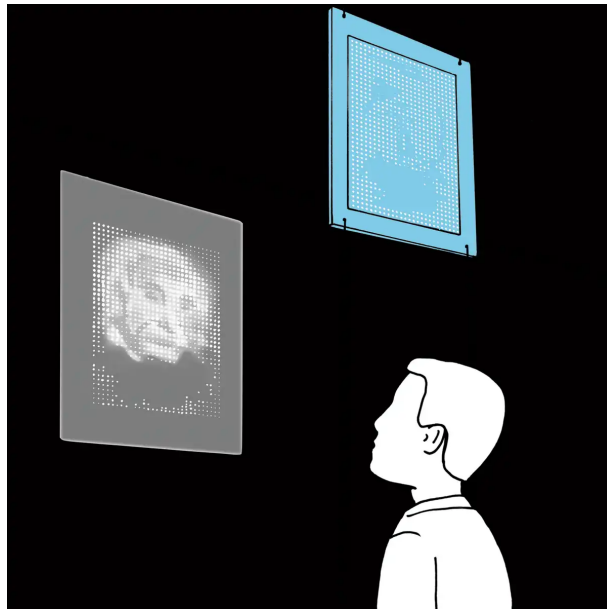


Hole Portrait

Can you make out what or who is depicted on the perforated metal screen above you?



Look at the perforated metal screen above you.
Compare this with its shadow on the wall.

Even when you already know the solution, you cannot recognise any picture on the plate. But when the plate is illuminated, the holes give rise to a set of fuzzy shadows. These blur into a relatively distinct picture: Albert Einstein comes into view.

The sharpness of the edges of shadows depends on the size of the source of light. A point source produces a sharp-edged shadow: This is because any point on the screen either receives all of the light beam or none at all. With an extended light source, light from the various parts of the source meet the object at different angles. Right behind the object, there is a region of full shadow, but moving towards its edge, gradually more and more of the light source becomes exposed, i.e. the shadow edge is fuzzy.