What is claimed is:

1. A circuit board (200) electrically connectable to a plurality of apparatus-side terminals (510, 590) of a cartridge attachment unit (1100) of a printing apparatus (1000), the printing apparatus having an attachment detection circuit (502, 503, 600) and a memory control circuit (501), the circuit board comprising:

a memory device (203);

a plurality of first terminals (220, 230, 270, 280) connected to the memory device, wherein the plurality of first terminals are connected to the memory control circuit when the circuit board is connected to the cartridge attachment unit ~~through which~~ so that a power source voltage and signals for operating the memory device are supplied through the first terminals from the printing apparatus; and

a plurality of second terminals (210, 240, 250, 280) connected to the attachment detection circuit when the circuit board is connected to the cartridge attachment unit ~~to be used~~ for detecting connection status of the plurality of apparatus-side terminals with the circuit board,

wherein the plurality of first terminals respectively have a ~~plurality of~~ first contact ~~portions~~ portion (cp) for contacting a corresponding apparatus-side ~~terminals~~terminal among the plurality of apparatus-side terminals,

the plurality of second terminals respectively have a ~~plurality of~~ second contact ~~portions~~ portion (cp) for contacting a corresponding apparatus-side ~~terminals~~terminal among the plurality of apparatus-side terminals,

the plurality of first and second contact portions are arranged so as to form a first row (R1) and a second row (R2), and

four contact portions of the plurality of second contact portions are disposed respectively at the ends of the first and second rows.

2. The circuit board according to Claim 1, wherein

the plurality of first contact portions are disposed within a first area (810),

the four contact portions among the plurality of second contact portions are disposed outside the first area and are arranged at positions corresponding to four corners of a quadrangular second area (820) that encompasses the first area, and

the second area has a trapezoid shape having a short first base corresponding to the first row and a long second base corresponding to the second row.

3. The circuit board according to Claim 1 or 2, wherein

among the four contact portions of the plurality of second contact portions:

two contact portions (210cp, 240cp) disposed at the ends of the first row (R1) ~~are~~ have connected with each other and neither is connected to a fixed voltage, and

two contact portions (250cp, 290cp) disposed at the ends of the second row (R2) ~~are~~ have connectable to an electric device (204, 208).

4. The circuit board according to Claim 3, wherein

a contact portion of a ground terminal (270) for the memory device is disposed at the center of the second row.

5. The circuit board according to any one of Claims 1-4, wherein during detection of connection status of the plurality of apparatus-side terminals with the circuit board:

the two contact portions (210cp, 240cp) at the ends of the first row are arranged to have applied thereto ~~with~~ a voltage that is equal to or less than a first power supply voltage supplied to a power terminal for the memory device, and

the two contact portions (250cp, 290cp) at the ends of the second row are

arranged to have applied ~~with~~ thereto a voltage that is higher than the first power supply voltage and that is equal to or less than a second power supply voltage for driving a print head of the printing apparatus.

6. The circuit board according to Claim 5, wherein during detection of connection status of the plurality of apparatus-side terminals with the circuit board:

one (240cp) of the two contact portions at the ends of the first row is arranged to have inputted thereto a first attachment inspection signal ~~is inputted~~ as a first pulse signal to ~~one of the two contact portions at the ends of the first row~~, and the other (210cp) of the two contact portions is arranged to output a first attachment response signal ~~is outputted~~ in accordance with the first attachment inspection signal ~~from the other of the two contact portions~~, and

one (250cp) of the two contact portions at the ends of the second row is arranged to have applied thereto a first voltage that is less than or equal to the second power supply voltage and that is higher than the first power supply voltage ~~is applied to one of the two contact portions at the ends of the second row~~, and the other (290cp) of the two contact portions is arranged to output a voltage that is lower than the first voltage and that is higher than the first power supply voltage ~~is outputted from the other of the two contact portions~~.

7. The circuit board according to Claim 6, wherein

the two contact portions (210cp, 240cp) at the ends of the first row (R1) are used for detecting when an overvoltage ~~was~~is applied to the two contact portions, and

a high level of the first attachment inspection signal is set to a voltage that is lower than the overvoltage.

8. The circuit board according to any one of Claims 1-7, wherein

two contact portions (250cp, 290cp) disposed at the ends of the second row (R2) are connectable to an electric device, and

the electric device is a resistance element (204) installed ~~in~~ on the circuit board.

9. The circuit board according to Claim 5, wherein during detection of connection status of the plurality of apparatus-side terminals with the circuit board:

one (240cp) of the two contact portions at the ends of the first row is arranged to have inputted thereto a first attachment inspection signal ~~is inputted~~ as a first pulse signal ~~to one of the two contact portions at the ends of the first row~~, and the other (210cp) of the two contact portions is arranged to output a first attachment response signal ~~is outputted~~ in accordance with the first attachment inspection signal ~~from the other of the two contact portions~~, and

one (250cp) of the two contact portions at the ends of the second row is arranged to have inputted thereto a second attachment inspection signal ~~is inputted~~ as a second pulse signal ~~to one of the two contact portions at the ends of the second row~~, and the other of the two contact portions is arranged to output a second attachment response signal ~~is outputted~~ in accordance with the second attachment inspection signal ~~from the other of the two contact portions~~.

10. The circuit board according to Claim 9, wherein

one (250cp) of the two contact portions at the ends of the second row is arranged to have inputted thereto the second attachment inspection signal ~~has~~ having a rising edge from a low level to a high level that is at a timing that is different from timing of the rising edge from a low level to a high level of the first attachment inspection signal.

11. The circuit board according to Claim 9 or 10, wherein

the two contact portions at the ends of the first row are arranged to be used for detecting when an overvoltage ~~was~~is applied to the two contact portions, ~~and~~ ~~with~~ a high level of the first attachment inspection signal ~~is~~ being set to a voltage that is lower than the overvoltage.

12. The circuit board according to any one of Claims 1-5 and 9-11, wherein

two contact portions (250cp, 290cp) disposed at the ends of the second row (R2) are connectable to an electric device, and

the electric device is a sensor (208) for detecting a remaining amount of printing material within a printing material cartridge attached to the cartridge attachment unit.

13. The circuit board according to any one of Claims 1-12, wherein

the plurality of first terminals include a ground terminal (270) for supplying a ground voltage from the printing apparatus to the memory device, a power supply terminal (260) for supplying power at a different voltage than the ground voltage from the printing apparatus to the memory device, a clock terminal (230) for supplying clock signals from the printing apparatus to the memory device, a reset terminal (220) for supplying reset signals from the printing apparatus to the memory device, and a data terminal (280) for supplying data signals from the printing apparatus to the memory device, and

two of the first contact portions (220cp, 230cp) are disposed in the first row (R1), and three of the first contact portions (260cp-280cp) are disposed in the second row (R2).

14. The circuit board according to any one of Claims 1-13, wherein a distance between the two contact portions (210cp) at the ends of the first and second contact portions existing in the first row is longer than a distance between the two contact portions

(260cp, 280cp) at the ends of the first contact portions existing in the second row.

15. The circuit board according to any one of Claims 1-14, wherein

the circuit board is for attaching to a cartridge attachment unit of the printing apparatus that comprises a print head and the cartridge attachment unit.

16. A printing material cartridge (100) attachable to a cartridge attachment unit (1100) of a printing apparatus (1000) having a plurality of apparatus-side terminals (510-590), an attachment detection circuit (502, 503, 600) and a memory control circuit (501) comprising:

a memory device (203);

a plurality of first terminals (220, 230, 270, 280) connected to the memory device, wherein the plurality of first terminals are connected to the memory control circuit when the printing material container is attached to the cartridge attachment unit ~~through which~~ so that a power source voltage and signals for operating the memory device are supplied through the first terminals from the printing apparatus; and

a plurality of second terminals (210, 240, 250, 290) connected to the attachment detection circuit (502, 503, 600) when the printing material container is attached to the cartridge attachment unit ~~to be used~~ for detecting attachment status of the printing material cartridge in the cartridge attachment unit,

wherein the plurality of first terminals respectively have a ~~plurality of~~ first contact ~~portions~~ portion (cp) for contacting a corresponding apparatus-side ~~terminals~~ terminal among the plurality of apparatus-side terminals when the printing material container is ~~properly~~ attached to the cartridge attachment unit,

the plurality of second terminals respectively have a ~~plurality of~~ second contact ~~portions~~ portion (cp) for contacting a corresponding apparatus-side ~~terminals~~ terminal

among the plurality of apparatus-side terminals when the printing material container is ~~properly~~ attached to the cartridge attachment unit,

the plurality of first and second contact portions are arranged so as to form a first row (R1) and a second row (R2), and

four contact portions of the plurality of second contact portions are disposed respectively at the ends of the first and second rows.

17. The printing material cartridge according to Claim 16, wherein

the plurality of first contact portions are disposed within a first area (810),

the four contact portions among the plurality of second contact portions are disposed outside the first area and are arranged at positions corresponding to four corners of a quadrangular second area (820) that encompasses the first area, and

the second area has a trapezoid shape having a short first base corresponding to the first row and a long second base corresponding to the second row.

18. The printing material cartridge according to Claim 16 or 17, wherein

among the four contact portions of the plurality of second contact portions,

two contact portions (210cp, 240cp) disposed at the ends of the first row (R1) ~~are~~ have connected with each other and neither of them is connected to a fixed voltage, and

two contact portions (250cp, 290cp) disposed at the ends of the second row (R2) ~~are~~ have connected therebetween an electric device (204, 208) installed in the printing material cartridge.

19. The printing material cartridge according to Claim 18, wherein

a contact portion of a ground terminal (270) for the memory device is disposed at

the center of the second row.

20. The printing material cartridge according to any one of Claims 16-19, wherein during detection of attachment status of the printing material cartridge in the cartridge attachment unit:

the two contact portions (210cp, 240cp) ~~-~~at the ends of the first row (R1) are arranged to have ~~-~~applied ~~with~~ thereto a voltage that is equal to or less than a first power supply voltage supplied to a power terminal for the memory device, and

the two contact portions (250cp, 290cp) at the ends of the second row (R2) are arranged to have applied ~~with~~ thereto a voltage that is higher than the first power supply voltage and that is equal to or less than a second power supply voltage for driving a print head of the printing apparatus.

21. The printing material cartridge according to Claim 20, wherein during detection of attachment status of the printing material cartridge in the cartridge attachment unit:

one (240cp) of the two contact portions at the ends of the first row (R1) is arranged to have inputted thereto a first attachment inspection signal ~~is inputted~~, as a first pulse signal, ~~to one of the two contact portions at the ends of the first row,~~ and the other (210cp) of the two contact portions is arranged to output a first attachment response signal ~~is outputted~~ in accordance with the first attachment inspection signal ~~from the other of the two contact portions~~, and

one (250cp) of the two contact portions at the ends of the second row (R2) is arranged to have applied thereto a first voltage that is less than or equal to the second power supply voltage and that is higher than the first power supply voltage ~~is applied to one of the two contact portions at the ends of the second row~~, and the other (290cp) of the

two contact portions is arranged to output a voltage that is lower than the first voltage and that is higher than the first power supply voltage ~~is outputted from the other of the two contact portions~~.

22. The printing material cartridge according to Claim 21, wherein

the two contact portions (210cp, 240cp) at the ends of the first row are arranged to be used for detecting when an overvoltage ~~was~~is applied to the two contact portions, ~~and~~

~~a~~ with a high level of the first attachment inspection signal ~~is~~ being set to a voltage that is lower than the overvoltage.

23. The printing material cartridge according to any one of Claims 16-22, wherein

two contact portions (250cp, 290cp) disposed at the ends of the second row ~~are~~ have connected therebetween an electric device installed in the printing material cartridge, and

the electric device is a resistance element (204).

24. The printing material cartridge according to Claim 20, wherein during detection of attachment status of the printing material cartridge in the cartridge attachment unit:

one (240cp) of the two contact portions at the ends of the first row is arranged to have inputted thereto a first attachment inspection signal ~~is inputted~~ as a first pulse signal ~~to one of the two contact portions at the ends of the first row~~, and the other (210cp) of the two contact portions is arranged to output a first attachment response signal is outputted in accordance with the first attachment inspection signal from ~~the other of the two contact portions~~, and

one (250cp) of the two contact portions at the ends of the second row ~~a second attachment inspection signal~~ is arranged to have inputted thereto a second attachment inspection signal as a second pulse signal ~~to one of the two contact portions at the ends of the second row~~, and the other (290cp) of the two contact portions is arranged to output a second attachment response signal ~~is outputted~~ in accordance with the second attachment inspection signal ~~from the other of the two contact portions~~.

25. The printing material cartridge according to Claim 24, wherein

the one (250cp) of the two contact portions at the ends of the second row is arranged to have inputted thereto the second attachment inspection signal ~~has~~ having a rising edge from a low level to a high level that is at a timing that is different from timing of the rising edge from a low level to a high level of the first attachment inspection signal.

26. The printing material cartridge according to Claim 24 or 25, wherein

the two contact portions at the ends of the first row are arranged to be used for detecting when an overvoltage ~~was~~is applied to the two contact portions, ~~and~~with

~~———~~a high level of the first attachment inspection signal ~~is~~ being set to a voltage that is lower than the overvoltage.

27. The printing material cartridge according to any one of Claims 16-20 and 24-26, wherein

two contact portions (250cp, 290cp) disposed at the ends of the second row (R2) ~~are~~ have connected therebetween an electric device installed in the printing material cartridge, and

the electric device is a sensor (208) for detecting a remaining amount of printing material within the printing material cartridge.

28. The printing material cartridge according to any one of Claims 16-27, wherein

the plurality of first terminals include a ground terminal (270) for supplying a ground voltage from the printing apparatus to the memory device, a power supply terminal (260) for supplying power at a different voltage than the ground voltage from the printing apparatus to the memory device, a clock terminal (230) for supplying clock signals from the printing apparatus to the memory device, a reset terminal (220) for supplying reset signals from the printing apparatus to the memory device, and a data terminal (280) for supplying data signals from the printing apparatus to the memory device, and

two of the first contact portions (220cp, 230cp) are disposed in the first row (R1), and three of the first contact portions (260cp-280cp) are disposed in the second row (R2).

29. The printing material cartridge according to any one of Claims 16-28, wherein a distance between the two contact portions (210cp, 240cp) at the ends of the first and second contact portions existing in the first row is longer than a distance between the two contact portions (260cp, 280cp) at the ends of the first contact portions existing in the second row.

30. The printing material cartridge according to any one of Claims 16-29, wherein

the printing material cartridge is for attaching to a cartridge attachment unit of the printing apparatus that comprises a print head and the cartridge attachment unit.

31. A printing material container adapter to which a printing material container is to be attached, the adapter being attachable to a cartridge attachment unit

(1100) of a printing apparatus ~~having a plurality of apparatus-side terminals~~ (1000), the printing apparatus having an attachment detection circuit (502, 503, 600) and a memory control circuit (501), the adapter comprising:

a memory device (203);

a plurality of first terminals (220, 230, 270, 280) connected to the memory device, wherein the plurality of first terminals are connected to the memory control circuit when the circuit board is connected to the cartridge attachment unit ~~through which~~ so that a power source voltage and signals for operating the memory device are supplied through the first terminals from the printing apparatus; and

a plurality of second terminals (210, 240, 250, 280) connected to the attachment detection circuit when the circuit board is connected to the cartridge attachment unit ~~to be used~~ for detecting attachment status of the printing material container adapter in the cartridge attachment unit,

wherein the plurality of first terminals respectively have a ~~plurality of~~ first contact ~~portions~~ portion (cp) for contacting a corresponding apparatus-side ~~terminals~~ terminal among the plurality of apparatus-side terminals when the printing material container adapter is ~~properly~~ attached to the cartridge attachment unit,

the plurality of second terminals respectively have a ~~plurality of~~ second contact ~~portions~~ portion (cp) for contacting a corresponding apparatus-side ~~terminals~~ terminal among the plurality of apparatus-side terminals when the printing material container adapter is ~~properly~~ attached to the cartridge attachment unit,

the plurality of first and second contact portions are arranged so as to form a first row (R1) and a second row (R2), and

four contact portions of the plurality of second contact portions are disposed respectively at the ends of the first and second rows.

32. The printing material container adapter according to Claim 31, wherein

the plurality of first contact portions are disposed within a first area (810),

the four contact portions among the plurality of second contact portions are disposed outside the first area and are arranged at positions corresponding to four corners of a quadrangular second area (820) that encompasses the first area, and

the second area has a trapezoid shape having a short first base corresponding to the first row and a long second base corresponding to the second row.

33. The printing material container adapter according to Claim 31 or 32, wherein

among the four contact portions of the plurality of second contact portions:

two contact portions (210cp, 240cp) disposed at the ends of the first row (R1) ~~are~~ have connected with each other and neither is connected to a fixed voltage, and

two contact portions (250cp, 290cp) disposed at the ends of the second row (R2) ~~are~~ have connected therebetween an electric device installed in the printing material container adapter.

34. The printing material container adapter according to Claim 33, wherein

a contact portion of a ground terminal (270) for the memory device is disposed at the center of the second row.

35. The printing material container adapter according to any one of Claims 31-34, wherein during detection of attachment status of the printing material container adapter in the cartridge attachment unit:

the two contact portions (210cp, 240cp) at the ends of the first row are arranged to have applied thereto ~~with~~ a voltage that is equal to or less than a first power

supply voltage supplied to a power terminal for the memory device, and

the two contact portions (250cp, 290cp) at the ends of the second row are arranged to have applied thereto ~~with~~ a voltage that is higher than the first power supply voltage and that is equal to or less than a second power supply voltage for driving a print head of the printing apparatus.

36. The printing material container adapter according to Claim 35, wherein during detection of attachment status of the printing material container adapter in the cartridge attachment unit:

one (240cp) of the two contact portions at the ends of the first row is arranged to have inputted thereto a first attachment inspection signal ~~is inputted,~~ as a first pulse signal, ~~to one of the two contact portions at the ends of the first row,~~ and the other (210cp) of the two contact portions is arranged to output a first attachment response signal ~~is outputted~~ in accordance with the first attachment inspection signal ~~from the other of the two contact portions~~, and

one (250cp) of the two contact portions at the ends of the second row is arranged to have applied thereto a first voltage that is less than or equal to the second power supply voltage and that is higher than the first power supply voltage ~~is applied to one of the two contact portions at the ends of the second row~~, and the other (290cp) of the two contact portions is arranged to output a voltage that is lower than the first voltage and that is higher than the first power supply voltage ~~is outputted from the other of the two contact portions~~.

37. The printing material container adapter according to Claim 36, wherein

the two contact portions (210cp, 240cp) at the ends of the first row (R1) are used for detecting when an overvoltage ~~was~~ is applied to the two contact portions, and

a high level of the first attachment inspection signal is set to a voltage that is lower than the overvoltage.

38. The printing material container adapter according to any one of Claims 31-37, wherein

two contact portions (250cp, 290cp) disposed at the ends of the second row (R2) ~~are~~ have connected therebetween an electric device installed in the printing material container adapter, and

the electric device is a resistance element (204).

39. The printing material container adapter according to Claim 35, wherein during detection of attachment status of the printing material container adapter in the cartridge attachment unit:

one (240cp) of the two contact portions at the ends of the first row is arranged to have inputted thereto a first attachment inspection signal ~~is inputted~~ as a first pulse signal ~~to one of the two contact portions at the ends of the first row~~, and the other (210cp) of the two contact portions is arranged to output a first attachment response signal ~~is outputted~~ in accordance with the first attachment inspection signal ~~from the other of the two contact portions~~, and

one (250cp) of the two contact portions at the ends of the second row is arranged to have inputted thereto a second attachment inspection signal ~~is inputted~~ as a second pulse signal ~~to one of the two contact portions at the ends of the second row~~, and the other of the two contact portions is arranged to output a second attachment response signal ~~is outputted~~ in accordance with the second attachment inspection signal ~~from the other of the two contact portions~~.

40. The printing material container adapter according to Claim 39, wherein

one (250cp) of the two contact portions at the ends of the second row is arranged to have inputted thereto the second attachment inspection signal ~~has~~ having a rising edge from a low level to a high level that is at a timing that is different from timing of the rising edge from a low level to a high level of the first attachment inspection signal.

41. The printing material container adapter according to Claim 39 or 40, wherein

the two contact portions at the ends of the first row are arranged to be used for detecting when an overvoltage ~~was~~ is applied to the two contact portions, ~~and~~

~~———~~with a high level of the first attachment inspection signal ~~is~~ being set to a voltage that is lower than the overvoltage.

42. The printing material container adapter according to any one of Claims 31-35 and 39-41, wherein

two contact portions (250cp, 290cp) disposed at the ends of the second row (R2) are connectable therebetween to an electric device installed in the printing material container adapter or the printing material container, and

the electric device is a sensor (208) for detecting a remaining amount of printing material within the printing material container.

43. The printing material container adapter according to any one of Claims 31-42, wherein

the plurality of first terminals include a ground terminal (270) for supplying a ground voltage from the printing apparatus to the memory device, a power supply terminal (260) for supplying power at a different voltage than the ground voltage from the printing

apparatus to the memory device, a clock terminal (230) for supplying clock signals from the printing apparatus to the memory device, a reset terminal (220) for supplying reset signals from the printing apparatus to the memory device, and a data terminal (280) for supplying data signals from the printing apparatus to the memory device, and

two of the first contact portions (220cp, 230cp) are disposed in the first row (R1), and three of the first contact portions (260cp-280cp) are disposed in the second row (R2).

44. The printing material container adapter according to any one of Claims 31-43, wherein a distance between the two contact portions (210cp) at the ends of the first and second contact portions existing in the first row is longer than a distance between the two contact portions (260cp, 280cp) at the ends of the first contact portions existing in the second row.

45. The printing material container adapter according to any one of Claims 31-44, wherein

the printing material container adapter is for attaching to a cartridge attachment unit of the printing apparatus that comprises a print head and the cartridge attachment unit.

46. A printing apparatus (1000) comprising:

a cartridge attachment unit ~~to which a printing material cartridge is attached~~ (1100);

a printing material cartridge (100) attached~~able~~ to the cartridge attachment unit;

a memory control circuit (501);

an attachment detection circuit (502, 503, 600) for detecting attachment conditions of the printing material cartridge; and

apparatus-side terminals (510-590),

wherein the printing material cartridge comprising:

a memory device (203);

a plurality of first terminals (220, 230, 270, 280) connected to the memory device, wherein the plurality of first terminals are connected to the memory control circuit when the printing material container is attached to the cartridge attachment unit ~~through which~~ so that a power source voltage and signals for operating the memory device are supplied through the first terminals from the printing apparatus; and

a plurality of second terminals (210, 240, 250, 290) connected to the attachment detection circuit (502, 503, 600) when the printing material container is attached to the cartridge attachment unit ~~to be used~~ for detecting attachment status of the printing material cartridge in the cartridge attachment unit,

wherein the plurality of first terminals respectively have a ~~plurality of~~ first contact ~~portions~~ portion (cp) for contacting a corresponding apparatus-side ~~terminals~~ terminal among the plurality of apparatus-side terminals when the printing material container is ~~properly~~ attached to the cartridge attachment unit,

the plurality of second terminals respectively have a ~~plurality of~~ second contact ~~portions~~ portion (cp) for contacting a corresponding apparatus-side ~~terminals~~ terminal among the plurality of apparatus-side terminals when the printing material container is ~~properly~~ attached to the cartridge attachment unit,

the plurality of first and second contact portions are arranged so as to form a first row (R1) and a second row (R2), and

four contact portions of the plurality of second contact portions are disposed respectively at the ends of the first and second rows.

47. The printing apparatus according to Claim 46, wherein

the plurality of first contact portions are disposed within a first area (810),

the four contact portions among the plurality of second contact portions are disposed outside the first area and are arranged at positions corresponding to four corners of a quadrangular second area (820) that encompasses the first area, and

the second area has a trapezoid shape having a short first base corresponding to the first row and a long second base corresponding to the second row.

48. The printing apparatus according to Claim 46 or 47, wherein

among the four contact portions of the plurality of second contact portions:

two contact portions (210cp, 240cp) disposed at the ends of the first row (R1) ~~are~~ have connected with each other and neither is connected to a fixed voltage, and

two contact portions (250cp, 290cp) disposed at the ends of the second row (R2) ~~are~~ have connected therebetween an electric device installed in the printing material cartridge.

49. The printing apparatus according to Claim 48, wherein

a contact portion of a ground terminal (270) for the memory device is disposed at the center of the second row.

50. The printing apparatus according to any one of Claims 46-49, wherein during detection of attachment status of the printing material cartridge in the cartridge attachment unit:

the printing apparatus is arranged to apply to the two contact portions (210cp, 240cp) at the ends of the first row (R1) ~~are applied with~~ a voltage that is equal to or less than a first power supply voltage supplied to a power terminal for the memory device, and

to apply to the two contact portions (250cp, 290cp) at the ends of the second row (R2) ~~are applied with~~ a voltage that is higher than the first power supply voltage and that is equal to or less than a second power supply voltage for driving a print head of the printing apparatus.

51. The printing apparatus according to Claim 50, wherein during detection of attachment status of the printing material cartridge in the cartridge attachment unit:

the printing apparatus is arranged to input a first attachment inspection signal ~~is inputted~~ as a first pulse signal to one (240cp) of the two contact portions at the ends of the first row, and to receive a first attachment response signal ~~is~~ outputted in accordance with the first attachment inspection signal from the other (240cp) of the two contact portions, and

the printing apparatus is arranged to apply a first voltage that is less than or equal to the second power supply voltage and that is higher than the first power supply voltage ~~is applied~~ to one of the two contact portions at the ends of the second row, and to receive a voltage that is lower than the first voltage and that is higher than the first power supply voltage ~~is~~ outputted from the other of the two contact portions.

52. The printing apparatus according to Claim 51, wherein

the printing apparatus is arranged to use the two contact portions at the ends of the first row ~~are used~~ for detecting when an overvoltage ~~was~~is applied to the two contact portions, and

a high level of the first attachment inspection signal is set to a voltage that is lower than the overvoltage.

53. The printing apparatus according to any one of Claims 46-52, wherein

two contact portions (250cp, 290cp) disposed at the ends of the second row ~~are~~ have connected therebetween an electric device installed in the printing material cartridge, and

the electric device is a resistance element (204).

54. The printing apparatus according to Claim 50, wherein during detection of attachment status of the printing material cartridge in the cartridge attachment unit:

the printing apparatus is arranged to input a first attachment inspection signal ~~is inputted~~ as a first pulse signal to one of the two contact portions at the ends of the first row, and to receive a first attachment response signal ~~is~~ outputted in accordance with the first attachment inspection signal from the other of the two contact portions, and

the printing apparatus is arranged to input a second attachment inspection signal ~~is inputted~~ as a second pulse signal to one of the two contact portions at the ends of the second row, and to receive a second attachment response signal ~~is~~ outputted in accordance with the second attachment inspection signal from the other of the two contact portions.

55. The printing apparatus according to Claim 54, wherein

the printing apparatus is arranged to input the second attachment inspection signal ~~has~~ with a rising edge from a low level to a high level that is at a timing that is different from timing of the rising edge from a low level to a high level of the first attachment inspection signal.

56. The printing apparatus according to Claim 54 or 55, wherein

the printing apparatus is arranged to use the two contact portions at the ends of the first row ~~are used~~ for detecting when an overvoltage ~~was~~is applied to the two contact

portions, ~~and~~with

————a high level of the first attachment inspection signal ~~is~~ being set to a voltage that is lower than the overvoltage.

57. The printing apparatus according to any one of Claims 46-50 and 54-56, wherein

two contact portions (250cp, 290cp) disposed at the ends of the second row (R2) ~~are~~ have connected therebetween an electric device installed in the printing material cartridge, and

the electric device is a sensor (208) for detecting a remaining amount of printing material within the printing material cartridge.

58. The printing apparatus according to any one of Claims 46-57, wherein

the plurality of first terminals include a ground terminal (270) for supplying a ground voltage from the printing apparatus to the memory device, a power supply terminal (260) for supplying power at a different voltage than the ground voltage from the printing apparatus to the memory device, a clock terminal (230) for supplying clock signals from the printing apparatus to the memory device, a reset terminal (220) for supplying reset signals from the printing apparatus to the memory device, and a data terminal (280) for supplying data signals from the printing apparatus to the memory device, and

two of the first contact portions (220cp, 230cp) are disposed in the first row (R1), and three of the first contact portions (260cp-280cp) are disposed in the second row (R2).

59. The printing apparatus according to any one of Claims 46-58, wherein a distance between the two contact portions (210cp, 240cp) at the ends of the first and second contact portions existing in the first row is longer than a distance between the two contact

portions (260cp, 280cp) at the ends of the first contact portions existing in the second row.

60. The printing apparatus according to any one of Claims 46-59, wherein the cartridge attachment unit comprises a print head.

61. The printing apparatus according to any one of Claim 46-60, wherein

N pieces of printing material cartridges are attachable to the cartridge attachment unit where N is an integer that is equal to or more than 2, and

two contact portions disposed at the ends of the first row in respective ones of the N pieces of printing material cartridges are connected in series according to an arrangement order of the N pieces of printing material cartridges in the cartridge attachment unit via plural device-side terminals installed in the cartridge attachment unit so as to form a wiring route, and the ends of the wiring route is connected to the attachment detection circuit, and

two contact portions disposed at the ends of the second row in respective ones of the N pieces of printing material cartridges are connected individually to the attachment detection circuit per each printing material cartridge, and

the attachment detection circuit is arranged to judges:

(i) whether all the N pieces of printing material cartridges are attached to the cartridge attachment unit by detecting connection status of the wiring route, and

(ii) whether individual printing material cartridges are attached by detecting connection status of the two contact portions disposed at the ends of the second row in each printing material cartridge.