CLAIMS

1. A projection exposure device that forms a prescribed pattern of a photomask on a workpiece by aligning the prescribed pattern at a prescribed position on the workpiece and projecting exposure light from a light source, having:

a sliding table composed by forming two first and second areas on the uppermost surface of sites where the workpieces are placed so as to enable two workpieces to be placed simultaneously without overlapping, and being able to alternately slide in opposite directions and temporarily stop at a prescribed first stopping position and second stopping position at the endpoint in each direction,

two first loaders able to respectively and individually load and unload the workpieces located within each of the areas of the sliding table,

a first position detection means arranged directly above the first area on the sliding table so as to detect the loaded position of the workpiece placed within the first area when the sliding table has temporarily stopped at the prescribed first stopping position,

a second position detection means arranged directly above the second area on the sliding table so as to detect the loaded position of the workpiece placed within the second area when the sliding table has temporarily stopped at the prescribed second stopping position,

a light source, a photomask and a projection optical system arranged directly above the second area on the sliding table that is able to project exposure light onto the workpiece placed in the second area when the sliding table has temporarily stopped at the prescribed first stopping position and arranged directly above the first area on the sliding table that is able to project exposure light onto the workpiece placed in the first area when the sliding table has temporarily stopped at the prescribed second stopping position,

a means that aligns the position of the projection exposure pattern with the position of the workpiece for which position has been detected, and

a control unit that controls sliding and stopping at each stopping position of the sliding table, loading and unloading of the workpiece in each area by the first loader, detection of the loaded position of the workpiece in each area by the position detection means, and projection of exposure light onto the workpiece in each area while aligning the position of the projection exposure pattern with the position of the workpiece for which position has been detected by the light source, the photomask and the projection optical system; wherein,

the means that aligns the position of the projection exposure pattern with the position of the workpiece for which position has been detected includes a drive means that linearly moves the photomask in at least one of the vertical (Y), horizontal (X) and height (Z) directions and a tilt drive means that changes the angle of the photomask relative to exposure light from the orthogonal plane,

the control unit carries out parallel processing consisting of detecting the loaded position of the workpiece placed in the first area with the position detection means when exposure light is projected onto the workpiece loaded in the second area by the light source, photomask and projection optical system, and conversely detecting the loaded position of the workpiece placed in the second area with the position detection means when exposure light is projected onto the workpiece loaded in the first area by the light source, photomask and projection optical system.

2. The projection exposure device according to claim 1, wherein the projection exposure device is a projection exposure device that carries out stepping exposure of the single workpiece by projecting a projection exposure pattern in a plurality of shots.

3. The projection exposure device according to any of claims 1 or 2, wherein a means that aligns the position of the projection exposure pattern with the position of the workpiece for which position has been detected includes a drive means that linearly moves a stage arranged beneath the sliding table in at least one direction consisting of the vertical (Y), horizontal (X) and height (Z) directions.

4. The projection exposure device according to any of claims 1 or 2, wherein a means that aligns the position of the projection exposure pattern with the position of the workpiece for which position has been detected includes a drive means that linearly moves the projection optical system in at least one direction consisting of the vertical (Y), horizontal (X) and height (Z) directions.

5. A projection exposure method for forming a prescribed pattern on a workpiece by aligning the prescribed pattern of a photomask at a prescribed position on the workpiece and projecting exposure light from a light source using a projection exposure device having a sliding table composed by forming two first and second areas on the uppermost surface of sites where the workpieces are placed so as to be able to be placed simultaneously without overlapping, and being able to alternately slide in opposite directions and temporarily stop at a prescribed first stopping position and second stopping position at the endpoint in each direction; comprising:

(A) a step for sliding the sliding table and temporarily stopping in the first area at the prescribed first stopping position,

(B) a step for loading the workpiece in the first area of the sliding table,

(C) a step for detecting the loaded position of the workpiece in the first area,

(D) a step for sliding the sliding table again and temporarily stopping in the first area at the prescribed second stopping position,

(E) a step for projecting exposure light of a pattern on a photomask onto the workpiece in the first area while aligning the position of the projection exposure pattern with the position of the workpiece for which position has been detected,

(F) a step for unloading the workpiece on which projection exposure has been completed from the second area in parallel with the projection exposure processing of (E) when there is the workpiece in the second area of the sliding table on which projection exposure has been completed, and

(G) a step for switching from the first area of the prescribed first stopping position of the steps (A) to (F) to the second area of the prescribed second stopping position, carrying out the next cycle of processing, and alternately switching between the first area and second area for subsequent cycles,

wherein the step for projecting exposure light while aligning the position of the projection exposure pattern with the position of the workpiece for which position has been detected includes linearly moving the photomask in at least one of the vertical (Y), horizontal (X) and height (Z) directions and changing the angle of the photomask relative to exposure light from the orthogonal plane.