WHAT IS CLAIMED IS:

[Claim 1] An article packaging unit comprising a combination of at least an outer box and a packaging mat, wherein

the outer box is a hollow square container that stores an article to be packed;

the packaging mat is formed by filling cushioning bodies in an airtight bag, and at least a portion of the packaging mat is removably attached to the inside of the outer box and has a valve,

the cushioning bodies have a function to bring the packaging mat into close contact with the surface of the article and lessen impacts applied from the outside by fitting the shape of the article packed with the packaging mat and increasing the filling density in the bag body when the air inside a bag body of the packaging mat is evacuated and the internal capacity is reduced,

the valve consists of a combination of a check valve and an air intake valve,

the check valve opens when a suction force of a pump is applied when deaerating the inside of the packaging mat, and after the deaeration, the valve closes to block introduction of the outside air into the packaging mat,

the air intake valve allows the outside air to be introduced into the packaging mat the inside of which is deaerated by a valve opening operation, and

the deaerated packaging mat is solidified and brought into close contact with the surface of the article stored in the outer box to hold the article at a fixed position.

[Claim 2] The article packaging unit according to Claim 1, wherein

the outer box has a cushion inside,

the cushion holds an article stored in the outer box at a fixed position in conjunction with the solidified packaging mat.

[Claim 3] The article packaging unit according to either one of Claims 1 and 2, wherein

the outer box has a mat holder,

the mat holder supports the packaging mat and presses it against a portion of the surface of the article stored in the outer box before deaeration of the inside of the packaging mat.

[Claim 4] An article packaging unit comprising a combination of an outer box, a

packaging mat, and an inner lid, wherein

the outer box is a container for storing an article and includes a box main body and an outer lid,

the box main body is an openable and closable hollow square container for storing an article, and has a cushion for supporting an article inside,

the packaging mat is formed by filling cushioning bodies in an airtight bag formed by laminating a surface sheet and a backside sheet that are airtight up and down and sealing the peripheral edges, and at least a portion of the packaging mat is removably attached to the inside of the outer box and has a valve,

the cushioning bodies have a function to bring the packaging mat into close contact with the surface of the article and lessen impacts applied from the outside by fitting the shape of the article packed with a packaging mat and increasing the filling density inside the bag body when the air inside a bag body of the packaging mat is evacuated and the internal capacity thereof is reduced,

the valve consists of a combination of a check valve and an air intake valve,

the check valve opens when a suction force of a pump is applied when deaerating the inside of the packaging mat, and after the deaeration, closes to block introduction of the outside air into the packaging mat,

the air intake valve is opened by a valve opening operation to allow the outside air to be introduced into the deaerated packaging mat, and

the inner lid is a mat holder that supports the packaging mat, and is supported as an inner lid in an openable and closable manner on the outer box, and makes the packaging mat fit the surface of the article supported on a cushion of the outer box when the inner lid closes.

[Claim 5] The article packaging unit according to Claim 4, wherein

the outer box consists of a box main body and an outer lid,

the box main body is a hollow square container opened across a portion of the front surface to a portion of the upper surface,

the outer lid is joined to the upper edge opening edge of the box main body so as to rise and fall to open and close the opening of the box main body,

~~the inner lid is attached to the upper bottom inner surface of the box main body so as to rise and fall to open and close an upper portion opening of the box main body,~~

~~the packaging mat is laid across the back surface of the inner lid, and is pushed by the surfaces of the inner lid and brought into contact with the surface of the article while fitting the shape of the article on the cushion of the outer box when the inner lid is closed.~~

~~[Claim 6] The article packaging unit according to Claim 5, wherein, inside the box main body, two protrusions of foamed plastic with a fixed thickness are installed at a fixed interval across the bottom surface and the back surface inside the box main body as a cushion for supporting the stored article, and when the stored article is a hexahedron, the cushion supports two surfaces of the stored article, and the packaging mat supported by the inner lid and solidified holds at least four remaining surfaces of the stored article.~~

~~[Claim 7] The article packaging unit according to Claim 2, wherein~~

~~the inner lid has a box shape whose front surface is opened, and in a portion of the bottom surface of the surfaces of the inner lid having a box shape, a small hole that an exhaust port of a valve provided in the packaging mat is made to face is opened, and on the back surface, a flap is provided so as to rise and fall,~~

~~the flap is removably attached to the upper bottom inner surface of the box main body, and~~

~~the packaging mat is attached across the flap and the bottom surface of the box shape of the inner lid.~~

~~[Claim 8] The article packaging unit according to Claim 4, wherein~~

~~the inner lid has a storage space, and~~

~~a pump to be used for deaerating the inside of the packaging mat is stored in the storage space in such a manner that the pump can be taken out from and put into the storage space.~~

1. An article packaging unit for home delivery services, comprising:

a combination of at least an outer box and a packaging mat,

wherein the outer box comprises a box main body and an outer lid,

the outer box is a container that stores an article,

the box main body is a hollow cube container having

an opening part opening and extending from a part of a front surface of the box main body to a part of an upper surface of the box main body, and

a cushion extending from a bottom surface of the box main body to a back surface of the box main body to hold the article therein,

the outer lid is connected to an opening edge of the upper surface of the box main body such that the outer lid flaps to open and close the opening part of the box main body,

the packaging mat is an airtight bag having cushioning bodies therein, at least a portion of the packaging mat is removably attached to an inside of the outer box, and the packaging mat has a valve thereon,

the cushioning bodies solidify the packaging mat to bring the packaging mat into close contact with a surface of the article and lessen impacts applied from outside by fitting a shape of the article packed with the packaging mat and increasing a filling density in the airtight bag when air inside of the airtight bag of the packaging mat is evacuated and an internal capacity is reduced,

the valve comprises a combination of a check valve and an air intake valve,

the check valve opens when a suction force of a pump is applied when deaerating an inside of the packaging mat, and after deaeration, the check valve closes to block introduction of outside air into the packaging mat,

the air intake valve introduces the outside air into the packaging mat, the inside of which is deaerated by a valve opening operation,

the deaerated and solidified packaging mat holds the article at a fixed position,

the cushion has a continuous L shape having a short side and a long side,

and

the short side has a step at an end thereof to hold the article between the step and the long side of the continuous L shape.

2. The article packaging unit for home delivery services according to claim 1, wherein the cushion holds the article stored in the outer box at the fixed position with the solidified packaging mat.

3. The article packaging unit for home delivery services according to claim 1, wherein

the outer box has a mat holder, and

the mat holder supports the packaging mat and presses the packaging mat against a portion of the surface of the article stored in the outer box before deaeration of the inside of the packaging mat.

4. An article packaging unit for home delivery services, comprising:

an outer box having a box main body, an inner lid, and a cushion supporting an article placed in the outer box thereon; and

a packaging mat,

wherein the inner lid is a mat holder that supports the packaging mat, and is supported in an openable and closable manner on the outer box,

the inner lid makes the packaging mat fit along a surface of the article supported on the cushion of the outer box when the inner lid closes,

the inner lid has

a box shape whose rear and lower surfaces are open,

a small hole which is an exhaust port of a valve provided in the packaging mat, on a front surface of the inner lid, and

a flap on a back surface of the inner lid,

the flap is removably attached to an upper bottom inner surface of the box

main body, and

the packaging mat is attached across the flap and the bottom surface of the inner lid.

5. The article packaging unit for home delivery services according to claim 4, wherein the packaging mat is laid across a back surface of the inner lid, and is pushed by surfaces of the inner lid and brought into contact with the surface of the article while fitting the packaging mat to a shape of the article on the cushion of the outer box when the inner lid is closed.

6. The article packaging unit for home delivery services according to claim 1, wherein the outer box has an inner lid having

a box shape whose rear and lower surfaces are open,

a small hole which is an exhaust port of a valve provided in the packaging mat, on a front surface of the inner lid, and

a flap on a back surface of the inner lid,

the flap is removably attached to an upper bottom inner surface of the box main body, and

the packaging mat is attached across the flap and the bottom surface of the inner lid.

7. The article packaging unit according to claim 4, wherein the inner lid has a storage space, and

a pump for deaerating an inside of the packaging mat is stored in the storage space in such a manner that the pump can be taken out from and put into the storage space.

8. The article packaging unit for home delivery services according to claim 4, wherein the outer box has an outer lid which is connected to an opening edge of an upper surface of the box main body such that the outer lid flaps to open and close an

opening part of the box main body.

WHAT IS CLAIMED IS:

1. An article packaging unit for home delivery services, comprising:

a combination of at least an outer box and a packaging mat,

wherein the outer box comprises a box main body and an outer lid,

the outer box is a container that stores an article,

the box main body is a hollow cube container having

an opening part opening and extending from a part of a front surface of the box main body to a part of an upper surface of the box main body, and

a cushion extending from a bottom surface of the box main body to a back surface of the box main body to hold the article therein,

the outer lid is connected to an opening edge of the upper surface of the box main body such that the outer lid flaps to open and close the opening part of the box main body,

the packaging mat is an airtight bag having cushioning bodies therein, at least a portion of the packaging mat is removably attached to an inside of the outer box, and the packaging mat has a valve thereon,

the cushioning bodies solidify the packaging mat to bring the packaging mat into close contact with a surface of the article and lessen impacts applied from outside by fitting a shape of the article packed with the packaging mat and increasing a filling density in the airtight bag when air inside of the airtight bag of the packaging mat is evacuated and an internal capacity is reduced,

the valve comprises a combination of a check valve and an air intake valve,

the check valve opens when a suction force of a pump is applied when deaerating an inside of the packaging mat, and after deaeration, the check valve closes to block introduction of outside air into the packaging mat,

the air intake valve introduces the outside air into the packaging mat, the inside of which is deaerated by a valve opening operation,

the deaerated and solidified packaging mat holds the article at a fixed

position,

the cushion has a continuous L shape having a short side and a long side, and

the short side has a step at an end thereof to hold the article between the step and the long side of the continuous L shape.

2. The article packaging unit for home delivery services according to claim 1, wherein the cushion holds the article stored in the outer box at the fixed position with the solidified packaging mat.

3. The article packaging unit for home delivery services according to claim 1, wherein

the outer box has a mat holder, and

the mat holder supports the packaging mat and presses the packaging mat against a portion of the surface of the article stored in the outer box before deaeration of the inside of the packaging mat.

4. An article packaging unit for home delivery services,
comprising:

an outer box having a box main body, an inner lid, and a cushion supporting an article placed in the outer box thereon; and

a packaging mat,

wherein the inner lid is a mat holder that supports the packaging mat, and is supported in an openable and closable manner on the outer box,

the inner lid makes the packaging mat fit along a surface of the article supported on the cushion of the outer box when the inner lid closes,

the inner lid has

a box shape whose rear and lower surfaces are open,

a small hole which is an exhaust port of a valve provided in the packaging mat, on a front surface of the inner lid, and

a flap on a back surface of the inner lid,

the flap is removably attached to an upper bottom inner surface of the box main body, and

the packaging mat is attached across the flap and the bottom surface of the inner lid.

5. The article packaging unit for home delivery services according to claim 4, wherein the packaging mat is laid across a back surface of the inner lid, and is pushed by surfaces of the inner lid and brought into contact with the surface of the article while fitting the packaging mat to a shape of the article on the cushion of the outer box when the inner lid is closed.

6. The article packaging unit for home delivery services according to claim 1, wherein the outer box has an inner lid having

a box shape whose rear and lower surfaces are open,

a small hole which is an exhaust port of a valve provided in the packaging mat, on a front surface of the inner lid, and

a flap on a back surface of the inner lid,

the flap is removably attached to an upper bottom inner surface of the box main body, and

the packaging mat is attached across the flap and the bottom surface of the inner lid.

7. The article packaging unit according to claim 4, wherein the inner lid has a storage space, and

a pump for deaerating an inside of the packaging mat is stored in the storage space in such a manner that the pump can be taken out from and put into the storage space.

8. The article packaging unit for home delivery services according to claim 4,

wherein the outer box has an outer lid which is connected to an opening edge of an upper surface of the box main body such that the outer lid flaps to open and close an opening part of the box main body.