

U.S. Patent No. 11,957,031	
1[pre]:	A display device, comprising:
1[a]:	a flexible screen body comprising a planar area and a bending area connected to the planar area;
1[b]:	a color filter disposed on the flexible screen body and at least covering the planar area;
1[c]:	a protective layer disposed on the flexible screen body and at least covering a part of the bending area; and
1[d]:	a coverplate disposed on the color filter and at least covering the planar area;
1[e]:	wherein in an overlapping area of the protective layer and the coverplate, a distance between the protective layer and the coverplate is greater than or equal to a default value, wherein the default value is greater than 0.
2:	The display device according to claim 1, wherein the protective layer is disposed on a surface of the flexible screen body, and a thickness of the protective layer on the surface of the flexible screen body is less than or equal to a distance between one side of the coverplate adjacent to the flexible screen body and one side of the flexible screen body adjacent to the coverplate.
3:	The display device according to claim 1, further comprising a touch control layer disposed between the flexible screen body and the color filter and an insulating layer disposed between the touch control layer and the color filter; wherein the protective layer is disposed on a surface of the insulating layer, and a thickness of the protective layer on the surface of the insulating layer is less than or equal to a distance between one side of the coverplate adjacent to the insulating layer and one side of the insulating layer adjacent to the coverplate.
4:	The display device according to claim 2, wherein the protective layer is further disposed on a surface of the color filter, and a thickness of the protective layer on the surface of the color filter is less than or equal to a distance between one side of the coverplate adjacent to the color filter and one side of the color filter adjacent to the coverplate.
5[pre]:	The display device according to claim 1, wherein the bending area comprises a transitional bending sub-area, a bending sub-area, and an extending bending sub-area defined in sequence, and the transitional bending sub-area is connected to and flush with the planar area;
5[a]:	the protective layer completely covers the bending sub-area and covers at least a part of the transitional bending sub-area; and

5[b]: the coverplate is connected to the color filter by an optical adhesive, and the coverplate completely covers the planar area and covers at least the part of the transitional bending sub-area.
6: The display device according to claim 5, wherein a thickness of the optical adhesive is greater than a maximum thickness of the protective layer on the transitional bending sub-area.
7: The display device according to claim 5, wherein the protective layer further covers at least a part of the extending bending sub-area.
8: The display device according to claim 5, wherein the protective layer is a UV glue.
9: The display device according to claim 5, further comprising: a support layer, wherein one side of the support layer supports the planar area and the transitional bending sub-area, and another side of the support layer away from the planar area supports the extending bending sub-area.
10: The display device according to claim 9, wherein the support layer comprises a first backplate disposed on one side of the planar area and the transitional bending sub-area away from the coverplate and a second backplate disposed on one side of the extending bending sub-area away from the protective layer.
11: The display device according to claim 10, wherein a foam is disposed between the first backplate and the second backplate.
12: The display device according to claim 11, wherein a stiffener plate is disposed between the foam and the second backplate.
13: The display device according to claim 12, wherein a heat dissipation layer is disposed between the foam and the stiffener plate.
14: The display device according to claim 5, wherein a distance between one side end of the protective layer adjacent to the planar area and an initial bending position of the flexible screen body is greater than a first default value, wherein the first default value is greater than or equal to 0, and the initial bending position is a jointed position of the bending sub-area and the transitional bending sub-area.
15: The display device according to claim 14, wherein a distance between one side end of the protective layer adjacent to the extending bending sub-area and a terminal bending position of the flexible screen body is greater than a second default value, wherein the second default value is greater than or equal to 0.
16: The display device according to claim 1, wherein the planar area comprises a plurality of red sub-pixel units, green sub-pixel units, and blue sub-pixel units, the color filter comprises a plurality of color resists and a black

matrix disposed among the color resists, and the color resists comprise red color resists, green color resists, and blue color resists; and wherein the red color resists are disposed corresponding to the red sub-pixel units, the green color resists are disposed corresponding to the green sub-pixel units, and the blue color resists are disposed corresponding to the blue sub-pixel units.
17: The display device according to claim 5, wherein the optical adhesive is an optically clear adhesive (OCA).
18: The display device according to claim 13, wherein a material of the heat dissipation layer is a metal material or graphite, and the metal material comprises one or more combinations of copper foil, aluminum foil, or stainless steel foil.
19: The display device according to claim 9, further comprising a driving unit disposed on one surface of the extending bending sub-area away from the support layer.