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Fig. 1

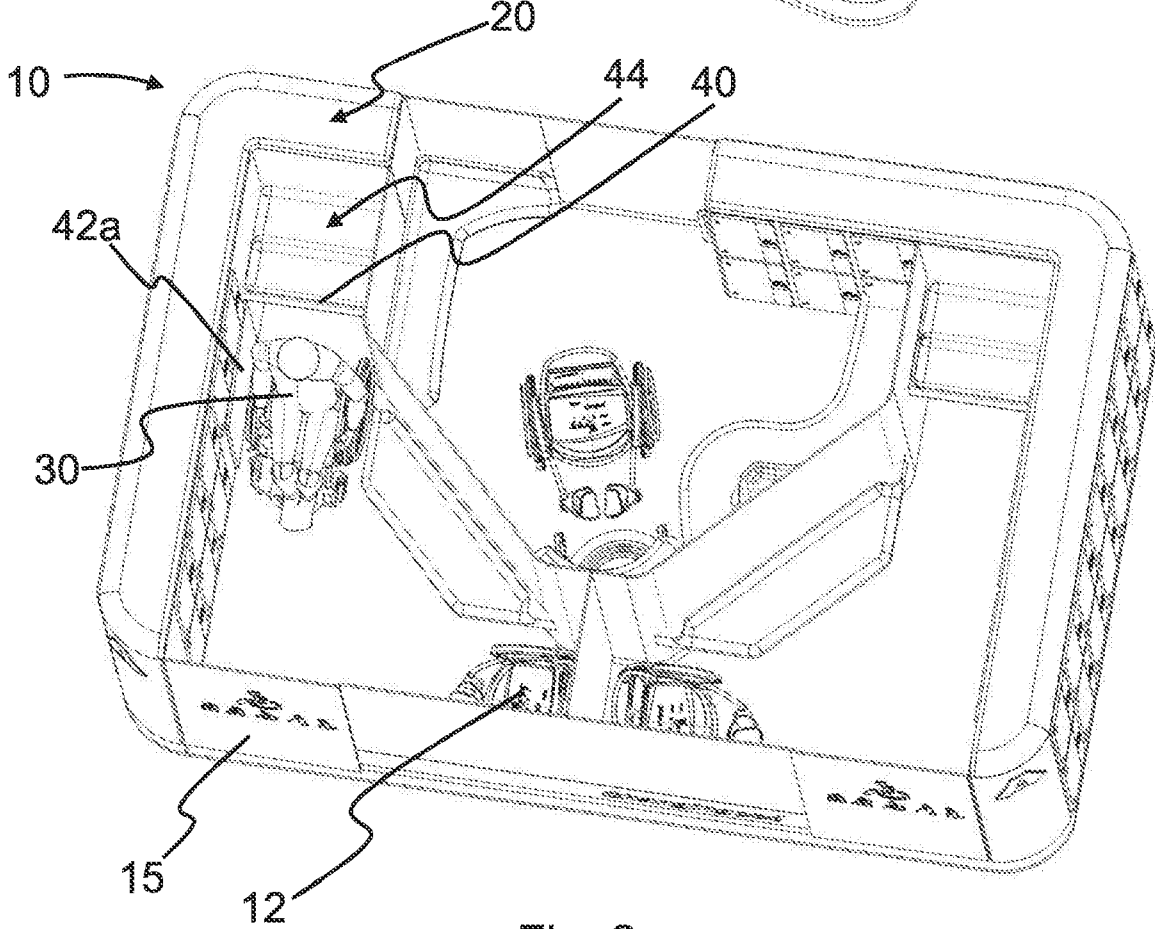
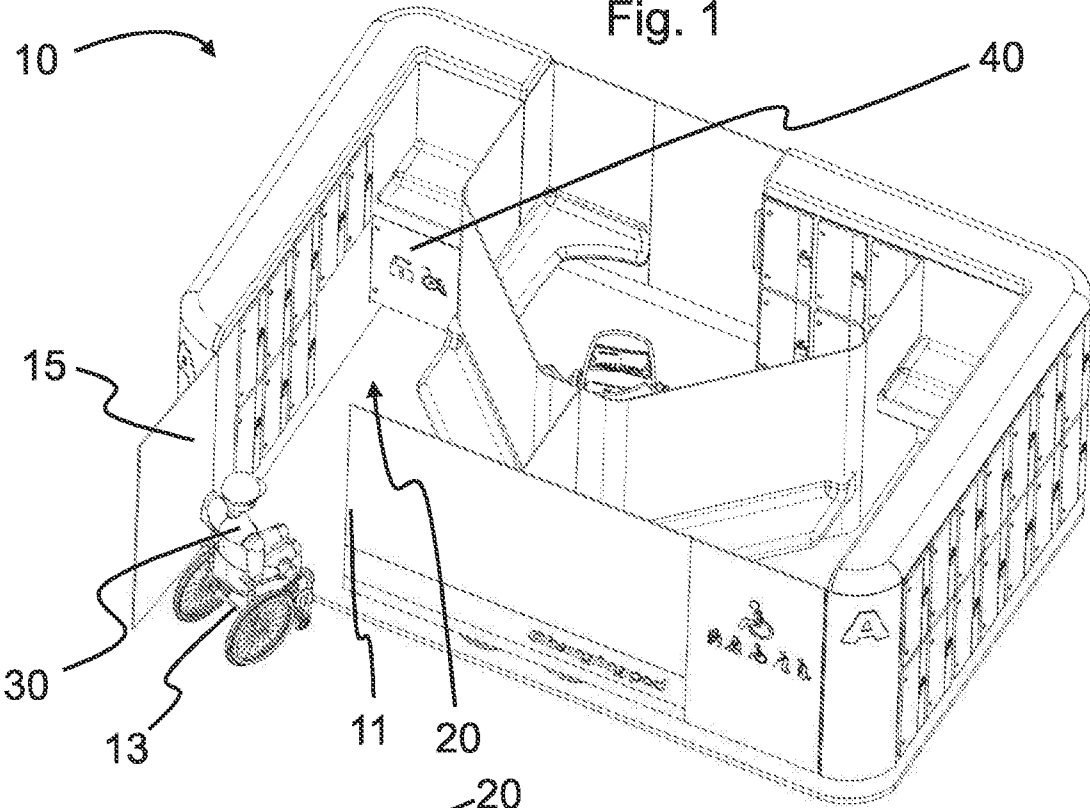


Fig. 2

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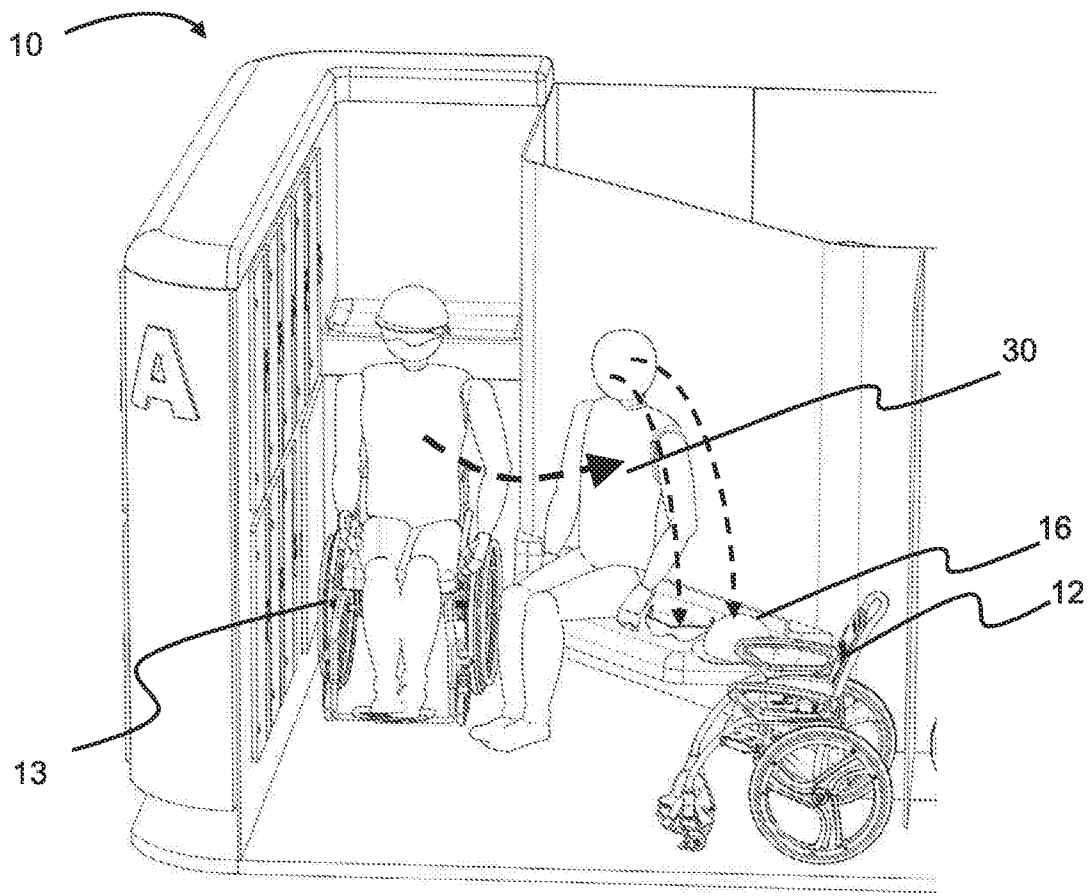


Fig. 3

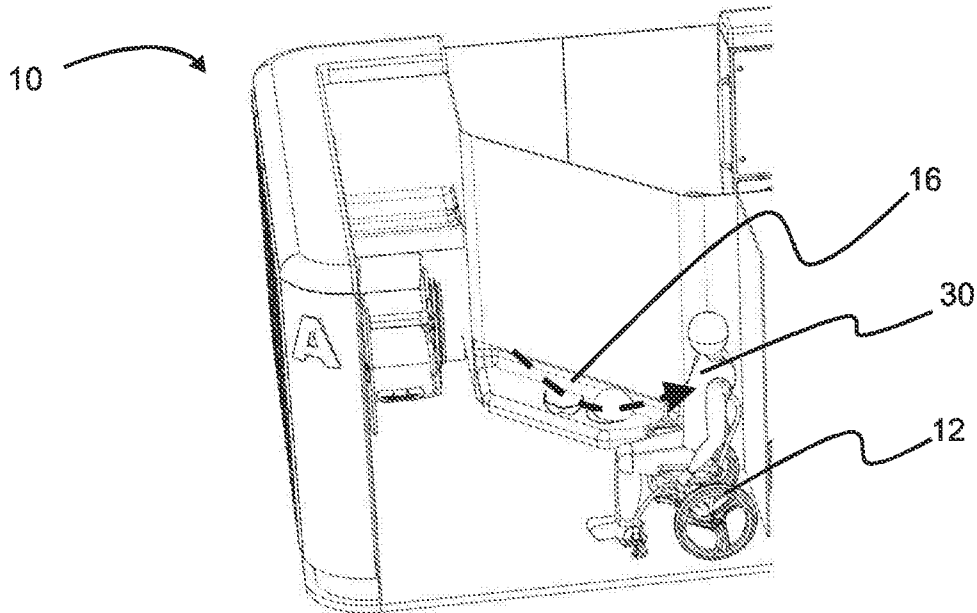


Fig. 4

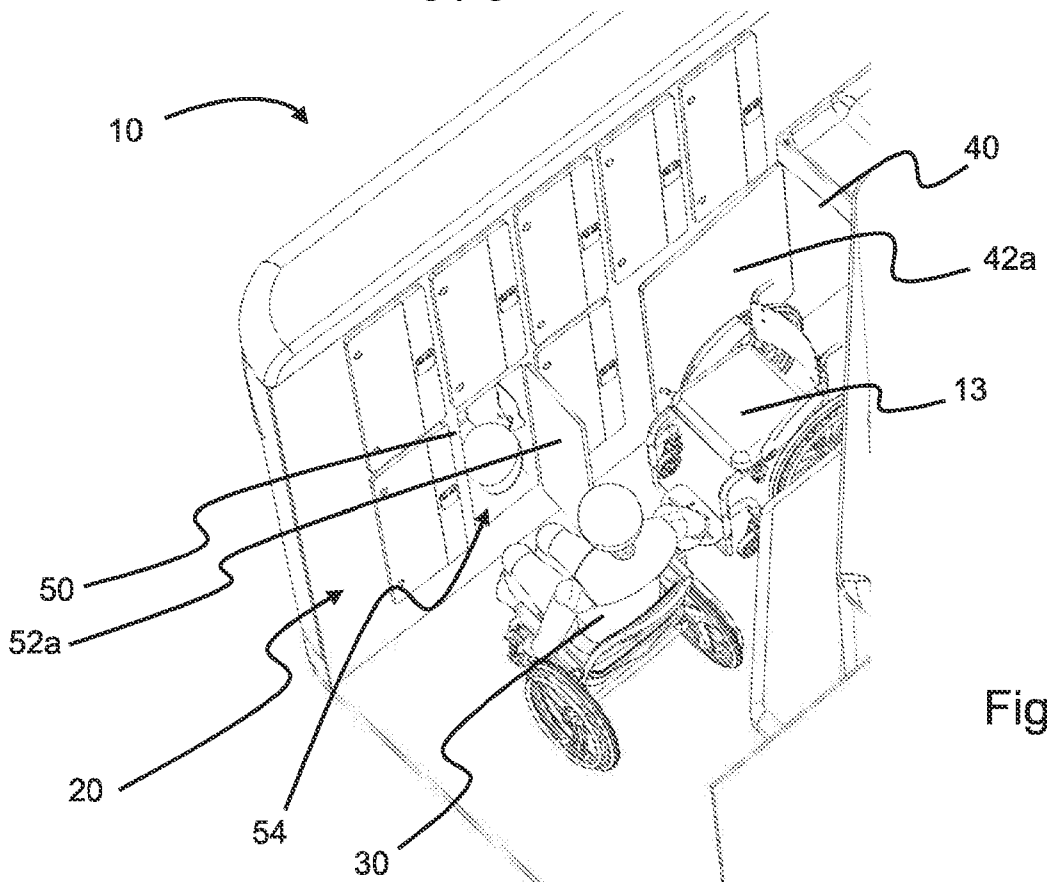


Fig. 5

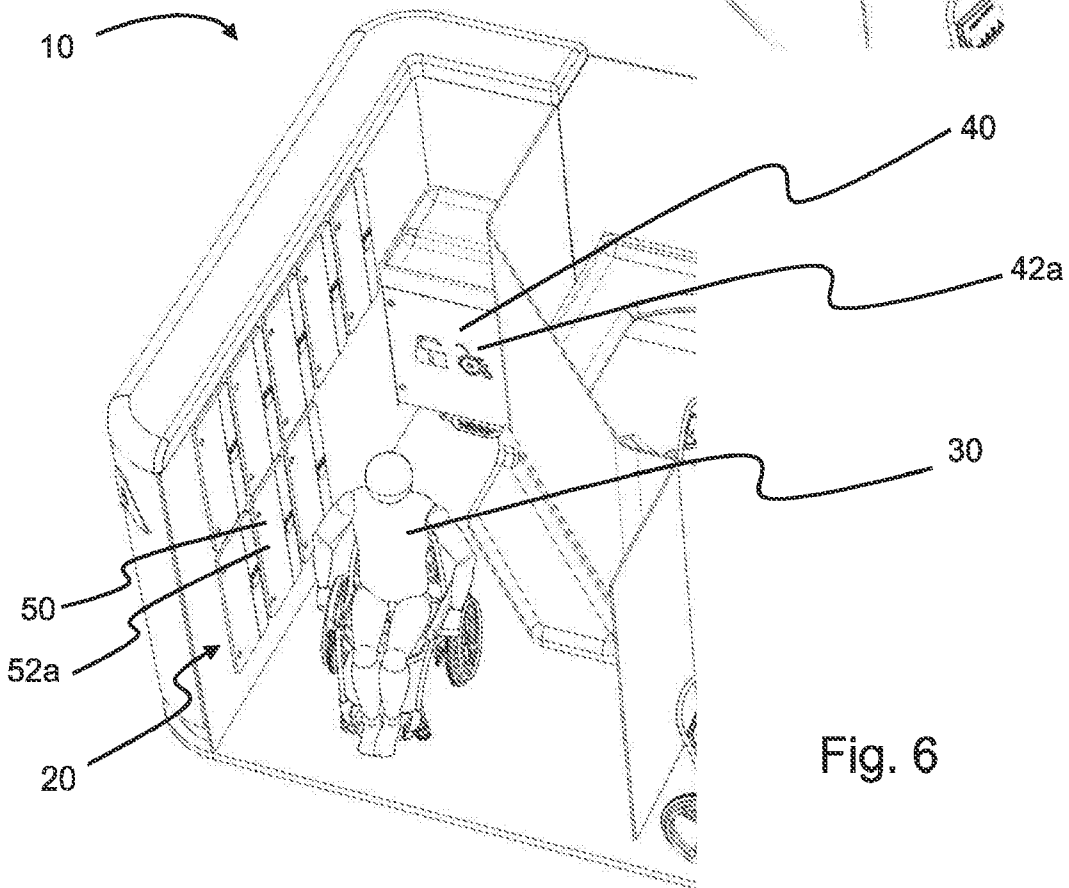


Fig. 6

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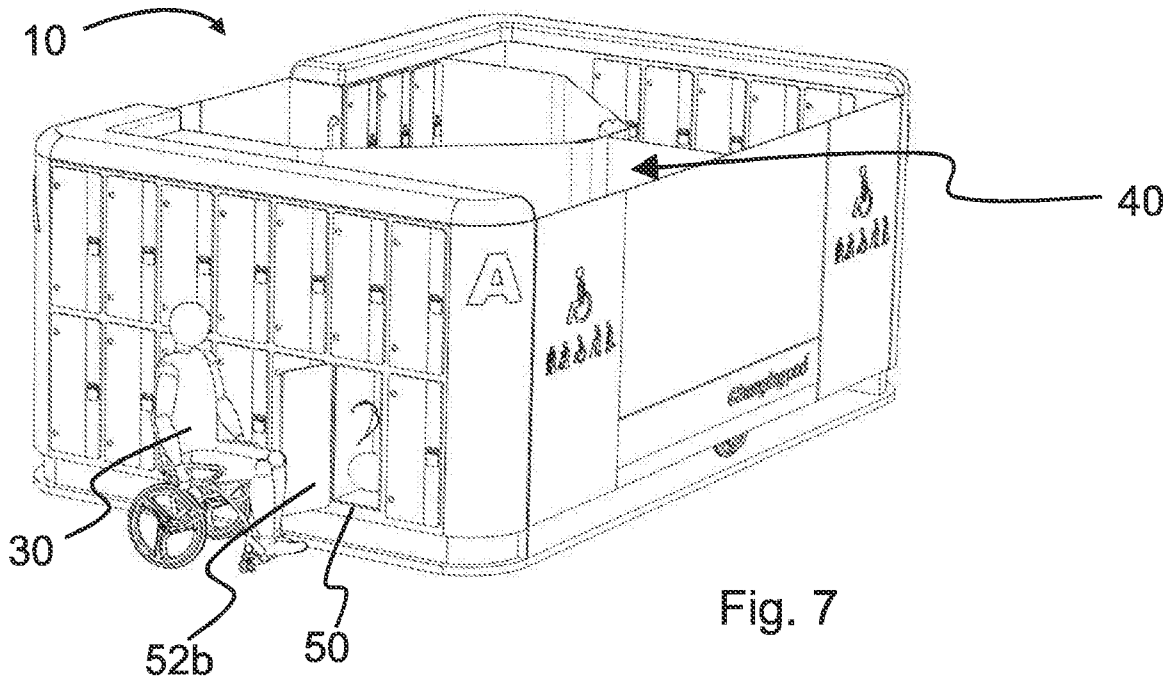


Fig. 7

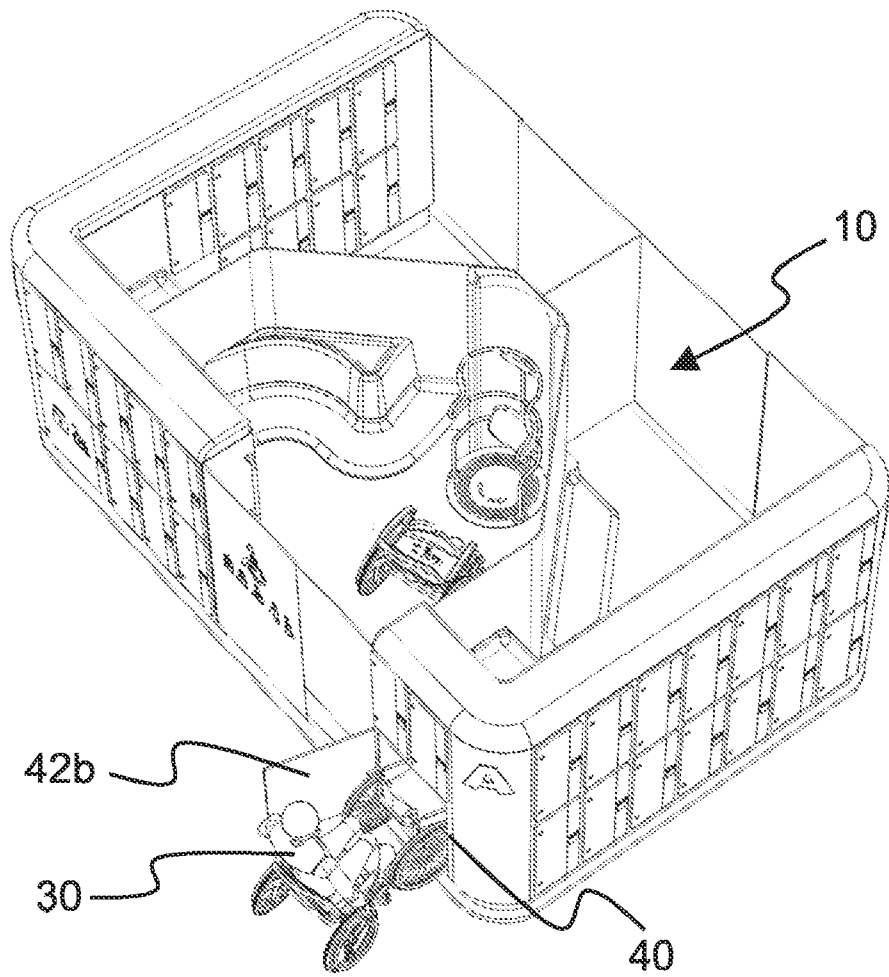


Fig. 8

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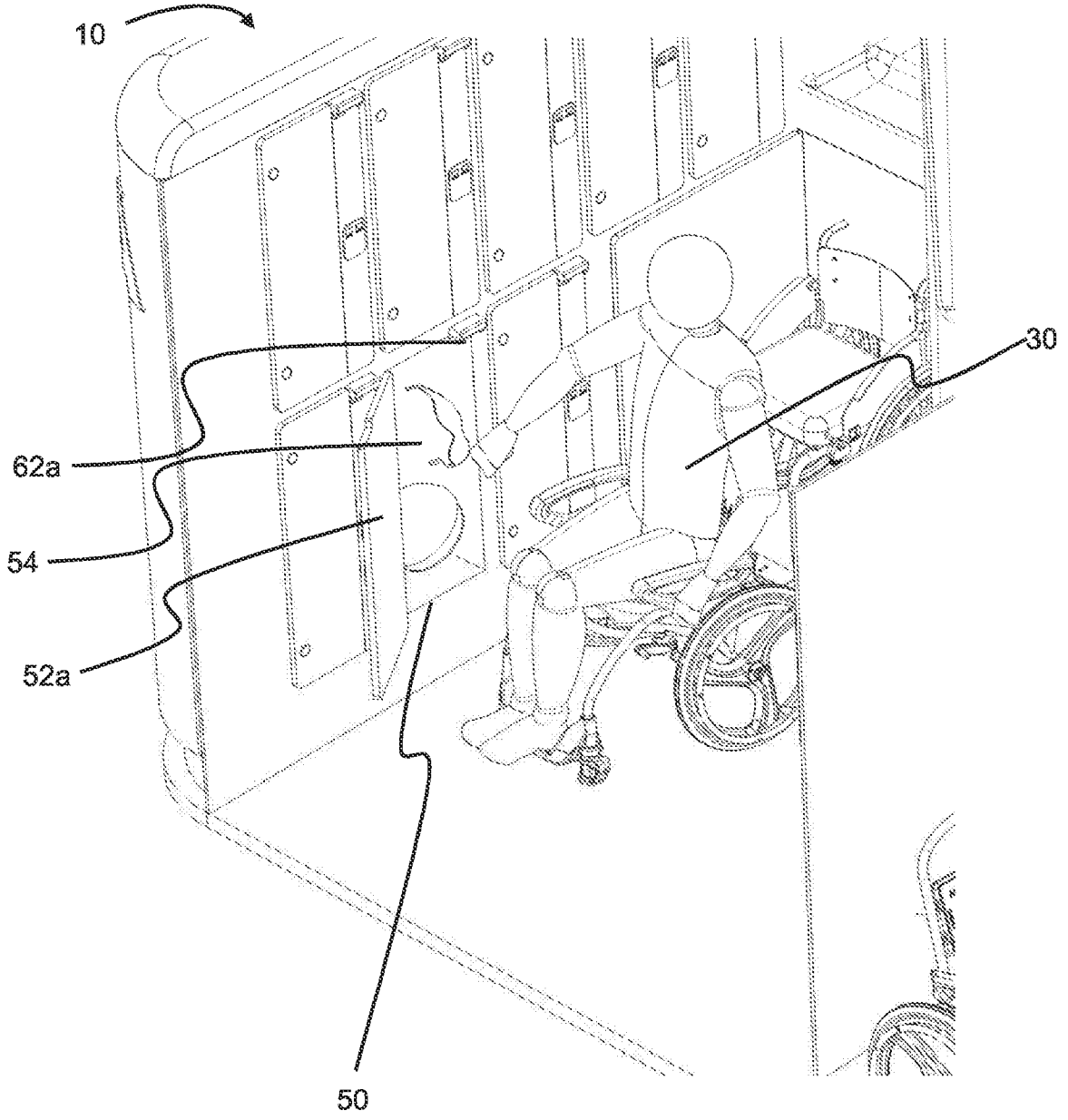


Fig. 9

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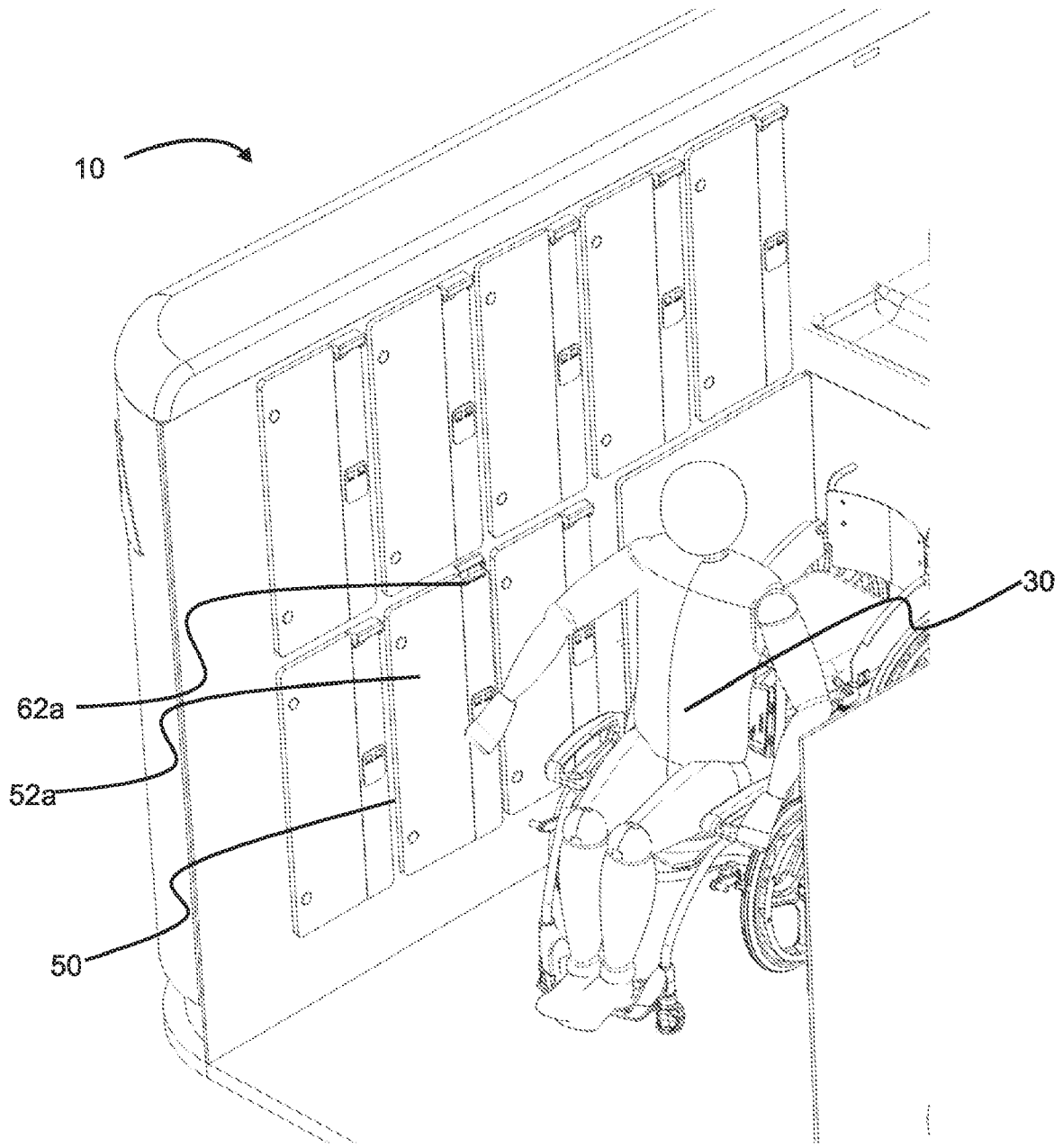


Fig. 10

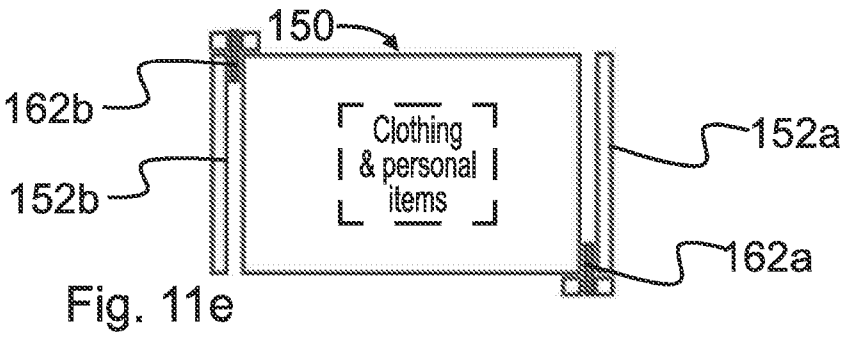
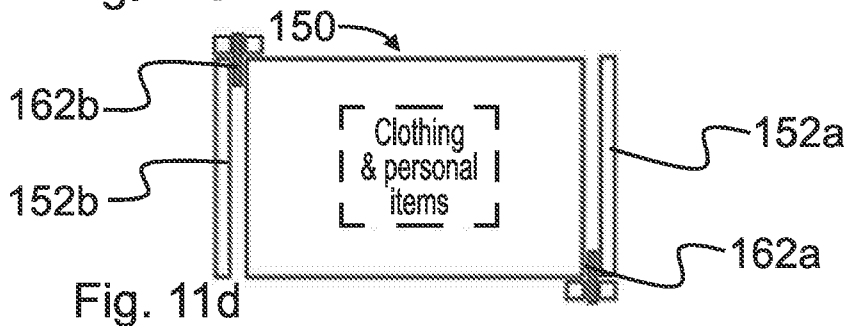
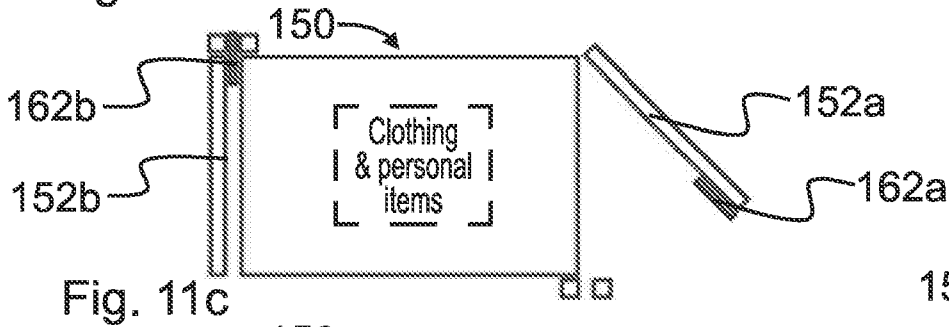
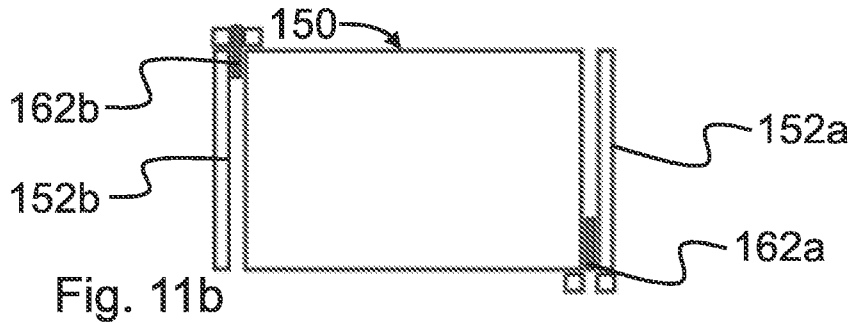
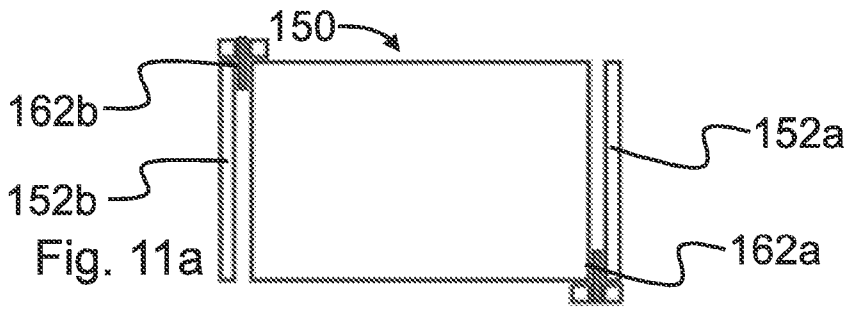
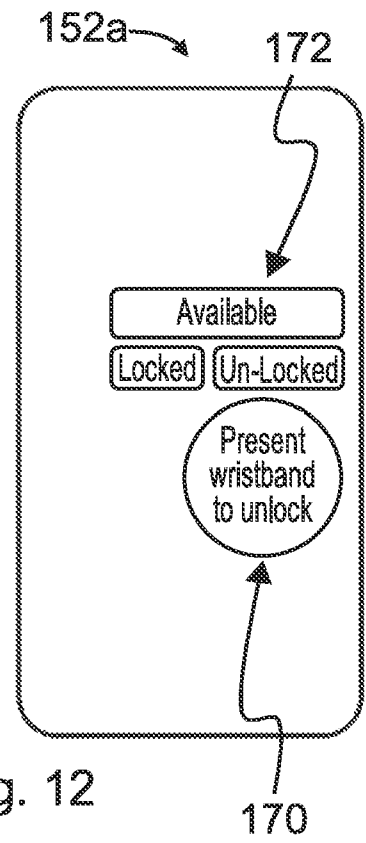
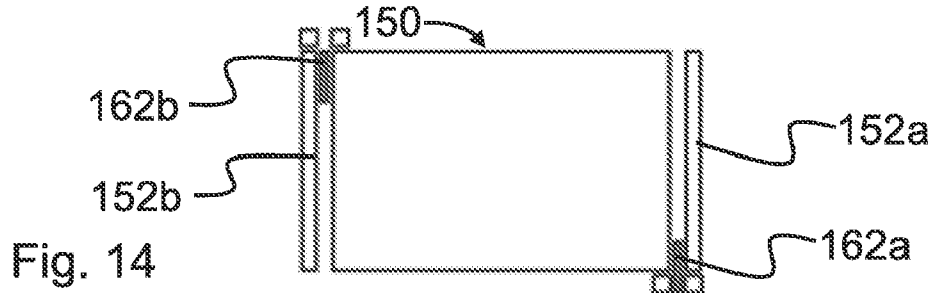
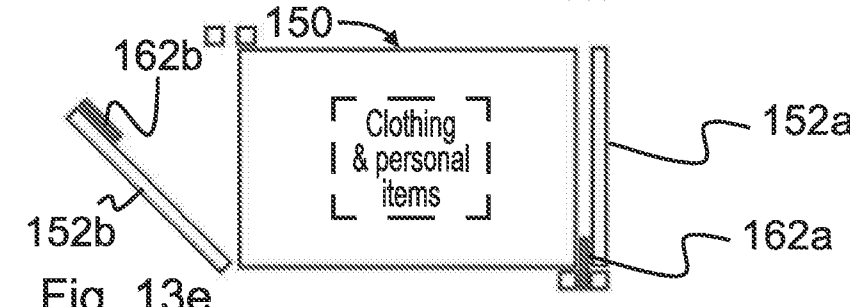
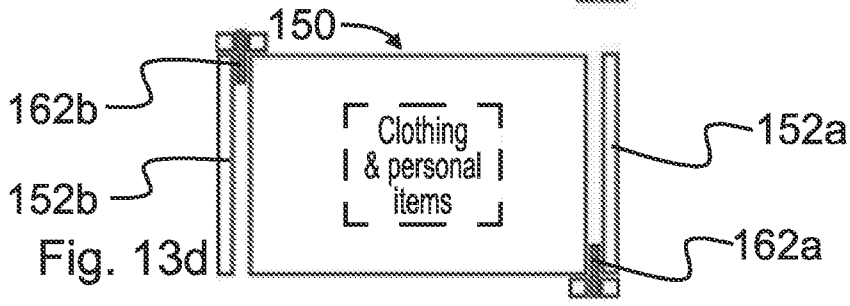
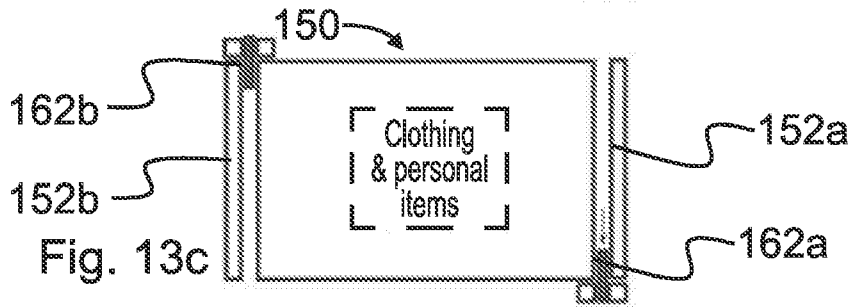
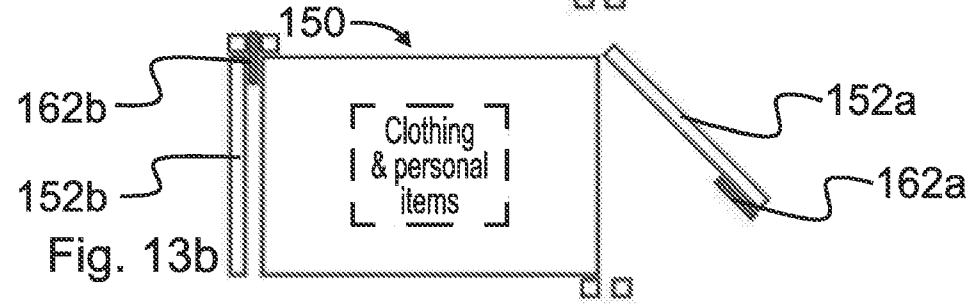
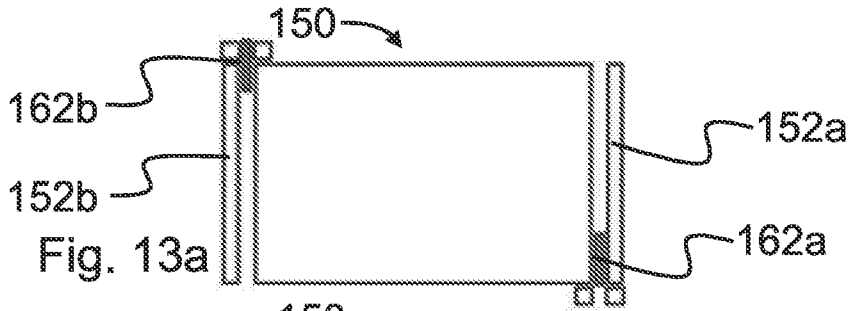


Fig. 11



04 11 20



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STORAGE APPARATUS AND ASSOCIATED METHODS

TECHNICAL FIELD

5 This disclosure concerns a storage apparatus and associated methods/apparatus. For example, the disclosure concerns storage lockers, such as in changing areas. In particular, but not exclusively, examples of the disclosure concern storage lockers accessible via a plurality of doors.

10 BACKGROUND

Communal facilities, such as sports centres and swimming pools, often have changing facilities for users to change their clothing. Users often travel to such facilities in everyday clothing and then change into activity clothing, such as a swimming costume or other
15 sports attire. Accordingly, changing rooms or areas are provided for the users to change their clothing before and/or after performing activities. Sometimes the changing rooms are communal changing areas, often segregated into male/female changing areas, where users can change their clothes (i.e. dress/undress). Other facilities provide changing rooms with individual, family or group changing areas. Such changing rooms
20 typically have a plurality of booths, cubicles or chambers to allow multiple individuals/families and/or groups to change simultaneously.

Storage lockers are typically provided for the users to store their apparel, such as their everyday clothing or belongings, whilst they are performing their activities at the facilities.
25 For example, swimmers visiting a swimming pool typically enter a changing area to undress from their everyday clothes to put on their swimming costume; and then store their everyday clothes in a locker until they have finished swimming. Once they have finished swimming, they return to their locker, possibly after showering, to retrieve their clothes and maybe also a towel. They can then proceed to change from their swimming
30 costume back to their everyday clothes in an available changing area.

Storage lockers are derived from their locking functionality, to provide security of the contents whilst the user is absent. Different lockers have different locking mechanisms, such as with mechanical keys or electronic tags which can be carried by the users whilst
35 away from the lockers; or pin codes or other electronic locking means to allow only authorised users to lock and unlock specific lockers.

SUMMARY

According to a first aspect there is provided an apparatus for storing apparel, such as a user's items. The apparatus comprises a changing area storage locker as defined in claim 1. The locker may comprise a sports facility storage locker. The locker may
 5 comprise a wheelchair locker for storing a wheelchair. The locker may comprise a buggy locker for storing a buggy, pram, stroller or the like. The locker may be configured to store a wheelchair or a buggy, pram, stroller or the like. For example, the locker may be sized and dimensioned to receive at least one of either a wheelchair or a stroller.

10 The locker comprises a first door and a second door. The locker comprises a storage cavity. The storage cavity is accessible via the first door. The storage cavity is accessible via the second door. The storage cavity is accessible via the first door and the second door. In at least some examples, the storage cavity may be accessible via at least the first door and the second door. The storage cavity may be accessible via only a single
 15 door at any time. The storage cavity may not be accessible by two or more doors simultaneously.

The storage cavity may be defined by at least one locker wall. In at least some examples, the storage cavity is defined by a pair of locker walls, the first door and the second door,
 20 and a locker top and a locker bottom. The first door and the second door may be opposing. The storage cavity may be defined between the first and second doors. The pair of locker walls may be opposing. The pair of locker walls may each comprise a side wall, such as a left side wall and a right side wall respectively. The storage cavity may be defined between the pair of side walls, between the pair of opposing doors and
 25 between the locker top and locker bottom.

The first door may provide access to the storage cavity from a first direction. The second door may provide access to the storage cavity from a second direction. The first and second directions may be opposing. For example, the first door may provide access via a
 30 first end direction, along a central longitudinal, optionally horizontal, axis of the locker, with the second door providing access in an opposite direction along the axis (e.g. towards the first door). In at least some examples, the first and second directions may be divergent or convergent, such as oblique. The first and second doors may be arranged such that they are at substantially right angles to each other. The first and
 35 second directions may be laterally arranged, such as where the first and second doors provide lateral, such as perpendicular, access to the storage cavity – relative to each other. For example, the locker may comprise a side locker in a changing area, such as a changing cubicle or

booth, with one of the first and second doors providing access from within the changing area; and the other of the first and second doors providing access from outside the changing area, such as via a locker door in a side wall. One of the first and second doors may provide access from a front of the locker; and the other of the first and second doors
5 may provide access from a side and/or back of the locker.

In some examples, the first and second directions may be the same, or at least parallel. For example, the first and second doors may each be provided in a same plane or face of the locker, such as the front of the locker. The first and second doors may be
10 separated, such as by a divider. The divider may comprise a partition or wall of the changing area, such as a cubicle wall.

The locker may span a boundary of the changing area. The locker may at least partially define a boundary of the changing area.
15

The locker comprises at least one locking system for locking at least one of the first and second doors. The locking system is for selectively locking one or both of the first and second doors. The locking system is configured to prohibit access to the storage cavity via the first and second doors simultaneously. A locked door may comprise a locked
20 closed door. In at least some examples, the first and/or second door/s may be lockable only in a closed position. The locking system may be configured to prevent locking of the door/s when the door/s is/are not closed, or not closed properly.

The storage cavity may be accessible via either of the first or second doors when they
25 are unlocked. The storage cavity may be securable via one or both of the first and second doors when they are locked. The locking system may be configured to operate such that if the first door is unlocked, the second door is or remains locked; and if the second door is unlocked, the first door is or remains locked.

The locking system may be configured to selectively vary the first and second doors
30 between respective states. The state may comprise a configuration. The state may comprise an operative state. The locker may be reconfigurable between only a limited number of states, at least when in normal use. The locking system may be configured to selectively vary the state by operation by a single user. The locking system may be
35 configured to selectively vary the state between three respective states, wherein:

- i. both the first and second doors are locked;
- ii. the first door is unlocked and the second door is locked; or

iii. the first door is locked and the second door is unlocked

The states may be variable in any order. Alternatively, the states may be variable only in a fixed order, such as i, then ii, then iii as listed above. The states may be infinitely variable, such as infinitely cyclable between states. The states may be variable only by a single user. The states may be variable only by a single, authorised user, such as the user in possession of a key or other access means for operating the locking system.

In at least some examples, the locking system may be configured to vary a status of at least one of a lock, door or locker between: locked & openable by an authorised user; and locked & openable by any user. In such examples, the locker may be toggled between three statuses: the two respective "locked" statuses and an "open" status. An indicator may be provided to indicate at least two of those statuses (e.g. "available" for "locked & openable by any user"; and "unavailable" for "open" and also "locked & openable by an authorised user only").

The locker may comprise a default state. The default state may comprise an initial state, such as prior to use by any user. In at least some examples, the locker may be only openable from the default state via one of the first and second doors. The one of the first and second doors may be predefined. The one of the first and second doors openable from the default state may be selected, such as automatically by a central management system. The default state of the locker, such as whether or which of the first and second doors is respectively locked and unlocked in the default state, may be determined in dependence on a parameter/s. The parameter/s may include one or more of: a time of day; a time in relation to an activity or planned activity; a status of one or more other locker/s, such as those accessible from a same cubicle.

The locker may be reconfigurable between states by a user action and/or an authorised user action and/or by a management control (such as a central electronic control system and/or a management staff/personnel).

The locker may be configured or reconfigured to the default state. The locker may be reconfigurable to the default state by user operation. For example, the locker may be reconfigurable to the default state by the user completing use of the lock. The locker may be reconfigurable to the default state automatically. For example, the locker may be configured, such as programmed, to return to the default state after a period of time, such as a predetermined period of inactivity. The locker door/s may be biased closed, or

at least automatically closeable, such as to enable automatic and/or remote reconfiguration of the locker (e.g. by changing a state of the lock/s).

5 The locking system may comprise at least one mechanical lock. Additionally, or alternatively, the locking system may comprise at least one electromagnetic lock. The locking system may comprise one or more of: mechanical keys or electronic tags such as can be carried by the user whilst away from the locker; a pin code/s; other electronic and/or mechanical locking means. The locking system may be configured to allow only authorised users to lock and unlock specific lockers; such as only a single user to lock
10 and/or unlock a locker. The locking system may comprise a computer or other electronic management control system.

The first door, when open, may provide access to the storage cavity via a first opening, such as a first doorway. The second door, when open, may provide access to the storage
15 cavity via a second opening, such as a second doorway. The first opening may be discrete from the second opening.

The locker may be configured to prevent viewing into the locker when the first and second doors are closed. The locker may be configured to prevent viewing through the locker,
20 such as to prevent viewing into the changing area.

The locker may comprise an indicator to indicate whether at least one of the locker doors is unlocked. The indicator may comprise a visual indicator, such as to visually indicate to a user in the changing area whether at least one of the locker doors is unlocked. The
25 indicator may comprise a mechanical indicator. Additionally, or alternatively, the indicator may comprise an electronic indicator. In at least some examples, the indicator may be configured to alert the locker user and optionally an additional person, such as an authorised member of staff or supervisor. The indicator may be couple to the locking system. In at least some examples, the locking system comprises a latch. The latch may
30 provide a visual indication of engagement. The first and/or second door/s may be biased. For example, the first door and the second door may both be spring-loaded to close when not held open. The biasing force may be sufficient to engage a portion of the locking system, such as a mechanical latch. At least one of the first and second doors may be biased open. For example, each of the inner doors on a cubicle-side of the lockers may
35 be biased open when unlocked. Accordingly, a visual indicator that all of the lockers or at least inner locker doors is locked can be provided by an absence of open locker doors.

A user may be reassured by an absence of open locker doors that all of the lockers are locked, such as when wishing to disrobe in the cubicle.

5 The locking system may be configured to operate to individually lock or unlock each of the first and second doors.

The locker may further comprise a second locking system. The aforementioned at least one locking system may be a first locking system, the first locking system operating to lock or unlock the first door. The second locking system may operate to lock or unlock
10 the second door.

The locker may comprise a divider between the first and second doors. In use, the divider may conceal an outside of the first door from a user accessing the storage cavity via the second door. The divider may conceal an outside of the second door from a user
15 accessing the storage cavity via the first door.

06 10 21
In at least some examples, one or more parts of the locker may be insulated, such as to reduce transmission of sound. For example, the locker door, particularly the inner, cubicle-side door, may be configured to reduce transmission of sound. Accordingly, a
20 user in the cubicle may experience at least a sense of enhanced privacy, whereby sounds of another user accessing a locker cavity from outside the cubicle are not intrusive. At least part of the locker may be sealed. For example, the locker door/s may comprise a sealing portion, for sealing the locker door closed. The locker may be configured to prevent a physical object being passed into or out of the cubicle via the
25 locker, such as through or around a closed locker door. In at least some examples, the inner locker door may comprise a sealing portion, the sealing portion at least assisting in reducing transmissibility into and/or out of the cubicle of sound and/or physical objects. The sealing portion may assist in preventing viewing into and/or out of the cubicle.

30 According to a further aspect there is provided an array of the lockers of any other aspect, example, embodiment or claim. The array may be configured to visually indicate whether any of the plurality of first locker doors and/or any of the plurality of the second locker doors is or can be unlocked. At least one of the pluralities of first or second doors may face in a similar orientation, such as towards a same changing area. For example, a first
35 group of lockers may each comprise a first door accessible from within a first changing

area; and each comprise a second locker door accessible from outside the changing area (when permitted).

5 According to a further aspect of this disclosure there are provided at least some examples of a facility, such as a changing facility, comprising the apparatus, such as the storage locker/s, or array/s thereof, of any other aspect, example, embodiment or claim. The changing facility may comprise a first changing area; wherein the first door of the locker is accessible from the first changing area, and the second door of the locker is accessible from outside the first changing area. In at least some examples, the second
10 door may be accessible from a second changing area. The first changing area may comprise a wet changing area. The second changing area may comprise a dry changing area.

15 According to a further example, there is provided a method of accessing a storage cavity of a storage locker, as defined in claim 23. The method may comprise selectively accessing the storage cavity via only a single door or opening of the storage locker, whilst at least one other door or opening of the storage locker is closed. The method comprises preventing a simultaneous opening of at least two locker doors. The method may comprise preventing access to the storage cavity of the locker from outside the
20 changing area associated with the locker whilst a user within the changing area is accessing the locker. The method may comprise permitting access to the locker by a single user. The method may comprise permitting access via a single first door of an array of such lockers. The array of lockers may all comprise first doors on a same side or orientation, such as all located or directed towards the changing area. The method
25 may comprise permitting access via a plurality of second locker doors of such an array. For example, the method may comprise a plurality of users outside the changing area each accessing a respective locker via a respective second locker door, optionally simultaneously accessing. The method may comprise permitting access to lockers from within the changing area only whilst those lockers are inaccessible, such as not
30 unlockable, from outside the changing area. The method may comprise prohibiting access to lockers from outside the changing area whilst those lockers are accessible, such as unlocked and/or unlockable, from within the changing area. The method may comprise prohibiting simultaneous access to a same locker by two different users. The method may comprise prohibiting simultaneous access to a same locker by both the first
35 and second doors by a single user. The method may comprise prohibiting simultaneous access to a same locker from within and outside the changing area. The method may

comprise permitting access to lockers from outside the changing area only whilst those lockers are inaccessible, such as not unlockable, from inside the changing area.

5 The method may comprise changing a state or configuration of a locker/s by a user action and/or automatically. The method may comprise changing the state of the locker after a period of time. The method may comprise changing the state of the locker to a default state. The method may comprise defaulting the locker/s to provide access, at least initial access, from a preferred side only. The preferred side may comprise a side within the cubicle. Alternatively, the preferred side may comprise from outside the cubicle. The
10 preferred side may be variable, such as with a time of day and/or use of a facility. For example, where a system detects a high usage rate, the preferred side for default access may be varied accordingly. In this way, the management system can assist in directing users to a most efficient locker and/or cubicle/s.

15 According to a further aspect of the present disclosure there is provided a method of manufacturing an apparatus, such as a storage locker according to any other aspect, embodiment, example or claim.

The method may comprise additive printing, 3D printing. The method may comprise transferring manufacturing instructions, such as to or from a computer (e.g. via internet,
20 e-mail, file transfer, web or the like). In at least some examples, the method may comprise printing at least some of the components of the apparatus. For example, the method may comprise printing any or all of the components of the storage locker (and optionally 3D printed lock component/s). The components or apparatus may be supplied in a final-use configuration.

25 Another aspect of the present disclosure provides a computer program comprising instructions arranged, when executed, to implement a method in accordance with any other aspect, example or embodiment. A further aspect provides machine-readable storage storing such a program.

30 The invention is defined in the appended claims. It will readily be appreciated that features recited as optional with respect to the first aspect may be additionally applicable with respect to the other aspects without the need to explicitly and unnecessarily list those various combinations and permutations here (e.g. the apparatus of one aspect
35 may comprise features of any other aspect). Optional features as recited in respect of a method may be additionally applicable to an apparatus or device; and vice versa. The apparatus or device of one aspect, example, embodiment or claim may be configured to

perform a feature of a method of any aspect, example, embodiment or claim. In addition, corresponding means for performing one or more of the discussed functions are also within the present disclosure.

- 5 It will be appreciated that one or more embodiments/aspects may be useful in at least storing a user's items.

The above summary is intended to be merely exemplary and non-limiting.

- 10 Various respective aspects and features of the present disclosure are defined in the appended claims.

- 15 It may be an aim of certain embodiments of the present disclosure to solve, mitigate or obviate, at least partly, at least one of the problems and/or disadvantages associated with the prior art. Certain embodiments or examples may aim to provide at least one of the advantages described herein.

BRIEF DESCRIPTION OF THE DRAWINGS

- 20 These and other aspects of the present invention, as defined in the appended claims, will now be described, by way of example only, with reference to the accompanying drawings, in which:

- 25 Figure 1 is a isometric view of a plurality of changing cubicles in an aquatic sports facility wherein multiple storage lockers may be accessed from within the cubicle, showing a user approaching the cubicle entrance;

Figure 2 is a isometric view showing the user inside one of the Fig. 1 changing cubicles;

- 30 Figure 3 is a cutaway isometric view of a Fig. 1 changing cubicle (with a front-wall represented as transparent), which shows the user transferring from a standard wheelchair to a changing bench within the cubicle;

- 35 Figure 4 is a cutaway isometric view showing the user subsequently transferring from the changing bench to a sports wheelchair;

Figure 5 is a cutaway isometric view showing the user having opened the cubicle-side door of a storage locker for storing apparel, and the cubicle-side door of a storage locker for storing their standard wheelchair;

- 5 Figure 6 is a cutaway isometric view showing the respective storage lockers after the user has closed their doors;

Figure 7 is a isometric view of the changing cubicle which shows the user returning to the cubicle and accessing the apparel locker from a different, pool-side locker door;

10

Figure 8 is a further isometric view showing the user accessing the wheelchair locker from a different, pool-side locker door;

- 15 Figure 9 shows an alternative configuration of the storage lockers depicted in the previous drawings, wherein there is a privacy latch at the cubicle-side door, and wherein the cubicle-side door of an apparel locker is open; and

Figure 10 shows the locker with the configuration of Fig. 9, wherein the cubicle-side door of the apparel locker is being closed by the user.

20

DETAILED DESCRIPTION

- 25 Changing area storage lockers are present in many venues, including at aquatic sports facilities. However, they are not always accessible by their users when required. This applies especially to wheelchair users, who may be restricted in the number of lockers that they can readily access.

- 30 In the following detailed example, a plurality of changing area storage lockers are located at an aquatic sports facility. Each locker has two doors, with a first door being accessible by a user inside a changing cubicle and/or a dry changing area, and the second door being accessible by a user beside a swimming pool and/or inside a wet changing area. Only one door of the locker can be open or unlocked at any instant, such that the first and second doors can never be open or unlocked together.

- 35 Each storage locker comprises a locking system for selectively locking either, or both of the first and second doors. The locking system operates such that if the first locker door is unlocked, the second locker door is or remains locked; and if the second locker door is unlocked, the first locker door is or remains locked. A storage cavity is defined

between the first and second locker doors, which is accessible via either door if unlocked, and securable via either or both doors if locked.

Fig. 1 shows the changing cubicle 10 in the aquatic sports facility wherein multiple storage lockers 20 may be accessed from within the cubicle 10. The user 30 approaches the cubicle entrance 11. The cubicle 10 contains a sports wheelchair 12 (seen in Fig. 2), which in this example is an aquatic wheelchair. The user 30 enters the cubicle 10 whilst using a standard wheelchair 13.

Once the user 30 is inside the cubicle 10, a main cubicle door 15 is closed for privacy, and the user 30 manoeuvres into a transfer space. Fig. 2 shows the user 30 proximal to, and facing away from, one of the storage lockers 20, which in this instance is a wheelchair locker 40. The wheelchair locker 40 has a first door being a cubicle-side door 42a, and a second door being a pool-side door (shown in Fig. 8).

In Fig. 2, the cubicle-side door 42a of the wheelchair locker 40 has been opened by the user 30, whilst the pool-side door is and remains closed, because only one door of the locker 40 can be open at any instant. This helps the user 30 to access the locker's storage cavity 44 whilst maintaining their privacy inside the changing cubicle 10.

Fig. 3 shows the user 30 transferring from the standard wheelchair 13 to a changing bench 16 within the cubicle 10 where they can conveniently remove their outdoor items of apparel. Subsequently, the user 30 transfers from the changing bench 16 to the aquatic wheelchair 12, as shown in Fig. 4.

A further locker 20 is then accessed by the user, as shown in Fig. 5, which in this instance is an apparel locker 50. Similarly with the wheelchair locker 40, the apparel locker 50 has a first door being a cubicle-side door 52a, and a second door being a pool-side door (shown in Fig. 7). It will be appreciated that in other examples the second door may comprise a different cubicle-side door (e.g. located in a different, second cubicle) or a non-pool-side door, such as where the second door 52b is in a dry area, and/or a post-activity changing area. The cubicle-side door 52a of the apparel locker 50 has been opened by the user 30, whilst the pool-side door is and remains closed, because only one door of the locker 50 can be open at any instant. This helps the user 30 to access the locker's storage cavity 54 whilst maintaining their privacy inside the changing cubicle 10.

The user 30 then places their items into the apparel locker 50, and closes the cubicle-side door 52a. The standard wheelchair 13 is pushed inside the wheelchair locker 40 which is then also closed at the cubicle-side door 42a. This is shown in Fig. 6. After closure, the cubicle-side door of each locker 42a, 52a is locked. The locking system may
 5 operate mechanically through the use of a removable, user-carriable key, and/or electronically/electromagnetically through the entry of a unique pin code by the user, or a removable, user-carriable RFID tag or fob.

The user 30 then exits the changing cubicle 10 and proceeds to use the venue's facilities,
 10 such as sports facilities or equipment, which includes a swimming pool in this example. When the user 30 returns to the changing cubicle 10, it is possible that the changing area 10 will be occupied by another user. This is especially likely at peak venue-usage times. The user is temporarily unable to access their apparel and belongings, such as their clothes and wheelchair 13, from the locker(s) 40, 50 via the same door(s) 42a, 52a
 15 through which these items were initially fed for storage.

In situations such as these, the user 30 can optionally gain access to the apparel locker 50 from the pool-side via the pool-side apparel locker door 52b, and they can similarly gain access to the wheelchair locker 40 from the pool-side wheelchair locker door 42b.
 20 Fig. 7 shows the apparel locker 50 being accessed from its pool-side door 52b, and Fig. 8 shows the wheelchair locker 40 being accessed from its pool-side door 42b. The user 30 need not wait until the changing cubicle 10 is free to access and retrieve their items such as apparel and wheelchair 13 from their locker(s) 40, 50. For example, the user 30 can take their items to another cubicle if vacant – or take their belongings to leave the
 25 facility (e.g. if they do not wish to change back into their original clothing).

Fig. 9 shows an alternative configuration of the previously described apparel locker 50 wherein there is a privacy latch 62a for engaging the cubicle-side locker door 52a. The privacy latch 62a is provided in addition to the aforescribed locking system. The
 30 privacy latch 62a prevents the cubicle-side locker door 52a from being opened when the latch 62a is engaged, and can be disengaged by the user 30 from inside the cubicle 10 to allow the locker door 52a to be opened (as described above however, the cubicle-side door 52a cannot be opened if the pool-side door of the locker is open or unlocked). Notably, the latch 62a is not accessible from the locker storage cavity 54 and/or the pool-side
 35 door 52b (seen in Fig. 7). Accordingly, the latch 62a helps prevent visibility into the cubicle 10 from outside the cubicle 10. The latch 62a serves as a visual indicator to the user 30 as to whether the cubicle-side locker door 52a is currently openable or not. For

example, the distinctive visual indicator (e.g. colour contrast) provided by the latches 62a can alert the user to any unlocked locker doors 52a; and reassure the user 30 that no locker door 52a can unexpectedly open whilst they are in the cubicle 10.

5 Fig. 10 shows the latched-locker configuration of Fig. 9, wherein the cubicle-side door 52a of the apparel locker 50 is being closed by the user 30. During the closing of the cubicle-side locker door 52a, the latch 62a typically pivots upwards to allow the door 52a to be closed. When the door 52a is closed, the latch 62a is typically re-engaged.

10 Optionally, the privacy latch 62a can be configured to automatically engage when the associated cubicle-side locker door 52a is moved into the closed position. The locker door 52a may be urged into the closed position by a spring tensioning-mechanism, and/or under the weight of the door itself. Thus it may be the default arrangement that the latch 62a is engaged.

15 Optionally, a securing device to temporarily secure the locker door 52a in the fully open position is provided, to increase the user's 30 ease of access to the storage cavity 54 whilst required. Afterwards, the securing device can be manually released and the cubicle-side door 52a of the locker 50 can be closed and locked, and the latch 62a re-engaged.

20

In embodiments, the cubicle-side door 42a of a wheelchair storage locker 40 comprises the aforescribed privacy latch 62a. Also or alternatively, multiple storage lockers 20 may be provided with latches.

25 In some embodiments including a privacy latch 62a, the latch 62a comprises an indicator to convey to a user 30 whether the latch 62a is currently engaged or disengaged. The indicator may utilise text and/or colour and/or light e.g. an LED light which flashes in green or red depending on whether the latch is engaged or disengaged. This may offer

30 reassurance to the user 30 that no cubicle-side locker door can be opened unexpectedly, for example by another user accessing a locker 20 from outside the cubicle 10 whilst the cubicle 10 is occupied.

Referring now to Figure 11, there is schematically shown a sequence of operation of an

35 example locker 150, generally similar to that of preceding figures, with similar features indicated by similar reference numerals, incremented by 100. Accordingly the locker 150 comprises a respective internal door 152a and external door 152b, the internal door 152a

being accessible from within a cubicle (not shown in Figure 11). Figure 11a shows the locker 150 in an initial configuration. Figures 11a to 11e sequentially depict operation in an example chronological order. The initial configuration is a default configuration. As shown here, the door 152b outside the cubicle (not shown in Fig. 11) is initially locked.

5 The door 152b is openable by unlocking the lock 162b by any user, such as by any user presenting an individual's unique RFID, or similar, to an outside locker interface 170 (e.g. on/in the external door 152b), whereby the single external door 152b becomes unlocked and openable by the individual user. As shown in Figure 11a, the door 152a inside the cubicle is initially locked, similarly openable by unlocking the lock 162b by any user, such as by any user presenting an individual's unique RFID, or similar, to an inside locker interface 170 (e.g. on/in the internal door 152a), whereby the single internal door 152a becomes unlocked and openable by the individual user.

As shown in Figure 11a, the locker 150 here is in a default state initially, which is an "available" state in this example. Accordingly, a user interface, such as the representative panel 172 schematically illustrated in Figure 12, visually indicates that the locker 150 is "Available". It will be appreciated that panels 172 can be located on each side of the locker 150, such as in each respective door 152a, 152b. It will also be appreciated that each respective locker 150 can have its own respective indicator panels 172. In the example shown in Figure 11, the initial state of the locker 150 is an "available, locked" state. Although, the locker is "available", here it must be unlocked to enable access.

It will be appreciated that, from the configuration of Figure 11a, as soon as one of the doors 152a, 152b is unlocked by a presentation of a RFID tag by any user, then the other door 152b, 152a becomes unopenable in anyway: the other lock 162b, 162a cannot be operated to unlock the other door 152b, 152a. For example, even the same user who has unlocked a first door (e.g. cubicle-side door 152a as shown in Figure 11b) would be prevented in the unlikely event that they try to unlock the other door (e.g. external door 152b) whilst the first door (e.g. cubicle-side door 152a) is still unlocked. Once a locker 150 has been unlocked from the state of Figure 11a by a user's RFID tag, then the locker 150 can only be unlocked by that same user's RFID tag, for at least a period of use. Even whilst being used (locked and/or unlocked by the same user), both of the locker doors 152a, 152b cannot be in an unlocked state simultaneously.

It will be appreciated that here the locker doors 152a, 152b cannot be 'locked open' – the system will not recognise an activated latch with the door open as a "locked" door, such that the system shall still treat such a "locked-open" door as an "unlocked" door, In

at least some examples, the system will not even activate or allow activation of a lock when the door 152a, 152b is not positioned with or for the lock to be properly activated to lock the door 152a, 152b closed. For example, the latch 162a, 162b may only be activatable when it can be suitably received, such as in or by a corresponding keeper.

5

In at least some examples, the doors 152a, 152b are each biased, such as with a respective spring mechanism pulling or forcing each door 152a, 152b shut.

In the scenario of use depicted by Figure 11b, the cubicle-side door 152a has been
10 unlocked from the previous configuration of Figure 11a by a user in the cubicle presenting a suitable RFID wristband to an RFID interface panel 170, such as schematically depicted in Figure 12. The locker door 152b outside the cubicle remains locked, even after the inside door 152a has been unlocked. This door 152b cannot be opened in any way, when the inner door 152a is in an unlocked state. Once one door is
15 unlocked from one side then the other side may not be opened and the locker enters an “unlocked” state – whereby the locker is only accessible by the original user from a single door at a time. For example, as illustrated in Figure 11b, if the inside door 152a is opened then the outside door 152b may not be opened and the outside door 152b indicates this by illuminating the “locked” indicator. The locker 150 may then be filled by the user via
20 the inner, cubicle-side locker door 152a. It will be appreciated in other example methods of operation, the user may initially open the locker 150 using the external door 152b outside the cubicle, such that the sequence of operation may mirror that shown in Figure 11b (and subsequently).

25 Once unlocked to the configuration of Figure 11b, the inside door 152a can be opened and remains unlocked for a period of time to allow filling of the locker 150. In at least some examples, where the locker is associated with a sports centre, then the period of time may be determined in accordance with a corresponding minimum time for an activity, such as 20 or 30 minutes for a minimum time. Within that time period, the user
30 is able to fill the locker 150; and lock the locker 150 by re-presenting the RFID to the interface 170 in the locker door 152a. In at least some examples, the period of time is predetermined, such as to reflect a typical or reasonable minimum time for performing an associated activity. The associated activity may comprise a maximum reasonable time for a user to change their clothing and fill the locker 150. For example, where a
35 user's first action on entering a cubicle is to unlock a locker 150, then the period of time may allow for the user to subsequently disrobe, put on other clothing and fill the locker 150 with the items they wish to store. The period of time and/or locker status of Figure

11b may account for a user opening a first locker, then changing their mind and moving or putting their belongings into a second, different locker only. In the example shown here, the locker 150 may be transitioned from the “unlocked” configuration of Figure 11b to a locked configuration (e.g. of Figure 11c) by a presentation of any RFID tag to the locker’s 150 interface 170 – not necessarily the same RFID tag that was used to unlock the locker 150 from the configuration of Figure 11a. In other examples, only the same RFID tag that was used to unlock the locker 150 from the configuration of Figure 11a can be used to lock the locker 150 (e.g. after that same user has filled the locker with the items they wish to store in the locker 150).

The locker 150 does not remain in the “unlocked” state of Figure 11b indefinitely. For example if a user opened that locker 150 and then changed their mind to use a different locker 150 the original locker 150 could be stuck oriented to the insider side of the cubicle. To prevent that, the locker 150 here is configured with a “timeout” such that the locker reverts back to the initial state (of Figure 11a) after a predetermined time. The timing would be set to be the longest that it can be while still maintaining an availability of lockers 150 on/from each side of the cubicle. In this example, the timing to revert to the initial state would be at least 30mins in order to ensure that a cubicle occupant was not simply taking a while to fill their locker.

In at least some examples, the system may allow a single user to utilise multiple lockers simultaneously. For example, a user’s RFID tag may be used to provide simultaneous use of a wheelchair locker (e.g. locker 40 of previous figures) and a smaller locker 150. In some examples, the system may enable a user to utilise an unlimited number of lockers 150. In other examples, the system may be configured to limit a user’s simultaneous use to a limited number of lockers. The limited number of lockers simultaneously usable by a user and/or RFID tag may be three or less, such as a single locker.

Referring to Figure 11c, it can be seen that the user can open the inner, cubicle-side door 152a only. The doors 152a, 152b here can be biased closed (e.g. by a spring, not shown), such that the user must pull the door 152a open to access the cavity within the locker 150. In other examples, only one of the inner or outer locker doors 152a, 152b is biased closed. In at least some examples, at least one of the locker doors 152a, 152b is biased open (when unlocked). Accordingly, an absence of any open doors 152a can reassure a user that all of the locker doors (at least on one side, such as inside the cubicle) are locked.

Once the user has placed all of their items within the locker 150, the door 152a inside cubicle is locked with the RFID tag (e.g. wristband). The user's personal items remain located in the locker 150, as shown in Figure 11d, where the locker is in a "locked
 5 unavailable" state. The user can leave the cubicle and area of the locker 150, such as to perform their desired activities. Upon completing their activities, the user can return to the same locker 150 to retrieve their personal items. Either door 152a, 152b of the locker 150 may be unlocked by the same RFID tag as used to lock the locker 150 from the configuration of Figure 11c to the configuration of Figure 11d. For example, if the user is
 10 able to access the same cubicle (e.g. if same cubicle is not occupied by another user), then the user can use the same cubicle and access the locker 150 again via the same, inner cubicle-side door 152a. Alternatively, if the user cannot access the same cubicle (or does not wish to use a cubicle, e.g. if changing clothes again is not required), then the user can choose to access the locker 150 via the outside locker door 152b. As
 15 always, only a single locker door: either the inner, cubicle-side door 152a or external door 152b can be in an unlocked state at any time.

In this example, the locker 150 has three states, such as experienced by users. Accordingly, the indicator 172 has three corresponding options for indication. In at least
 20 some examples, the indicator may comprise a light/s and/or a symbol for communicating the different states. For example, a green light and corresponding symbol (or text) may indicate the initial "(locked), Available" state; an orange light and corresponding symbol (or text) may indicate the second "unlocked" state when a user has accessed the locker 150 initially with their RFID tag; and a red light and corresponding symbol (or text) to
 25 indicate the third "Locked, Unavailable" state.

In this example system, there is provided a RFID tag transducer for toggling the relevant door 152a, 152b between locked and unlocked states. The locks 162a, 162b on doors
 152a, 152b on each side of the locker 150 have a common control system. The lockers
 30 150 are each connected to a central control system. Here, the doors' 152a, 152b self-closing biasing mechanism assists in automatically changing the state of the doors, such as when the predetermined time period lapses.

Referring now to Figure 13, there is shown a sequence of an alternative operation of a
 35 locker 150 in chronological order from 13a to 13e. The locker 150 as shown in Figure 13a is generally in a similar state as that shown in Figure 11a. However, here, in the default initial state, the locker 150 in the "available" state is not fully locked. Rather, one,

and only one, of the locker doors 152a, 152b is unlocked and the other of the locker doors 152b, 152a is locked. As shown here, the inner lock 162 is disengaged such that the inner, cubicle-side door 152a is unlocked and accessible, from within the cubicle. As shown in Figure 13a, the outer locker door 152b has its lock 162b engaged, such that

5 the outer locker door 152b cannot be opened, not even with a presentation of a RFID tag to the interface panel 170 of the locker 150 (such as per Figure 12). In this alternative arrangement, the locker can only be accessed from one, single side when the locker is empty and available. Accordingly, a management system can be used to direct users towards a preferred side of use. For example, the single side of access may be the

10 cubicle-side initially – such as based upon an assumption that all users initially shall wish to utilise a cubicle. Accordingly, all lockers can be initially ‘programmed’ to provide access from the cubicle (as shown as the example in Figure 13b).

With the locker 150 unlocked and openable (from one side only), a user can open the

15 locker door 152a and insert their items for storage, as depicted in Figure 13b. Thereafter, presentation of a RFID to the locker interface 170 in the locker door 152a transitions the corresponding lock 162a to a locked configuration, as shown in Figure 13c. In the locked, occupied configuration of Figure 13d, the user can leave the cubicle and locker area to perform their desired activity. When a user wishes to access their items, they can choose

20 which side of the locker 150 to access – such as in dependence on availability of the same cubicle (from which the locker 150 is accessible via the inner door 152a). As shown here in Figure 13e, the user has accessed the locker 150 via the external locker door 152b. Use of the locker 150 by this user is now complete, with the locker 150 now in a state of “available”, similar to the original initial state. As shown in this example here, the

25 initial state of the locker 150 is not identical: after use by the first user, the “available” configuration of the locker 150 now has the locker being accessible only from outside the cubicle, via the external locker door 152b, as exemplified in Figure 14. It will be appreciated that there may be a transition in the “available” states of lockers, with the one of the doors 152a, 152b that is initially accessible transferring from one side of the

30 locker to the other – in dependence on each user’s preference or last use of the locker 150. A management system and/or a ‘timeout’ may be used to vary which door is open in the “available” state. For example, over a period of time, a number of lockers may have their default “available” states changed such that accessibility is switched from one side of the locker (e.g. outside the cubicle) to the other (e.g. inside the cubicle).

35 Accordingly, locker access can be actively managed, such as throughout or during different times of the day or general use: with the default initial state being selected between Figure 14 and Figure 13a.

As per previously, the locker doors 152a, 152b are each biased closed. Accordingly, the state of the doors can be automatically changed. For example, the central control system may change the state of a locker door after the lapse of the predetermined time period (e.g. 30 minutes) and/or after or upon a particular event. For example, at the end and/or start of each day, the central control system may change the state of every locker to a preferred default initial state.

It should be appreciated that the provision of a locker with only two possible conditions from a user perspective (e.g. locked and unlocked/available) may provide improved usability. For example, users, particularly users with a disability or anxiety who could be potentially be more deterred from visiting a facility, may feel more comfortable or adapt more quickly to such a system that may more closely resemble an interface or operation of at least a locker door. For example prior art systems where locker doors are typically only toggled between locked and unlocked may be more familiar for users where at least some examples of lockers 150 here at least have such an appearance of only being locked or unlocked – albeit some of the apparently “locked” lockers 150 may be accessible from the other side (unbeknown to the user).

In at least some examples, the locker may be provided with a sensor/s. The sensor/s may be to at least assist in determining a state or condition of the locker. The state or condition of the locker may be related to a presence of a user's items in the locker. For example, the locker may comprise a sensor/s for detecting the presence of a user's items, such as with optical and/or mechanical sensors. In at least some examples, the locker has a force sensor such as to detect a weight of items located in the locker cavity by a user. The sensor/s may be configured to provide an input to a management system, such as to assist in determining and/or defining a locker state or configuration. For example, an indication from a sensor of a lack of user items in a locker may allow the management system to change a state of a locker 150 to “available”, such as after a predetermined period of time and/or with an override (e.g. manual).

It will be appreciated that although not shown here, the lockers can have identifiers, such as numbers applied. Accordingly, each locker door for the same locker can have the same identifier making it straightforward for users to access the locker from either side.

Although the above-described embodiments relate to an aquatic sports facility with wet and dry changing areas, the inventive changing area storage locker(s) could be provided

in alternative locations. At least one storage locker could be disposed in a sports centre or gymnasium, or another venue with sports and/or leisure facilities/equipment such as a school or a spa. In any location provided with at least one storage locker, the first and second locker doors may be provided in distinct areas, only one of these areas being
5 inhabitable by any one user at a single instant. The first and second doors could be provided in first and second changing cubicles, and/or first and second changing areas.

In embodiments, a single locker may be configured to store apparel and/or one or more wheelchairs and/or (an)other item(s).

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The applicant hereby discloses in isolation each individual feature described herein and any combination of two or more such features, to the extent that such features or combinations are capable of being carried out based on the present specification as a whole in the light of the common general knowledge of a person skilled in the art,
15 irrespective of whether such features or combinations of features solve any problems disclosed herein, and without limitation to the scope of the claims.

It should be understood that the embodiments described herein are merely exemplary and that various modifications may be made thereto without departing from the scope or spirit of the invention, which is defined in the appended claims. For example, it will be
20 appreciated that any number of the aforescribed changing area storage lockers can be provided at a given location, including one locker, or at least two or more (e.g. five lockers).

CLAIMS

1. A changing facility comprising a changing area storage locker, the changing area storage locker comprising:

5 at least a first door accessible from within a first changing area, and a second door accessible from outside the first changing area;

a storage cavity for storing a user's apparel, the storage cavity being accessible via the first door and via the second door;

10 at least one locking system for selectively locking one or both of the first and second doors such that the storage cavity is accessible via only a single one of the first and second doors at any time for storing the user's apparel;

wherein the locking system is configured to prohibit access to the storage cavity via the first and second doors simultaneously including prohibiting simultaneous access to the same locker via both the first and second doors by a single user;

15 wherein the user's stored apparel in the storage cavity is accessible via either of the first or second doors when they are unlocked; and

wherein the locker is configured to prevent viewing into the locker when the first and second doors are closed to prevent viewing through the locker and into the changing area.

20 2. The changing facility as claimed in claim 1, wherein the storage cavity is accessible via either of the first or second doors when they are unlocked, and securable via one or both of the first and second doors when they are locked; and wherein the locking system operates such that if the first door is unlocked, the second door is or remains locked; and if the second door is unlocked, the first door is or remains locked.

25 3. The changing facility as claimed in any preceding claim, wherein the locking system is configured to selectively vary the first and second doors between two respective states, wherein:

- 30
- i. the first door is unlocked and the second door is locked; or
 - ii. the first door is locked and the second door is unlocked; and
 - iii. wherein the states are variable in any order.

4. The changing facility as claimed in any preceding claim, wherein the locking system is configured to selectively vary the first and second doors between three respective states, wherein:
- i. both the first and second doors are locked;
 - ii. the first door is unlocked and the second door is locked; or
 - iii. the first door is locked and the second door is unlocked.
5. The changing facility as claimed claim 3 or 4, wherein the states are infinitely variable, such as infinitely cyclable between states.
6. The changing facility as claimed in any preceding claim, wherein the first door, when open, provides access to the storage cavity via a first opening, such as a first doorway; and the second door, when open, provides access to the storage cavity via a second opening, such as a second doorway; and wherein the first opening is discrete from the second opening.
7. The changing facility as claimed in any preceding claim, wherein the locker is configured to prevent a physical object being passed into or out of the changing area via the locker through or around a closed locker door .
8. The changing facility as claimed in any preceding claim, wherein the locker comprises an indicator to indicate whether at least one of the locker doors is unlocked.
9. The changing facility as claimed in any preceding claim, wherein the locking system is configured to operate to individually lock or unlock each of the first and second doors.
10. The changing facility as claimed in any preceding claim, wherein the locker comprises a wheelchair locker for storing a wheelchair.
11. The changing facility as claimed in any preceding claim further comprising a second locking system, wherein the at least one locking system is a first locking system, and wherein the first locking system operates to lock or unlock the first door, and the second locking system operates to lock or unlock the second door.

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12. The changing facility as claimed in any preceding claim, wherein the first and second doors are arranged such that they substantially directly oppose each other.

5 13. The changing facility as claimed in any of claims 1 to 11, wherein the first and second doors are arranged such that they are at substantially right angles to each other.

10 14. The changing facility as claimed in any preceding claim, wherein the storage locker is a sports facility storage locker.

15 15. The changing facility as claimed in any preceding claim, wherein the locking system comprises at least one mechanical lock.

15 16. The changing facility as claimed in any preceding claim, wherein the locking system comprises at least one electromagnetic lock.

17. The changing facility of any preceding claim comprising an array of lockers.

20 18. The changing facility as claimed in claim 17, wherein the array is configured to visually indicate whether any of the plurality of first locker doors and/or any of the plurality of the second locker doors is or can be unlocked, at least one of the pluralities of first or second doors facing in a similar orientation, such as towards a same changing area.

25 19. The changing facility as claimed in any preceding claim, wherein the second door is accessible from a second changing area; and wherein the first changing area is a wet changing area, and the second changing area is a dry changing area.

30 20. A method of accessing a storage cavity of a changing area storage locker in a changing facility, the storage locker comprising: at least a first locker door accessible from within a first changing area; and a second locker door accessible from outside the first changing area; and a locking system for selectively locking one or both of the first and second doors such that a storage cavity is accessible
35 via only a single one of the first and second doors at any time for storing a user's

apparel; the method comprising preventing a simultaneous opening of the first and second locker doors by a single user; and wherein the method comprises provision of access to the user's stored apparel in the storage cavity via either of the first or second doors when they are unlocked; and wherein the method comprises preventing viewing into the locker when the first and second doors are closed to prevent viewing through the locker and into the changing area.

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