second receiving space 22 allows for maintaining the pressure in the first receiving space 21 at a predetermined pressure (pressure control).

[0041] FIGS. 4 and 5 illustrate the main parts of the ejection material ejecting apparatus 1, FIG. 4 being a transition diagram indicating that the amount of the ejection material 9 stored in the first receiving space 21 has further decreased than in FIG. 3, and FIG. 5 being a transition diagram indicating that the amount of the ejection material 9 in the first receiving space 21 has further decreased than in FIG. 4. It can be seen in FIG. 4 that the central part of the flexible member 8 has deformed in a manner significantly intruding into the first receiving space 21, whereby the first receiving space 21 has contracted. Along with contraction of the first receiving space 21, the operating liquid 11 is supplied to the second receiving space 22, whereby the second receiving space 22 expands.

[0042] In FIG. 5, the flexible member 8 has deformed into a convex shape conforming to the wall (inner wall) of the first receiving space 21, with the ejection material 9 in the first receiving space 21 having almost been ejected and exhausted by the head 3, and the capacity of the first receiving space having decreased to almost zero. Therefore, a groove may be provided in the housing 7 which causes the first receiving space 21 and the head 3 to be in communication when the flexible member 8 has deformed into the convex shape. Providing a groove allows for preventing the flexible member 8 from blocking the flow path from the first receiving space 21 to the head 3.

(Second Embodiment)

[0043] In the following, a second embodiment of the present invention will be described, referring to the drawings. Note that the basic configuration of the present embodiment is similar to that of the first embodiment and therefore only characteristic components will be described below.

resist 51 to be ejected without increasing the size of the housing 7 of the resist receiving unit 5, and it becomes possible to down-size the resist receiving unit 56 and down-size the imprint device 50.

(Fourth Embodiment)

[0052] In the following, a fourth embodiment of the present invention will be described, referring to the drawings. Note that the basic configuration of the present embodiment is similar to that of the first embodiment and therefore only characteristic components will be described below.

[0053] FIG. 8 is an exploded perspective view of the ejection material receiving unit 4. The ejection material receiving unit 4 is configured so that the housing 7 (7a, 7b) sandwiches the flexible member 8. The ejection material receiving unit 4 is configured so that the space between the housing 7 (7a, 7b) and the flexible member 8 is sealed with O-rings 23 and 24, each being a sealing member (encapsulating member) provided on the aperture periphery of the housing 7 (7a, 7b). Abutting of the sealing member (encapsulating member) and the flexible member 8 forms a fluid receiving space. The flexible member 8 is a member covering the receiving space. Note that, an elastic member such as an O-ring, a gasket, or the like is preferred as the sealing member (encapsulating member).

[0054] In addition, adhesive or liquid sealant is also applicable. The flexible member 8 has been molded to have a convex-shaped convex part so as to conform to the shape of the concave part of the housing 7 (7a, 7b). The thickness of the flexible member 8 is about 10 μm to 200 μm. The convex part, being formed on the part covering the receiving space, is a deformable part. The aperture periphery of the housing 7 (7a, 7b) has provided thereon a groove 25 for inserting the O-rings 23 and 24 therein, so that the ejection material receiving unit 4 is obtained by inserting the O-rings 23 and 24 into the groove 25 in manner sandwiching the flexible member 8 and fastening them with a screw or the like.

path 40) used for holding the film may be provided on positions which are symmetry relative to the casting mold so that the film is uniformly vacuum adsorbed.

[0064] As thus described, an absorption port which absorbs a part of the film to become a flange in the flexible member 8 is provided on the casting mold. Accordingly, a manufacturing method of a flexible member capable of suppressing occurrence of wrinkles or deflection has been realized.

(Fifth Embodiment)

[0065] In the following, a fifth embodiment of the present invention will be described, referring to the drawings. Note that the basic configuration of the present embodiment is similar to that of the first embodiment and therefore only characteristic components will be described below.

[0066] FIGS. 11A and 11B illustrate steps of vacuum molding in the present embodiment. In the present embodiment, as illustrated in FIG. 11A, a concave part 45 is provided on a part corresponding to the region (flange part) abutting the sealing member of the flexible member 8 in the convex casting mold 33. In the molding of the flexible member 8 in the convex casting mold 33 of the present embodiment, the first region of the film 36 is supported on the first surface of the convex casting mold 33, and the first region is absorbed by the absorption port. With such an arrangement, molding is performed by abutting of the film 36 with the second surface including an absorption port which is different from the first surface. Furthermore, the absorption port 39 and the flow path 40 being in communication with the absorption port 39 is provided on the concave part 45, as illustrated in FIG. 11B. Absorbing the film 36 in the convex part 45 at the time of molding results in holding and simultaneously vacuum molding the film 36 into a concave shaped. Molding in the aforementioned manner causes the part vacuum molded into a concave shape to become the sealing member abutting surface, and allows for increasing the planarity of the surface abutting the sealing member.

is similar to that of the first embodiment and therefore only characteristic components will be described below.

[0076] FIG. 15 illustrates a step of vacuum molding in the present embodiment. In the present embodiment, after having preliminarily heated the film at another position, the film is set to a state illustrated in FIG. 15. The film is pressurized and held by the casting mold 42 at normal temperature, while absorbing the part corresponding to the flange of the flexible member 8 in the concave casting mold 32. In this manner the part abutting the sealing member may be cooled first and cured, while being kept at a high planarity. On this occasion, there is no significant difference between absorbing or not absorbing the part corresponding to the flange, since it is immediately before starting film molding.

[0077] Next, molding is performed by absorption by the concave casting mold 32 at a temperature near normal temperature and pressing the heated plug 46 against the film 36. In terms of timing, it is preferred to perform the pressing operation by the plug 46 earlier, and the film is absorbed and molded by the concave casting mold 32 with the film having been heated and deformed. The plug 46 is lifted without terminating the absorption operation and, upon dropping of the film temperature, the absorption operation is terminated and the film is molded. In this manner it is possible to mold surface of the film 36 having a higher planarity and abutting the sealing member.

(Other Embodiments)

[0078] The embodiments described above may be combined as appropriate so as to perform vacuum molding. For example, the fifth and the sixth embodiments may be combined so as to form an absorption port on the concave part with a porous body.

[0079] While the present invention has been described with reference to exemplary embodiments, it is to be understood that the invention is not limited to the disclosed exemplary embodiments. The scope of the following claims is to be accorded the

WHAT IS CLAIMED IS:

1. An ejection material receiving unit comprising:

a first receiving space capable of receiving ejection material to be ejected from an eject head;

a second receiving space which is adjacent to the first receiving space and capable of receiving liquid; and

a flexible member separating the first receiving space and the second receiving space, wherein

the flexible member has a concave part which takes a concave shape in a state where the first receiving space is not filled with the ejection material and the second receiving space is not filled with the liquid, and

the concave shape is a shape dented toward the second receiving space from the first receiving space, and is also a shape conforming to a wall forming the second receiving space.

2. The ejection material receiving unit according to claim 1, wherein

the flexible member is capable of deforming into a convex shape conforming to the wall forming the first receiving space, as amount of ejection material received in the first receiving space decreases.

3. The ejection material receiving unit according to claim 2, comprising a groove which causes the first receiving space and an ejection head to be in communication when the flexible member has deformed into the convex shape.

4. The ejection material receiving unit according to any one of claims 1 to 3, wherein

the second receiving space is configured to allow the liquid to be supplied to the space from outside.

5. The ejection material receiving unit according to any one of claims 1 to 4, wherein

a corner of the concave part in the flexible member has a curved shape formed on the corner.

6. The ejection material receiving unit according to any one of claims 1 to 4, wherein

a corner of the concave part in the flexible member has a tapered shape formed on the corner.

7. The ejection material receiving unit according to any one of claims 1 to 6, wherein

the ejection material is imprint material.

8. The ejection material receiving unit according to any one of claims 1 to 7, wherein

the flexible member includes a plurality of flexible members.

9. An ejection material ejecting apparatus comprising:

an ejection head; and

an ejection material receiving unit including:

a first receiving space capable of receiving ejection material to be ejected from the eject head;

a second receiving space which is adjacent to the first receiving space and capable of receiving liquid; and

a flexible member separating the first receiving space and the second receiving space, wherein

the flexible member has a concave part which takes a concave shape in a state where the first receiving space is not filled with the ejection material and the second receiving space is not filled with the liquid, and

the concave shape is a shape dented toward the second receiving space from the first receiving space, and is also a shape conforming to a wall forming the second receiving space.

10. The ejection material ejecting apparatus according to claim 9, comprising

a pressure control device connected to the second receiving space and configured to control pressure in the first receiving space.

11. The ejection material ejecting apparatus according to claim 10, wherein

the pressure control device includes:

a main tank configured to store the liquid to be supplied to the second receiving space; and

a sub tank configured to receive the liquid supplied to the sub tank from the main tank, and supply the liquid to the second receiving space.

12. The ejection material ejecting apparatus according to claim 10 or 11, including a mold configured to press ejection material ejected from the ejection head.

13. The ejection material ejecting apparatus according to any one of claims 10 to 12, wherein

the ejection material is imprint material.

14. The ejection material ejecting apparatus according to any one of claims 10 to 13, wherein the flexible member is capable of deforming into a convex shape conforming to the wall forming the first receiving space, as amount of ejection material (9) received in the first receiving space decreases.

15. The ejection material ejecting apparatus according to any one of claims 10 to 13, wherein

a corner of the concave part in the flexible member has a curved shape formed on the corner.

16. The ejection material ejecting apparatus according to any one of claims 10 to 13, wherein

a corner of the concave part in the flexible member has a tapered shape formed on the corner.