peripheral part of the lower body member 21.

[0064] A plurality of bobbin parts 21c protruded from a bottom face of the recess part 21a is provided to the recess part 21a. The bobbin parts 21c are arranged along a closed curve C. In other words, the bobbin parts 21c are arranged in such a manner that a path, which connects an end region on the side of an outer periphery of each bobbin part 21c to each other, forms the predetermined closed curve when viewed from the center of the recess part 21a. The conductive wire 15 is wound around the bobbin parts 21c and forms the main arrangement pattern. Also, the conductive wire 15 is wound around each of the bobbin parts 21c and forms the sub-arrangement patterns. As illustrated in FIG. 7A, the diameter D2 of each of the bobbin parts 21c is adequately smaller than the diameter D1 of the closed curve C. Therefore, the sub-arrangement patterns become smaller than the diameter of the main arrangement pattern.

[0065] A flange part 21e is provided at an apex part of each of the bobbin parts 21c. The flange part 21e projects to the side of the outer periphery more than a core part 21d around which the conductive wire 15 is wound. The flange part 21e prevents the conductive wire 15 from falling out of the core part 21d.

[0066] Note that in the second embodiment, like the first embodiment, an auxiliary bobbin part may be provided on the closed curve C, and the conductive wire 15 forming the main arrangement pattern may be jutted out to the side of the outer periphery ~~of the conductive wire 15 forming the main arrangement pattern~~. Instead, a bobbin to form the main arrangement pattern may be provided separately from the bobbin parts 21c.

[0067] Next, a method for producing the contactless information medium according to the second embodiment will be described. Note that the lower body member 21 is

sealed inside the upper body member 42. Among these, configurations of the bobbin member 13, the IC chip 14, and the conductive wire 15 are similar to those of the first embodiment. Note that the metal member 43 is not necessary when there is no need to weight the contactless information medium 40.

[0080] Next, a method for producing the contactless information medium 40 will be described. FIGS. 13A to 13E are views for describing the method for producing the contactless information medium 40. Here, a built-in component 17 in which the bobbin member 13, the IC chip 14, and the conductive wire 15 are integrated (see FIGS. 5A and 5B) is manufactured in advance. In the manufacture, the IC chip 14 and the conductive wire 15 may be covered with adhesive or the like in order to protect the IC chip 14 and to keep a winding pattern of the conductive wire 15. Also, an opening, a cutout, a D-cut, or the like (none of them are illustrated) may be provided to the bobbin member 13 for the positioning thereof in a mold used in injection molding described in the following.

[0081] First, as illustrated in FIG. 13A, the built-in component 17 and the metal member ~~42~~ 43 are arranged in a mold 44 for injection molding. The mold 44 includes a lower mold 44a and an upper mold 44b. A cavity 44c surrounded by the lower mold 44a and the upper mold 44b has a shape corresponding to the shape of the upper body member 42 illustrated in FIG. 12. A recess and a protrusion (not illustrated) corresponding to an image given to a surface of the contactless information medium 40 are provided to the cavity 44c. In such a mold 44, the built-in component 17 is positioned and directly placed on an inner bottom face of the lower mold 44a, with a rear surface 17a (surface on the opposite side of the surface on which the

medium according to the fifth embodiment are similar to those of the first and third embodiments.

[0091] As illustrated in FIG. 14, a contactless information medium 50 according to the ~~fourth~~ fifth embodiment includes a lower body member 51, an upper body member 52, an IC chip 14, a conductive wire 15, and a metal member 53. The IC chip 14, the conductive wire 15, and the metal member 53 are sealed by the lower body member 51 and the upper body member 52. Note that the metal member 53 is not necessary when there is no need to weight the contactless information medium 50.

[0092] To an inner surface 51a of the lower body member 51, a plurality of bobbin parts 51b protruded from the inner surface 51a is provided. The conductive wire 15 is wound around the bobbin parts 51b. Note that the shape and the arrangement of the bobbin parts 51b are similar to those of the bobbin parts 21c illustrated in FIG. 7A. The winding pattern of the conductive wire 15 is similar to that in FIG. 8.

[0093] Note that in the fifth embodiment, a peripheral part of the lower body member 51 is one step lower than a center part thereof, in order to adjust the position in the thickness direction of the metal member 53 in the contactless information medium 50. However, the center part and the peripheral part may be on the same flat surface.

[0094] Next, a method for producing the contactless information medium 50 will be described. FIG. 15 is a view for describing the method for producing the contactless information medium 50.

[0095] First, the lower body member 51 is manufactured by the injection molding method. Then, the conductive wire 15 is wound around the bobbin parts 51b, and the IC chip 14

part of an inner bottom face of the lower mold 65a in order to adjust the height of the metal member 63 in the contactless information medium 60. Furthermore, a pin 65e, which holds the metal member 63, is provided to the upper mold 65b.

[0105] Then, primary molding is performed by injecting a melted resin material into the cavity 65c through a sprue 65d. The IC chip 14 and the conductive wire 15 wound around the bobbin parts 61c are sealed in the primary molding step.

[0106] Then, a primary molded piece is released from the mold 65 and arranged, as illustrated in FIG. 17B, in a mold 66 for injection molding, the mold 66 including a lower mold 66a and an upper mold 66b. The primary molded piece is arranged with ~~a rear~~ the outer surface 61d facing the upper mold 66b. A cavity 66c surrounded by the lower mold 66a and the upper mold 66b has a shape corresponding to the shape of the peripheral part of the contactless information medium 60 illustrated in FIG. 16.

[0107] Then, secondary molding is performed by injecting a melted resin material into the cavity 66c through a sprue 66d. Note that a resin material used in the secondary molding step has a different color form the resin material used in the primary molding step. In the secondary molding step, the metal member 63 is sealed. Also, the recess (not illustrated) provided to the surface of the primary molded piece is filled with the resin material having a different color and the image is formed. Then, by releasing a secondary molded piece from the mold 66, the contactless information medium 60 in the shape of a final product can be obtained.

[0108] Note that in the sixth embodiment, surface colors and materials of center parts are different between both