

(19)



(11)

EP 3 672 894 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent:
09.11.2022 Bulletin 2022/45

(51) International Patent Classification (IPC):
B66B 9/08 (2006.01)

(21) Application number: **18879386.3**

(52) Cooperative Patent Classification (CPC):
B66B 9/0807; B66B 9/0853

(22) Date of filing: **30.07.2018**

(86) International application number:
PCT/TR2018/050407

(87) International publication number:
WO 2019/098963 (23.05.2019 Gazette 2019/21)

(54) NONDISCRIMINATORY ACCESS SYSTEM FOR PUBLIC/COLLECTIVE LIVING SPACES

DISKRIMINIERUNGSFREIES ZUGANGSSYSTEM FÜR ÖFFENTLICHE/KOLLEKTIVE LEBENSRAÜME

SYSTÈME D'ACCÈS NON DISCRIMINATOIRE POUR DES ESPACES DE VIE PUBLICS/COLLECTIFS

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(72) Inventor: **OZDEMIR, Ataman**
06800 Ankara (TR)

(30) Priority: **25.08.2017 TR 201712778**

(74) Representative: **Yalçiner Patent and Consulting Ltd.**
Tunus Caddesi 85/3-4
Kavaklıdere
Ankara (TR)

(43) Date of publication of application:
01.07.2020 Bulletin 2020/27

(73) Proprietor: **ORTA DOGU TEKNİK UNIVERSITESI**
06800 Ankara (TR)

(56) References cited:
WO-A1-2013/158051 US-A1- 2008 308 357
US-A1- 2010 215 468

EP 3 672 894 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

Technical Field

[0001] The invention is related to a "nondiscriminatory access system for public/collective living spaces" which eases the access problems for the disabled without getting outside assistance, in public/collective living spaces, where the boarding platform is higher or lower than the ground level.

Prior Art

[0002] Climbing up and down from the lower level to the upper level where there is an elevation difference is extremely difficult especially for people who use wheelchairs or crutches, who have difficulty in walking and who are visually impaired. Even though solutions for passage from the lower level to the upper level, such as staircases are provided for people who are not disabled, these solutions are not applicable for the disabled and such staircases cause serious problems when used.

[0003] Today in the known state of the art, for the passage of non-disabled people from the lower level to the upper level;

- ramps
- elevators
- stairs or escalators

are used.

[0004] In the present systems, since the system is generally used by getting help from others when a disabled person desires to climb a stair level, the time loss causes various difficulties for both the disabled and the person who assists the disabled.

[0005] In addition, all other present systems are complicated and stationary systems whose mounting to the location is difficult and which have been produced with extra parts. At the same time, because of these are formed from extra parts, undesirable problems such as repair of extra parts can occur through time.

WO 2013/158051 A1 discloses a similar system which has lower level platform (1), sloped platform (2), hinged connection between sloped platform (2) and higher level (6) and lifting and lowering means (4).

The Purpose and Brief Description of the Invention

[0006] In developing the nondiscriminatory access system, it is aimed to achieve an access system which can be assembled and disassembled at the location with ease, which provides convenience for the end user, which has a simple structure that can be used at any point having an elevation difference, which is easy to use, which does not require frequent maintenance, which is

5 durable against unforeseen loads and which has low cost of initial installation and during its operation.

[0007] The system developed according to the present invention as defined in claim 1 is a system which can be assembled at any location with access problems and disassembled which provides convenience for the end user. With the fewest parts as possible to produce, the mobility of the mechanism has been improved. One of the most important innovations of the system is that the disabled person does not need to get assistance from others in any way when he/she climbs up the floor. Additionally, the system convenient for carrying the entire load within the capacity of this system is designed with such a width that a stretcher can be carried thereon. The system can also be used for carrying products or semi-products to the production line without interruption where there is an elevation difference in the production line in the industry. Along with all the other features it comprises, the system is one that can ease the disabled or non-disabled passenger and load transfer to all vehicles or to the port by being integrated to the port in maritime transport.

[0008] The most significant distinction of this system from the other solutions is that it is a universal design and it is a system that can carry more than one disabled person, not just one disabled person and the people assisting them. Briefly, this system is suitable for use in transferring the disabled, patients, doctors, other assisting personnel and additionally all other loads.

30 Description of the Figures Illustrating the Invention

[0009] The figures and the related explanations used in order to better explain the nondiscriminatory access system developed by this invention is as follows.

- 35 Figure 1- Side view of the 1st application of the nondiscriminatory access system (Platform is in the lower position)
- 40 Figure 2- Side view of the 1st application of the nondiscriminatory access system (Platform is in the middle position)
- Figure 3- Side view of the 1st application of the nondiscriminatory access system (Platform is in the upper position)
- 45 Figure 4- Top view of the 1st application of the nondiscriminatory access system (Platform is in the upper position)
- Figure 5- Side view of the 2nd application of the nondiscriminatory access system (Platform is in the lower position)
- 50 Figure 6- Side view of the 2nd application of the nondiscriminatory access system (Platform is in the middle position)
- Figure 7- Side view of the 2nd application of the nondiscriminatory access system (Platform is in the upper position)
- 55 Figure 8- Side view of the 3rd application of the nondiscriminatory access system (Platform is

- in the lower position)
- Figure 9- Side view of the 3rd application of the non-discriminatory access system (Platform is in the middle position)
- Figure 10- Side view of the 3rd application of the non-discriminatory access system (Platform is in the upper position)
- Figure 11- Side view of the 4th application of the non-discriminatory access system (Platform is in the lower position)
- Figure 12- Side view of the 4th application of the non-discriminatory access system (Platform is in the middle position)
- Figure 13- Side view of the 4th application of the non-discriminatory access system (Platform is in the upper position)
- Figure 14- Side view of the 5th application of the non-discriminatory access system (Platform is in the lower position)
- Figure 15- Side view of the 5th application of the non-discriminatory access system (Platform is in the middle position)
- Figure 16- Side view of the 5th application of the non-discriminatory access system (Platform is in the upper position)

Description of the Parts Forming the Invention

[0010] The pieces and parts in the figures used to better illustrate the nondiscriminatory access system developed by this invention are numbered and the reference of each number is listed below.

- 1- Loadbearing body (main frame/main construction)
- 2- Platform side brackets
- 3- Platform
- 4- Parallel rods
- 5-A Power and motion transfer component
- 5-B Power and motion transfer component
- 6- Power supply
- 7- Back screen
- 8- Front screen
- 9- Ramp/stopper
- 10- Ramp motion wheel
- 11- Return spring
- 12- Railings
- 13- Safety panel
- 14- Safety panel motion component
- 15- Connection
- 16- Switch levers
- 17- Protective panel

Detailed Description of the Invention

[0011] The basic principle of this invention is to develop a system which eases the access problems for the disabled individuals in all public areas, especially in the plac-

es where there is an elevation difference.

[0012] The most important elements (mandatory for the operation) of the nondiscriminatory disabled access system developed by this invention are as follows:

- 5 • A loadbearing body (main frame/main construction) (1), of which a specific part is fixed to the upper level of the levels having a height difference and a specific part is fixed to the lower level,
- 10 • A horizontal platform (3) on which the disabled vehicle will be driven,
- 15 • Platform side brackets (2) which take place on both sides of the horizontal platform (3) and prevent the disabled vehicle from swaying to the left or right during the operation of the system,
- 20 • Parallel rods (4) one end of which is mounted to the loadbearing body (main frame/main construction) (1) and the other end to the platform side brackets,
- 25 • Power and motion transfer component (5-A), one end of which is connected to one of the parallel rods (4) and from its middle part to the second of the parallel rods (4) and the other end is connected to the power and motion transfer component element numbered 5-B,
- 30 • Power and motion transfer component (5-B), one end of which is connected to the power and motion transfer component element numbered 5-A and the other end to the loadbearing body (1) (main frame/main construction),
- 35 • Power supply (6),
- 40 • Safety panel (13) which prevents the platform (3) from moving further than the required position of the platform as it moves from the lower position to the upper position,
- 45 • Safety panel motion component (14) which enables the movement of the safety panel,
- 50 • A fixed end connection (15) of a plunger to which the fixed end of the plunger is connected.

[0013] The other elements which constitute the operation of the nondiscriminatory disabled access system developed with this invention and provide these with security features are as follows;

- 55 • The back screen (7) and the front screen (8) which prevent foreign objects from entering the bottom of the platform when the system is in operation and which prevents the mechanism from being seen,

- A protective panel (17) which prevent foreign objects from entering the bottom of the platform from the side of the platform when the system is in operation,
- The ramp/ stopper (9) which enable the disabled to get on the platform together with his/her vehicle when the platform (3) is in the lower position and which prevents the disabled vehicle from moving backwards when the platform is moving,
- The ramp motion wheel (10) which prevents the ramp/stopper (9) from moving after the platform (3) moves from the lower position,
- The return spring (11) which enables the movement of the ramp motion wheel (10),
- Railings (12) that the disabled can hold on to and that prevent the disabled from falling.

[0014] The operation principle of the nondiscriminatory access system is as follows; When the nondiscriminatory access system is at the lower position;

[0015] The user passes onto the platform (3) with the help of the ramp/stopper (9). The user activates the power supply (6) by pressing on the up button on the platform side bracket (2). In one embodiment of the invention, hydraulic/pneumatic plunger is used as the power supply (6). As can be seen in Figure 1,2 or 3, the fixed end of the plunger is fixed to the connection point (15) and the moving part is fixed to the power and motion transfer component (5-B). With the linear movement of the hydraulic/pneumatic plunger, the power and motion transfer components (5-A and 5-B) start to push the parallel rods (4) upward. Since one end of each of the parallel rods (4) are fixed to the platform side brackets (2), the platform (3) departs from the ground. With the movement of the platform (3), under the influence of the tractive force of the return spring (11), the ramp/stopper (9) goes to the stopper position. When the system arrives at the upper level needed to be reached, the safety panel motion component (14) moves the safety panel (13) and the distance control switches are activated and they stop the system. Thereby, the level the user desires to climb up to is reached.

[0016] If there is no new use demand related to the use of the disabled access system when the platform (3) is at the upper position, after staying at the (adjustable) upper position for a period, it can gradually go down to the lower position without any intervention.

[0017] When the disabled person is at the upper level and the system is at the lower level, when the disabled person desires to go down, he/she calls the system up by pressing the button on the loadbearing body (main frame/main construction) (1).

When the nondiscriminatory access system is at the upper position;

[0018] When the user arrives at the platform (2), he/she

activates the power supply (6) by pressing on the down button. With the linear movement of the hydraulic/pneumatic plunger, the power and motion transfer components (5-A and 5-B) parts start pulling the parallel rods (4) downward. Since one end of each of the parallel rods (4) are fixed to the platform side brackets (2), they move the platform (3) downwards parallel to the ground level with the downward movement of the parallel rods (4). At the same time, the safety panel motion component (14) moves the safety panel (13) downwards. When the disabled access system approaches the ground level, the ramp motion wheel (10) pulls the return spring (11) and enables the ramp/stopper (9) to be brought to the exit position, which is the ramp position. At this stage, the safety panel passes on to the barrier position. Distance control switches are activated at the exit point and the system is automatically stopped.

[0019] In order to keep from any inconvenience within the operation space of the disabled access system, the safe operation space of the system is defined with the help of boards on the side, the moving front screen (8) at the front and the safety panel at the arrival point.

[0020] In Figure-5, the 2nd application of the nondiscriminatory access system takes place. In this application, a plunger is used as the power supply (6). One end of the plunger is fixed to the loadbearing body (main frame/main construction) (1) and the other end to the switch levers (16). One rod of the switch levers (16) is fixed to the junction point of the power and motion transfer components (5-A and 5-B) and the other rod is fixed to the ground. When the system passes on to the upper position from the lower position, the plunger pushes the switch levers (16) and enables the power and motion transfer components (5-A and 5-B) to move upwards. The upward movement of the power and motion transfer components (5-A and 5-B) provide the upward movement of the parallel rods (4) and the upward movement of the parallel rods (4) provides the upward movement of the platform (3) parallel to the ground.

[0021] In Figure 8, the 3rd application of the nondiscriminatory access system takes place. In this application, a plunger is used as the power supply (6). The fixed end of the plunger is fixed to the rod which is fixed to the ground from the switch levers (16) and the moving end of the plunger is fixed to the rod which is fixed to the power and motion transfer rod (5-A) from the switch levers (16). When the system passes on to the upper position from the lower position, the plunger pushes the switch levers (16) and provides for the power and motion transfer component (5-A) to move upwards. The upward movement of the power and motion transfer component (5-A) provide the upward movement of the parallel rods (4) and the upward movement of the parallel rods (4) provides the upward movement of the platform (3) parallel to the ground.

[0022] In Figure 11, the 4th application of the nondiscriminatory access system takes place. In this application, a plunger is used as the power supply (6). One of

the switch levers (16) is fixed to the ground and the other end is fixed to the platform side brackets (2). The fixed end of the plunger is fixed to the side brackets (2) and the other end is to the rod which is fixed to the plunger side brackets (2) from the switch levers (16). When the system passes on to the upper position from the lower position, the plunger pushes the switch levers (16) and provides the upward movement of the platform (3). The upward movement of the platform (3) enables the parallel rods (4) to move upwards and the upward movement of the parallel rods (4) enables the upward movement of the power and motion transfer rods.

[0023] In Figure-15, the 5th application of the nondiscriminatory access system takes place. In this application, a plunger is used as the power supply (6). One of the switch levers (16) is fixed to the ground and the other rod is fixed to the platform side brackets (2). The fixed end of the plunger is fixed to the rod which is fixed to the ground from the switch levers and the moving end of the plunger is fixed to the rod which is fixed to the platform side brackets (2) from the switch levers. When the system passes on to the upper position from the lower position, the plunger pushes the plunger switch levers (16) and enables the upward movement of the platform (3). The upward movement of the platform (3) enables the parallel rods (4) to move upward and the upward movement of the parallel rods (4) enables the upward movement of the power and motion transfer rods.

[0024] As the power supply, instead of the plunger, any one of linear systems, eccentric rods, cam systems, screw systems, hydraulic or pneumatic cylinders, gear wheel systems, chain or gear steel cords can be used.

[0025] In one embodiment of the invention, remote control is used instead of the buttons which provide the up and down movement of the system.

Claims

1. A nondiscriminatory disabled access system comprising:

- a loadbearing body (1), a specific part of which is fixed to the upper level of the levels having a height difference and a specific part to the lower level,
- A horizontal platform (3) on which a vehicle used by a user with disabilities may be driven,
- Platform side brackets (2) which are placed on both sides of the horizontal platform (3) and prevent the vehicle from swaying to the left or right during the operation of the system,
- Parallel rods (4) one end of which is mounted to the loadbearing body (1) and the other end to the platform side brackets,
- a power and motion transfer component (5-A), one end of which is connected to one of the parallel rods (4) its middle part is connected to the

second of the parallel rods (4) while its other end is connected to a second power and motion transfer component element (5-B), one end of which is connected to the power and motion transfer component element (5-A) and the other end to the load bearing body (1),

- a Power supply (6),
- a safety panel (13) which prevents the platform (3) from moving further than the required position of the platform as it moves from the lower position to the upper position and
- A safety panel motion component (14) which enables the movement of the safety panel.

2. A disabled access system according to Claim 1, **characterized in that** further comprises:

- A back screen (7) and a front screen (8) which prevent foreign objects from entering the bottom of the platform when the system is in operation and which prevents the mechanism from being seen,
- A protective panel (17) which prevent foreign objects from entering the bottom of the platform from the side of the platform when the system is in operation,
- A ramp/ stopper (9) which enables the user with disabilities to get on the platform together with his/her vehicle when the platform (3) is in the lower position and which prevents the vehicle from moving backwards when the platform is moving,
- A ramp motion wheel (10) which prevents the ramp/stopper (9) from moving after the platform (3) moves from the lower position,
- A return spring (11) which enables the movement of the ramp motion wheel (10),
- Railings (12) that the user with disabilities can hold onto and that prevent the user from falling, which also makes the operation of the disabled access system easier and which provide security features.

3. A disabled access system according to Claim 1, **characterized in that** the fixed end of the power supply (6) is fixed to the connection point (15) and a moving end of the power supply (6) is fixed to the second power and motion transfer component (5-B).

4. A disabled access system according to Claim 1 or Claim 2, **characterized in that** a down direction button and an up direction button are provided on the platform side brackets (2).

5. A disabled access system according to Claim 1 or Claim 2, **characterized in that** it has a call button on the load bearing body (1) for the system to go up.

6. A disabled access system according to any one of the above claims **characterized in that** the power supply (6) is at least any one of a plunger, linear systems, eccentric rods, cam systems, screw systems, hydraulic or pneumatic cylinders, gear wheel systems, chain or gear steel cords. 5
7. A disabled access system according to any one of the preceding claims, **characterized in that** comprises distance control switches which enable the system to move to the position the system is required to arrive at, as it goes up or down. 10
8. A disabled access system according to Claim 1, **characterized in that** it comprises switch levers (16) one rod of which is fixed to the junction point of the power and motion transfer components (5-A ve 5-B) and the other rod is fixed to the ground. 15
9. A disabled access system according to Claim 8, **characterized in that** a fixed end of the power supply (6) is fixed to the loadbearing body (1) and a moving end of the power supply (6) is fixed to the rod which is fixed to the junction point of the power and motion transfer components (5-A ve 5-B) from the switch levers (16). 20 25
10. A disabled access system according to Claim 8, **characterized in that** the fixed end of the power supply (6) is fixed to the rod which is fixed to the ground from the switch levers (16) and the moving end of the power supply (6) is fixed to the junction point of the power and motion transfer components (5-A ve 5-B) from the switch levers (16). 30 35
11. A disabled access system according to Claim 1, **characterized in that** it comprises switch levers (16) one rod of which is fixed to the platform side brackets (2) and the other rod is fixed to the ground. 40
12. A disabled access system according to Claim 11, **characterized in that** a fixed end of the power supply (6) is fixed to the platform side brackets (2) and the moving end of the power supply (6) is fixed to the rod which is fixed to the side platform (2) from the switch levers (16). 45
13. A disabled access system according to Claim 11, **characterized in that** the fixed end of the power supply (6) is fixed to the rod which is fixed to the ground from the switch levers (16) and a moving end of the power supply is fixed to the rod which is fixed to the side platform (2) from the switch levers (16). 50
14. A disabled access system according to any one of the preceding claims, **characterized in that** the up and down movement of the system is provided by a remote control. 55

Patentansprüche

1. Diskriminierungsfreies Zugangssystem für Behinderte, umfassend:
- einen tragenden Körper (1), dessen spezifischer Teil an der oberen Ebene der Ebenen mit einem Höhenunterschied und dessen spezifischer Teil an der unteren Ebene befestigt ist,
 - Eine horizontale Plattform (3), auf der ein Fahrzeug, das von einem Benutzer mit Behinderungen benutzt wird, gefahren werden kann,
 - Seitliche Plattformhalterungen (2), die auf beiden Seiten der horizontalen Plattform (3) angebracht sind und verhindern, dass das Fahrzeug während des Betriebs des Systems nach links oder rechts schwanke,
 - Parallele Stangen (4), deren eines Ende am Tragkörper (1) und deren anderes Ende an den seitlichen Plattformhalterungen montiert ist,
 - ein Kraft- und Bewegungsübertragungskomponente (5-A), dessen eines Ende mit einer der parallelen Stangen (4) verbunden ist, dessen mittlerer Teil mit der zweiten der parallelen Stangen (4) verbunden ist, während sein anderes Ende mit einem zweiten Kraft- und Bewegungsübertragungselement (5-B) verbunden ist, dessen eines Ende mit dem Kraft- und Bewegungsübertragungselement (5-A) und dessen anderes Ende mit dem Lastaufnahmekörper (1) verbunden ist,
 - eine Stromversorgung (6),
 - ein Sicherheitspaneel (13), das die Plattform (3) daran hindert, sich über die gewünschte Position der Plattform hinaus zu bewegen, wenn sie sich von der unteren in die obere Position bewegt und
 - Ein Sicherheitspaneel-Bewegungskomponente (14) zur Bewegung des Sicherheitspaneels, die die Bewegung des Sicherheitspaneels ermöglicht.
2. Zugangssystem für Behinderte nach Anspruch 1, **dadurch gekennzeichnet, dass** es ferner umfasst:
- Ein hinterer Bildschirm (7) und ein vorderer Bildschirm (8), die verhindern, dass Fremdojekte in den Boden der Plattform eindringen, wenn das System im Betrieb ist, und die verhindern, dass der Mechanismus gesehen werden kann,
 - Ein Schutzpaneel (17), das verhindert, dass Fremdojekte von der Seite der Plattform in den Boden der Plattform eindringen, wenn das System im Betrieb ist,
 - Eine Rampe/einen Anschlag (9), die/der es dem Benutzer mit Behinderungen ermöglicht,

- mit seinem Fahrzeug auf die Plattform zu gelangen, wenn sich die Plattform (3) in der unteren Position befindet, und die/der verhindert, dass das Fahrzeug rückwärts fährt, wenn sich die Plattform bewegt,
- Ein Rampenbewegungsrad (10), das verhindert, dass sich die Rampe/der Anschlag (9) bewegt, nachdem sich die Plattform (3) aus der unteren Position bewegt hat,
 - eine Rückholfeder (11), die die Bewegung des Rampenbewegungsrades (10) ermöglicht,
 - Geländer (12), an denen sich der Benutzer mit Behinderungen festhalten kann und die ihn vor einem Sturz bewahren, was auch die Bedienung des Zugangssystems für Behinderte erleichtert, und die Sicherheitsmerkmale bieten.
3. Zugangssystem für Behinderte nach Anspruch 1, **dadurch gekennzeichnet, dass** das feste Ende der Stromversorgung (6) an dem Anschlusspunkt (15) und ein bewegliches Ende der Stromversorgung (6) an dem zweiten Kraft- und Bewegungsübertragungskomponente (5-B) befestigt ist.
4. Zugangssystem für Behinderte nach Anspruch 1 oder Anspruch 2, **dadurch gekennzeichnet, dass** an den seitlichen Plattformhalterungen (2) eine Abwärtsrichtungstaste und eine Aufwärtsrichtungstaste vorgesehen sind.
5. Zugangssystem für Behinderte nach Anspruch 1 oder Anspruch 2, **dadurch gekennzeichnet, dass** es eine Ruffaste am tragenden Körper (1) zum Hochfahren des Systems aufweist.
6. Zugangssystem für Behinderte nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Stromversorgung (6) mindestens eines der folgenden Systeme ist: Stößel, Linearsysteme, Exzenterstangen, Nockensysteme, Schraubensysteme, hydraulische oder pneumatische Zylinder, Zahnradsysteme, Ketten- oder Zahnradstahlseile.
7. Zugangssystem für Behinderte nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** es Abstandssteuerungsschalter umfasst, die das System in die Lage versetzen, die Position anzufahren, die das System erreichen soll, wenn es nach oben oder unten fährt.
8. Zugangssystem für Behinderte nach Anspruch 1, **dadurch gekennzeichnet, dass** es Schalthebel (16) umfasst, von denen eine Stange am Verbindungspunkt der Kraft- und Bewegungsübertragungskomponenten (5-A und 5-B) und die andere Stange am Boden befestigt ist.
9. Zugangssystem für Behinderte nach Anspruch 8, **dadurch gekennzeichnet, dass** ein festes Ende der Stromversorgung (6) an dem tragenden Körper (1) befestigt ist und ein bewegliches Ende der Stromversorgung (6) an der Stange befestigt ist, die an dem Verbindungspunkt der Kraft- und Bewegungsübertragungskomponenten (5-A und 5-B) von den Schalthebeln (16) befestigt ist.
10. Zugangssystem für Behinderte nach Anspruch 8, **dadurch gekennzeichnet, dass** das feste Ende der Stromversorgung (6) an der Stange befestigt ist, die von den Schalthebeln (16) aus am Boden befestigt ist, und das bewegliche Ende der Stromversorgung (6) von den Schalthebeln (16) aus am Verbindungspunkt der Kraft- und Bewegungsübertragungskomponenten (5-A und 5-B) befestigt ist.
11. Zugangssystem für Behinderte nach Anspruch 1, **dadurch gekennzeichnet, dass** es Schalthebel (16) umfasst, deren eine Stange an den seitlichen Plattformhalterungen (2) befestigt ist und deren andere Stange auf dem Boden befestigt ist.
12. Zugangssystem für Behinderte nach Anspruch 11, **dadurch gekennzeichnet, dass** ein festes Ende der Stromversorgung (6) an den seitlichen Plattformhalterungen (2) befestigt ist und das bewegliche Ende der Stromversorgung (6) an der Stange befestigt ist, die an der seitlichen Plattform (2) von den Schalthebeln (16) aus befestigt ist.
13. Zugangssystem für Behinderte nach Anspruch 11, **dadurch gekennzeichnet, dass** das feste Ende der Stromversorgung (6) an der Stange befestigt ist, die von den Schalthebeln (16) aus am Boden befestigt ist, und ein bewegliches Ende der Stromversorgung an der Stange befestigt ist, die von den Schalthebeln (16) aus an der seitlichen Plattform (2) befestigt ist.
14. Zugangssystem für Behinderte nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Auf- und Abwärtsbewegung des Systems durch eine Fernsteuerung erfolgt.

Revendications

1. Système d'accès handicapés non discriminatoire comprenant :

- un corps porteur (1), dont une partie spécifique est fixée au niveau supérieur des niveaux présentant une différence de hauteur et une partie spécifique au niveau inférieur,
- Une plate-forme horizontale (3) sur laquelle peut être conduit un véhicule utilisé par un utilisateur handicapé,
- Des supports latéraux de la plate-forme (2) qui

sont placés de part et d'autre de la plate-forme horizontale (3) et empêchent le véhicule de se balancer vers la gauche ou la droite pendant le fonctionnement du système,

- Des tiges parallèles (4) dont une extrémité est montée sur le corps porteur (1) et l'autre extrémité sur les supports latéraux de la plate-forme,
- un élément de transfert de puissance et de mouvement (5-A), dont une extrémité est reliée à l'une des tiges parallèles (4) sa partie centrale est reliée à la deuxième des tiges parallèles (4) tandis que son autre extrémité est reliée à un deuxième élément de transfert de puissance et de mouvement (5-B), dont une extrémité est reliée à l'élément de transfert de puissance et de mouvement (5-A) et l'autre extrémité au corps porteur (1),
- une alimentation électrique (6),
- un panneau de sécurité (13) qui empêche la plate-forme (3) de se déplacer au-delà de la position requise de la plate-forme lorsqu'elle se déplace de la position inférieure à la position supérieure et
- un composant de mouvement du panneau de sécurité (14) qui permet le mouvement du panneau de sécurité.

2. Système d'accès handicapés selon la revendication 1, **caractérisé en ce qu'il** comprend en outre :

- Un écran arrière (7) et un écran avant (8) qui empêchent les corps étrangers d'entrer dans le fond de la plateforme lorsque le système est en fonctionnement et qui empêchent de voir le mécanisme,
- Un panneau de protection (17) qui empêche les objets étrangers d'entrer dans le fond de la plate-forme depuis le côté de la plate-forme lorsque le système est en fonctionnement,
- Une rampe/butée (9) qui permet à l'utilisateur handicapé de monter sur la plate-forme avec son véhicule lorsque la plate-forme (3) est en position inférieure et qui empêche le véhicule de reculer lorsque la plate-forme est en mouvement,
- Une roue de mouvement de la rampe (10) qui empêche la rampe/butée (9) de se déplacer après que la plate-forme (3) se soit déplacée de la position inférieure,
- Un ressort de rappel (11) qui permet le mouvement de la roue de mouvement de la rampe (10),
- Des garde-corps (12) auxquels l'utilisateur handicapé peut s'accrocher et qui empêchent l'utilisateur de tomber, ce qui facilite également le fonctionnement du système d'accès handicapés et offre des fonctions de sécurité.

3. Système d'accès handicapés selon la revendication 1, **caractérisé en ce que** l'extrémité fixe de l'alimentation électrique (6) est fixée au point de connexion (15) et une extrémité mobile de l'alimentation électrique (6) est fixée au deuxième composant de transfert de puissance et de mouvement (5-B).

4. Système d'accès handicapés selon la revendication 1 ou la revendication 2, **caractérisé en ce qu'un** bouton de direction vers le bas et un bouton de direction vers le haut sont prévus sur les supports latéraux de la plate-forme (2).

5. Système d'accès handicapés selon la revendication 1 ou la revendication 2, **caractérisé en ce qu'il** comporte un bouton d'appel sur le corps porteur (1) pour que le système remonte.

6. Système d'accès handicapés selon l'une quelconque des revendications précédentes, **caractérisé en ce que** l'alimentation électrique (6) est au moins l'un quelconque d'un plongeur, de systèmes linéaires, de tiges excentriques, de systèmes de cames, de systèmes de vis, de cylindres hydrauliques ou pneumatiques, de systèmes de roues dentées, de chaînes ou de cordons d'acier à engrenages.

7. Système d'accès handicapés selon l'une quelconque des revendications précédentes, **caractérisé en ce qu'il** comprend des commutateurs de commande de distance qui permettent au système de se déplacer vers la position à laquelle le système doit arriver, lorsqu'il remonte ou descend.

8. Système d'accès handicapés selon la revendication 1, **caractérisé en ce qu'il** comprend des leviers de commutation (16) dont une tige est fixée au point de jonction des composants de transfert de puissance et de mouvement (5-A et 5-B) et l'autre tige est fixée au sol.

9. Système d'accès handicapés selon la revendication 8, **caractérisé en ce qu'une** extrémité fixe de l'alimentation électrique (6) est fixée au corps porteur (1) et une extrémité mobile de l'alimentation électrique (6) est fixée à la tige qui est fixée au point de jonction des composants de transfert de puissance et de mouvement (5-A et 5-B) à partir des leviers de commutation (16).

10. Système d'accès handicapés selon la revendication 8, **caractérisé en ce que** l'extrémité fixe de l'alimentation électrique (6) est fixée à la tige qui est fixée au sol à partir des leviers de commutation (16) et l'extrémité mobile de l'alimentation électrique (6) est fixée au point de jonction des composants de transfert de puissance et de mouvement (5-A et 5-B) à partir des leviers de commutation (16).

11. Système d'accès handicapés selon la revendication 1, **caractérisé en ce qu'**il comprend des leviers de commutation (16) dont une tige est fixée aux supports latéraux de la plate-forme (2) et l'autre tige est fixée au sol. 5
12. Système d'accès handicapés selon la revendication 11, **caractérisé en ce qu'**une extrémité fixe de l'alimentation électrique (6) est fixée aux supports latéraux de la plate-forme (2) et l'extrémité mobile de l'alimentation électrique (6) est fixée à la tige qui est fixée à la plate-forme latérale (2) à partir des leviers de commutation (16). 10
13. Système d'accès handicapés selon la revendication 11, **caractérisé en ce que** l'extrémité fixe de l'alimentation électrique (6) est fixée à la tige qui est fixée au sol à partir des leviers de commutation (16) et une extrémité mobile de l'alimentation électrique est fixée à la tige qui est fixée à la plate-forme latérale (2) à partir des leviers de commutation (16). 15
20
14. Système d'accès handicapés selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le mouvement de remontée et de descente du système est assuré par une télécommande. 25

30

35

40

45

50

55

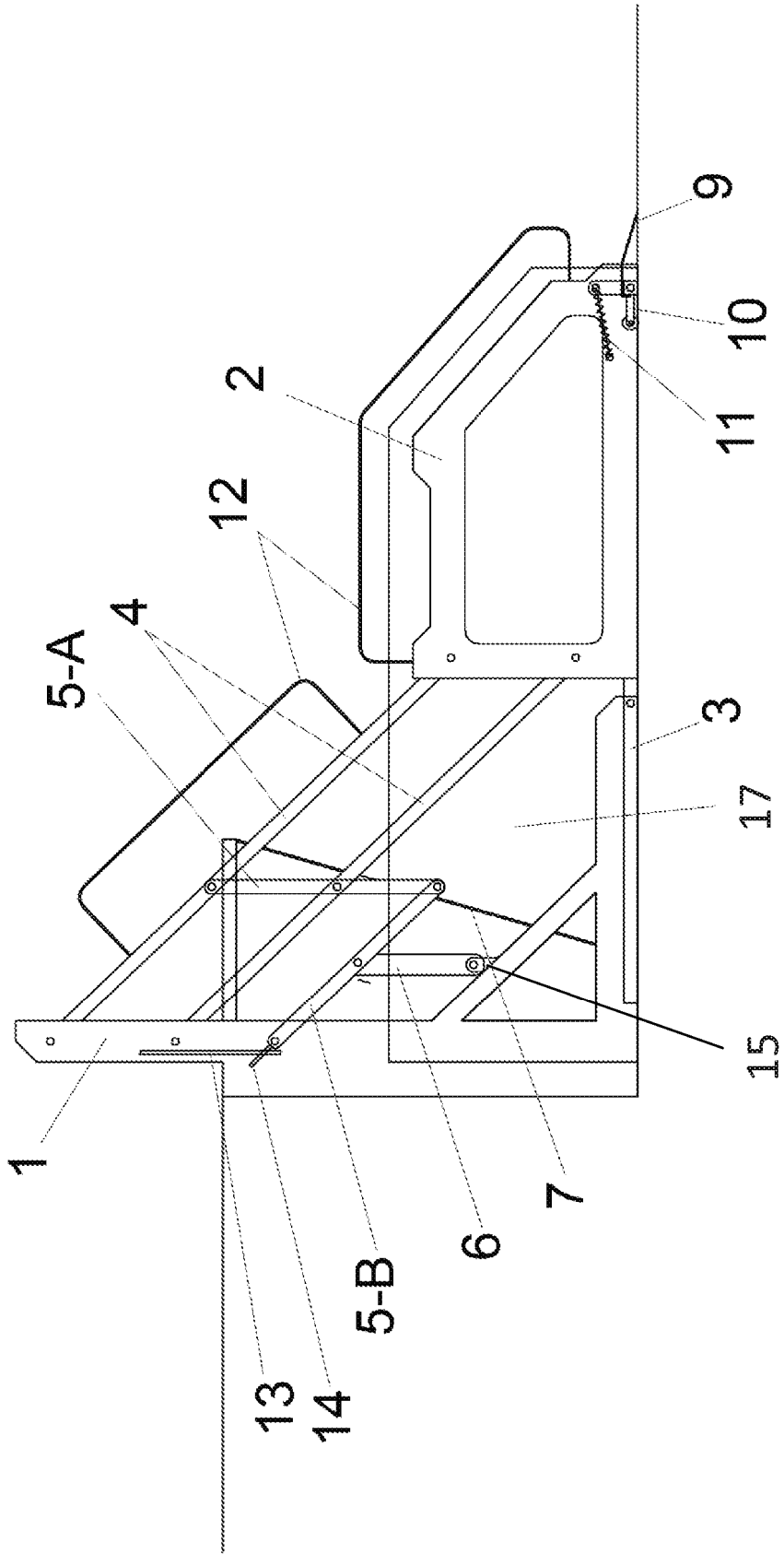


Figure - 1

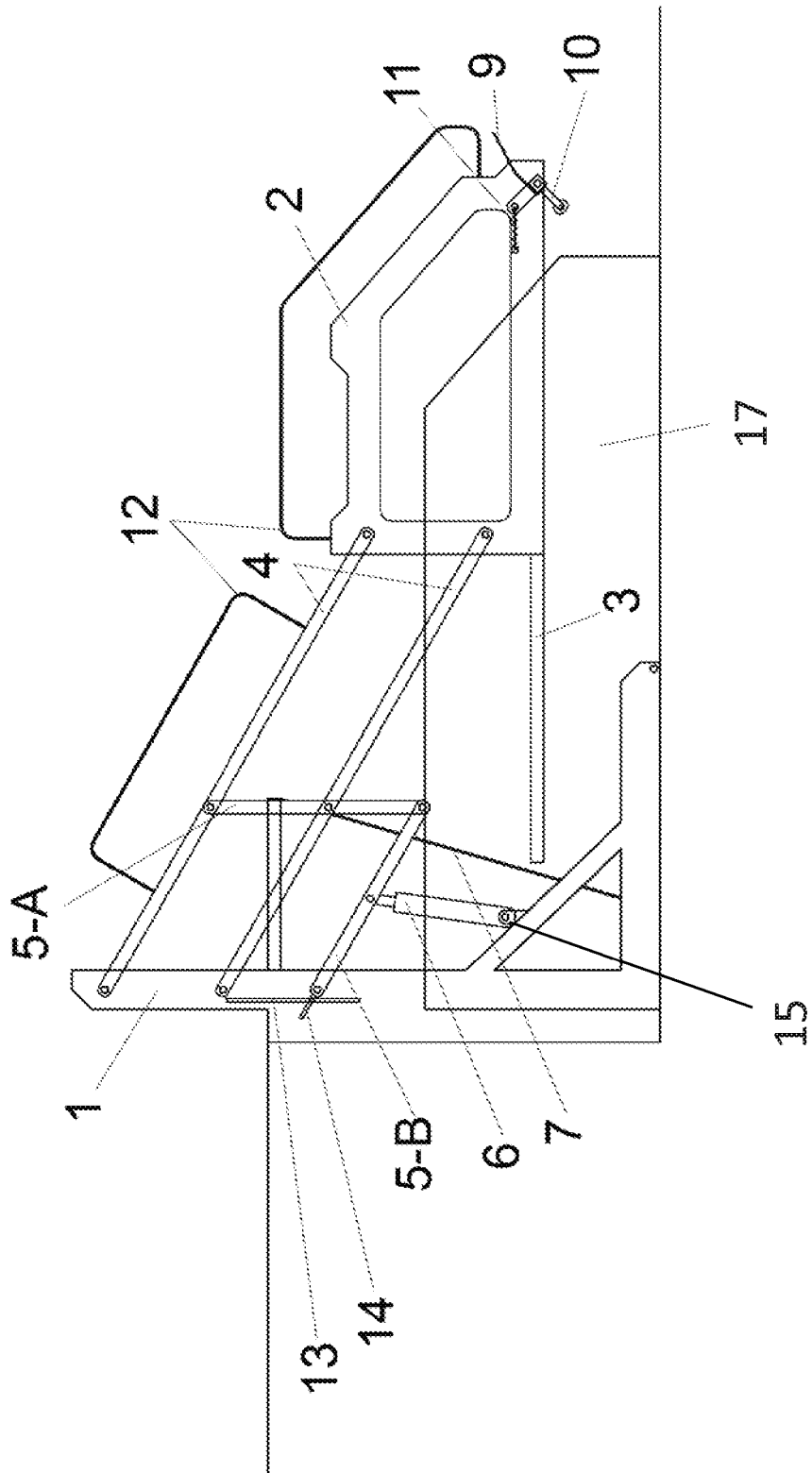


Figure - 2

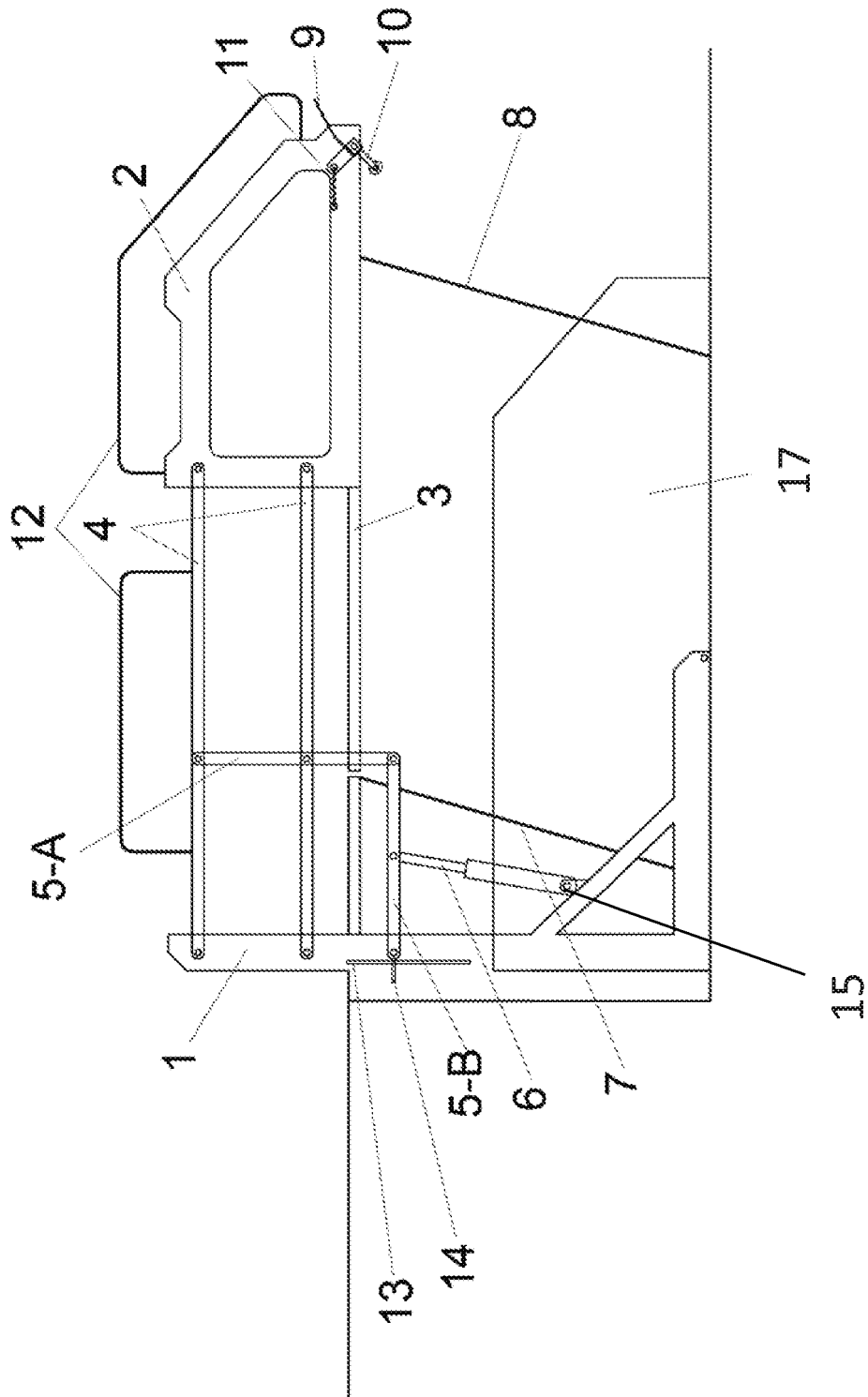


Figure - 3

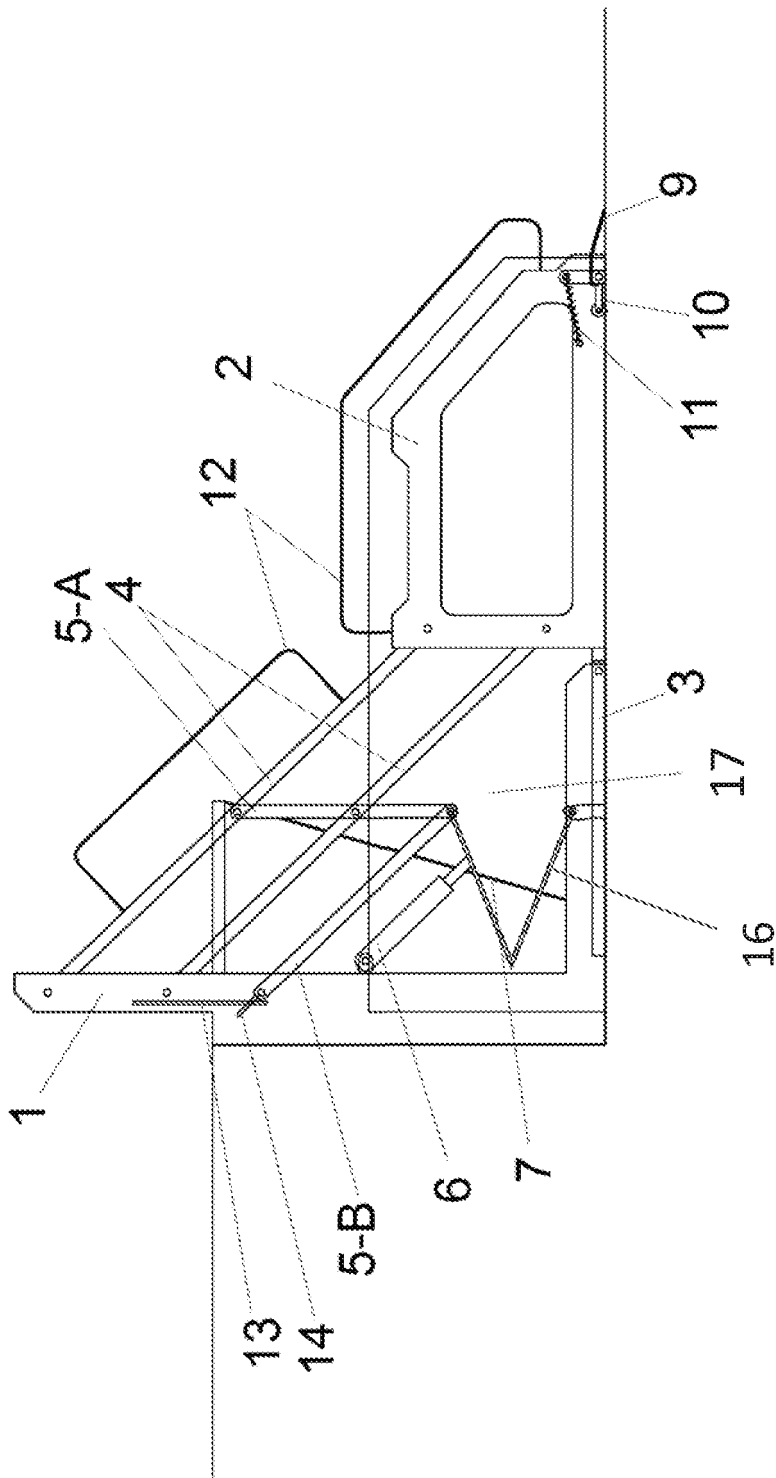


Figure - 5

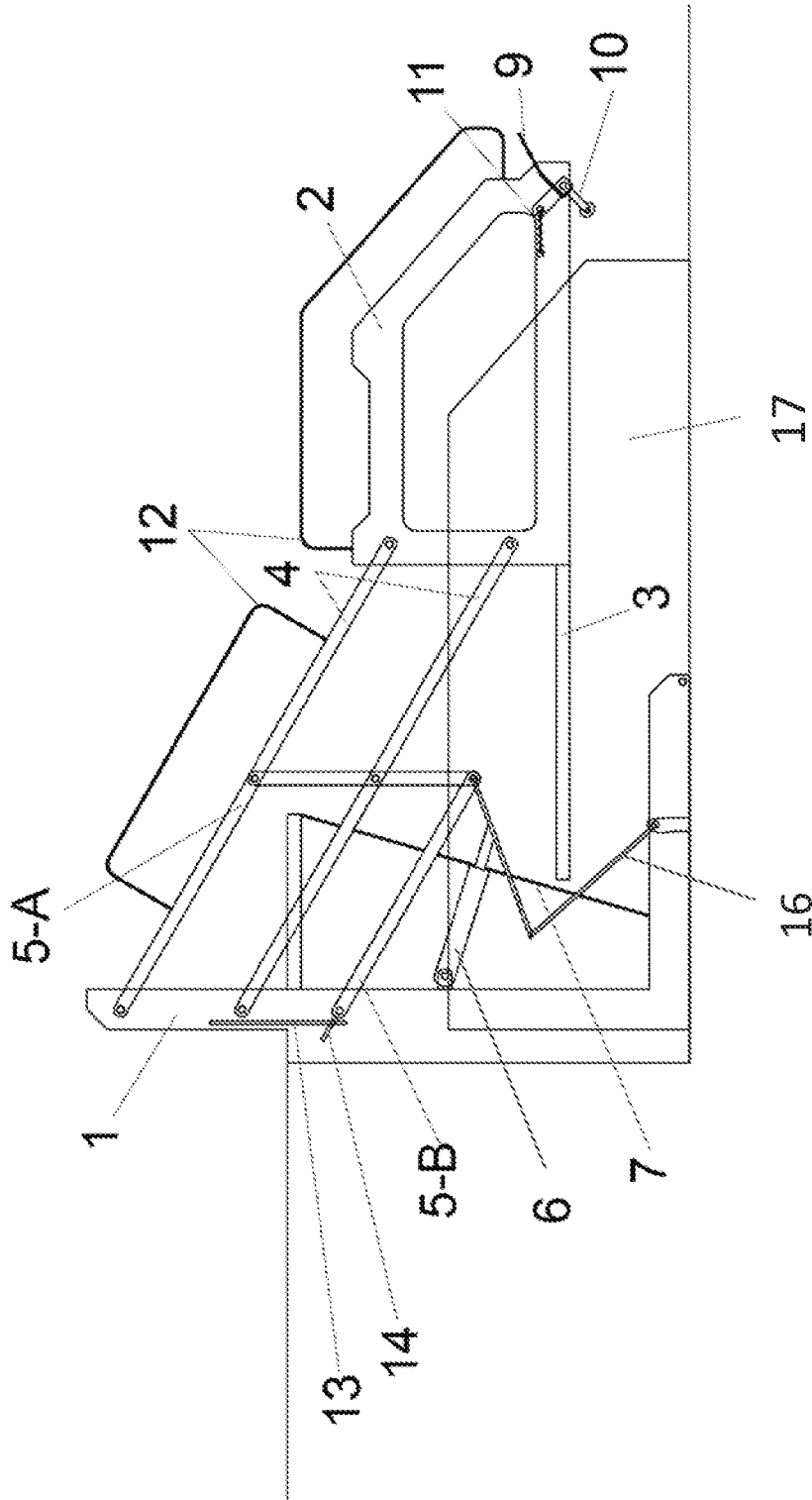


Figure - 6

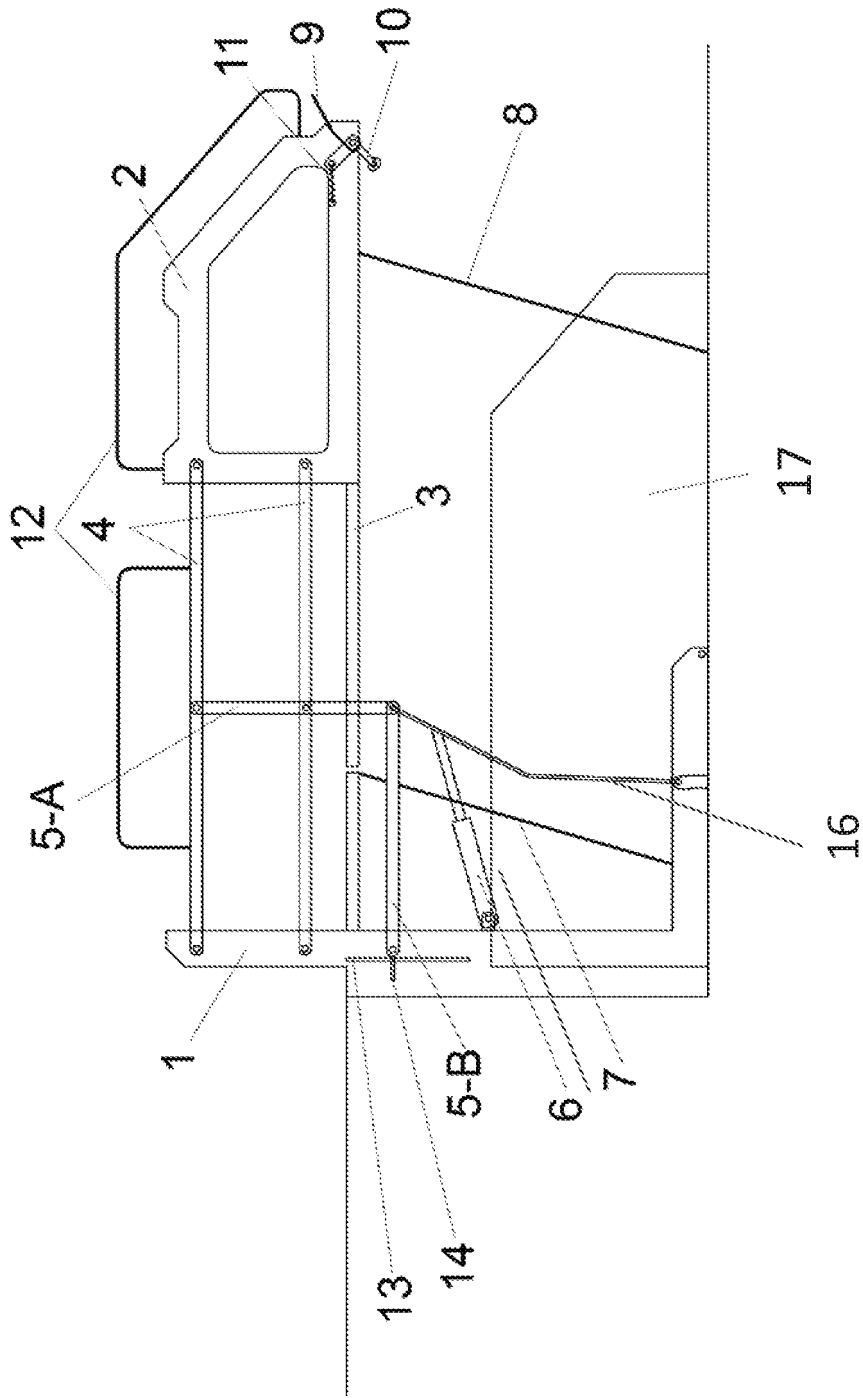


Figure - 7

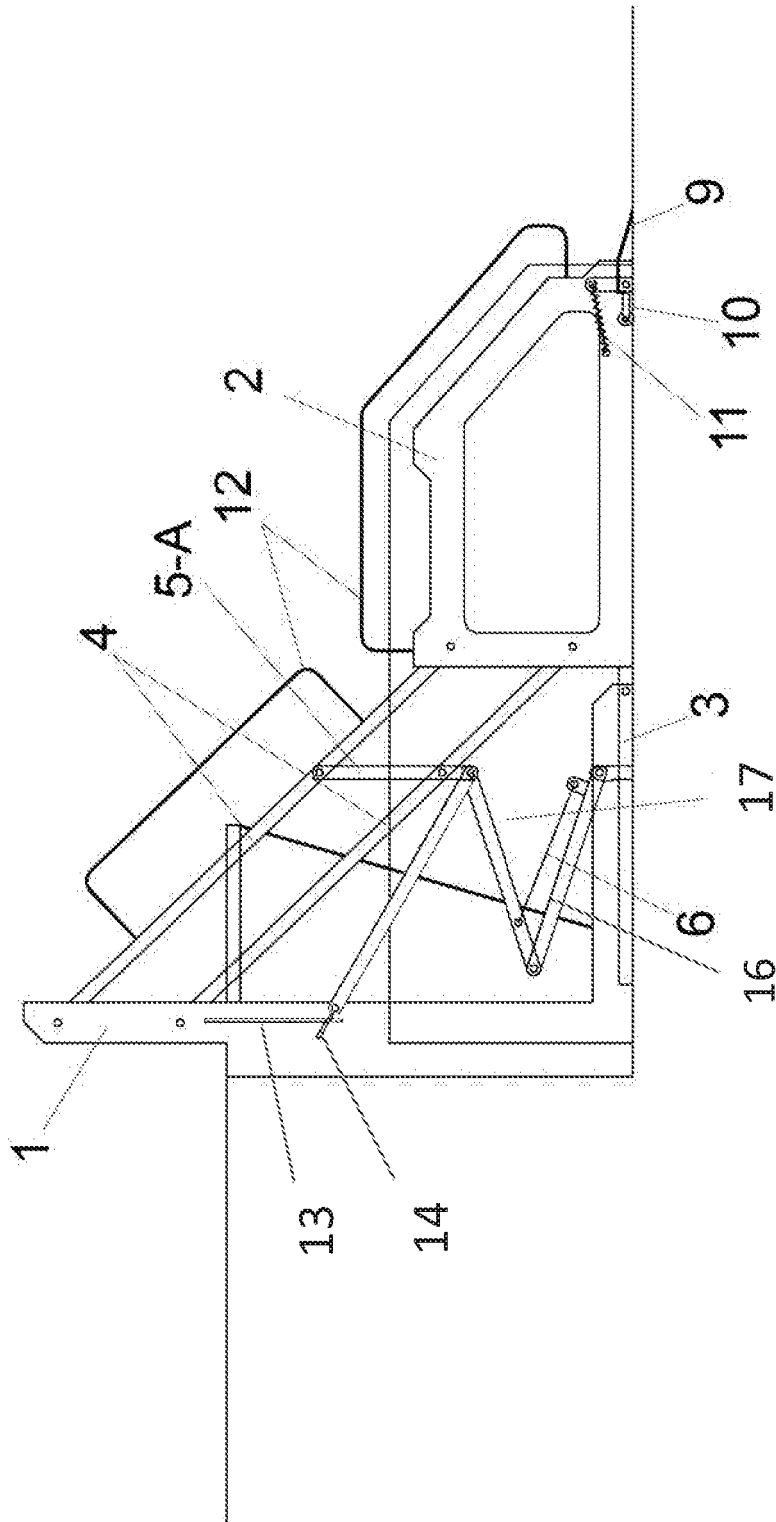


Figure - 8

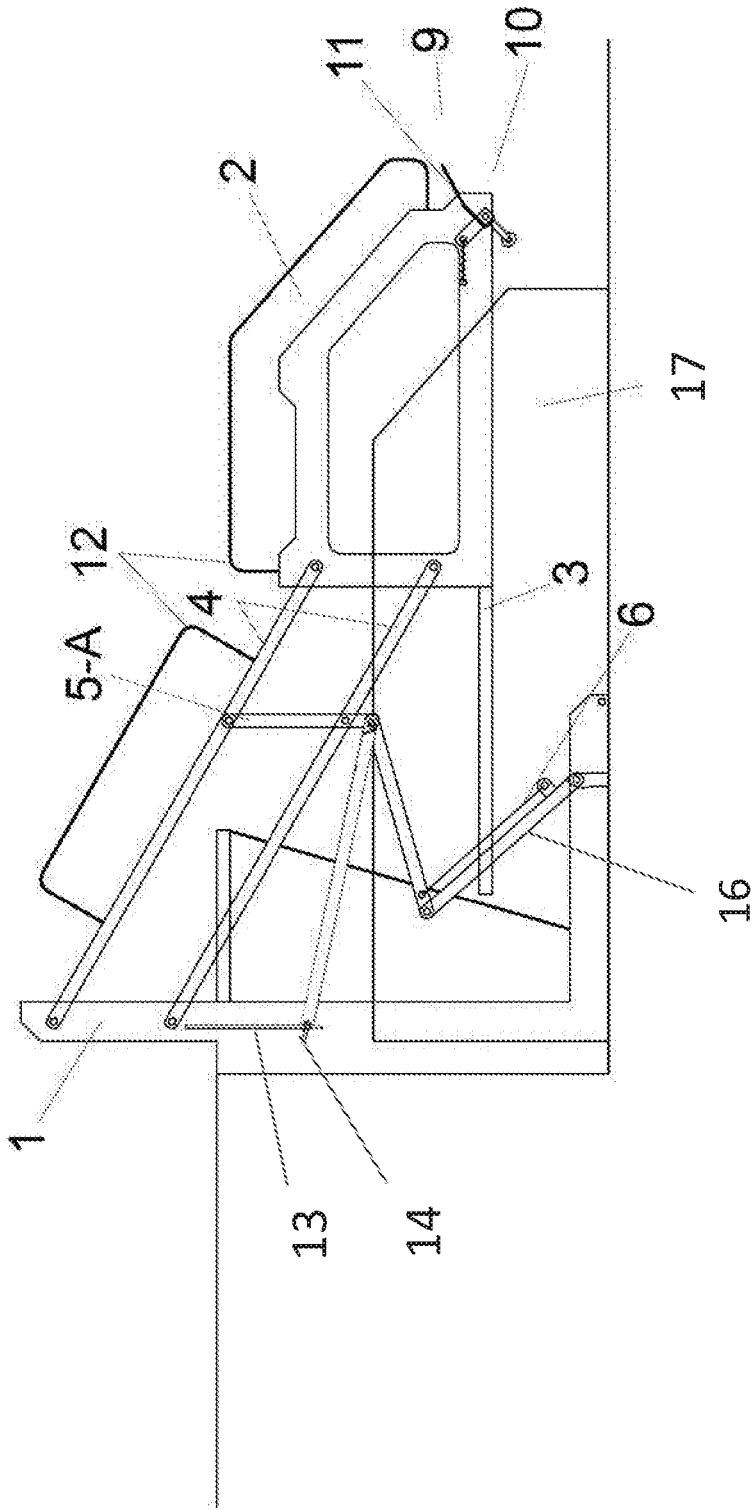


Figure - 9

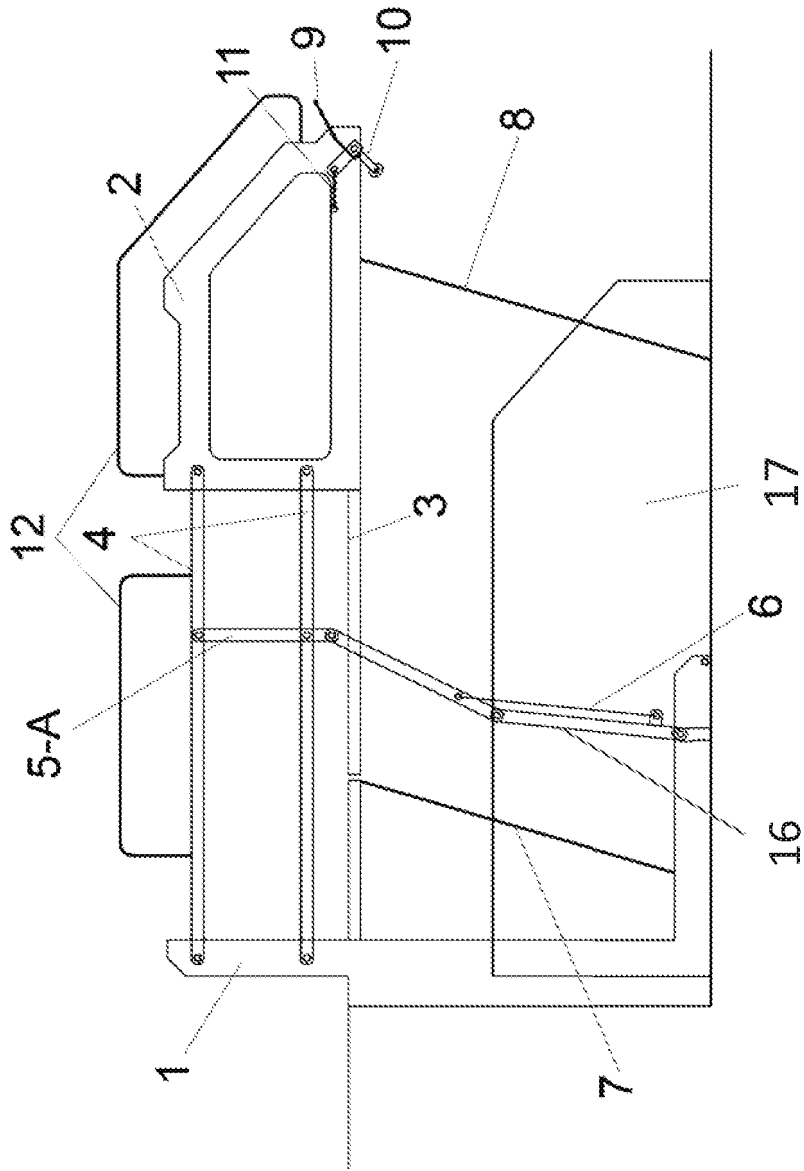


Figure - 10

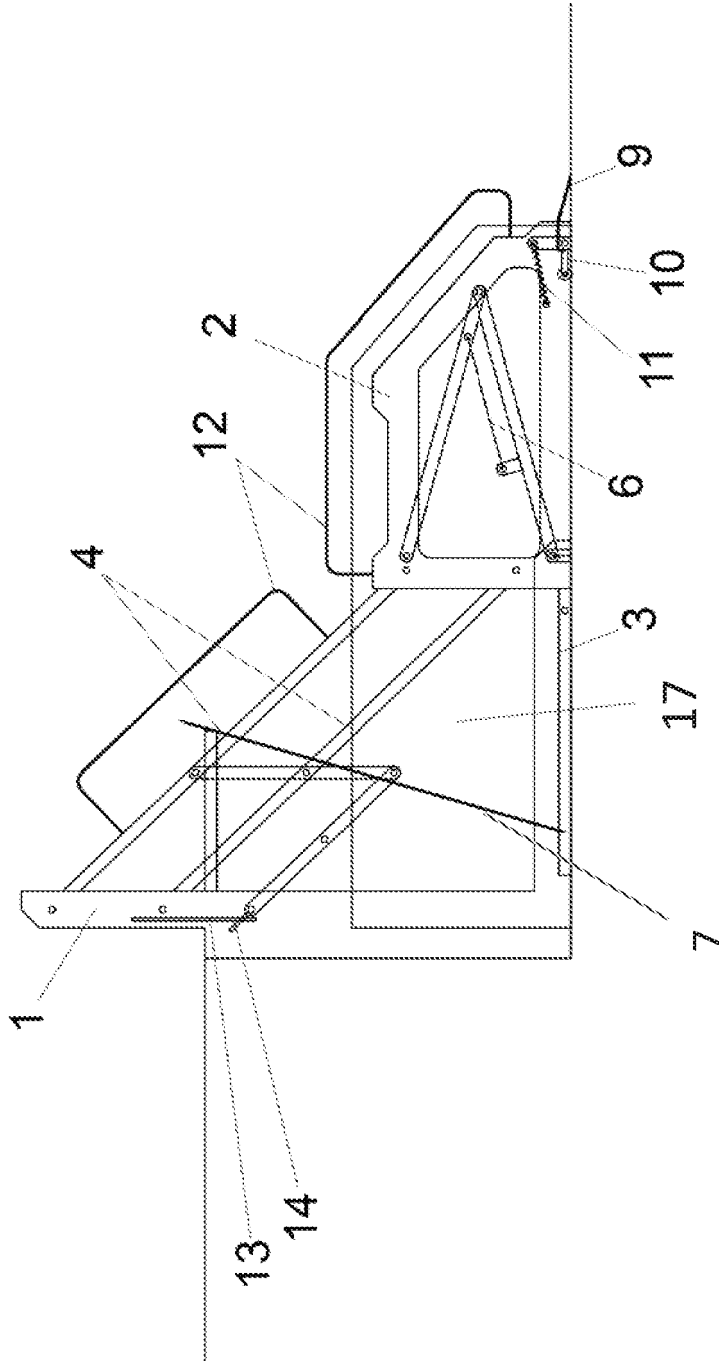


Figure - 11

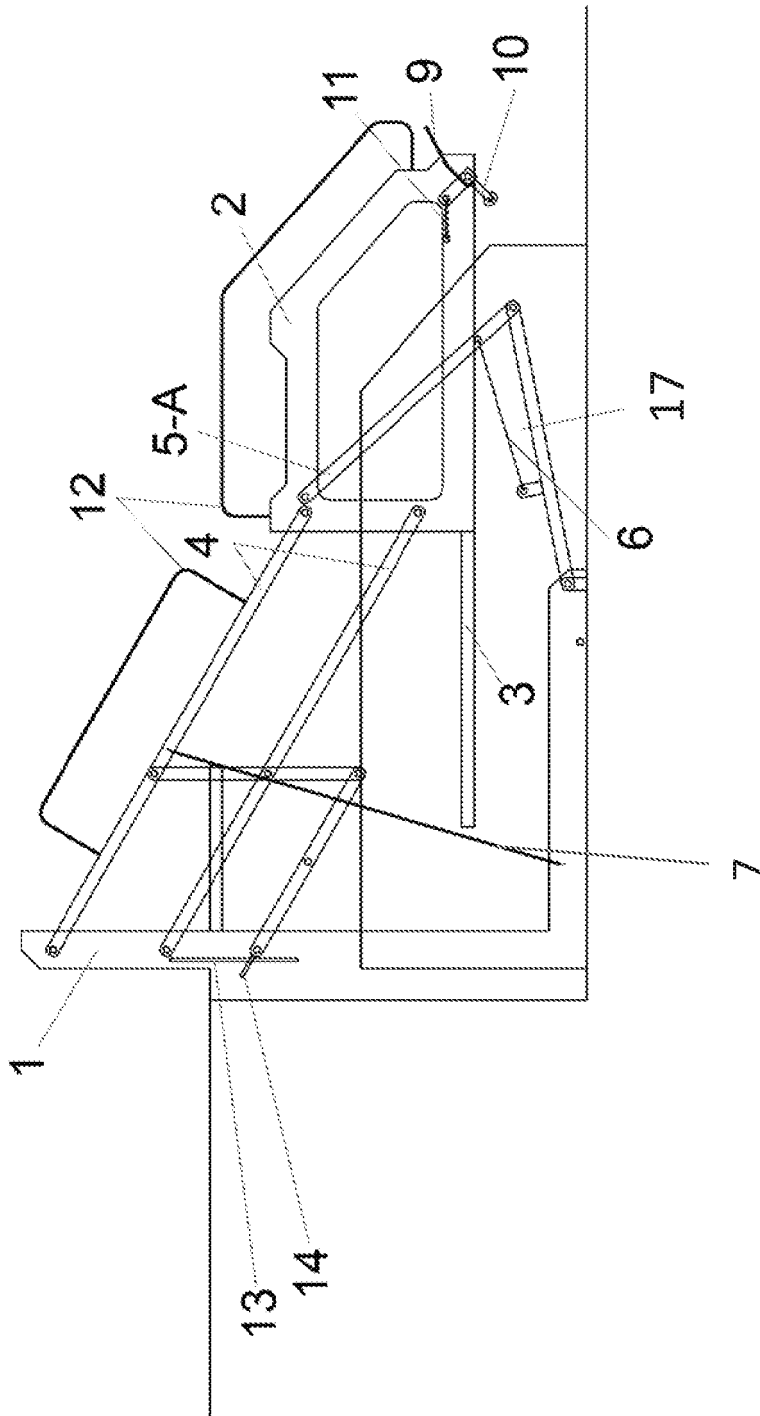


Figure - 12

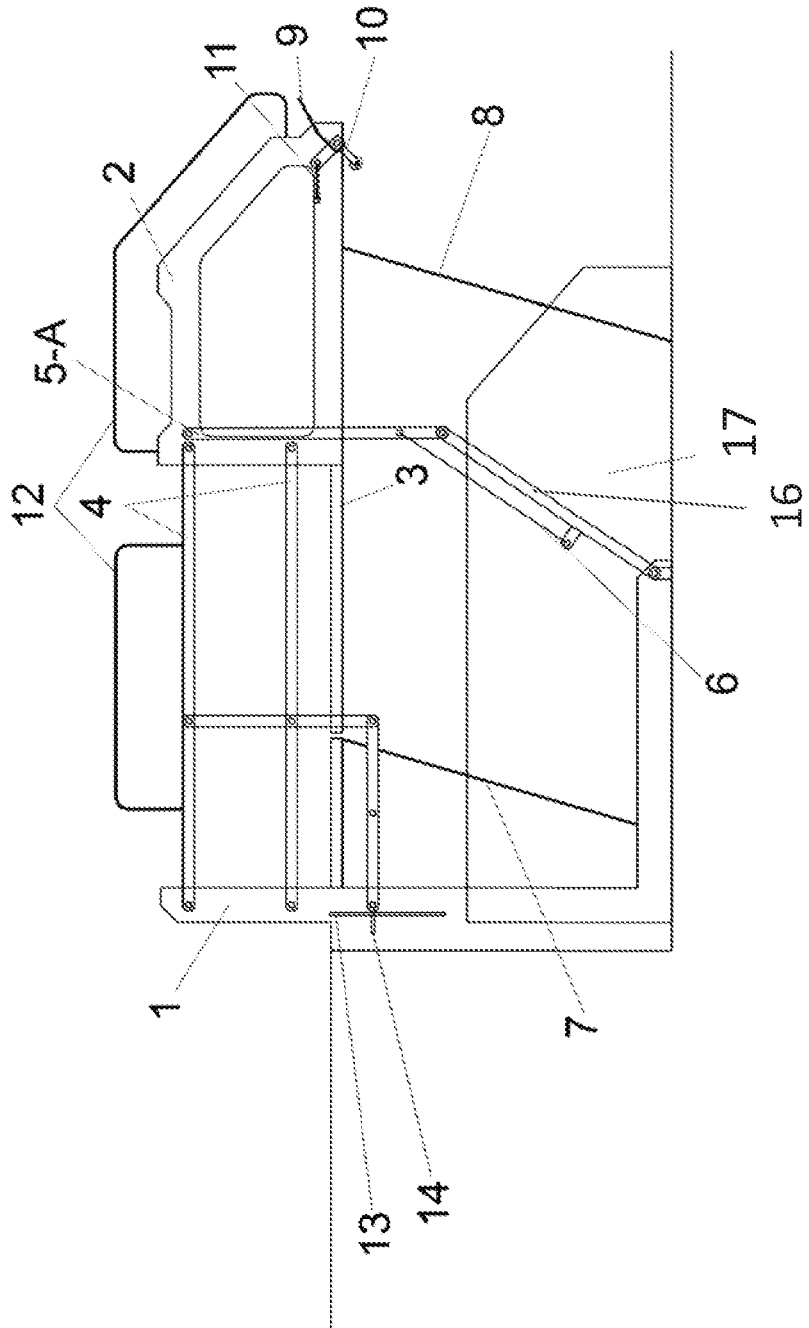


Figure - 13

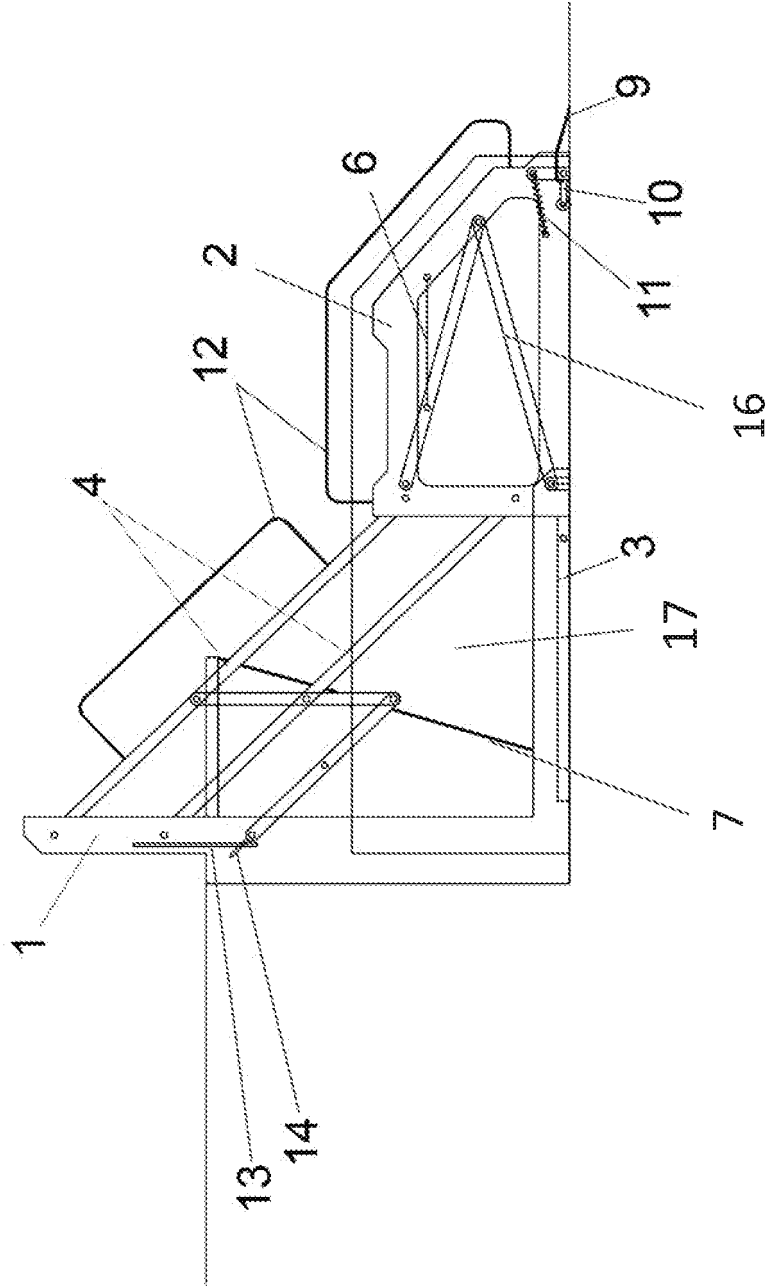


Figure - 14

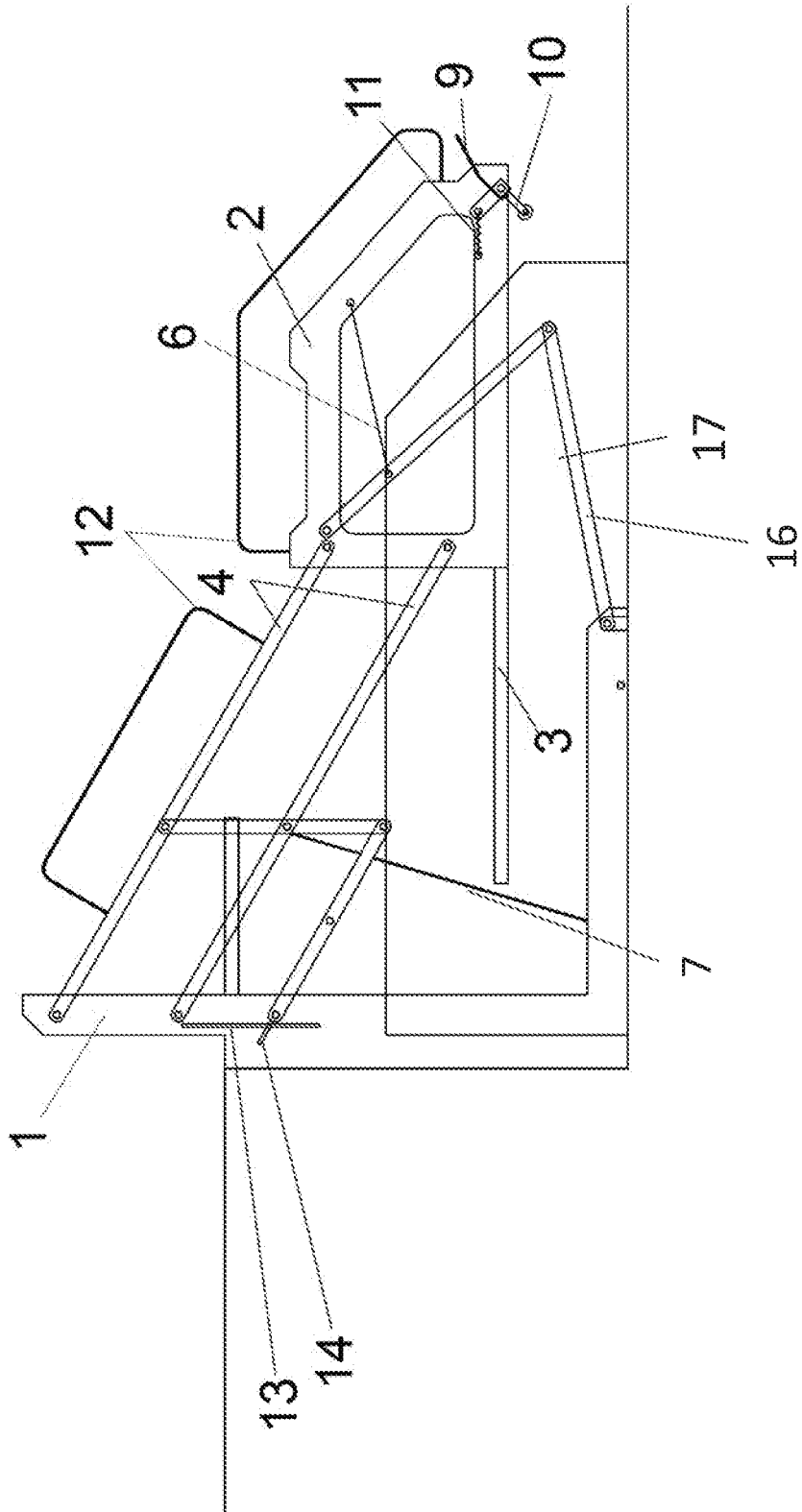


Figure - 15

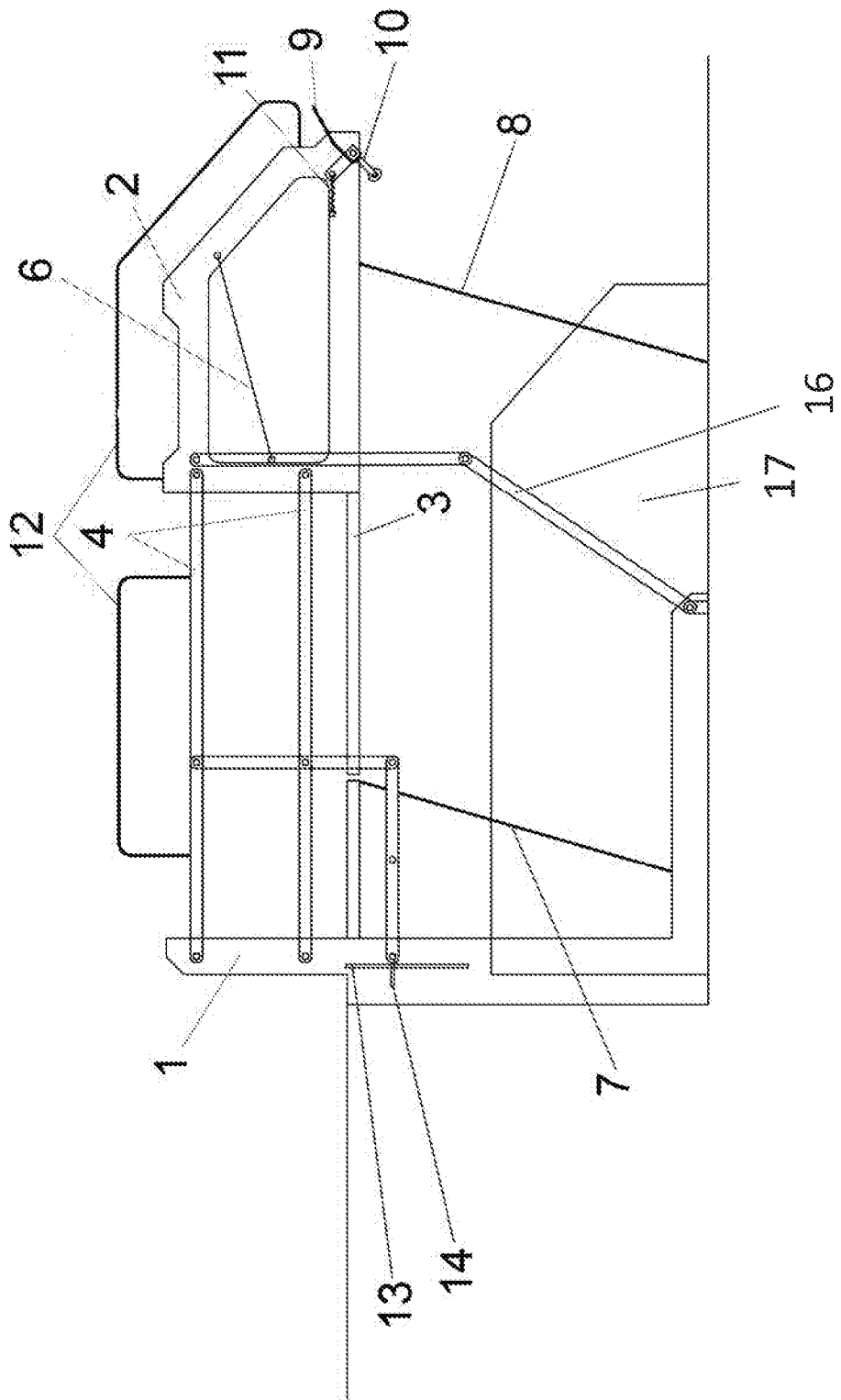


Figure - 16

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- WO 2013158051 A1 [0005]