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A keg hoist
Hebevorrichtung für ein Fass
Dispositif de levage de baril

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Proprietor: Dunne, John Jerrard
Templeogue, Dublin 6W (IE)

Inventor: Dunne, John Jerrard
Templeogue, Dublin 6W (IE)

Representative: O'Connor, Donal Henry
c/o Cruickshank & Co.,
1 Holles Street
Dublin 2 (IE)

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Description

[0001] The present invention relates to a keg hoist of the type comprising a lifting platform movable up and down within a substantially vertically arranged lift shaft and having vertically spaced apart keg receiving openings.

[0002] In this specification the term "keg" encompasses generally all forms of kegs, barrels and drums in other words any essentially cylindrical article of relatively substantial size as well as other non cylindrical articles with which it may be used. In this specification, because the keg hoist can operate in reverse, the term "entrance opening" and "exit opening" refer simply to the function of that opening when it is having a keg delivered into it and similarly delivered out of it. However, in other circumstances, the operation could be delivery from the exit opening rather than the entrance opening of, for example, a hoist in a cellar. Similarly "feed" and "discharge" are terms used in the same way.

[0003] The handling of beer kegs is not usually a problem within for example breweries because the breweries have extensive mechanical handling equipment whether stationary or movable such as forklift trucks which mechanical handling equipment is usually provided with keg-embracing or engaging clamps which allow the kegs to be safely moved from place to place. Thus moving of such kegs around, a brewery or warehouse, does not usually involve substantial physical labour or more importantly, manhandling of the kegs by the workers. Substantially the same considerations apply for example, with oil drums, which are transported often from one industrial premises to another.

[0004] However, the use of mechanical handling equipment is not prevalent within the premises of most customers of breweries, that is to say hotels, public houses and the like establishment which very often have cellars connected by some form of chute or entrance in a wall of the building to the exterior pavement. The placing of kegs in such cellars leads to a considerable amount of manhandling by the staff, not alone of the particular establishment receiving the beer kegs, but also of the driver of the lorry delivering the beer kegs from the brewery. Indeed in many instances the driver is accompanied by a helper and will often have some form of mechanical handling equipment which may be quite useful in transporting the kegs from the back of a lorry trailer or container in which they are transported to the entrance to the cellar. Thereafter the amount of mechanical handling equipment available is slight, if not non-existent.

[0005] It is known to provide in such establishments keg hoists which are essentially lifting platforms movable up and down within some form of substantially vertically arranged lift shaft. They very often are not mounted within a lift-shaft, but are simply lifting platforms such as a scissors-lift actuated platform which are movable from a position adjacent the floor of the cellar to a position adjacent the entrance to the cellar which as stated already, is usually on the exterior of the building such as a wall thereof communicating with the pavement or possibly portion of the premises such as a car park attached to the public house or hotel. The barrels are then man-handled and rolled onto the platform and as inevitably happens accidents occur. The incidence of back strain and accidents generally which occur in the manhandling of relatively heavy beer kegs is substantial and has led to considerable insurance claims which insurance claims of their nature increase the insurance premiums for the protection of the staff of such establishments. Further, staff are becoming more and more reluctant to carry out work where there is a likelihood of such back strain or injury occurring. Health and Safety considerations are of the utmost importance to both employer and employee.

[0006] There is thus a need for an improved construction of keg hoist and the present invention is directed for providing such an improved construction of keg hoist.


Statements of Invention

[0008] According to the invention, there is provided a keg hoist of the type comprising a lifting platform movable up and down within a substantially vertically arranged keg retaining shaft and having vertically spaced-apart keg receiving openings characterised in that the lifting platform comprises a pair of spaced-apart endless flexible connectors bridged by spaced-apart support bars movable between one entrance opening and an exit opening through the keg retaining shaft and then outside the shaft on the return.

[0009] Ideally, the shaft is formed from an open framework. The advantage of this construction is that it is an inexpensive and relatively efficient hoist which does not have any elaborate machinery. Indeed, it is envisaged that the hoist would not require any electric motor or the like to operate it but could simply operate by gravity and the use of some form of brake for delivery into a cellar while the lifting of empty kegs out of the cellar could be carried out by any mechanically operated mechanism.

[0010] Ideally, the flexible connector comprises a drive chain led around sprocket wheels, each support bar being connected to the drive chain by a further length of chain wrapped around it and connected to the drive chain. It will be appreciated that the vertically spaced-apart openings comprise a horizontal opening adjacent the uppermost part of the shaft and a vertical opening adjacent the bottom of the shaft.

[0011] In one embodiment of the invention, adjacent the horizontal opening, there is provided a lead-in ramp having an opening to permit the passage of a bar through, across it and down through the shaft whereby movement of the bar into and across the ramp moves a keg towards the horizontal opening. Ideally, there is also...
provided a discharge ramp adjacent the vertical opening. In this way, an efficient lead-in and lead-out of the keg hoist will be provided.

[0012] It will be appreciated that, depending on its use, it will be appreciated that the discharge ramp can be a lead-in ramp and vice versa.

[0013] In another embodiment of the invention, the keg hoist comprises a drive motor for the flexible connectors, a controller for operating the drive motor and keg presence sensors adjacent both openings. The use of a motor will save additional work.

[0014] Ideally, the controller comprises means on sensing the presence of a keg at the entrance opening and the absence of a keg at the entrance opening indexes the drive motor to move the keg a predetermined distance. In this latter embodiment, the controller is preferably adapted to continue to move the keg until the presence of a keg is sensed at the exit opening.

[0015] The invention further provides a keg hoist for mounting adjacent an opening in a vertical wall of a cellar comprising:

- an open framework having front, rear and end sides including a plurality of uprights interconnected by cross-members to form a substantially vertical keg retaining shaft having an upper horizontal opening and a lower vertical opening;
- a lead-in ramp adjacent the horizontal opening;
- a return shaft behind the keg retaining shaft and below the lead-in ramp;
- a pair of spaced-apart chains mounted on sprocket wheels, one on each end side of the framework, and carrying substantially horizontally and transversely arranged support bars across the end sides within the shafts;
- a drive motor connected to one of the sprocket wheels;
- a keg presence sensor adjacent the lead-in ramp, operatively connected to the drive motor; and
- a keg presence sensor adjacent the lower vertical opening and operatively connected to the drive motor.

[0016] In this latter embodiment, ideally there is provided a discharge ramp adjacent the vertical opening comprising a stationary floor engaging portion inclined downwardly across the vertical opening to the floor and a pivotal portion spaced-apart from the stationary portion for the passage of a bar therebetwehen, the pivotal portion being movable from one inclined position substantially in line with the stationary floor engaging portion for discharge of a keg to a vertical position for reception of a keg.

[0017] Preferably, a releasable keg retaining door is mounted in the vertical opening.

[0018] What the invention provides is a relatively simply constructed hoist which will be efficient in use and will obviate all the problems heretofore experienced in the handling of kegs, for example, in public house cellars.

Detailed Description

[0019] The invention will be more clearly understood from the following description of an embodiment thereof given by way of example only with reference to the accompanying drawings in which:

Fig. 1 is a side view of a beer keg hoist according to the invention mounted against the wall of a cellar;

Fig. 2 is a front view of the keg hoist;

Fig. 3 is a side sectional view of the keg hoist;

Fig. 4 is a side view of portion of a chain mounting a support bar according to the invention;

Fig. 5 is a side diagrammatic view showing operation of the beer keg hoist to deliver a keg into a cellar;

Fig. 6 is a view similar to Fig. 5 showing the hoist in use to raise a keg out of the cellar;

Fig. 7 is a view similar to Figs. 5 and 6 of an alternative construction of keg hoist according to the invention;

Fig. 8 is a side view of the beer keg hoist of Fig. 1 mounted in a different type of cellar; and

Fig. 9 is a perspective view of a guide used with the beer keg hoist of Fig. 8.

[0020] Referring to the drawings, and initially to Figs. 1 to 6 thereof, there is illustrated a keg hoist, indicated generally by the reference numeral 1, mounted on a cellar floor 3 which cellar has an exterior wall 7 and an entrance hatch 4 at ground level 5. The keg hoist 1 comprises an open framework comprising a keg retaining shaft 10 and a return shaft 11. The keg retaining shaft 10 has vertically spaced-apart keg receiving openings, namely, an entrance opening provided by a horizontal opening 12 and an exit opening provided by a vertical opening 13. The framework comprises a plurality of fixed uprights 14, 15 and horizontal cross members 16, together with a pivotal upright 17 mounted by a pivot joint 18 from a horizontal strut 19. The upright 17 is connected at its lower end to the upright 15 by an adjust-
cation screw 20. The uprights 15 and 17 carry sprocket wheels 21 around which are led endless flexible connectors formed by chains 22, which chains 22 carry by a further length of chain 23, spaced-apart support bars 25 (see Fig. 4). Drive for the endless chains 22 is by a motor 30 having a controller 31 formed from a conventional microprocessor. Keg presence sensors 32, 33 respectively, at the horizontal opening 12 and the vertical opening 13 are provided. A chain and an indexing sensor 34 is also provided and the sensors 32, 33, 34 are connected to the controller 31.

A lead-in ramp 40 is provided by the framework at the hatch 4 for the horizontal opening 12 and includes an opening to permit the passage of a support bar 25 therethrough, across it and down through the keg retaining shaft 10. Adjacent the vertical opening 13, there is provided a discharge ramp 45 having an arcuate stationary floor engaging portion 46 inclined downwardly across the vertical opening 13 to the cellar floor 2 and a pivotal portion 47 mounted by a pivot bar 48 on the upright 17, the pivot bar 48 being movable by a handle 49.

Kegs are identified by the reference numeral 50 and various subscript letters in the drawings are used to illustrate the position of the keg 50 as it travels through the hoist and thus in the description, the reference numerals and the various subscripts refer equally to keg position and are so referred to. The kegs 50 are not shown in each drawing and therefore reference has to be made specifically to Figs. 1, 3 and 5. Initially, and presuming there are no other kegs in the keg hoist 1, although other kegs are illustrated, a keg 50, identified as 50a (Fig. 5), is rolled towards the hatch 4 to the position 50b (Fig. 3) above the keg sensor 32 and the presence of the keg 50b then causes the controller 31 to operate the motor 30 to move the chain 22 and thus the support bar 25 against the keg 50b so as to move the keg to the position 50c (Fig. 5). The keg 50 is then moved further across the horizontal opening 12 into it and the keg 50d now rests at the top of the keg retaining shaft (Fig. 1) where further indexing of the motor 30 causes the keg 50 to achieve the position at 50e (Fig. 1) and then is delivered to the position 50f in the discharge ramp 45 where the keg 50f impinges against the pivotal portion 47 to be delivered into the floor engaging portion 46 and then out through the vertical opening 13 onto the cellar floor 2.

It will be appreciated that the various sensors will operate to ensure that a keg is not indexed to the next position unless it is free to do so. For example, if there is a keg at the vertical opening 13 which has not yet been removed, then further indexing cannot take place.

Pivoting of the upright 17 by the adjustment screw 20 allows the chains 22 to be maintained at the correct tension.

Referring now to Fig. 6, when it is desired to lift a keg from the cellar floor 2 and deliver it out the door, the reverse operation takes place. In this case, the keg is rolled up the discharge ramp 45 with the pivotal portion 47 lying vertical and the keg 50g is lifted up the keg retaining shaft 10 to the position 50h, then the keg 50h is moved across towards the hatch 4.

Referring to Fig. 7, there is illustrated an alternative construction of keg hoist, again identified by the reference numeral 1 and similar parts are identified by the same reference numerals. In this embodiment, there are provided two sets of chains 22 and support bars 25. In this particular construction, a barrel or keg, for example, will be maintained not simply against the sides or vertical uprights 14, 15 of the keg retaining shaft 10, but can be slotted between the two support bars 25. Further, they will be particularly useful for carrying other articles such as, for example, crates 51, as illustrated. There is also provided a gate 71 for the vertical opening to prevent kegs 50 rolling across the cellar floor 2.

It has been found that even with crates for bottled beers, mineral waters, wines and spirits, such as the crate 51, the embodiment of Figs. 1 to 6 operates quite easily for the lifting of them once they are of a sufficient size to slide in the keg retaining shaft 10.

It is envisaged that various other sensors may be positioned about the keg hoist to prevent the jamming of the keg hoist. Ideally, the motor 31 operates to index chains a distance sufficient to allow the keg to be moved across and through the keg retaining shaft in an orderly manner.

In many instances, cellars project from buildings below pavements and the entrance to the cellar is thus in the pavement. In other cases, the beer keg hoist according to the invention might be accessible from an interior room and thus the entrance to the beer keg hoist would be from the floor.

Referring now to Figs. 8 and 9, parts similar to those described with reference to the previous drawings are identified by the same reference numerals, in this embodiment, the beer keg hoist 1 is mounted again on the cellar floor 2 except that now the cellar wall 3 extends below the pavement 80 outside an exterior wall 81 of the building in which the cellar is housed. There is an opening 82 in the pavement 80 which opening may be closed by a sliding hatch or as is often the case, by pivotally mounted doors which are not illustrated. A guide frame formed from guide rails 85 having depending spigots 86 for engagement with holes in the pavement 80 is provided to guide the kegs 50 through and into the keg hoist 1. The keg hoist 1 operates in substantially the same way as heretofore. It will be appreciated that the keg hoist when full will present a keg 50 at the opening in the pavement, often referred to as the cellar door, protruding about three quarter height above pavement or street level. The keg has to be removed before a further keg will be indexed up. The guide rail 85 can be stored within the keg hoist 1 when not in use.

A motorised version may not always be necessary and a simple mechanical actuator with a brake
will be sufficient particularly where the delivery of heavy filled kegs is downwards, for example, into an underground cellar or store.

[0032] It will be appreciated that the keg hoist according to the invention may be used to store kegs, further optimising cellar space.

[0033] In the specification the terms "comprise, comprises, comprising" or any variation thereof and the terms include, includes, included and including" or any variation thereof are considered to be totally interchangeable and they should all be afforded the widest possible interpretation and vice versa.

[0034] The invention is not limited to the embodiment hereinbefore described, but may be varied in both construction and detail within the scope of the appended claims.

Claims

1. A keg hoist (1) comprising a lifting platform movable up and down within a substantially vertically arranged keg retaining shaft and having vertically spaced-apart keg receiving openings wherein the lifting platform comprises a pair of spaced-apart endless flexible connectors bridged by spaced-apart support bars (25) movable between one entrance opening (12) and an exit opening (13) through the keg retaining shaft (10) and then outside the shaft (10) on the return.

2. A keg hoist (1) as claimed in claim 1 in which the shaft (10) is formed from an open framework.

3. A keg hoist (1) as claimed in claim 1 or 2, in which the flexible connector comprises a drive chain (22) led around sprocket wheels (21), each support bar being connected to the drive chain (22) by a further length of chain (23) wrapped around it and connected to the drive chain (22).

4. A keg hoist (1) as claimed in any of claims 1 to 3, in which the vertically spaced-apart openings comprise a horizontal opening (12) adjacent the uppermost part of the shaft and a vertical opening (13) adjacent the bottom of the shaft.

5. A keg hoist (1) as claimed in claim 4, in which, adjacent the horizontal opening (12), there is provided a lead-in ramp having an opening to permit the passage of a bar therethrough, across it and down through the shaft whereby movement of the bar into and across the ramp moves a keg towards the horizontal opening.

6. A keg hoist (1) as claimed in claims 4 or 5, in which there is provided a discharge ramp adjacent the vertical opening.

7. A keg hoist (1) as claimed in any preceding claim, comprising a drive motor (30) for the flexible connectors, a controller (31) for operating the drive motor (30) and keg presence sensors (32, 33) adjacent both openings (12, 13).

8. A keg hoist (1) as claimed in claim 7, in which the controller (31) includes means on sensing the presence of a keg (30) at the entrance opening (12) and in the absence of a keg at the entrance opening (12) indexes the drive motor (30) to move the keg (50) a predetermined distance.

9. A keg hoist (1) as claimed in claim 8, in which the controller (31) is adapted to continue to move the keg (50) until the presence of a keg (50) is sensed at the exit opening (13).

10. A keg hoist (1) as claimed in any preceding claim for mounting adjacent an opening (4) in a vertical wall (3) of a cellar comprising:-

an open framework having front, rear and end sides including a plurality of uprights (14, 15, 17) interconnected by cross-members (16) to form a substantially vertical keg retaining shaft (10) having an upper horizontal opening (12) and a lower vertical opening (13);

a lead-in ramp adjacent the horizontal opening;

a return shaft (11) behind the keg retaining shaft (10) and below the lead-in ramp;

a pair of spaced-apart chains (22) mounted on sprocket wheels (21), one on each end side of the framework, and carrying substantially horizontally and transversely arranged support bars (25) across the end sides within the shafts (10, 11);

a drive motor (30) connected to one of the sprocket wheels (21);

a keg presence sensor (32) adjacent the lead-in ramp, operatively connected to the drive motor (30); and

a keg presence sensor (32) adjacent the lower vertical opening (13) and operatively connected to the drive motor (30).

11. A keg hoist (1) as claimed in claim 10, in which there is provided a discharge ramp adjacent the vertical opening (13) comprising a stationary floor engaging portion (45) inclined downwardly across the vertical opening (13) to the floor (2) and a pivotal portion (47) spaced-apart from the stationary portion (45).
for the passage of a bar (25) therebetween, the pivotal portion (47) being movable from one inclined position substantially in line with the stationary floor engaging portion (45) for discharge of a keg (50) to a vertical position for reception of a keg (50).

12. A keg hoist (1) as claimed in claim 11, in which a releasable keg retaining gate (71) is provided for the vertical opening (13).

13. A keg hoist (1) as claimed in any preceding claim, in which there are two sets of flexible connectors each carrying support bars (25) and forming pairs of support bars (25), one attached to each flexible connectors each pair of support bars (25) lying in a substantially horizontal plane with the support bars laterally spaced-apart when moving through the keg retaining shaft (10).

Patentansprüche

1. Fasshebeanlage (1), die eine Hebebühne aufweist, die aufwärts und abwärts innerhalb eines im wesentlichen vertikal angeordneten Fasshalteschachts bewegbar ist und vertikal beabstandete Fassaufnahmeöffnungen aufweist, wobei die Hebebühne ein Paar beabstandeter flexibler Endlosverbinder aufweist, die durch beabstandete Haltestäbe (25) überbrückt sind, welche zwischen einer Eintrittsoffnung (12) und einer Austrittsoffnung (13) durch den Fasshalteschacht (10) und dann außerhalb des Schachts (10) auf dem Rückweg bewegbar sind.

2. Fasshebeanlage (1) nach Anspruch 1, bei der der Schacht (10) aus einem offenen Fachwerk gebildet wird.

3. Fasshebeanlage (1) nach Anspruch 1 oder 2, in der der flexible Verbinder eine Antriebskette (22) führt um Zahnräder (21) aufweisst, wobei jeder Haltestab mit der Antriebskette (22) durch ein weiteres Stück Kette (23) verbunden ist, die um ihn gewickelt und mit der Antriebskette (22) verbunden ist.

4. Fasshebeanlage (1) nach einem der Ansprüche 1 bis 3, bei der die vertikal beabstandeten Öffnungen eine horizontale Öffnung (12) angrenzend an den obersten Teil des Schachts und eine vertikale Öffnung (13) angrenzend an den Boden des Schachts aufweisen.

5. Fasshebeanlage (1) nach Anspruch 4, bei der angrenzend an die horizontale Öffnung (12) eine Einführrampe mit einer Öffnung vorgesehen ist, um den Durchgang eines Stabs durch diese, über sie hinweg und hinunter durch den Schacht zu ermöglichen, wodurch Bewegung des Stabs in die Rampe hinein und über sie hinweg ein Fass in Richtung auf die horizontale Öffnung bewegt.

6. Fasshebeanlage (1) nach den Ansprüchen 4 oder 5, bei der eine Abgaberampe angrenzend an die vertikale Öffnung vorgesehen ist.

7. Fasshebeanlage (1) nach einem vorhergehenden Anspruch, die einen Antriebsmotor (30) für die flexiblen Verbinder, einen Kontroller (31) zum Bedienen des Antriebsmotors (30) und Sensoren (32, 33) zur Feststellung des Vorliegens von Fässern angrenzend an beide Öffnungen (12, 13) aufweist.

8. Fasshebeanlage (1) nach Anspruch 1, bei der der Kontroller (31) ein Mittel zum Ermitteln des Vorliegens eines Fasses (30) an der Eintrittsoffnung (12) einschließt und bei Nichtvorliegen eines Fasses an der Eintrittsoffnung (12) den Antriebsmotor (30) schaltet, um das Fass (5) über eine vorbestimmte Strecke zu bewegen.

9. Fasshebeanlage (1) nach Anspruch 8, bei der der Kontroller (31) ausgelegt ist, um Bewegung des Fasses (50) fortzusetzen, bis das Vorliegen eines Fasses (50) an der Austrittsoffnung (13) ermittelt wird.

10. Fasshebeanlage (1) nach einem vorhergehenden Anspruch zur Anbringung angrenzend an eine Öffnung (4) in einer vertikalen Wand (3) eines Kellers, umfassend:

   ein offenes Fachwerk mit Vorder-, Rück- und Seitenteilen, die eine Mehrzahl von Ständern (14, 15, 17) einschließt, welche durch Querelemente (16) zum Bilden eines im wesentlichen vertikalen Fasshalteschachts (10) mit einer oberen horizontalen Öffnung (12) und einer unteren vertikalen Öffnung (13) miteinander verbunden sind;

   eine Einführorampe angrenzend an die horizontale Öffnung;

   einen Rückführschacht (11) hinter dem Fasshalteschacht (10) und unter der Einführorampe;

   ein Paar beabstandeter Ketten (22) angebracht an Zahnrädern (21), eine auf jeder Endseite des Fachwerks, die im wesentlichen horizontal und quer angeordnete Haltestäbe (25) über den Endseiten innerhalb der Schächte (10, 11) tragen;

   einen Antriebsmotor (30), der mit einem der
Zahnrad (21) verbunden ist;

einen Sensor (32) zur Feststellung des Vorliegens von Fässern angrenzend an die Einführungsrampe, der operativ mit dem Antriebsmotor (30) verbunden ist; und

einen Sensor (32) zur Feststellung des Vorliegens von Fässern angrenzend an die untere vertikale Öffnung (13), der operativ mit dem Antriebsmotor (30) verbunden ist.

11. Fasshebeanlage (1) nach Anspruch 10, bei der eine Abgaberampe angrenzend an die vertikale Öffnung (13) vorgesehen ist, die einen feststehenden, den Boden ergreifenden Teil (45), der nach unten über die vertikale Öffnung (13) zum Boden (2) geneigt ist, und einen Schwenkteil (47) aufweist, der von dem feststehenden Teil (45) für den Durchgang eines Stabs (25) dazwischen beabstandet ist, wobei der Schwenkteil (47) aus einer geneigten Position im wesentlichen in Übereinstimmung mit dem feststehenden, den Boden ergreifenden Teil (45) zur Abgabe eines Fasses (50) zu einer vertikalen Position zur Aufnahme eines Fasses (50) bewegbar ist.

12. Fasshebeanlage (1) nach Anspruch 11, bei der ein lösbares Fasshaltertor (71) für die vertikale Öffnung (13) vorgesehen ist.


Revendications

1. Palan pour barils (1) consistant en une plate-forme de levage pouvant monter et descendre à l’intérieur d’un fût de retenue de barils disposée essentiellement verticalement et ayant des ouvertures de réception de baril espacées verticalement, dans lequel la plate-forme de levage consiste en une paire de connecteurs flexibles sans fin espacés reliés transversalement par des barres de support espacées (25) qui peuvent être déplacées entre une ouverture d’entrée (12) et une ouverture de sortie (13) à travers le fût de retenue de barils (10), puis à l’extérieur du fût (10) lors du retour.

2. Palan pour barils (1) selon la revendication 1 dans lequel le fût (10) est formé à partir d’une ossature ouverte.

3. Palan pour barils (1) selon la revendication 1 ou 2, dans lequel le connecteur flexible consiste en une chaîne d’entraînement (22) menée autour de pignons à chaîne (21), chaque barre de support étant reliée à la chaîne d’entraînement (22) par une autre longueur de chaîne (23) enroulée autour d’elle et reliée à la chaîne d’entraînement (22).

4. Palan pour barils (1) selon l’une quelconque des revendications 1 à 3, dans lequel les ouvertures espacées verticalement consistent en une ouverture horizontale (12) adjacente à la partie supérieure du fût et en une ouverture verticale (13) adjacente au bas du fût.

5. Palan pour barils (1) selon la revendication 4, dans lequel, en position adjacente à l’ouverture horizontale (12), il est prévu une rampe de guidage d’entrée ayant une ouverture pour permettre le passage d’une barre à travers elle, en travers de celle-ci et vers le bas à travers le fût, par laquelle le mouvement de la barre vers l’intérieur de la rampe et en travers de celle-ci déplace un baril vers l’ouverture horizontale.

6. Palan pour barils (1) selon la revendication 4 ou 5, dans lequel il est prévu une rampe de décharge en position adjacente à l’ouverture verticale.

7. Palan pour barils (1) selon l’une quelconque des revendications précédentes comprenant un moteur d’entraînement (30) pour les connecteurs flexibles, un contrôleur (31) pour commander le moteur d’entraînement (30) et des capteurs de présence de baril (32, 33) adjacents aux deux ouvertures (12, 13).

8. Palan pour barils (1) selon la revendication 7, dans lequel il est prévu un moyen pour détecter la présence d’un baril (30) à l’ouverture d’entrée (12) et, en l’absence de baril à l’ouverture d’entrée (12), positionne le moteur d’entraînement (30) de façon à déplacer le baril (50) sur une distance prédéterminée.

9. Palan pour barils (1) selon la revendication 8, dans lequel le contrôleur (31) est adapté de façon à continuer à déplacer le baril (50) jusqu’à ce que la présence d’un baril (50) soit détectée à l’ouverture de sortie (13).

10. Palan pour barils (1) selon l’une quelconque des revendications précédentes destiné à être monté en position adjacente à une ouverture (4) dans un mur vertical (3) d’une cave comprenant :
rière et latéraux y compris une pluralité de montants (14, 15, 17) interconnectés par des membres transversaux (16) pour former un fût de retenue de barils essentiellement vertical (10) ayant une ouverture horizontale supérieure (12) et une ouverture verticale inférieure (13) ;

une rampe de guidage adjacente à l'ouverture horizontale ;

un fût de retour (11) derrière le fût de retenue de barils (10) et en dessous de la rampe de guidage d'entrée ;

une paire de chaînes espacées (22) montées sur des pignons à chaîne (21), une sur chaque côté latéral de l’ossature et portant des barres de support (25) disposées essentiellement horizontalement et transversalement en travers des côtés latéraux à l'intérieur des fûts (10, 11) ;

un moteur d'entraînement (30) raccordé à un des pignons à chaîne (21) ;

un capteur de présence de baril (32) adjacent à la rampe de guidage d'entrée, connecté au moteur d'entraînement (30) de façon à pouvoir le commander ; et

un capteur de présence de baril (32) adjacent à l'ouverture verticale inférieure (13) et connecté au moteur d'entraînement (30) de façon à pouvoir le commander.

11. Palan pour barils (1) selon la revendication 10, dans lequel il est prévu une rampe de décharge adjacente à l'ouverture verticale (13) consistant en une portion immobile s'engageant avec le sol (45) inclinée vers le bas en travers de l'ouverture verticale (13) vers le sol (2) et en une portion pivotante (47) écartée de la portion immobile (45) pour le passage d'une barre (25) entre elles, la portion pivotante (47) pouvant être déplacée d'une position inclinée essentiellement en ligne avec la portion immobile s'engageant avec le sol (45) pour la décharge d’un baril (50) jusqu’à une position verticale pour la réception d’un baril (50).

12. Palan pour barils (1) selon la revendication 11, dans lequel une porte de retenue de barils pouvant être déverrouillée (71) est prévue pour l'ouverture verticale (13).

13. Palan pour barils (1) selon l’une quelconque des revendications précédentes, dans lequel il y a deux ensembles de connecteurs flexibles portant chacun des barres de support (25) et formant des paires de barres de support (25), une attachée à chaque connecteur flexible, chaque paire de barres de support (25) étant disposée dans un plan essentiellement horizontal avec les barres de support espacées latéralement lorsqu'elles se déplacent à travers le fût de retenue de barils (10).