior rotary mattress-base operating mechanisms is that if an excessive load is applied during the closing of the mattress-base, their gas springs cause the overall mattress-base to abruptly fall on the bed bottom article storage part, with a consequent great safety problem.

[0008] Other examples of known beds with opening and closing system are disclosed in JP S55 66556 U and US 2013/019402 A1.

SUMMARY OF THE INVENTION

[0009] Thus, the aim of the present invention is to overcome the above and yet other drawbacks of prior mechanisms for rotatively operating bed-bases, by providing a rotary opening and closing mattress-base system which is adapted to restrain the mattress-base at any desired rotary position both in the opening and closing operations thereof.

[0010] Within the scope of the above mentioned aim, a main object of the invention is to provide such a rotary mattress-base operating mechanism without operating levers for opening/closing the mattress-base, thereby providing very high safety constructional features.

[0011] Another object of the present invention is to provide such a rotary mattress-base operating mechanism or system by which both the bed-base and mattress may be easily operated by a "single user finger".

[0012] Yet another object of the present invention is to provide such a rotary mattress-base operating mechanism in which the mattress-base and mattress assembly may be held at a stop or restrained position at each point of the mattress-base and mattress assembly rotary movement, even at a very small distance from a resting/closing position thereof, thereby preventing the mattress-base and mattress assembly from abruptly downward falling.

[0013] Yet another object of the present invention is to provide such a mattress-base and mattress rotary operating system including gas springs of very small operating power, thereby increasing the mattress-base and mattress assembly life, because of the very small operating stress on the components thereof.

[0014] Yet another object of the present invention is to provide such a mattress-base and mattress operating system which may be made starting from light materials such as non-metal or wood materials for the bed-base and plastics materials for many other components of the rotary operating systems.

[0015] Yet another object of the present invention is to provide such a rotary operating system which may be made starting from a recycled high strength plastics materials, for example glass fiber nylon, thereby providing a very strong system.

[0016] Yet another object of the present invention is to provide such a rotary operating system the main components of which may be made by existing advanced injection molding apparatus.

[0017] Yet another object of the present invention is to provide such a rotary operating system which is very advantageous from a mere economic standpoint.

[0018] Yet another object of the present invention is to provide such a rotary operating system allowing the mattress-base and other bed components to be very quickly and easily assembled and disassembled without requiring assembling or disassembling tools, with very quick and simple assembling or disassembling operations in particular for performing both cleaning and other optional driving operations.

[0019] Yet another object of the present invention is to provide such a rotary mattress-base operating system including customized gas spring systems also providing a strong braking power, with self-event safety advantages, even in abrupt mattress-base closing movements.

[0020] Yet another object of the present invention is to provide such a rotary mattress-base operating system which also supports a large variable operating load, with-

out the need of changing its gas spring system.

[0021] Yet another object of the present invention is to provide such a rotary mattress-base operating system which has a very reduced overall size to be practically invisible, with the exception for the gas springs and related attachments.

[0022] Yet another object of the present invention is to provide such a rotary mattress-base operating system the main components of which are all arranged within the bed-base volume.

[0023] Yet another object of the present invention is to provide such a rotary mattress-base operating system which also has a very pleasant aesthetic aspect.

[0024] According to one aspect of the present invention, the above mentioned aim and objects are achieved by bed having a rotary opening system according to the main claim.

[0025] Further characteristics of the inventive system being defined in the dependent claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0026] Further characteristics and advantages of the present invention will become more apparent hereinafter from the following detailed disclosure of a preferred, though not exclusive, embodiment of the invention which is illustrated, by way of an indicative but not limitative example, in the accompanying drawings, where:

Figure 1 is a perspective view of the bed according to the present invention, in an open position thereof; Figure 2 is a perspective detailed view showing the inventive bed in an open position; Figure 3 is a longitudinal cross-section view of the invention bed in an open position thereof; and Figure 4 is a further longitudinal cross-section view of the invention bed in a closed position thereof.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0027] With reference to the above mentioned figures, the bed having the rotary opening system for restraining at any desired rotary opening position a mattress-base, according to the present invention, substantially comprises a mattress-base (1) pivoted on a side (2, 2a) of the bed, by a pair of pivot pins (3, 3a) underlying the plane of the mattress (4) and being arranged at a set distance from the mattress-base head (1), thereby providing a suitable opening angle, substantially corresponding to a ninth of a full 360° angle, without causing the mattress-base (1) from interfering against the bottom (5) of the bed.

[0028] Said system comprises moreover a pair of gas springs (6, 6a) operating between the mattress-base (1) and bed side (2, 2a) and being arranged at the sole pair of points (7, 7a - 8, 8a) allowing said gas springs (6, 6a) to provide a resilient force balancing, at each rotary point, the mattress-base (1) and related mattress (4) weight;

said pair of points (7, 7a - 8, 8a) being designed for each size and operating stroke of the gas springs (6, 6a) to allow the mattress-base (1) to be restrained at each desired rotary position, both in the opening and closing movements of the mattress-base (1). Since the inventive system has preset limit parameters including: the start and end rotary angle of the mattress-base (1), the size and operating stroke of the gas springs (6, 6a) and the differential or delta force of the insertion force and extension force of said springs (6, 6a), it has been found that a diagram showing the amount of power or energy necessary to turn the mattress-base (1) with a constant turning speed, by applying a force from point to point, is linear for a single pair of points (7, 7a - 8, 8a), to which must be applied the gas springs (6, 6a) with an applying force advantageously slightly less than that necessary for driving the mattress-base, thus the mattress-base (1) may be restrained at any desired rotary position both in the opening and closing movements thereof.

[0029] The inventive system comprises moreover a L-shape bracket (9, 9a), fixedly connected to the mattress-base (1) by coupling screws, and a pivot pin (3, 3a) to be engaged in an inclined hollow and lip (10, 10a) of a rotary plate (11, 11a), fixedly connected to the bed side (2, 2a) through connecting screws; said pins (3, 3a), upon assembling, coupling the mattress-base (1) to the bed proper (2, 2a) without using assembling tools, while allowing a rotary movement of the mattress-base from a closed horizontal position to a position opened defining an opening angle of about a ninth of a full 360° angle, with the brackets (9, 9a) arranged at a suitable distance from the head of the mattress-base (1) allowing the mattress-base (1) to be opened without interference between the mattress-base (1) and the bed bottom (5).

[0030] As shown, a further gas spring (6, 6a) operating between the mattress-base (1) and the bed side (2, 2a) is further provided, which, through a fork (12, 12a), is screwed to the mattress-base (1) and further including a contoured socket support (13, 13a) threaded to the bed side (2, 2a), and being so arranged that the pins (14, 14a) of said fork (12, 12a) and the central portion of the hollow part (15, 15a) of the socket support (13, 13a) coincide with the sole point pair (7, 7a - 8, 8a) allowing the gas spring (6, 6a) to provide the above working operation thereby, with the mattress-base (1) in an open condition, it will be sufficient to cause the eyelet foot element (16, 16a) of the gas springs (6, 6a) to slide into the slanted hollow (15, 15a) of the socket support (13, 13a) to operatively apply the system without the need of using assembling tools.

[0031] Moreover, to allow the system to operate by the same gas springs (6, 6a) even in a presence of weights different from the optimum ones, it is sufficient to screw on the socket support (13, 13a) at one of the two further positions on the bed side (2, 2a) one of which (17, 17a) is related to comparatively large loads and two of which (18, 18a - 19, 19a) for comparatively less loads, without changing the mattress-base (1) opening slanting.

[0032] The system allows moreover to greatly containing the forces applied by the gas springs (6, 6a), thereby causing an application of a comparatively low stress on the component materials, and allowing to use non metal materials: for example injection molded plastics material for the components (9, 9a - 11, 11a - 12, 12a - 13, 13a), and a wood material for the mattress-base (1), with a very high practical handling advantages with the further possibility of carrying out a very high yield making process.

[0033] Furthermore, advantageously, it is also possible to use gas springs (6, 6a) providing an instantaneous great braking effect in case of an abrupt increase of the pressure on the mattress-base (1) / mattress (4) assembly during the closing operation, with a consequent great advantage from a safety standpoint, while using gas springs (6, 6a) which may be easily made by available technical gas spring making processes.

Claims

1. A bed including a mattress-base (1), including an article storing space, wherein said mattress-base (1) is pivoted to two bed sides (2, 2a) on a pair of pivot pins (3, 3a) arranged under a bed mattress (4) and spaced at a set distance from the mattress-base (1) head, thereby providing a set opening angle, preferably of about a ninth of a full 360° angle, while preventing the mattress-base (1) from interfering against a bed bottom (5), said bed further including a rotary opening and closing system for restraining at any desired rotary opening or closing positions said mattress-base (1), said system further comprising two gas springs (6, 6a) operating between said mattress-base (1) and bed sides (2, 2a) and arranged in a sole pair of points (7, 7a - 8, 8a) allowing said gas springs (6, 6a) to provide a balancing work which, at any desired point of the mattress-base (1) rotary movement, balances a pushing force of a weight of the mattress-base (1) and the mattress (4) supported by said mattress-base (1) to allow said mattress-base (1) to be restrained at any desired rotary point as a user of said bed performs both rotary opening and closing movements of said mattress-base (1), said sole pair of points (7, 7a - 8, 8a) being selected based on a size and operating stroke of said gas springs (6, 6a), said system further comprising a pair of L-shaped brackets (9, 9a) fixedly coupled by coupling screws to said mattress-base (1), **characterized in that** each L-shaped bracket (9, 9a) including the pivot pin (3, 3a) for engaging in a slanted hollow portion of a rotary plate (11, 11a) having a plate lip (10, 10a), said rotary plate (11, 11a) being fixedly coupled by coupling screws to each of the bed sides (2, 2a), said pivot pins (3, 3a) connecting said mattress-base (1) to the bed sides (2, 2a) to allow said mattress-base (1) to turn from

a closed horizontal position to an opened position through said angle of about a ninth of a full 360° turning angle, said L-shaped bracket (9, 9a) being arranged at a distance from said mattress-base (1) head thereby allowing said mattress-base (1) to be freely opened without any interference between said mattress-base (1) and bed bottom (5).

2. Bed according to claim 1, **characterized in that** each said gas spring (6, 6a) is arranged between said base (1) and a said bed side (2, 2a), through a fork element (12, 12a) screwed to said base (1) and a contoured support socket (13, 13a) screwed to said bed side (2, 2a) each fork element (12, 12a) and said support socket having a pin (14, 14a) and a central portion coinciding with the sole pair of points (7, 7a - 8, 8a) and wherein with the base (1) at an opened position it is sufficient to cause an eyelet foot element (16, 16a) of each said gas spring (6, 6a) to slide through a slanted hollow (15, 15a) of said support socket (13, 13a) to actuate said system without tools, and to perform a quick assembling of said system.
3. A bed, according to one or more of the preceding claims, **characterized in that** said support socket (13, 13a) is screwed at one of three positions provided on the bed sides (2, 2a), one position of which (17, 17a) is provided for larger loads and two positions (18, 18a - 19, 19a) for smaller loads, without causing a variation of an opening inclination of said base (1).
4. A bed, according to one or more of the preceding claims, **characterized in that** said system further comprises adjusting means for adjusting the gas spring (6, 6a) forces thereby only slightly stressing the system non metal materials.
5. A bed, according to one or more of the preceding claims, **characterized in that** said gas springs (6, 6a) provide an instantaneous strong braking effect for braking an abrupt increase of a pressure on a base (1) / mattress (4) assembly during a closing operation thereof.
6. A bed, according to claim 1, **characterized in that** a diagram of a start and final rotary angle of the base (1), a size and operating stroke of the gas springs (6, 6a) and a differential value between an insertion force and an extension force of said gas springs (6, 6a), said diagram representing an amount of energy necessary for causing the base (1) to turn with a constant speed, by applying a force from point to point, is linear for a single pair of points (7, 7a - 8, 8a), said points (7, 7a - 8, 8a) being those to which are applied said gas springs (6, 6a) with a force slightly less than a driving force for driving said base, thereby said base (1) may be restrained at any rotary

set position both in an opening and in a closing operation thereof.

Patentansprüche

1. Bett, das einen Lattenrost (1) beinhaltet, der einen Gegenstandsaufbewahrungsraum beinhaltet, wobei der Lattenrost auf einem Paar von Schwenkbolzen (3, 3a), die unter einer Bettmatratze (4) angeordnet und in einem eingestellten Abstand vom Kopf des Lattenrosts (1) beabstandet sind, zu zwei Bettseiten (2, 2a) geschwenkt wird und dadurch einen eingestellten Öffnungswinkel bereitstellt, vorzugsweise von etwa einem Neuntel eines vollen 360°-Winkels, während verhindert wird, dass der Lattenrost (1) und ein Bettboden (5) zusammentreffen, wobei das Bett ferner ein Drehöffnungs- und -schließsystem beinhaltet, um den Lattenrost (1) in jeder gewünschten Drehöffnungs- oder -schließposition zu halten, wobei das System ferner zwei Gasfedern (6, 6a) umfasst, die zwischen dem Lattenrost und den Bettseiten (2, 2a) betrieben werden und in einem einzigen Paar von Punkten (7, 7a - 8, 8a) angeordnet sind, derart, dass die Gasfedern (6, 6a) eine Ausgleichsarbeit bereitstellen, die an jedem gewünschten Punkt der Drehbewegung des Lattenrosts (1) eine Druckkraft eines Gewichts des Lattenrosts (1) und der Matratze (4), die vom Lattenrost (1) gestützt wird, ausgleicht, damit der Lattenrost (1) an jedem gewünschten Drehpunkt gehalten werden kann, wenn ein Benutzer des Betts eine Drehöffnungs- und -schließbewegung des Lattenrosts (1) durchführt, wobei das einzige Paar von Punkten (7, 7a - 8, 8a) auf Basis einer Größe und eines Betriebshubs der Gasfedern (6, 6a) ausgewählt wird, wobei das System ferner ein Paar L-förmiger Halterungen (9, 9a) umfasst, die mittels Kopplungsschrauben fest an den Lattenrost (1) gekoppelt sind, **dadurch gekennzeichnet, dass** jede L-förmige Halterung (9, 9a) den Schwenkbolzen (3, 3a) beinhaltet, um in einen geneigten hohlen Abschnitt einer Drehplatte (11, 11a), die eine Plattenlippe (10, 10a) aufweist, einzugreifen, wobei die Drehplatte (11, 11a) mittels Kopplungsschrauben fest an jede der Bettseiten (2, 2a) gekoppelt ist, wobei die Schwenkbolzen (3, 3a) den Lattenrost (1) mit den Bettseiten (2, 2a) verbinden, damit sich der Lattenrost (1) durch den Winkel von etwa einem Neuntel eines vollen 360°-Drehwinkels aus einer geschlossenen horizontalen Position in eine geöffnete Position drehen kann, wobei die L-förmige Halterung (9, 9a) in einem Abstand vom Kopf des Lattenrosts (1) beabstandet ist, damit der Lattenrost (1) ohne Zusammentreffen des Lattenrosts (1) und des Bettbodens (5) frei geöffnet werden kann.

2. Bett nach Anspruch 1, **dadurch gekennzeichnet,**

dass jede Gasfeder (6, 6a) über ein Gabelement (12, 12a), das in den Rost (1) geschraubt ist, und eine konturierte Stützbuchse (13, 13a), die in eine Bettseite (2, 2a) geschraubt ist, zwischen dem Rost (1) und der Bettseite (2, 2a) angeordnet ist, wobei jedes Gabelement (12, 12a) und die Stützbuchse einen Bolzen (14, 14a) aufweisen und ein zentraler Abschnitt mit dem Paar von Punkten (7, 7a - 8, 8a) zusammenfällt und wobei, wenn sich der Rost (1) in einer geöffneten Position befindet, es ausreichend ist zu bewirken, dass ein Ösenfüßelement (16, 16a) jeder Gasfeder (6, 6a) durch einen geneigten Hohlraum (15, 15a) der Stützbuchse (13, 13a) gleitet, um das System ohne Werkzeuge zu betätigen und eine schnelle Montage des Systems durchzuführen.

3. Bett nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Stützbuchse (13, 13a) in einer von drei Positionen, die an den Bettseiten (2, 2a) bereitgestellt sind, eingeschraubt sind, wobei eine der Positionen (17, 17a) für größere Lasten bereitgestellt ist und zwei Positionen (18, 18a - 19, 19a) für kleinere Lasten bereitgestellt sind, ohne eine Schwankung einer Öffnungsneigung des Rosts (1) zu bewirken.

4. Bett nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** das System ferner Einstellmittel zum Einstellen der Kräfte der Gasfedern (6, 6a) umfasst, wodurch die Nichtmetallmaterialien des Systems nur geringfügig beansprucht werden.

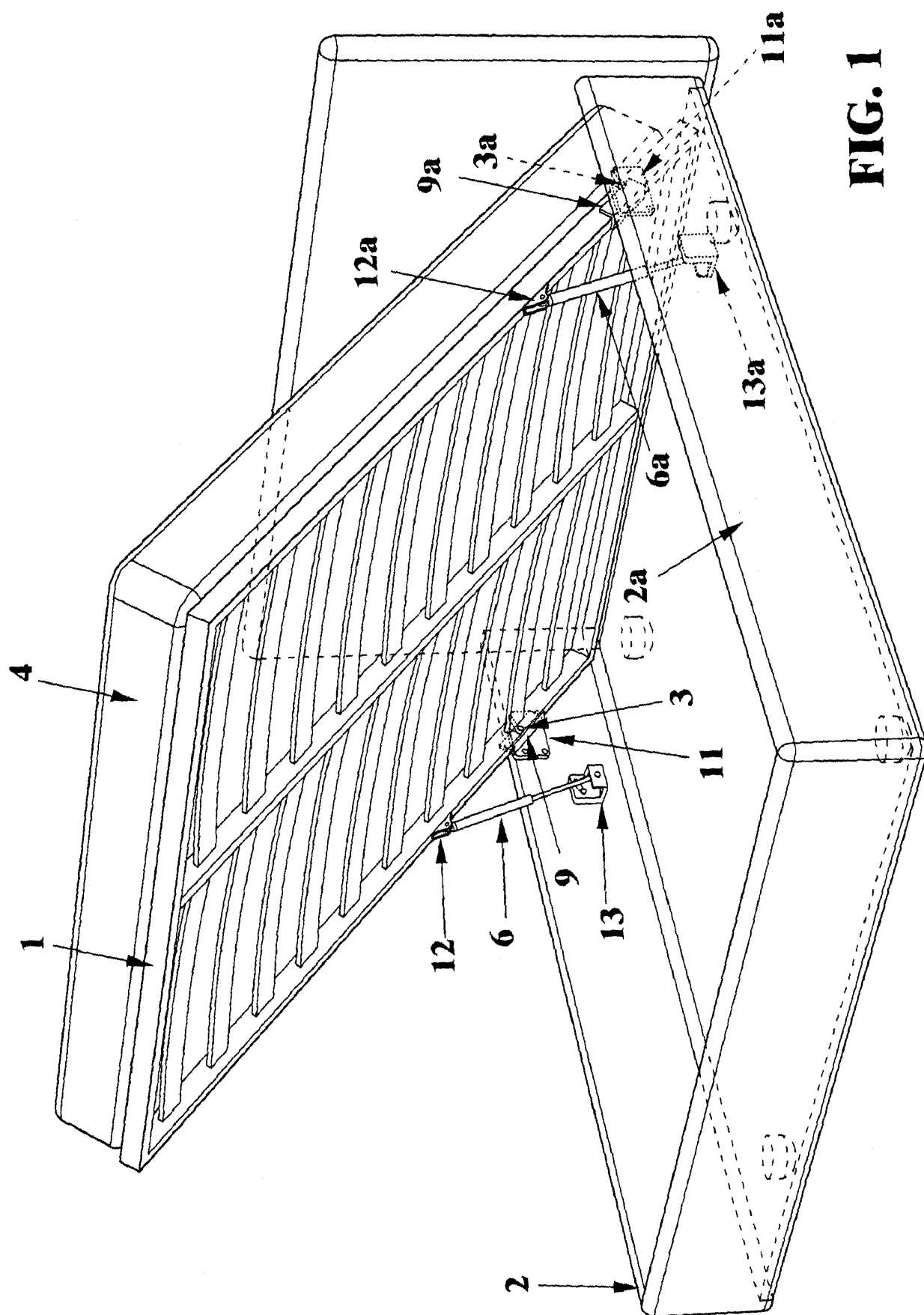
5. Bett nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Gasfedern (6, 6a) zum Bremsen einer abrupten Erhöhung eines Drucks auf eine Anordnung aus Rost (1) und Matratze (4) während eines Schließvorgangs davon eine sofortige starke Bremswirkung bereitstellen.

6. Bett nach Anspruch 1, **dadurch gekennzeichnet, dass** ein Diagramm eines Anfangs- und eines Enddrehwinkels des Rosts (1), einer Größe und eines Betriebshubs der Gasfedern (6, 6a) und eines Differenzwerts zwischen einer Einfahrkraft und einer Ausfahrkraft der Gasfedern (6, 6a), wobei das Diagramm eine Menge Energie repräsentiert, die erforderlich ist, um zu bewirken, dass der Rost (1) sich mit einer konstanten Geschwindigkeit dreht, indem eine Kraft von Punkt zu Punkt aufgebracht wird, für ein einzelnes Paar von Punkten (7, 7a - 8, 8a) linear ist, wobei die Punkte (7, 7a - 8, 8a) jene sind, auf die die Gasfedern (6, 6a) mit einer geringfügig kleineren Kraft als der Antriebskraft zum Antreiben des Rosts aufgebracht werden, wodurch der Rost (1) sowohl bei einem Öffnungs- als auch einem Schließbetrieb davon in jeder eingestellten Drehposition gehalten

werden kann.

Revendications

1. Lit comprenant un sommier (1), comprenant un espace de rangement d'articles, dans lequel ledit sommier (1) est pivoté vers deux côtés de lit (2, 2a) sur une paire de pivots (3, 3a) disposés sous un matelas de lit (4) et espacés à une distance définie de la tête du sommier (1), fournissant ainsi un angle d'ouverture défini, de préférence d'environ un neuvième d'un angle de 360°, tout en empêchant le sommier (1) d'interférer contre un dessous de lit (5), ledit lit comprenant en outre un système d'ouverture et de fermeture rotatif permettant de retenir ledit sommier (1) dans n'importe quelles positions d'ouverture ou de fermeture rotatives souhaitées, ledit système comprenant en outre deux ressorts à gaz (6, 6a) fonctionnant entre ledit sommier (1) et lesdits côtés de lit (2, 2a) et arrangé en une seule paire de points (7, 7a - 8, 8a) permettant auxdits ressorts à gaz (6, 6a) de fournir un effort d'équilibrage, en n'importe quel point du mouvement rotatif du sommier (1), une force de poussée d'un poids du sommier (1) et du matelas (4) supporté par ledit sommier (1), pour permettre audit sommier (1) d'être retenu en n'importe quel point de rotation souhaité lorsqu'un utilisateur dudit lit effectue les deux mouvements rotatifs d'ouverture et de fermeture dudit sommier (1), ladite seule paire de points (7, 7a - 8, 8a) étant sélectionnée sur la base d'une taille et d'une course de fonctionnement desdits ressorts à gaz (6, 6a), ledit système comprenant en outre une paire de supports en forme de L (9, 9a) accouplés fixement audit sommier (1) par des vis d'accouplement, **caractérisé en ce que** chaque support en forme de L (9, 9a) comprend le pivot (3, 3a) pour un engagement dans une partie creuse inclinée d'une plaque rotative (11, 11a) présentant une lèvre de plaque (10, 10a), ladite plaque rotative (11, 11a) étant accouplée fixement à chacun des côtés de lit (2, 2a) par des vis d'accouplement, lesdits pivots (3, 3a) reliant ledit sommier (1) aux côtés de lit (2, 2a), pour permettre audit sommier (1) de tourner d'une position horizontale fermée vers une position horizontale fermée par le biais dudit angle d'environ un neuvième d'un angle de rotation entier de 360°, ledit support en forme de L (9, 9a) étant disposé à une distance de ladite tête du sommier (1), permettant ainsi audit sommier (1) d'être ouvert librement sans interférence entre ledit sommier (1) et ledit dessous de lit (5).
2. Lit selon la revendication 1, **caractérisé en ce que** chacun desdits ressorts à gaz (6, 6a) est disposé entre ledit sommier (1) et l'un desdits côtés de lit (2, 2a), par le biais d'un élément de fourche (12, 12a) vissé audit sommier (1) et d'une douille de support profilée (13, 13a) vissée audit côté de lit (2, 2a), chaque élément de fourche (12, 12a) et ladite douille de support comportant une broche (14, 14a) et une partie centrale coïncidant avec la seule paire de points (7, 7a - 8, 8a), et dans lequel, avec le sommier (1) dans une position ouverte, il suffit de faire glisser un élément de base à oeillet (16, 16a) de chacun desdits ressorts à gaz (6, 6a) à travers une partie creuse inclinée (15, 15a) de ladite douille de support (13, 13a) pour actionner ledit système sans outils, et pour réaliser un assemblage rapide dudit système.
3. Lit selon l'une ou plusieurs des revendications précédentes, **caractérisé en ce que** ladite douille de support (13, 13a) est vissée dans l'une de trois positions prévues sur les côtés de lit (2, 2a), parmi lesquelles une position (17, 17a) est prévue pour des charges plus élevées et deux positions (18, 18a - 19, 19a) pour des charges plus petites, sans entraîner de modification d'une inclinaison d'ouverture dudit sommier (1).
4. Lit selon l'une ou plusieurs des revendications précédentes, **caractérisé en ce que** ledit système comprend en outre des moyens de réglage pour régler les forces des ressorts à gaz (6, 6a), en sollicitant ainsi seulement légèrement les matériaux non métalliques du système.
5. Lit selon l'une ou plusieurs des revendications précédentes, **caractérisé en ce que** lesdits ressorts à gaz (6, 6a) fournissent un fort effet de freinage instantané pour freiner une augmentation soudaine d'une pression sur un assemblage du sommier (1) et du matelas (4) pendant une opération de fermeture de celui-ci.
6. Lit selon la revendication 1, **caractérisé en ce qu'un** schéma d'un angle de rotation initial et final du sommier (1), d'une taille et d'une course de fonctionnement des ressorts à gaz (6, 6a) et d'une valeur différentielle entre une force d'insertion et une force d'extension desdits ressorts à gaz (6, 6a), ledit schéma représentant une quantité d'énergie nécessaire pour amener le sommier (1) à tourner avec une vitesse constante, en appliquant une force d'un point à un autre, est linéaire pour une seule paire de points (7, 7a - 8, 8a), lesdits points (7, 7a - 8, 8a) étant ceux auxquels sont appliqués lesdits ressorts à gaz (6, 6a) avec une force légèrement inférieure à une force d'entraînement pour l'entraînement dudit sommier, ledit sommier (1) pouvant ainsi être retenu dans n'importe quelle position de rotation définie, que ce soit lors de l'ouverture ou de la fermeture de celui-ci.



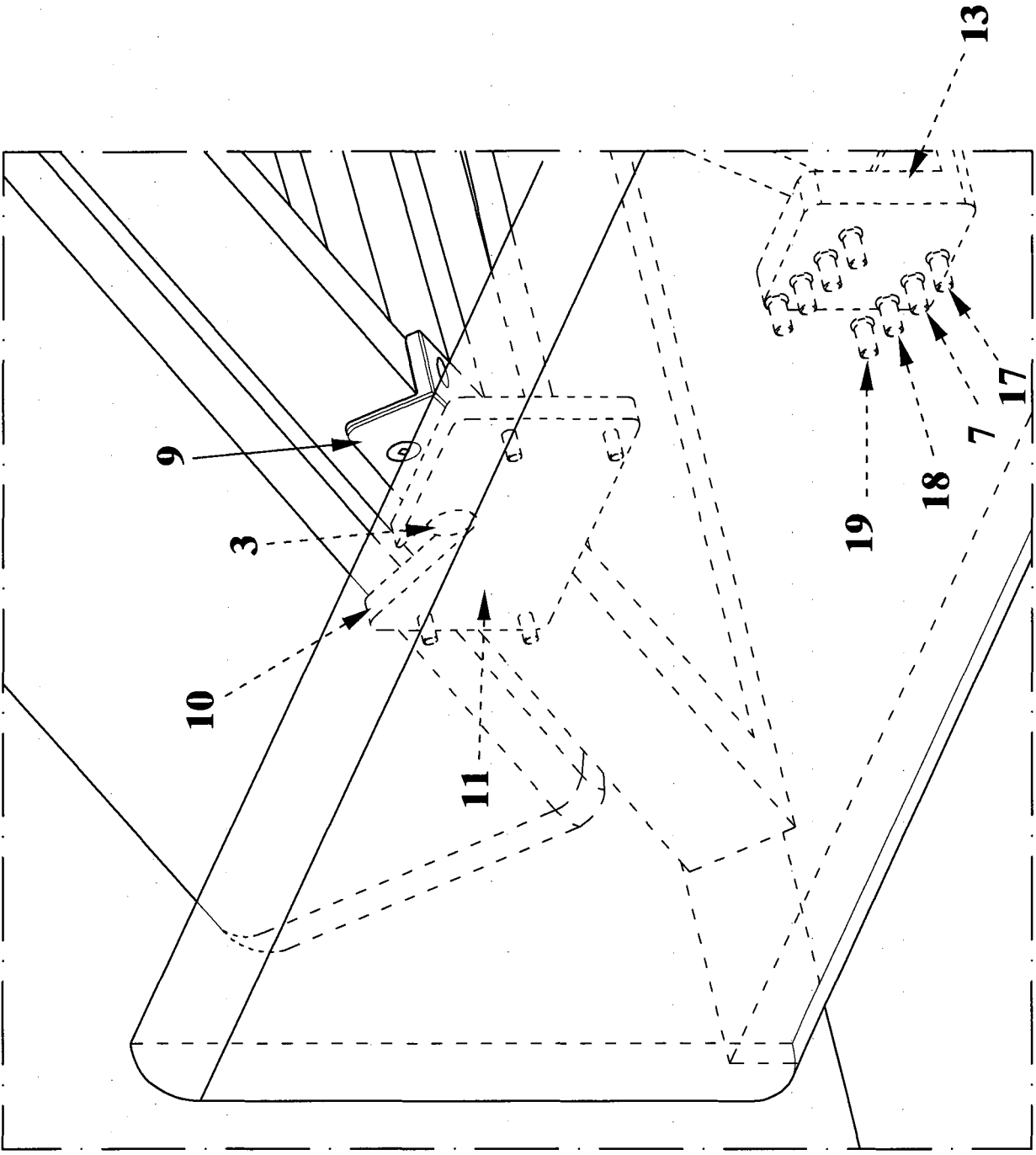
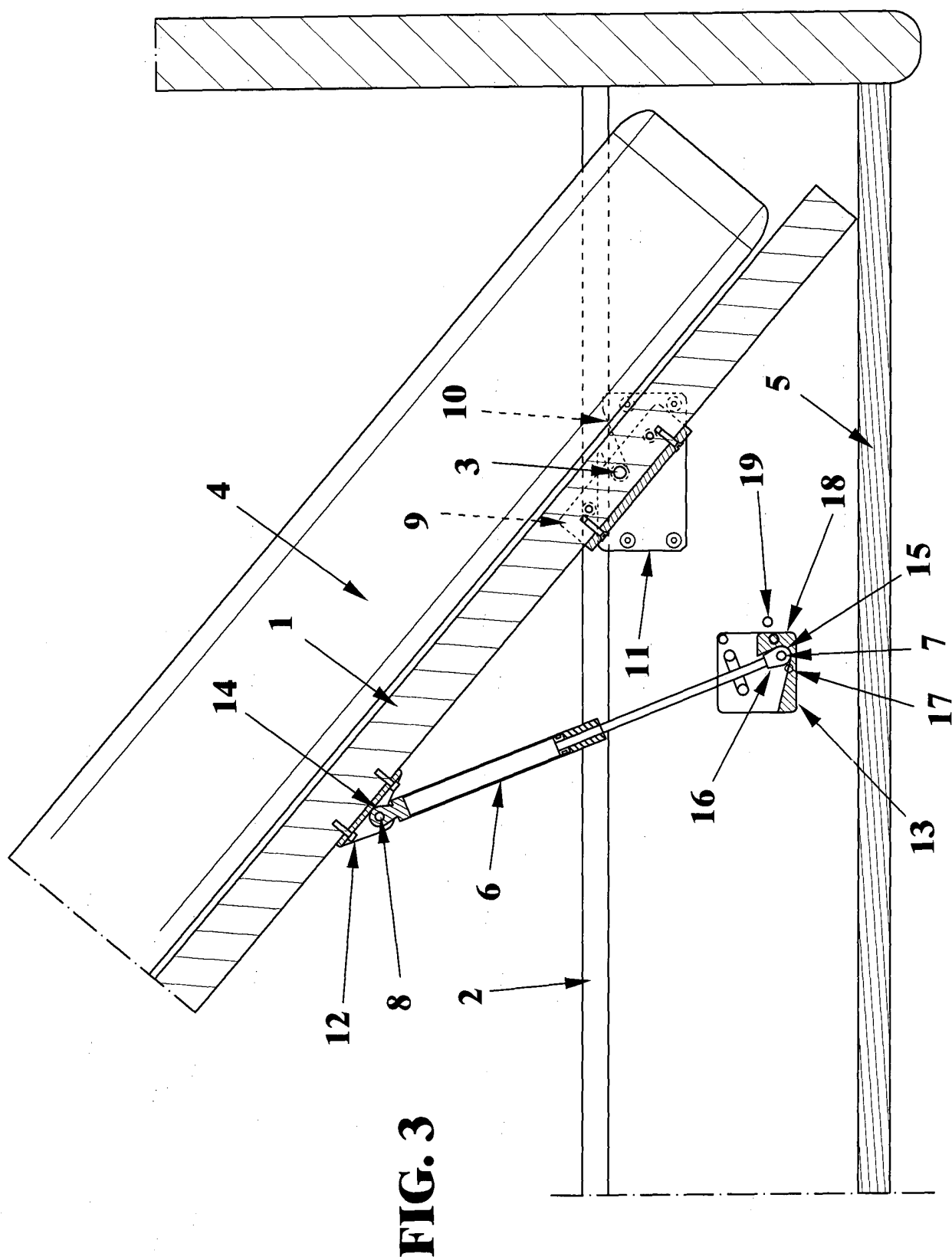


FIG. 2



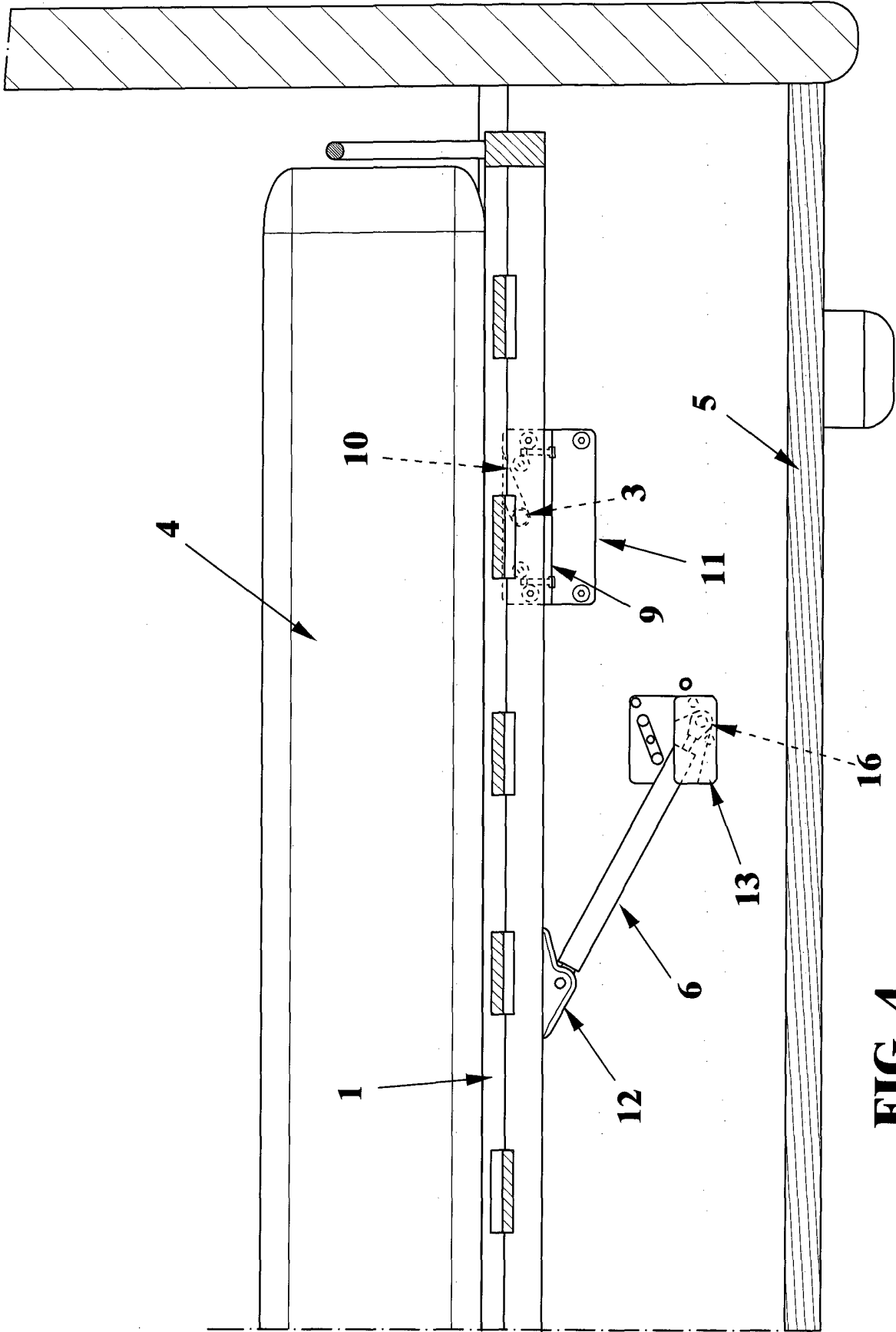


FIG. 4

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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