CLAIMS

1. An article storage facility comprising:

a transport device including a travel cart configured to travel along a predetermined first direction;

a storage rack including a plurality of storage portions arranged along the first direction; and

a supply device configured to supply an article to the transport device,

wherein a direction orthogonal to the first direction in a view in an up-down direction is a second direction, one side in the first direction is a first side in the first direction, another side in the first direction is a second side in the first direction, one side in the second direction is a first side in the second direction, and another side in the second direction is a second side in the second direction,

the transport device includes a first transfer device and a second transfer device mounted on the travel cart,

the second transfer device is arranged on the first side in the first direction with respect to the first transfer device,

each of the first transfer device and the second transfer device includes a placement portion on which a plurality of the articles are capable of being placed side by side in the second direction, and performs a transfer operation of the articles between the placement portion and the storage portion by moving the articles in the second direction,

the supply device includes a first conveyor arranged so as to be adjacent on the first side in the second direction with respect to the first transfer device when the travel cart is at a predetermined loading position, a second conveyor that is arranged on the first side in the first direction with respect to the first conveyor and is arranged so as to be adjacent on the first side in the second direction with respect to the second transfer device when the travel cart is at the loading position, and a third conveyor that includes a first connection portion connected to an end on the first side in the second direction of the first conveyor and a second connection portion that is connected to an end on the first side in the second direction of the second conveyor,

the third conveyor is configured to transport the article in the first direction,

the first connection portion is provided at an end on the second side in the first direction of the third conveyor,

the first conveyor is configured to transport the article in the second direction, and a plurality of the articles are capable of being arranged side by side in the second direction thereon,

the second conveyor is configured to transport the article in the second direction, and a plurality of the articles are capable of being arranged side by side in the second direction thereon, and

the third conveyor includes, between the first connection portion and the second connection portion in the first direction, a buffer region in which at least one article is capable of being arranged.

2. An article storage facility comprising:

a transport device including a travel cart configured to travel along a predetermined first direction;

a storage rack including a plurality of storage portions arranged along the first direction; and

a supply device configured to supply an article to the transport device,

wherein a direction orthogonal to the first direction in a view in an up-down direction is a second direction, one side in the first direction is a first side in the first direction, another side in the first direction is a second side in the first direction, one side in the second direction is a first side in the second direction, and another side in the second direction is a second side in the second direction,

the transport device includes a first transfer device and a second transfer device mounted on the travel cart,

the second transfer device is arranged on the first side in the first direction with respect to the first transfer device,

each of the first transfer device and the second transfer device includes a placement portion on which a plurality of the articles are capable of being placed side by side in the second direction, and performs a transfer operation of the

articles between the placement portion and the storage portion by moving the articles in the second direction,

the supply device includes a first conveyor arranged so as to be adjacent on the first side in the second direction with respect to the first transfer device when the travel cart is at a predetermined loading position, a second conveyor that is arranged on the first side in the first direction with respect to the first conveyor and is arranged so as to be adjacent on the first side in the second direction with respect to the second transfer device when the travel cart is at the loading position, and a third conveyor that includes a first connection portion connected to an end on the first side in the second direction of the first conveyor and a second connection portion that is connected to an end on the first side in the second direction of the second conveyor,

the third conveyor is configured to transport the article in the first direction,

the first connection portion is provided at an end on the second side in the first direction of the third conveyor,

the first conveyor is configured to transport the article in the second direction, and a plurality of the articles are capable of being arranged side by side in the second direction thereon,

the second conveyor is configured to transport the article in the second direction, and a plurality of the articles are capable of being arranged side by side in the second direction thereon, and

at least the second conveyor out of the first conveyor and the second conveyor is configured to transport the article to the third conveyor.

3. The article storage facility according to claim 1 or 2, further comprising

a control system configured to control the supply device,

wherein the articles have a plurality of types with mutually different attributes,

the plurality of articles transported along the third conveyor are, in order starting from the second side in the first direction, which is a downstream side in a transport direction, a first article, a second article, a third article, and a fourth

article,

the control system transports the first article from the third conveyor to the first conveyor,

the type of the first article is a first type,

if the type of the second article is the first type, the control system transports the second article from the third conveyor to the first conveyor, and if the type of the second article is a second type that is different from the first type, the control system transports the second article from the third conveyor to the second conveyor,

if the type of the third article is the first type, the control system transports the third article from the third conveyor to the first conveyor, and if the type of the third article is the second type, the control system transports the third article from the third conveyor to the second conveyor, and

if the type of the fourth article is the first type and there is room for arranging a new article on the first conveyor, the control system transports the fourth article from the third conveyor to the first conveyor, and if the type of the fourth article is the second type and there is room for arranging a new article on the second conveyor, the control system transports the fourth article from the third conveyor to the second conveyor.

4. An article storage facility comprising:

a transport device including a travel cart configured to travel along a predetermined first direction;

a storage rack including a plurality of storage portions arranged along the first direction; and

a supply device configured to supply an article to the transport device,

wherein a direction orthogonal to the first direction in a view in an up-down direction is a second direction, one side in the first direction is a first side in the first direction, another side in the first direction is a second side in the first direction, one side in the second direction is a first side in the second direction, and another side in the second direction is a second side in the second direction,

the transport device includes a first transfer device and a second transfer

device mounted on the travel cart,

the second transfer device is arranged on the first side in the first direction with respect to the first transfer device,

each of the first transfer device and the second transfer device includes a placement portion on which a plurality of the articles are capable of being placed side by side in the second direction, and performs a transfer operation of the articles between the placement portion and the storage portion by moving the articles in the second direction,

the supply device includes a first conveyor arranged so as to be adjacent on the first side in the second direction with respect to the first transfer device when the travel cart is at a predetermined loading position, a second conveyor that is arranged on the first side in the first direction with respect to the first conveyor and is arranged so as to be adjacent on the first side in the second direction with respect to the second transfer device when the travel cart is at the loading position, and a third conveyor that includes a first connection portion connected to an end on the first side in the second direction of the first conveyor and a second connection portion that is connected to an end on the first side in the second direction of the second conveyor,

the third conveyor is configured to transport the article in the first direction,

the first connection portion is provided at an end on the second side in the first direction of the third conveyor,

the first conveyor is configured to transport the article in the second direction, and a plurality of the articles are capable of being arranged side by side in the second direction thereon,

the second conveyor is configured to transport the article in the second direction, and a plurality of the articles are capable of being arranged side by side in the second direction thereon,

the article storage facility further comprises a control system configured to control the supply device,

the articles have a plurality of types with mutually different attributes,

the plurality of articles transported along the third conveyor are, in order starting from the second side in the first direction, which is a downstream side in

a transport direction, a first article, a second article, a third article, and a fourth article,

the control system transports the first article from the third conveyor to the first conveyor,

the type of the first article is a first type,

if the type of the second article is the first type, the control system transports the second article from the third conveyor to the first conveyor, and if the type of the second article is a second type that is different from the first type, the control system transports the second article from the third conveyor to the second conveyor,

if the type of the third article is the first type, the control system transports the third article from the third conveyor to the first conveyor, and if the type of the third article is the second type, the control system transports the third article from the third conveyor to the second conveyor,

if the type of the fourth article is the first type and there is room for arranging a new article on the first conveyor, the control system transports the fourth article from the third conveyor to the first conveyor, and if the type of the fourth article is the second type and there is room for arranging a new article on the second conveyor, the control system transports the fourth article from the third conveyor to the second conveyor,

if the type of the third article is neither the first type nor the second type, the control system arranges the third article on the second side in the first direction with respect to the second connection portion of the third conveyor,

if the type of the fourth article is the second type, the control system transports the fourth article from the third conveyor to the second conveyor, and

if the type of the fourth article is not the second type, the control system arranges the fourth article on the second side in the first direction with respect to the second connection portion of the third conveyor, and if the type of a fifth article transported subsequent to the fourth article is the second type, the control system transports the fifth article from the third conveyor to the second conveyor.

5. An article storage facility comprising:

a transport device including a travel cart configured to travel along a predetermined first direction;

a storage rack including a plurality of storage portions arranged along the first direction; and

a supply device configured to supply an article to the transport device,

wherein a direction orthogonal to the first direction in a view in an up-down direction is a second direction, one side in the first direction is a first side in the first direction, another side in the first direction is a second side in the first direction, one side in the second direction is a first side in the second direction, and another side in the second direction is a second side in the second direction,

the transport device includes a first transfer device and a second transfer device mounted on the travel cart,

the second transfer device is arranged on the first side in the first direction with respect to the first transfer device,

each of the first transfer device and the second transfer device includes a placement portion on which a plurality of the articles are capable of being placed side by side in the second direction, and performs a transfer operation of the articles between the placement portion and the storage portion by moving the articles in the second direction,

the supply device includes a first conveyor arranged so as to be adjacent on the first side in the second direction with respect to the first transfer device when the travel cart is at a predetermined loading position, a second conveyor that is arranged on the first side in the first direction with respect to the first conveyor and is arranged so as to be adjacent on the first side in the second direction with respect to the second transfer device when the travel cart is at the loading position, and a third conveyor that includes a first connection portion connected to an end on the first side in the second direction of the first conveyor and a second connection portion that is connected to an end on the first side in the second direction of the second conveyor,

the third conveyor is configured to transport the article in the first direction,

the first connection portion is provided at an end on the second side in the

first direction of the third conveyor,

the first conveyor is configured to transport the article in the second direction, and a plurality of the articles are capable of being arranged side by side in the second direction thereon,

the second conveyor is configured to transport the article in the second direction, and a plurality of the articles are capable of being arranged side by side in the second direction thereon,

the article storage facility further comprises a control system configured to control the supply device,

the articles have a plurality of types with mutually different attributes,

the plurality of articles transported along the third conveyor are, in order starting from the second side in the first direction, which is a downstream side in a transport direction, a first article, a second article, a third article, and a fourth article,

the control system transports the first article from the third conveyor to the first conveyor,

the type of the first article is a first type,

if the type of the second article is the first type, the control system transports the second article from the third conveyor to the first conveyor, and if the type of the second article is a second type that is different from the first type, the control system transports the second article from the third conveyor to the second conveyor,

if the type of the third article is the first type, the control system transports the third article from the third conveyor to the first conveyor, and if the type of the third article is the second type, the control system transports the third article from the third conveyor to the second conveyor,

if the type of the fourth article is the first type and there is room for arranging a new article on the first conveyor, the control system transports the fourth article from the third conveyor to the first conveyor, and if the type of the fourth article is the second type and there is room for arranging a new article on the second conveyor, the control system transports the fourth article from the third conveyor to the second conveyor,

if the type of the third article is neither the first type nor the second type, the control system transports the third article from the third conveyor to the second conveyor, and

if the type of the fourth article is the first type and there is room for arranging a new article on the first conveyor, the control system transports the fourth article from the third conveyor to the first conveyor.

6. The article storage facility according to claim 5,

wherein if the type of a fifth article transported subsequent to the fourth article is the second type, the control system moves the third article from the second conveyor to the third conveyor to arrange the third article on the second side in the first direction with respect to the second connection portion of the third conveyor, and transports the fifth article from the third conveyor to the second conveyor, and

if the type of the fifth article is not the second type, the control system moves the third article from the second conveyor to the third conveyor to arrange the third article on the second side in the first direction with respect to the second connection portion of the third conveyor and arranges the fifth article on the second side in the first direction with respect to the second connection portion of the third conveyor, and if the type of a sixth article transported subsequent to the fifth article is the second type, the control system transports the sixth article from the third conveyor to the second conveyor.

7. The article storage facility according to any one of claims 3 to 6,

wherein the attribute is a dimension of an outer shape of the article, and

the type of the article is determined according to which predetermined dimension class the dimension of the article belongs to.

8. The article storage facility according to any one of claims 2 and 4 to 6, wherein the third conveyor includes, between the first connection portion and the second connection portion in the first direction, a buffer region in which at least one article is capable of being arranged.