

PANTOGRAPH

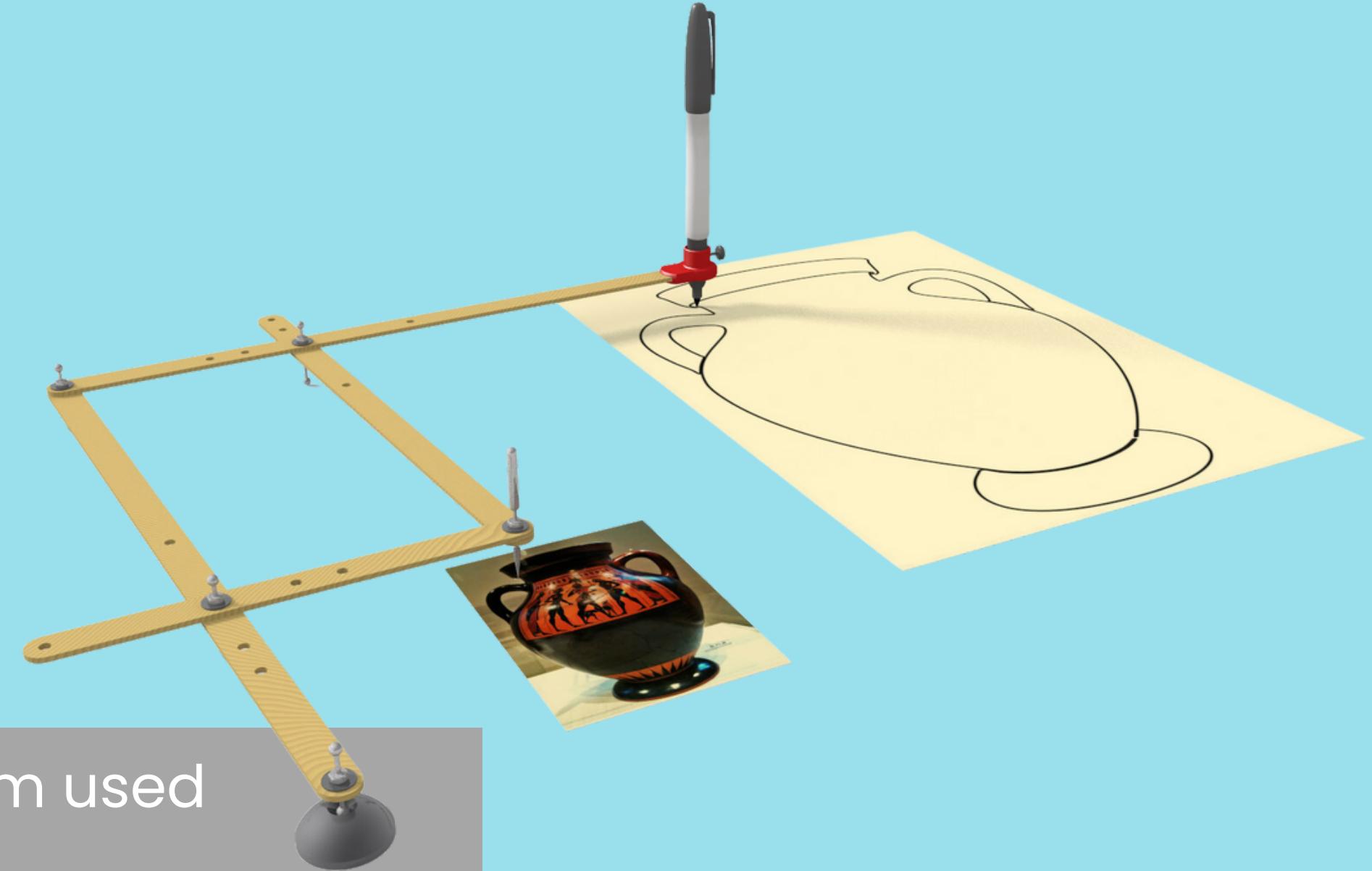
GROUP C

FRIDAY

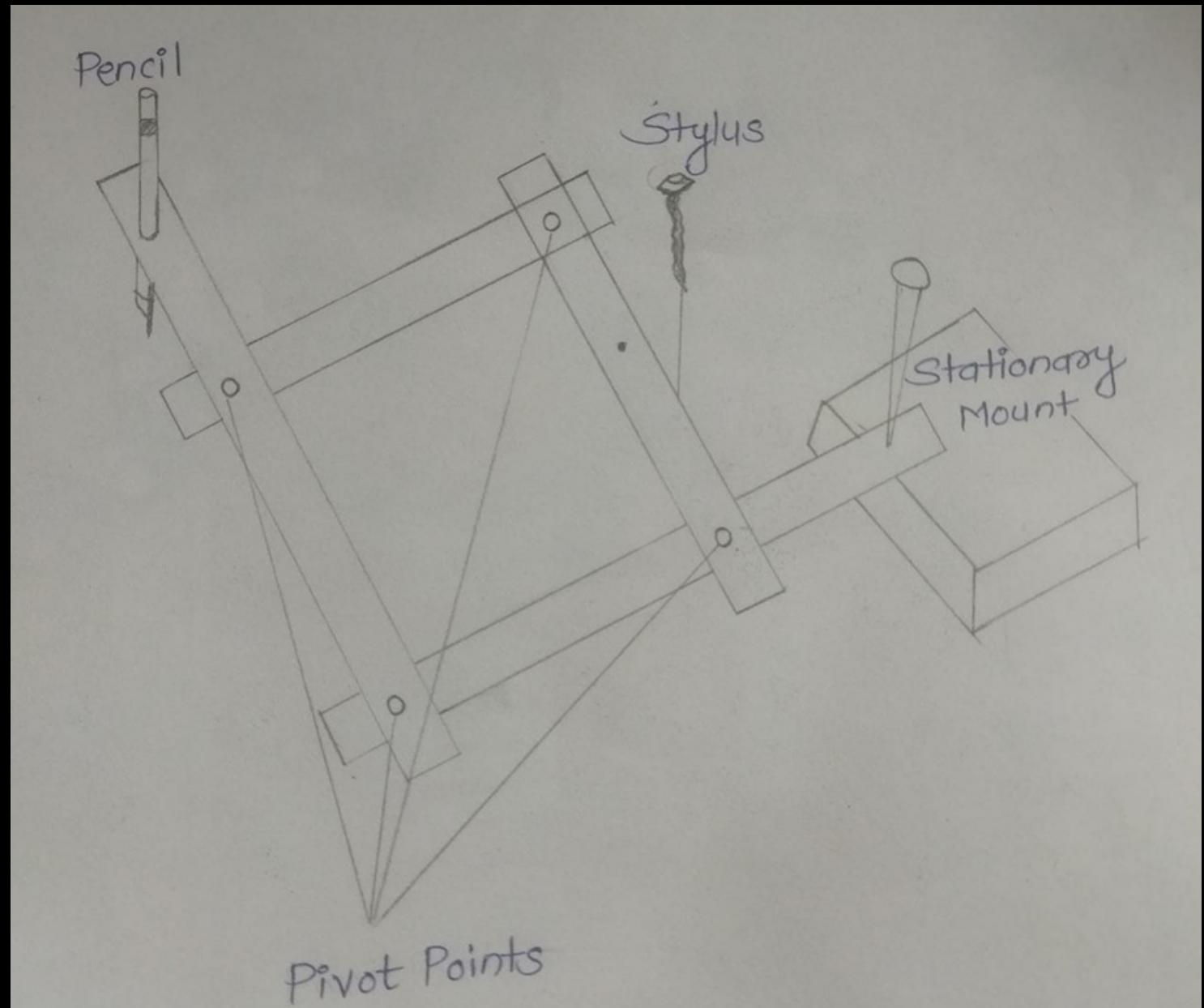


ABOUT PANTOGRAPH

A pantograph is a mechanical linkage system used for copying or scaling a drawing or object. It consists of a set of rigid links connected by joints, which can be adjusted to create a range of different shapes and sizes.



MECHANISM



**SCALE -1/4 TH OF ORIGINAL
DIMENSIONS**

ORIGINAL DIMENSIONS-

LENGTH OF LARGE LINK 37CM

AND SMALLER ONE 28CM

The longer set of links is typically fixed, while the shorter set is attached to a movable stylus. As the operator moves the stylus over the original, the linkage system causes the corresponding motion to be replicated at a different scale by the other end of the pantograph. This is achieved by carefully controlling the relative positions of the links, which can be adjusted to create a range of different shapes and sizes. This allows for precise, proportional duplication of the original image or object.

In the mechanism shown:

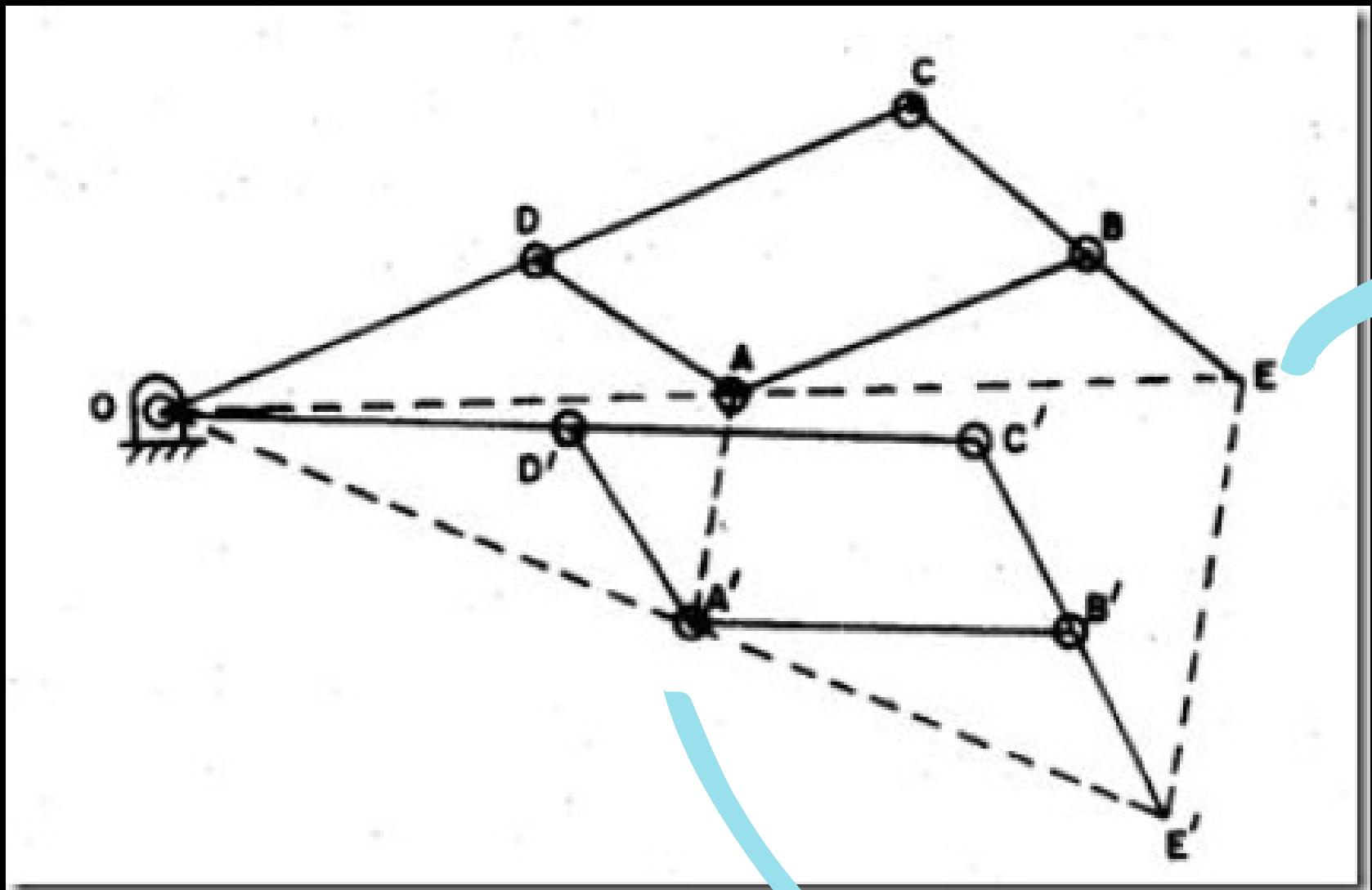
$$AB=CD$$

$$AD=BC$$

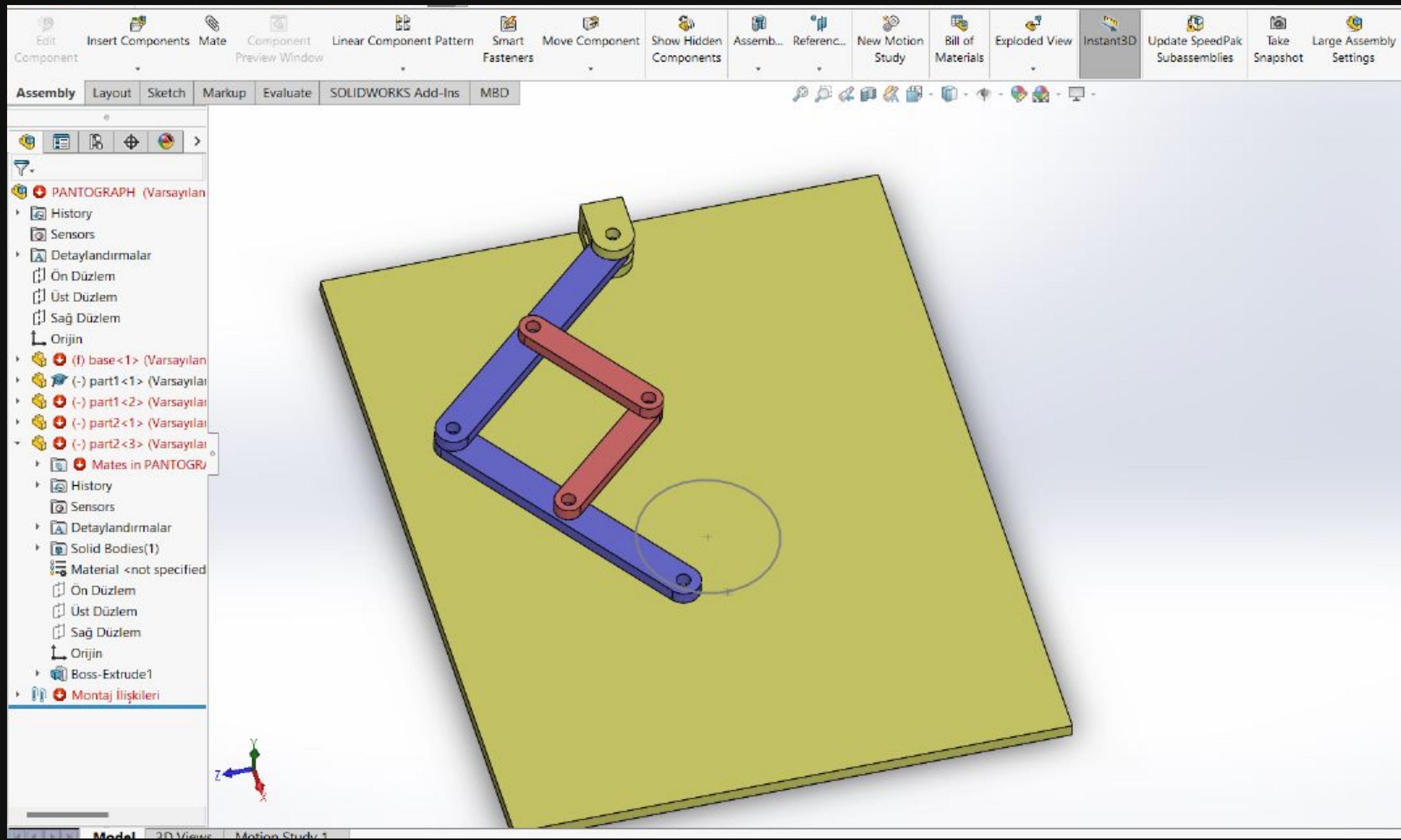
Therefore, OAE lie on a straight line

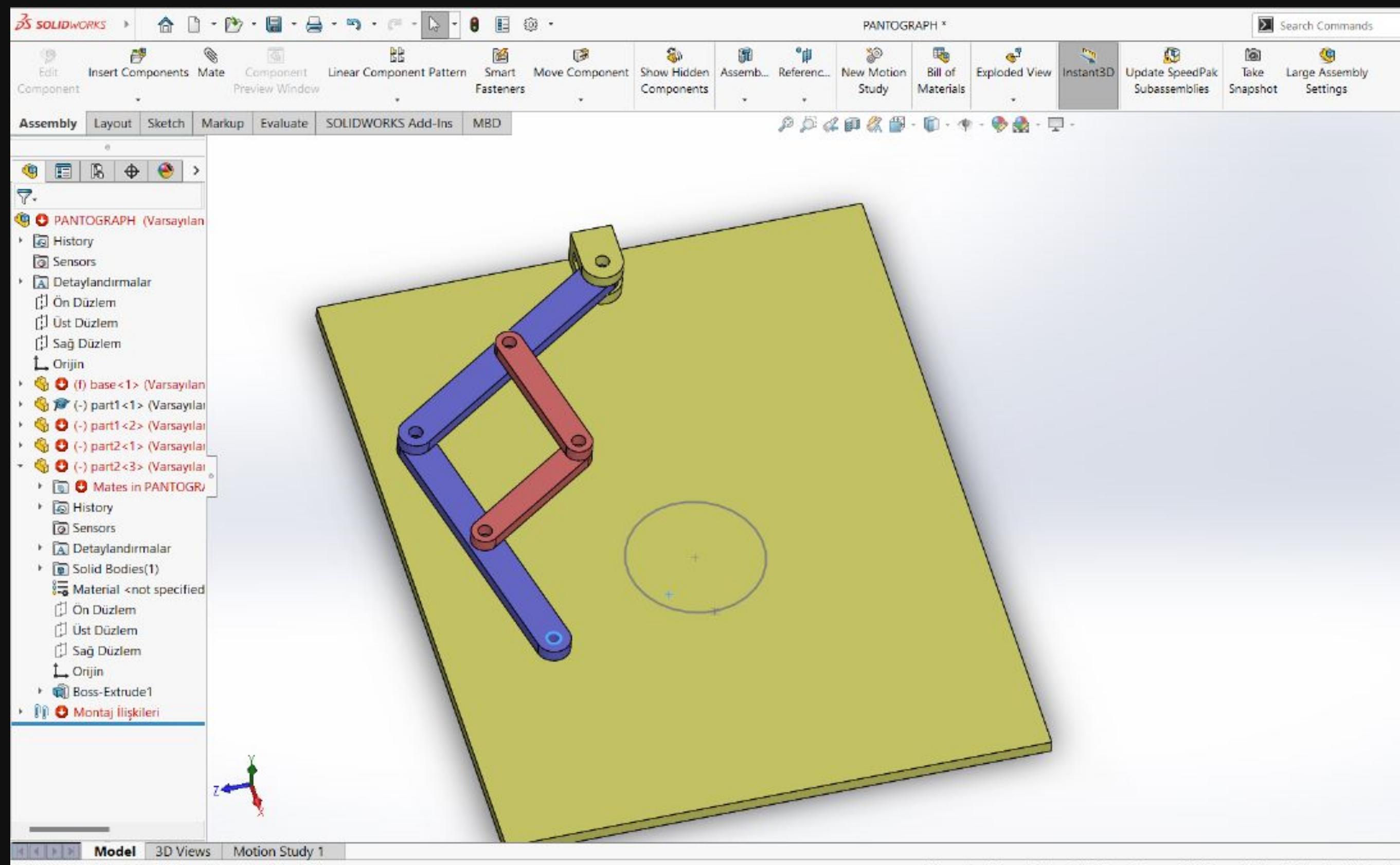
E moves to E'

When point A moves to A'



CAD MODEL

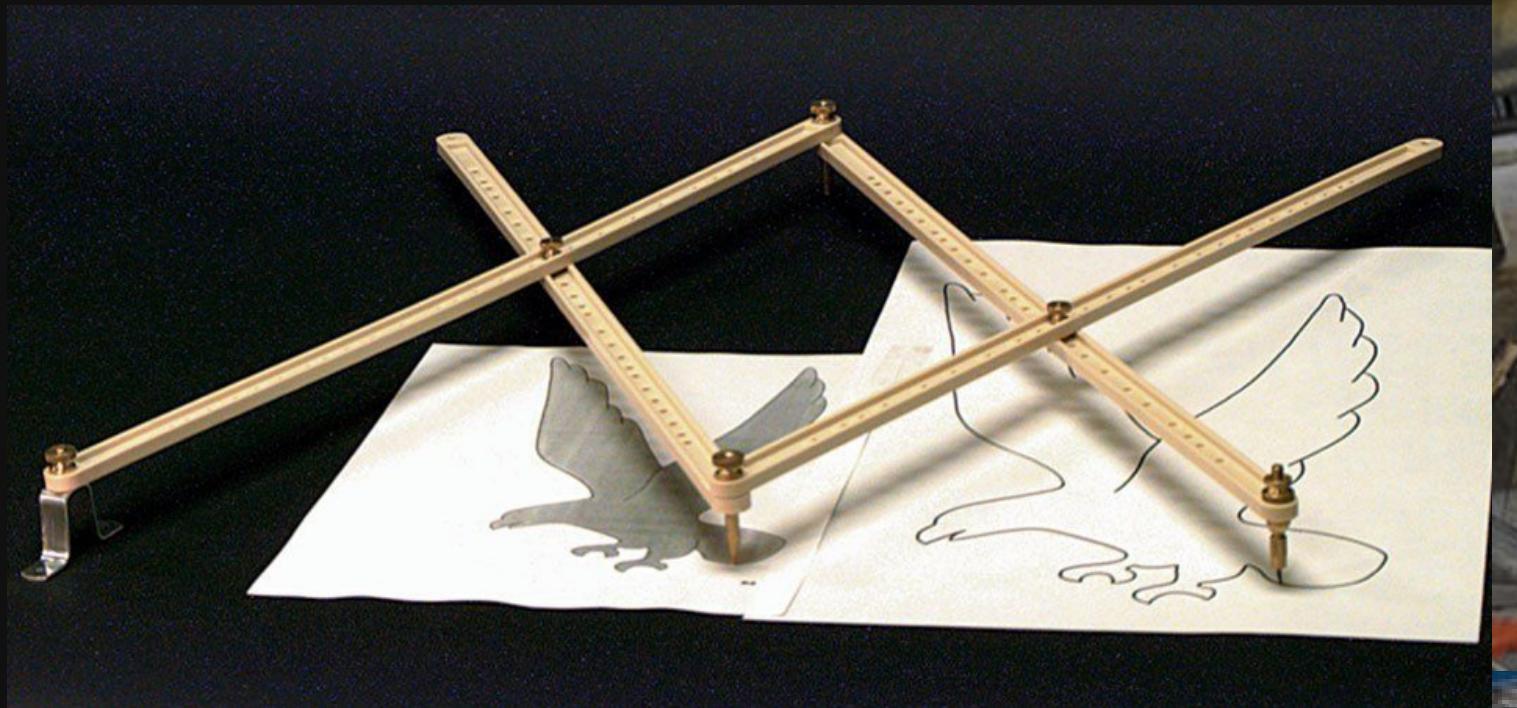




APPLICATIONS

Architectural and engineering drawings:

useful for creating blueprints and other technical drawings where accuracy is crucial.



Milling machines:

In milling machines, the pantograph is often used to produce intricate designs on metal or other materials.



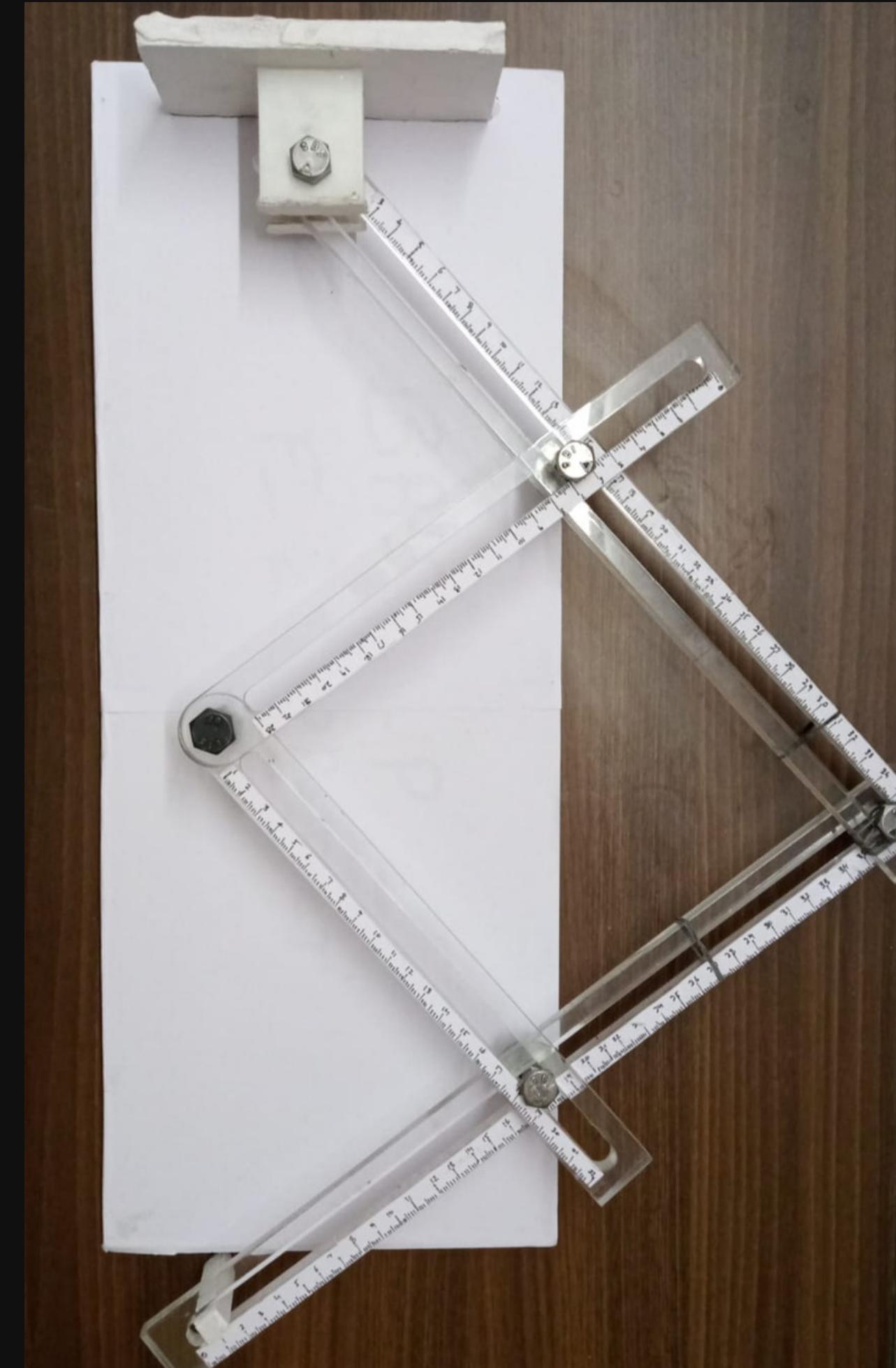
In trains :

an apparatus mounted on the roof of an electric train, tram or electric bus[1] to collect power through contact with an overhead line.



Material :

1. Polymer links
with slots
2. 3d printed base
and support
3. Nuts, bolts and
washers



REFERENCES:

- 1) <https://www.scribd.com/document/402660070/Pantograph-project-Report-docx>
- 2) <https://www.youtube.com/watch?v=ElsDYKTntU8&feature=youtu.be>
- 3) <https://youtu.be/MFt42sp5pQo>
- 4) <https://www.faqsclear.com/what-is-pantograph-and-its-applications/>