

EVACUATION LADDER FOR TRANSPORTING HOSPITAL BED

BACKGROUND OF THE INVENTION

1. Field of the Invention:

5 The present invention relates to an evacuation ladder for transporting hospital bed, especially a building with a floor guide rail for the hospital bed to lead to the evacuation ladder entrance, and the bearing surface of each carrier of the evacuation ladder is provided with two guide grooves for the four casters of the hospital
10 bed to do a guide and positioning, so that the hospital bed can be quickly pushed into the evacuation ladder for escape.

2. Description of the Related Art:

 Due to the fact that the cities where human beings live are already narrow and densely populated and the land prices are
15 becoming more and more expensive, high-rise buildings in urban floors have become extremely common. According to the current fire regulations, high-rise buildings must also have escape equipment for safety considerations. Every once in a while in Taiwan, there will always be a building fire accident that causes
20 heavy casualties due to the lack of escaping from the building. The main cause of serious casualties is mostly insufficient escape measures. In addition to the failure to fully implement public safety inspections, the building itself is also to blame for the lack of

escape measures. For example, in the fire accident at the Carnival Building in Chiayi City, some of the victims died by jumping off the building in a hurry because they could not escape. Therefore, how to deal with various unforeseen disasters such as fire, earthquake and other unwarranted disasters, the escape of residents living on high floors is obviously something that building residents should face up to. Among the current general high-rise building escape equipment, the most commonly used are rope-type vertical landing equipment and escape ladders. The rope-type vertical landing equipment is often difficult to operate and due to the shaking caused by climbing, people dare not try it, and it is not suitable for everyone. It is difficult for these devices to provide rapid and safe escape and avoidance, especially for the elderly, the sick, the handicapped and children. In fact, most people have no experience in using this type of rappelling escape device, and it is often impossible to activate it immediately in an emergency. Under unfamiliar circumstances, most people do not dare to descend directly into the sky, and an accidental fall from a building may occur due to improper operation.

Furthermore, everyone knows that fire and flood are ruthless, especially the incident of building fire is not uncommon. When a fire breaks out, in addition to deadly crises such as flames and thick smoke, the darkness generated by the loss of electricity is

a major killer that hinders escape. When the power is lost, the elevators that can quickly take people away from the fire are useless. In view of this, general fire escape equipment must comply with the principle of no power available, so there are no power

5 escape equipment such as escape slow descent tubes (rescue bags) and slow descent machines. Among them, there is a deceleration adjuster inside the slow descent machine to achieve the effect of emergency escape. The principle is the same as the ancient pulley type ancient well, using pulley device, and doing centrifugal force

10 braking to control the descending speed. Its equipment cost is low, but its operation is more complicated, and the operation formulas such as "hanging, throwing, wrapping, bunching, and pushing" must be kept in mind. During operation, personnel must be suspended and lowered slowly outside the outer wall of high-rise

15 buildings. Personnel are directly exposed to extremely high environments, which are easily affected by fear of heights and cannot be operated. On the other hand, the operating procedures and formulas are too complicated, if not well-trained (such as firefighters) can not easily operate, and the escape efficiency of

20 their personnel is low (only one person can operate and use), so the use effect is not good.

In view of the above, the structure of the rescue bag is the simplest for the escape equipment. It installs a funnel-shaped

annular belt with an elastic effect at an appropriate position in a high-tensile cloth pipe, and the annular belt has a slow-down effect. Personnel can quickly drill in and slide from the top of the cloth pipe to the bottom of the cloth pipe to escape. Although its escape efficiency is higher than that of a slow descent machine, it is often limited by the difference in the descending speed caused by the body size and motor nerve of the escapees, which may cause the escapees to collide with each other. On the other hand, if the installation position of the cloth pipe is too close to the wall, people may hit the wall and be injured. For those who are inconvenient to move, it is difficult to use rescue bags to escape, so there are still shortcomings in the use of rescue bags.

Please refer to the invention patent of "self-propelled emergency escape ladder" in Taiwan TW Bulletin No. I652092, which discloses an escape ladder for personnel to escape. However, due to the small area of its carrying seat, each carrying seat can provide about a few people to escape, or to do one escape for a wheelchair passenger and a wheelchair pusher. Therefore, bedridden patients cannot use this kind of escape ladder to escape, in order to avoid such regrets. The invention is an escape ladder designed for bedridden patients, which can effectively help them to escape.

SUMMARY OF THE INVENTION

Therefore, in view of the above problems and deficiencies, the inventor collected relevant information, and after multiple evaluations and considerations, came up with the creation of this evacuation ladder for transporting hospital bed.

5 It is one object of the present invention to provide an evacuation ladder for transporting hospital bed, which is installed in a building. The building provides a floor guide rail on one floor thereof for a hospital bed to lead to an evacuation ladder entrance. The evacuation ladder is provided with a preset body, and a preset
10 loading space set in the top of the preset body. The evacuation ladder comprises: a gravity deceleration device, which is set in the preset loading space of the preset body and comprises a reducer with an extended transmission shaft, and the transmission shaft is further penetrated in a driving wheel; two first looping chains
15 arranged on opposite sides of the preset body, and the upper and lower ends of the two first looping chains being respectively meshed with a first gear, and one first gear at the upper end being engaged with the driving wheel of the gravity deceleration device in a meshing linkage; two second looping chains set on opposite
20 sides of the preset body and maintaining a preset distance from the two first looping chains, the opposing upper and lower ends of the two second looping chains being respectively meshed with a second gear, and one second gear at the upper end being linked with the

driving wheel of the gravity deceleration device via a transmission chain; two first guide rails set at the upper end between the first looping chains and the second looping chains; two second guide rails set at the lower end between the first looping chains and the

5 second looping chains; and a plurality of carriers, each carrier comprising a shaft, a roller and a claw respectively provided at each of two sides thereof, the two shafts of each carrier being fastened in a respective predetermined button hole of the second looping chains, the two rollers of each carrier abutting on the two

10 first guide rails so that the two claws are hooked on a respective hanging rod of the two first looping chains for positioning, the two rollers of each carrier abutting on the second guide rails to keep the two claws out of the hanging rods of the first looping chains, and the two shafts flipping up with the second looping chains. Through

15 the above configuration, there is a floor guide rail on the floor of the building for the hospital bed to lead to the evacuation ladder entrance, and the bearing surface of the carrier of the evacuation ladder is provided with two guide grooves for the four casters of the hospital bed to do a guide and positioning, so that the hospital

20 bed can be quickly pushed into the evacuation ladder for escape.

It is another object of the present invention to provide an evacuation ladder for transporting hospital bed, wherein the gravity deceleration device consists of an AC motor, a reducer, a driver and

a DC battery pack or generator.

It is still another object of the present invention to provide an evacuation ladder for transporting hospital bed, wherein the first guide rails each further comprise an inclined rising portion, a
5 bending portion, an inclined descending portion and an engaging abutting end, and the second guide rails each further comprise a disengaging abutting end and an arc-shaped portion.

It is still another object of the present invention to provide an evacuation ladder for transporting hospital bed, wherein the
10 floor guide rail is a two-symmetrical curved track with a wide outer width and a narrow inner width.

It is still another object of the present invention to provide an evacuation ladder for transporting hospital bed, wherein the building is also provided with a ramp at the exit of the evacuation
15 ladder on the first floor.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a three-dimensional appearance view of the first embodiment of the evacuation ladder with a bed guiding mechanism of the present invention.

20 FIG. 2 is a side view of the evacuation ladder according to the first embodiment of the present invention.

FIG. 3 is a schematic diagram of the first action of the first embodiment of the evacuation ladder of the present invention

where the carrier of the evacuation ladder is joined to the first looping chains at the first guide rails.

FIG. 4 is a schematic diagram of the second action of the first embodiment of the evacuation ladder of the present invention
5 where the carrier of the evacuation ladder is joined to the first looping chains at the first guide rails.

FIG. 5 is a schematic diagram of the first action of the carrier of the evacuation ladder being separated from the first looping chains at the second guide rails according to the first
10 embodiment of the present invention.

FIG. 6 is a schematic diagram of the second action of the carrier of the evacuation ladder being separated from the first looping chains at the second guide rails according to the first embodiment of the present invention.

15 FIG. 7 is a three-dimensional appearance view of the second embodiment of the evacuation ladder with a bed guiding mechanism of the present invention.

FIG. 8 is a schematic diagram of the first action of the second embodiment of the evacuation ladder of the present
20 invention where the carrier of the evacuation ladder is joined to the first looping chains at the first guide rails.

FIG. 9 is a schematic diagram of the second action of the second embodiment of the evacuation ladder of the present

invention where the carrier of the evacuation ladder is joined to the first looping chains at the first guide rails.

FIG. 10 is a schematic diagram of the first action of the carrier of the evacuation ladder being separated from the first looping chains at the second guide rails according to the second embodiment of the present invention.

FIG. 11 is a schematic diagram of the second action of the carrier of the evacuation ladder being separated from the first looping chains at the second guide rails according to the second embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Please refer to FIGS. 1-6, where FIG. 1 is a three-dimensional appearance view of the first embodiment of the evacuation ladder with a bed guiding mechanism of the present invention, FIG. 2 is a side view of the evacuation ladder according to the first embodiment of the present invention, FIGS. 3 and 4 are schematic diagrams of the first and second actions of the first embodiment of the evacuation ladder of the present invention where the carrier of the evacuation ladder is joined to the first looping chains at the first guide rails, and FIGS. 5 and 6 are schematic diagrams of the first and second actions of the carrier of the evacuation ladder being separated from the first looping chains at the second guide rails according to the first embodiment of the

present invention. It can be clearly seen from the figures that the evacuation ladder for transporting hospital bed of the present invention is installed in a building **1**. A floor guide rail **13** for a hospital bed **12** to lead to an evacuation ladder entrance **10** is
5 arranged on one floor **11** of the building **1**. The floor guide rail **13** is a two-symmetrical curved track with a wide outer width and a narrow inner width. The building **1** is also provided with a ramp **14** at the exit of the evacuation ladder on the first floor. The evacuation ladder **2** is provided with a preset body (not shown), and
10 a preset loading space (not shown) is set in the top of the preset body, comprising a gravity deceleration device **21**, two first looping chains **22**, two second looping chains **23**, two first guide rails **25**, two second guide rails **26**, and a plurality of carriers **27**.

The gravity deceleration device **21** is set in the preset
15 loading space of the preset body. The gravity deceleration device **21** is provided with a reducer **211** and extends a transmission shaft **2111**, and the transmission shaft **2111** is further penetrated in a driving wheel **212**. The gravity deceleration device **21** comprises an alternating current (AC) motor **213**, a reducer **211**, a driver (AC
20 in/AC out and DC in/AC out) and a direct current (DC) battery pack or generator.

The two first looping chains **22** are arranged on opposite sides of the preset body, and the upper and lower ends of the two

first looping chains **22** are respectively meshed with a first gear **221**, and one first gear **221** at the upper end is engaged with the driving wheel **212** of the gravity deceleration device **21** in a meshing linkage.

5 The two second looping chains **23** are set on opposite sides of the preset body and maintain a preset distance from the two first looping chains **22**. The upper and lower ends of the two second looping chains **23** are respectively meshed with a second gear **231**, and the second gear **231** at the upper end is linked with the driving
10 wheel **212** of the gravity deceleration device **21** via a transmission chain **24**.

 The two first guide rails **25** are set at the upper end between the first looping chains **22** and the second looping chains **23**. The first guide rails **25** each comprise an inclined rising portion **251**, a
15 bending portion **252**, an inclined descending portion **253** and an engaging abutting end **254**.

 The second guide rails **26** are set at the lower end between the first looping chains **22** and the second looping chains **23**. The second guide rails **26** each comprise a disengaging abutting end **261**
20 and an arc-shaped portion **262**.

 The carriers **27** each comprise a bearing surface **271** above, and two guide grooves **2710** provided on the bearing surface **271** for guiding and positioning the four casters **121** of the hospital bed

12, so that the hospital bed 12 does not slide. Each of two sides of each carrier 27 is respectively provided with a shaft 272, a roller 273 and a claw 274. The two shafts 272 are fastened in a respective predetermined button hole (not shown) of the second looping chains 23. The two rollers 273 of the carrier 27 abut on the two first guide rails 25 so that the two claws 274 are hooked on a respective hanging rod 222 of the two first looping chains 22 for positioning. The two rollers 273 of the carrier 27 abut on the second guide rails 26 to keep the two claws 274 out of the hanging rods 222 of the first looping chains 22, and the two shafts 272 flip up with the second looping chains 23.

As shown in FIG. 3, when the shafts 272 of one carrier 27 are inserted into the preset button holes of the second looping chains 23 and then cyclically ascend to the upper floor of the building 1, at this time, the shafts 272 of the carrier 27 are located on the top side of the second gear 231, and the rollers 273 of the carrier 27 are sliding from the inclined rising portions 251 of the first guide rails 25 to the bending portions 252. When the shafts 272 of the carrier 27 move to a position slightly above the first guide rails 25, and the rollers 273 of the carrier 27 slide from the bending portions 252 of the first guide rails 25 to the inclined descending portions 253.

As shown in FIG. 4, when the shafts 272 of the carrier 27

move to a position about the bottom side of the first guide rails **25**, the rollers **273** of the carrier **27** slide from the inclined descending portions **253** of the first guide rails **25** to the engaging abutting ends **254**, and the claws **274** of the carrier **27** are above the first
5 looping chains **22**. When the rollers **273** slipped from the engaging abutting ends **254**, the claws **274** of the carrier **27** took advantage of the opportunity to grab a position in the hanging rods **222** of the first looping chains **22**. Through the aforementioned actions, the carrier **27** of the evacuation ladder **2** joins the first looping chains
10 **22** at the first guide rails **25**.

As shown in FIG. 5, when one carrier **27** descends to the first floor and pushes the hospital bed **12** to leave the ramp **14** at the exit of the evacuation ladder on the first floor, at this time, the shafts **272**, rollers **273** and claws **274** of the carrier **27** are located
15 at the center of the first gear **221** and the second gear **231**, and the rollers **273** of the carrier **27** are abutting above the disengaging abutting ends **261** of the second guide rails **26**. When the shafts **272** of the carrier **27** descend with the second looping chains **23** to make the carrier **27** form an inclined state, the rollers **273** of the carrier
20 **27** use the disengaging abutting ends **261** as a fulcrum to form a seesaw structure, and the claws **274** on the carrier **27** are subjected to a rotational stress and disengage from the hanging rods **222** of the first looping chains **22**.

As shown in FIG. 6, the shafts **272** of the carrier **27**, which have been separated from the first looping chains **22**, rise cyclically with the second looping chains **23**. Through the aforementioned actions, the carrier **27** of the evacuation ladder **2** leaves the first
5 looping chains **22** at the second guide rails **26**. Of course, after the carrier **27** continues to rise to the highest position, it will be in the state shown in FIG. 3 to complete the cyclic operation of the evacuation ladder **2**.

Please refer to FIGS. 7-11, where FIG. 7 is a
10 three-dimensional appearance view of the second embodiment of the evacuation ladder with a bed guiding mechanism of the present invention, FIGS. 8 and 9 are schematic diagrams of the first and second actions of the second embodiment of the evacuation ladder of the present invention where the carrier of the evacuation ladder
15 is joined to the first looping chains at the first guide rails, and FIGS. 10 and 11 are schematic diagrams of the first and second actions of the carrier of the evacuation ladder being separated from the first looping chains at the second guide rails according to the second embodiment of the present invention. It can be clearly seen
20 from the figures that the evacuation ladder for transporting hospital bed of the present invention is installed in a building **1**. A floor guide rail **13** for a hospital bed **12** to lead to an evacuation ladder entrance **10** is arranged on one floor **11** of the building **1**. The floor

guide rail **13** is a two-symmetrical curved track with a wide outer width and a narrow inner width. The building **1** is also provided with a ramp **14** at the exit of the evacuation ladder on the first floor. The evacuation ladder **3** is provided with a preset body (not shown),
5 and a preset loading space (not shown) is set in the top of the preset body, comprising a gravity deceleration device **31**, two first slide rails **32**, two second slide rails **33**, two looping chains **34**, two first guide rails **36**, two second guide rails **37**, and a plurality of carriers **38**.

10 The gravity deceleration device **31** is set in the preset loading space of the preset body. The gravity deceleration device **31** is provided with a reducer **311** and extends a transmission shaft **3111**, and the transmission shaft **3111** is further penetrated in a driving wheel **312**. The gravity deceleration device **31** comprises an
15 alternating current (AC) motor **313**, a reducer **311**, a driver (AC in/AC out and DC in/AC out) and a direct current (DC) battery pack or generator.

The two first slide rails **32** are arranged on opposite sides of the preset body.

20 The two second slide rails **33** are set on opposite sides of the preset body and maintain a preset distance from the two first slide rails **32**.

The two looping chains **34** are set in the two second slide

rails **33**. The upper and lower ends of the two looping chains are meshed with a deceleration gear set **341** and a cyclic gear **342** respectively, and the deceleration gear set **341** meshes with the driven wheels **351** on both sides of a linking gear set **35**, and the
5 driven wheel **351** in the middle of the linking gear set **35** and the driving wheel **312** of the gravity deceleration device **31** do a meshing linkage through a transmission chain **352** sleeved on the outside. Between each driven wheel **351** there is a connecting rod **353** which is penetrated in the center. The deceleration gear set **341**
10 comprises a small chainring **3411** that meshes with the driven wheels **351** on both sides of the linking gear set **35**. The other side of the small chainring **3411** is connected with a large chainring **3412** which penetrates inside the looping chains **34**.

The two first guide rails **36** are arranged at the upper end
15 position between the first slide rails **32** and the second slide rails **33**. The first guide rails **36** each comprise an inclined rising portion **361**, a bending portion **362**, an inclined descending portion **363** and an engaging abutting end **364**.

The two second guide rails **37** are arranged at the lower end
20 position between the first slide rails **32** and the second slide rails **33**. The two second guide rails **37** each comprise a disengaging abutting end **371** and an arc-shaped portion **372**.

The carriers **38** each comprise a bearing surface **381** above,

and two guide grooves **382** provided on the bearing surface **381** for guiding and positioning the four casters **121** of the hospital bed **12**, so that the hospital bed **12** does not slide. Each of the two sides of each carrier **38** is provided with a shaft **383**, an oblique extension
5 roller **384** and a board end roller **385**. The two shafts **383** are fastened in a respective predetermined button hole (not shown) of the two looping chains **34**. The two oblique extension rollers **384** of the carrier **38** abut against the two first guide rails **36** so that the two board end rollers **385** slide into the two first slide rails **32** for
10 positioning. The two board end rollers **385** of the carrier **38** slide down on the second guide rails **37**, and the two board end rollers **385** slide to the ends of the second guide rails **37** to disengage, so that the carrier **38** flips up with the two looping chains **34** through the two shafts **383**.

15 As shown in FIG. 8, when the shafts **383** of one carrier **38** are inserted into the preset button holes of the two looping chains **34** and then cyclically ascend to the upper floor of the building **1**, at this time, the shafts **383** of the carrier **38** are located on the top side of the deceleration gear set **341**, and the oblique extension
20 rollers **384** of the carrier **38** are sliding from the bending portions **362** of the first guide rails **36** to the inclined rising portions **361**. When the shafts **383** of the carrier **38** move to a position slightly above the first guide rails **36**, and the oblique extension rollers **384**

of the carrier **38** slide from the bending portions **362** of the first guide rails **36** to the inclined descending portions **363**.

As shown in FIG. 9, when the shafts **383** of one carrier **38** move to a position about the bottom side of the first guide rails **36**,
5 the oblique extension rollers **384** of the carrier **38** slide from the inclined descending portions **363** of the first guide rails **36** to the engaging abutting ends **364**, and the board end rollers **385** of the carrier **38** are located above the first slide rails **32**. When the oblique extension rollers **384** slip from the engaging abutting ends
10 **364**, the board end rollers **385** of the carrier **38** slide into the first slide rails **32** for positioning. The carrier **38** of the evacuation ladder **3** is joined to the first slide rails **32** at the first guide rails **36** through the aforementioned actions.

As shown in FIG. 10, when one carrier **38** descends to the
15 first floor, and pushes the hospital bed **12** to leave the ramp **14** at the exit of the evacuation ladder on the first floor, at this time, the shafts **383**, oblique extension rollers **384** and board end rollers **385** of the carrier **38** are located at the bottom of the first slide rails **32** and the second slide rails **33**, and the board end rollers **385** of the
20 carrier **38** abut on the disengaging abutting ends **371** of the second guide rails **37**. As shown in FIG. 11, when the board end rollers **385** of the carrier **38** descend with the looping chains **34** so that the carrier **38** forms an inclined state, at this point the board end rollers

385 of the carrier 38 slide down to the arc-shaped portions 372 of the second guide rails 37. The shafts 383 of the carrier 38, which have left the first slide rails 32, go up circularly with the looping chains 34. The carrier 38 of the evacuation ladder 3 is separated
5 from the first slide rails 32 at the second guide rails 37 by the aforementioned actions. Of course, after the carrier 38 continues to rise to the highest position, the state as shown in FIG. 8 is formed to complete the cyclic operation of the evacuation ladder 3.

Through FIGS. 1 to 11, it can be understood that the present
10 invention is an evacuation ladder for transporting hospital bed, which is installed in a building. The building provides a floor guide rail on one floor thereof for a hospital bed to lead to an evacuation ladder entrance. The evacuation ladder is provided with a preset body, and a preset loading space set in the top of the preset body.
15 The evacuation ladder comprises: a gravity deceleration device, which is set in the preset loading space of the preset body and comprises a reducer with an extended transmission shaft, and the transmission shaft is further penetrated in a driving wheel; two first looping chains arranged on opposite sides of the preset body, and
20 the upper and lower ends of the two first looping chains being respectively meshed with a first gear, and one first gear at the upper end being engaged with the driving wheel of the gravity deceleration device in a meshing linkage; two second looping

chains set on opposite sides of the preset body and maintaining a preset distance from the two first looping chains, the opposing upper and lower ends of the two second looping chains being respectively meshed with a second gear, and one second gear at the upper end being linked with the driving wheel of the gravity deceleration device via a transmission chain; two first guide rails set at the upper end between the first looping chains and the second looping chains; two second guide rails set at the lower end between the first looping chains and the second looping chains; and a plurality of carriers, each carrier comprising a shaft, a roller and a claw respectively provided at each of two sides thereof, the two shafts of each carrier being fastened in a respective predetermined button hole of the second looping chains, the two rollers of each carrier abutting on the two first guide rails so that the two claws are hooked on a respective hanging rod of the two first looping chains for positioning, the two rollers of each carrier abutting on the second guide rails to keep the two claws out of the hanging rods of the first looping chains, and the two shafts flipping up with the second looping chains. Through the above configuration, there is a floor guide rail on the floor of the building for the hospital bed to lead to the evacuation ladder entrance, and the bearing surface of the carrier of the evacuation ladder is provided with two guide grooves for the four casters of the hospital bed to do a guide and

positioning, so that the hospital bed can be quickly pushed into the evacuation ladder for escape. The evacuation ladder disclosed in the present invention has excellent practicability when applied to fields such as hospitals or nursing centers, so a patent application
5 is filed to seek patent protection.

Although particular embodiments of the invention have been described in detail for purposes of illustration, various modifications and enhancements may be made without departing from the spirit and scope of the invention. Accordingly, the
10 invention is not to be limited except as by the appended claims.

What the invention claimed is:

1. An evacuation ladder for transporting hospital bed installed in a building, said building providing a floor guide rail on one floor thereof for a hospital bed to lead to an evacuation ladder
5 entrance, said evacuation ladder being provided with a preset body and a preset loading space set in a top of said preset body, said evacuation ladder comprising:

a gravity deceleration device set in said preset loading space of said preset body, said gravity deceleration device
10 comprising a reducer with an extended transmission shaft, and said transmission shaft being further penetrated in a driving wheel;

two first looping chains arranged on opposite sides of said preset body, and upper and lower ends of said two first looping chains being respectively meshed with a first gear, and one said
15 first gear at the upper end being engaged with said driving wheel of said gravity deceleration device in a meshing linkage;

two second looping chains set on opposite sides of said preset body and maintaining a preset distance from said two first looping chains, opposing upper and lower ends of said two second
20 looping chains being respectively meshed with a second gear, and one said second gear at the upper end being linked with said driving wheel of said gravity deceleration device via a transmission chain;

two first guide rails set at the upper end between said first looping chains and said second looping chains;

two second guide rails set at the lower end between said first looping chains and said second looping chains; and

5 a plurality of carriers, each said carrier comprising a shaft, a roller and a claw respectively provided at each of two sides thereof, said two shafts of each said carrier being fastened in a respective predetermined button hole of said second looping chains, said two rollers of each said carrier abutting on said two first guide
10 rails so that said two claws are hooked on a respective hanging rod of said two first looping chains for positioning, said two rollers of each said carrier abutting on said second guide rails to keep said two claws out of the hanging rods of said first looping chains, and said two shafts flipping up with said second looping chains.

15 2. The evacuation ladder for transporting hospital bed as claimed in claim 1, wherein said carriers each comprise a bearing surface above, and two guide grooves provided on said bearing surface for guiding and positioning the four casters of the hospital bed.

20 3. The evacuation ladder for transporting hospital bed as claimed in claim 1, wherein said first guide rails each further comprise an inclined rising portion, a bending portion, an inclined descending portion and an engaging abutting end; said second

guide rails each further comprise a disengaging abutting end and an arc-shaped portion.

4. The evacuation ladder for transporting hospital bed as claimed in claim 1, wherein said floor guide rail is a
5 two-symmetrical curved track with a wide outer width and a narrow inner width.

5. The evacuation ladder for transporting hospital bed as claimed in claim 1, wherein said building is also provided with a ramp at an exit of said evacuation ladder on the first floor.

10 6. An evacuation ladder for transporting hospital bed installed in a building, said building providing a floor guide rail on one floor thereof for a hospital bed to lead to an evacuation ladder entrance, said evacuation ladder being provided with a preset body and a preset loading space set in a top of said preset body, said
15 evacuation ladder comprising:

a gravity deceleration device set in said preset loading space of said preset body, said gravity deceleration device comprising a reducer with an extended transmission shaft, and said transmission shaft being further penetrated in a driving wheel;

20 two first slide rails arranged on opposite sides of said preset body;

two second slide rails set on opposite sides of said preset body and maintaining a preset distance from said two first slide

rails;

two looping chains set in said two second slide rails, said
two looping chains having upper and lower ends thereof
respectively meshed with a deceleration gear set and a cyclic gear,
5 and said deceleration gear set meshing with two driven wheels on
both sides of a linking gear set, and said driven wheel in the middle
of said linking gear set and said driving wheel of said gravity
deceleration device doing a meshing linkage through a transmission
chain sleeved on an outside, a connecting rod being provided
10 through the center between each said driven wheel;

two first guide rails arranged at an upper end position
between said first slide rails and said second slide rails;

two second guide rails arranged at a lower end position
between said first slide rails and said second slide rails; and

15 a plurality of carriers, each said carrier comprising a shaft,
an oblique extension roller and a board end roller respectively
provided at each of two sides thereof, said two shafts of each said
carrier being fastened in a respective predetermined button hole of
said two looping chains, said two oblique extension rollers of each
20 said carrier abutting against said two first guide rails so that said
two board end rollers of the respective said carrier slide into said
two first slide rails for positioning, said two board end rollers of
each said carrier sliding down on said second guide rails, and said

two board end rollers of each said carrier sliding to the ends of said second guide rails to disengage, so that the respective said carrier flips up with said two looping chains through said two shafts.

7. The evacuation ladder for transporting hospital bed as
5 claimed in claim 6, wherein said carriers each comprise a bearing surface above, and two guide grooves provided on said bearing surface for guiding and positioning the four casters of said hospital bed.

8. The evacuation ladder for transporting hospital bed as
10 claimed in claim 6, wherein said first guide rails each further comprise an inclined rising portion, a bending portion, an inclined descending portion and an engaging abutting end; said second guide rails each further comprise a disengaging abutting end and an arc-shaped portion.

15 9. The evacuation ladder for transporting hospital bed as claimed in claim 6, wherein said floor guide rail is a two-symmetrical curved track with a wide outer width and a narrow inner width.

10. The evacuation ladder for transporting hospital bed as
20 claimed in claim 6, wherein said deceleration gear set comprises a small chainring that meshes with the said driven wheels on both sides of said linking gear set, and the other side of said small chainring is connected with a large chainring which penetrates

inside said looping chains.