CLAIMS

1. A socket for electrically connecting an upper first part and a lower second part, the socket comprising:

a pin configured to contact the first part and the second part;

a non-conductive main body made of a non-conductive material, in which a penetrating hole is formed to penetrate the non-conductive main body vertically and function as a holder configured to hold the pin; and

a conductive layer made of a conductive material, provided on an inner circumferential surface of the penetrating hole to surround the pin.

2. The socket according to claim 1, wherein

the pin comprises a signal pin configured to contact the first part and the second part,

the holder comprises a signal pin holder configured to hold the signal pin, and

the conductive layer comprises a shield part that is grounded and provided on the inner circumferential surface of the penetrating hole as the signal pin holder to surround the signal pin.

3. The socket according to claim 2, wherein

the signal pin comprises a pair of differential signal pins configured to contact the first part and the second part,

the signal pin holder comprises a differential signal pin holder configured to hold the pair of differential signal pins together, and

on the inner circumferential surface of the penetrating hole as the differential signal pin holder, the shield part is provided to surround the pair of differential signal pins together.

4. The socket according to claim 3, wherein

the main body comprises a top plate part and a middle plate part provided below the top plate part,

the differential pin holder comprises:

a pair of first smaller diameter holes that are provided to the top plate part and support the pair of differential signal pins; and

a first larger diameter hole that is provided to the middle plate part and surrounds middle portions of the pair of differential signal pins,

on the inner circumferential surface of the penetrating hole as each of the first larger diameter holes, the shield part is provided, while, on the inner circumferential surface of the penetrating hole as the first smaller diameter hole, the conductive layer is not provided such that the non-conductive main body is exposed.

5. The socket according to claim 4, wherein

the top plate part and the middle plate part are formed integrally.

6. The socket according to claim 4, wherein

the pin comprises a ground pin configured to contact the first part and the second part,

the holder comprises a ground pin holder configured to hold the ground pin,

the ground pin holder comprises:

a second smaller diameter hole that are provided to the top plate part and support the ground pin; and

a second larger diameter hole that is provided to a middle plate part and surrounds a middle portion of the ground pin, and

the conductive layer comprises a ground part that is provided on the inner circumferential surface of the penetrating hole as the second larger diameter hole and to contact the ground pin.

7. The socket according to claim 6, wherein

the ground part is provided on the inner circumferential surface of the penetrating hole as the second larger diameter hole and on the inner circumferential surface of the penetrating hole as the second smaller diameter holes.

8. The socket according to claim 6, wherein

the ground pin comprises a top plunger provided at an upward side and a coil spring that is provided below the top plunger and to bias the top plunger, and

the coil spring contacts the ground part.

9. The socket according to claim 8, wherein

the coil spring is configured to contact the ground part at two locations including an upper end portion and a lower end portion.

10. The socket according to claim 2, wherein

the pin further comprises a power pin configured to contact the first part and the second part,

the holder comprises a power pin holder configured to hold the power pin, and

on the inner circumferential surface of the penetrating hole as the power pin holder, the conductive layer is not provided such that the non-conductive main body is exposed.

11. The socket according to claim 2, wherein

the signal pin comprises a single-ended signal pin configured to contact the first part and the second part,

the signal pin holder comprises a single-ended signal pin holder configured to hold the single-ended signal pin, and

on the inner circumferential surface of the penetrating hole as the single-ended signal pin holder, the shield part is provided to surround the single-ended signal pin.

12. The socket according to claim 4, wherein

the main body further comprises a floating plate part that is formed such that the first part can be placed thereon and that is supported to be vertically movable above the top plate part,

the floating plate part comprises an accommodating part disposed to penetrate the floating plate part vertically and configured to accommodate a pair of differential signal terminals of the first part altogether, the differential signal terminals being contacting the pair of differential signal pins when in use, and

on the floating plate part, the conductive layer is not provided such that the non-conductive main body is exposed.

13. The socket according to claim 2, wherein

the conductive layer comprises a nickel layer provided on a surface of the non-conductive main body and a gold layer provided on the nickel layer.

14. The socket according to claim 2, wherein

a sheet member provided to face a bottom surface of the non-conductive main body and comprises an electrode configured to contact the signal pin and the second part.

15. The socket according to claim 1, wherein

a plurality of penetrating holes are formed in the non-conductive main body to penetrate the non-conductive main body and function as the holder, and

a wall configured to partition penetrating holes next to each other comprises: an inner wall included in the non-conductive main body and made of the non-conductive material; and a pair of the conductive layers disposed to sandwich the inner wall from both sides of the penetrating holes next to each other in a vertical cross-section view.

16. The socket according to claim 1, wherein

a wall configured to define an accommodating space for the pin in the penetrating hole comprises: an inner wall included in the non-conductive main body and made of the non-conductive material; and the conductive layer disposed to cover a surface of the inner wall which is the inner circumferential surface of the non-conductive main body.

17. The socket according to claim 1, wherein

a plurality of penetrating holes are formed in the non-conductive main body to penetrate the non-conductive main body and function as the holder, and

each of the plurality of penetrating holes comprises: an upper part and a lower part in each of which the inner circumferential surface is formed with a smaller diameter to support a top and a bottom of the pin; and a middle part in which the inner circumferential surface is formed with a larger diameter compared to the upper part and the lower part, and

in each of the plurality of penetrating holes, the conductive layer is not provided on the inner circumferential surface of the lower part but is provided on the inner circumferential surface of the upper part and/or the middle part in accordance with a kind of the pin.

18. The socket according to claim 17, wherein

in a first one of the plurality of penetrating holes where the kind of the pin to be held is a signal pin, the conductive layer is provided on the inner circumferential surface of the middle part,

in a second one of the plurality of penetrating holes where the kind of the pin to be held is a ground pin, the conductive layer is provided on the inner circumferential surface of the upper part and the middle part, and

in a third one of the plurality of penetrating holes where the kind of the pin to be held is a power pin, the conductive layer is not provided on the inner circumferential surface of the upper part nor the middle part.