CLAIMS

1. A light projecting device comprising:

a flat plate-shaped light guide plate and a light source body that introduces light from a side peripheral surface of the light guide plate to the inside thereof, wherein

a plurality of concave parts are formed on a firstone plate surface of the light guide plate, and being so configured that

the light guide plate is configured to reflect and spread the light entering the light guide plate is reflected at the concave parts, emit the light while spreading and is emitted to the outside from a second the other plate surface of the light guide plate, and then irradiate the light is irradiated to a predetermined object such that, and the object can be observed through the light guide plate from a side of the firstone plate surface of the light guide plate,

wherein theeach surface of each of the concave parts is formed with a smooth concave curved surface, and

a tangential angle that is an angleθ is formed between a tangential line at an opening edge of the concave part and the plate surface is, whereby the tangential angle θ is set to be greaterless than or equal to 585° and less than or equal to 75° in a cross-sectional shape of the concave part cut by a plane that is both perpendicular to the plate surface and passing through a center of a recess of the smooth concave curved surface of the concave part.

2. The light projecting device described in claim 1, wherein the tangential angle θ is less than or equal to 75°.

3. The light projecting device described in claim 1, wherein the tangential angle θ is greater than or equal to 55°.

24. The light projecting device described in claim 1, wherein the concave part is in a partially concaveshaped like a portion of a sphere shape.

3~~5~~. The light projecting device described in claim 1, wherein the concave part has an opening diameter of greater than or equal to 0.02 mm and less than or equal to 0.2 mm.

4~~6~~. The light projecting device described in claim 1~~5~~, wherein a pitch between adjacent concave parts is greater than or equal to twice and less than or equal to five times the opening diameter of the concave part.

5~~7~~. A light projecting device comprising:

a plate-shaped light guide plate and a light source body that introduces light from a side peripheral surface of the light guide plate to the inside thereof, wherein

a plurality of concave parts are formed on a first~~one~~ plate surface of the light guide plate, ~~and being so configured that~~

the light guide plate is configured to reflect and spread the light entering the light guide plate ~~is reflected~~ at the concave parts, emit the light ~~while spreading and is emitted~~ to the outside from the other plate surface of the light guide plate, and then irradiate the light ~~is irradiated~~ to a predetermined object such that~~, and~~ the object can be observed through the light guide plate from a side of the first~~one~~ plate surface of the light guide plate, ~~wherein~~

the concave part is a partially ~~shaped like a portion of a sphere and has a~~ concave spherical surface with a center angle of greater than or equal to 110° and less than or equal to 1~~8~~0°.

~~8. The light projecting device described in claim 7, wherein~~

~~the center angle is greater than or equal to 100° and less than or equal to 170°.~~

~~9. The light projecting device described in claim 7, wherein~~

~~the center angle is greater than or equal to 110° and less than or equal to 150°.~~

6~~10~~. An inspection system comprising the light projecting device of claim 1 and a camera arranged on the~~a~~ side of the first plate~~one~~ surface of the light guide plate, wherein ~~and being~~

~~so configured that~~ the object arranged on a side of the second~~other~~ plate surface of the light guide plate can be inspected by taking a picture with the camera through the light guide plate.