CLAIMS

1. An end effector comprising:

a hand;

a holder provided on the hand and configured to hold a first substrate;

a mapping detector provided at a distal end portion of the hand, the mapping detector being configured to face a second substrate stored in a cassette and detect presence or absence of the second substrate;

a light emitter, which the hand is provided with and which is configured to convert an electrical input to generate detection light;

a light receiver, which the hand is provided with and which is configured to receive the detection light and convert the detection light into an electrical output; and

an optical path formed in the hand, through which the detection light emitted from the light emitter passes to be incident on the light receiver, wherein

the optical path is formed such that the detection light is blocked by the first substrate held by the holder, and such that the detection light is blocked by the second substrate detected by the mapping detector~~.~~; and wherein

the optical path includes:

a first section formed such that if the first substrate is in a normal condition and is set on the holder properly, the detection light is blocked by the first substrate, and otherwise, the detection light is not blocked in the first section; and

a second section formed such that if there is the second substrate stored in the cassette, the detection light is blocked by an outer peripheral portion of the second substrate, and otherwise, the detection light is not blocked in the second section; and wherein

the first section and the second section are provided in series.

~~2. The end effector according to claim 1, wherein~~

~~the optical path includes:~~

~~a first section formed such that if the first substrate is in a normal condition and is set on the holder properly, the detection light is blocked by the first substrate, and otherwise, the detection light is not blocked in the first section; and~~

~~a second section formed such that if there is the second substrate stored in the cassette, the detection light is blocked by an outer peripheral portion of the second substrate, and otherwise, the detection light is not blocked in the second section.~~

~~3. The end effector according to claim 2, wherein~~

~~the first section and the second section are provided in series.~~

42. The end effector according to ~~any one of claims 1 to 3~~claim 1, wherein

the light emitter and the light receiver include a light-emitting element and a light-receiving element, respectively, and

the light-emitting element and the light-receiving element form a transmissive optical sensor.