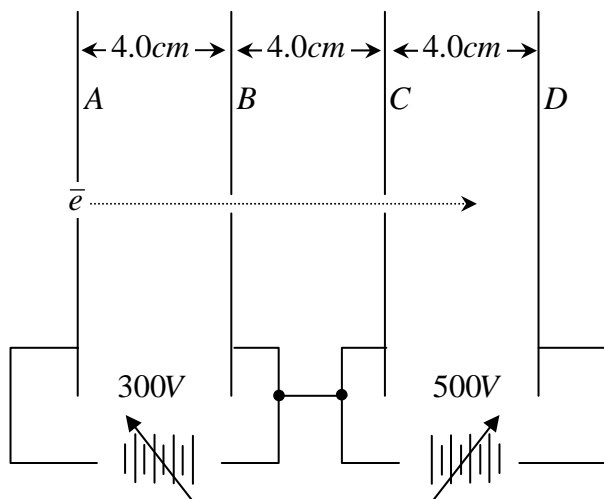


Four parallel plates are connected, in a vacuum, as shown



An electron, essentially at rest, drifts into the hole in the plate A and is accelerated to the right. Assuming that its vertical motion is negligible, it passes through hole B, goes on through hole C, and then continues moving towards plate D. Using the dimension and potential differences given in the diagram, calculate:

- The velocity with which the electron passes through hole B
- The velocity with which the electron passes through hole C. Explain your answer.
- The distance from plate D of the point where the electron comes to rest.
- The velocity with which it arrives back at plate A.

Ans:

- $1 \times 10^7 \text{ m/s}$
- $1 \times 10^7 \text{ m/s}$
- 1.6cm to the left
- $0 \text{ m/s}$