

## Title (en)

LENS ARRAY WITH A Laterally MOVABLE OPTICAL AXIS FOR CORPUSCULAR RAYS

## Title (de)

LINSENANORDNUNG MIT LATERAL VERSCHIEBBARER OPTISCHER ACHSE FÜR TEILCHENSTRAHLEN

## Title (fr)

SYSTEME DE LENTILLES PRESENTANT UN AXE OPTIQUE LATERALEMENT DEPLA ABLÉ CON U POUR UN RAYONNEMENT CORPUSCULAIRE

## Publication

**EP 1454334 A2 20040908 (DE)**

## Application

**EP 02804845 A 20021126**

## Priority

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## Abstract (en)

[origin: WO03052790A2] Disclosed is a lens array having a laterally movable axis for corpuscular rays, particularly for transmission from areas of an object surface onto the focal plane by means of electrons. The inventive array consists of a combined lens comprising a cylinder lens and a quadrupole lens provided with slit diaphragms which can be impinged upon by electric and/or magnetic fields. The optical axis of the quadrupole lens is oriented parallel to the axis of the cylinder lens and defines the optical axis of the projection, the position of which can be altered in relation to the axis of the cylinder lens. The quadrupole lens is in focus in the sector in which the cylinder lens is not in focus and is out of focus in the section in which the cylinder lens is in focus. The inventive combined lens can be operated as an immersion lens for projecting secondary electrons. The immersion field consists of at least two adjacent axially aligned fields. The first field lies between the object and the first slit diaphragm, and the second field lies between the first slit diaphragm and the second slit diaphragm. Both fields can be focused independently from each other. The potential difference between the object and the first diaphragm is comparatively small in relation to the potential difference between the first diaphragm and the second diaphragm, and the potential course between the object and the first diaphragm has to be approximately linear. The combined lens is brought into/out of focus by superposing the immersion field, the cylinder lens field, and the quadrupole field. Alternatively, the lens array can be used as a cathode lens for a photocathode with several homogenous adjacent emission areas.

## IPC 1-7

**H01J 37/153**

## IPC 8 full level

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## Citation (search report)

See references of WO 03052790A2

## Citation (examination)

- US 5412210 A 19950502 - TODOKORO HIDEO [JP], et al
- WO 0060632 A2 20001012 - UT BATTELLE LLC [US], et al
- US 5684360 A 19971104 - BAUM AARON WOLF [US], et al

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