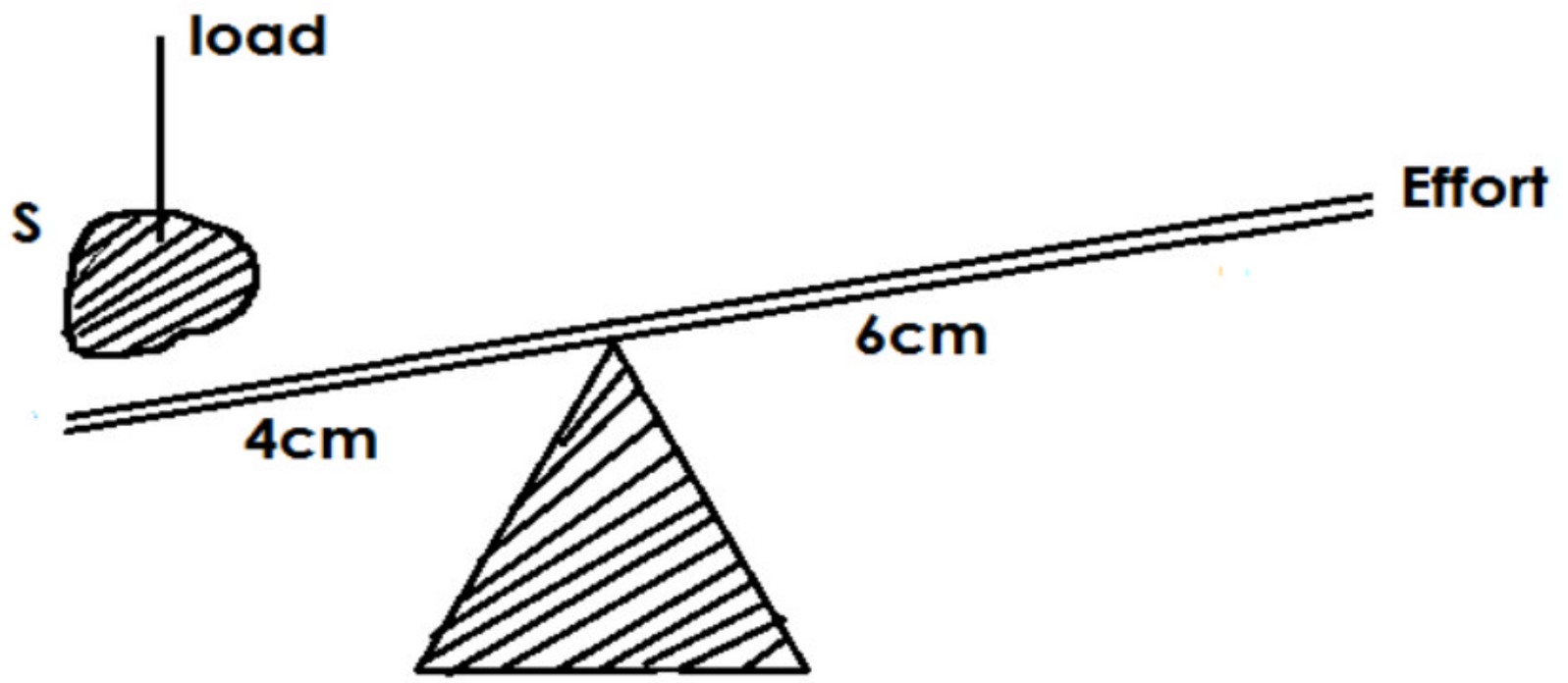
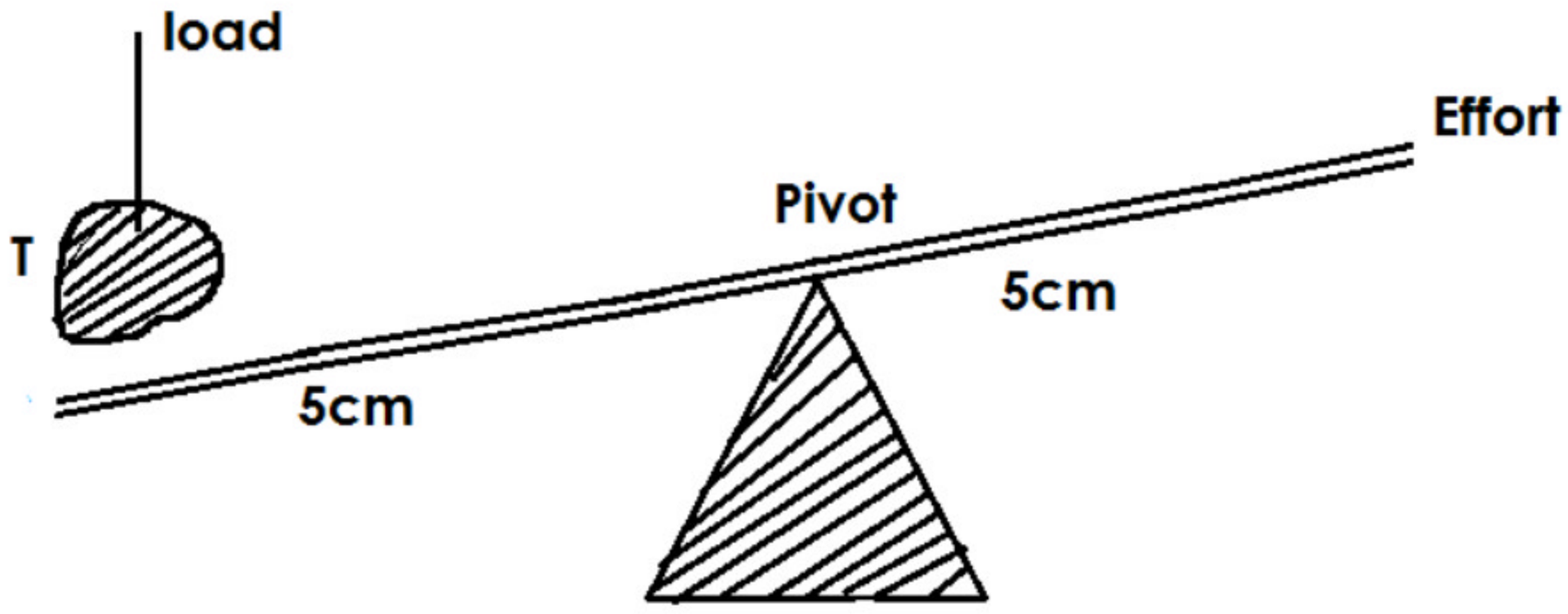




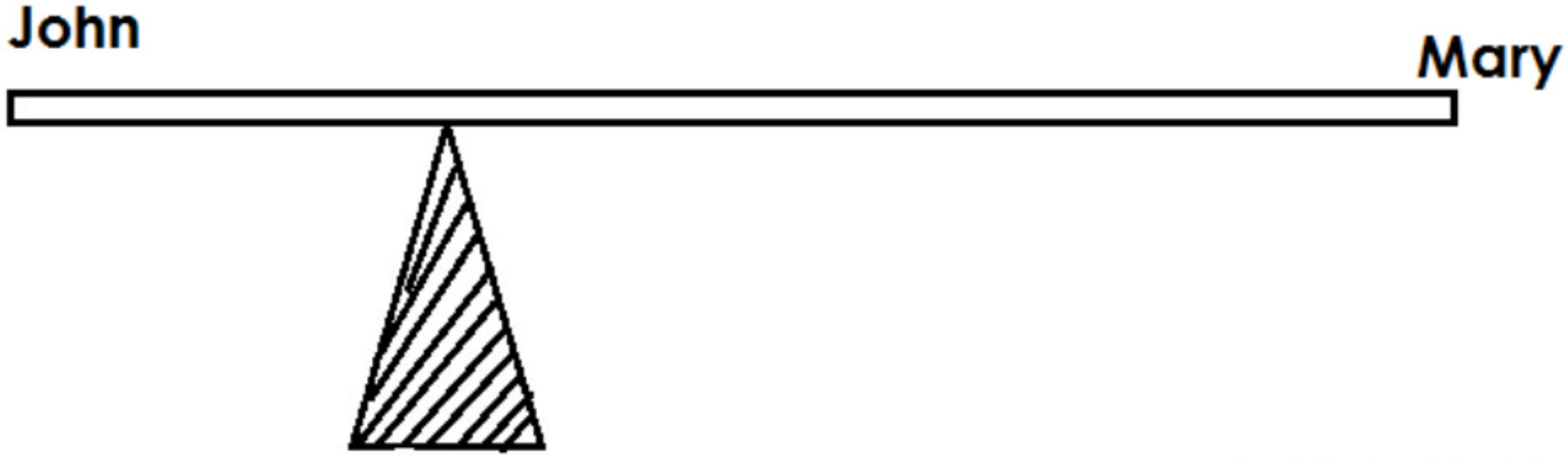
Qn. Which of the diagram above will help you to do work easily?

- Diagram S.

Qn. Give a reason to support the answer above.

- The effort arm is longer than the load arm.

Qn. John and Mary sat on a see-saw and they were at equilibrium as shown below:



a) Who is heavier?

- John is heavier.

b) Give a reason to support your answer above.

- John is seated nearer to the fulcrum and the nearer to the fulcrum, the heavier the object.

c) Who of the two is lighter?

- Mary is lighter.

d) Give a reason to support your answer above?

- Mary is seated far away from the fulcrum and the far away from the fulcrum, the lighter the object.

Classes of levers

Qn. Identify the three classes of levers.

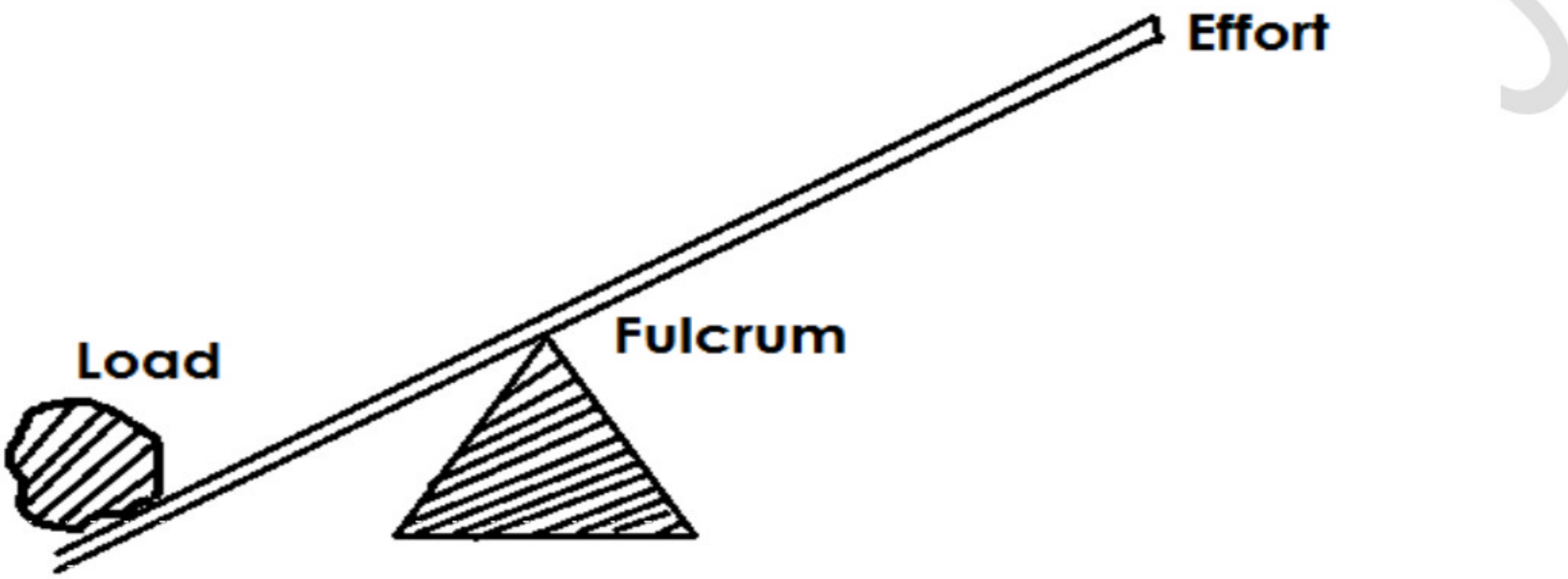
- First class levers.
- Second class levers
- Third class levers

i) First class levers.

Qn. What are first class levers?

- First class levers are machines where the pivot is in between the load and the effort.

(L.P.E) OR (E.P.L)



Note:

- In the first class, the effort arm is longer than the load arm.

Qn. State the advantage of using machines in the first class levers.

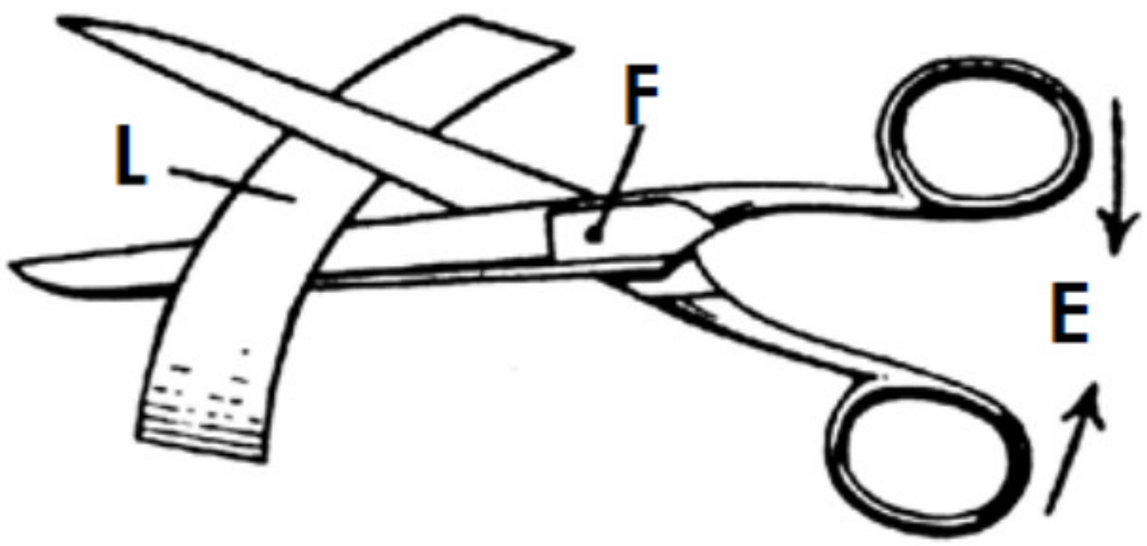
- Less effort is used.

Qn. How do first class levers simplify work?

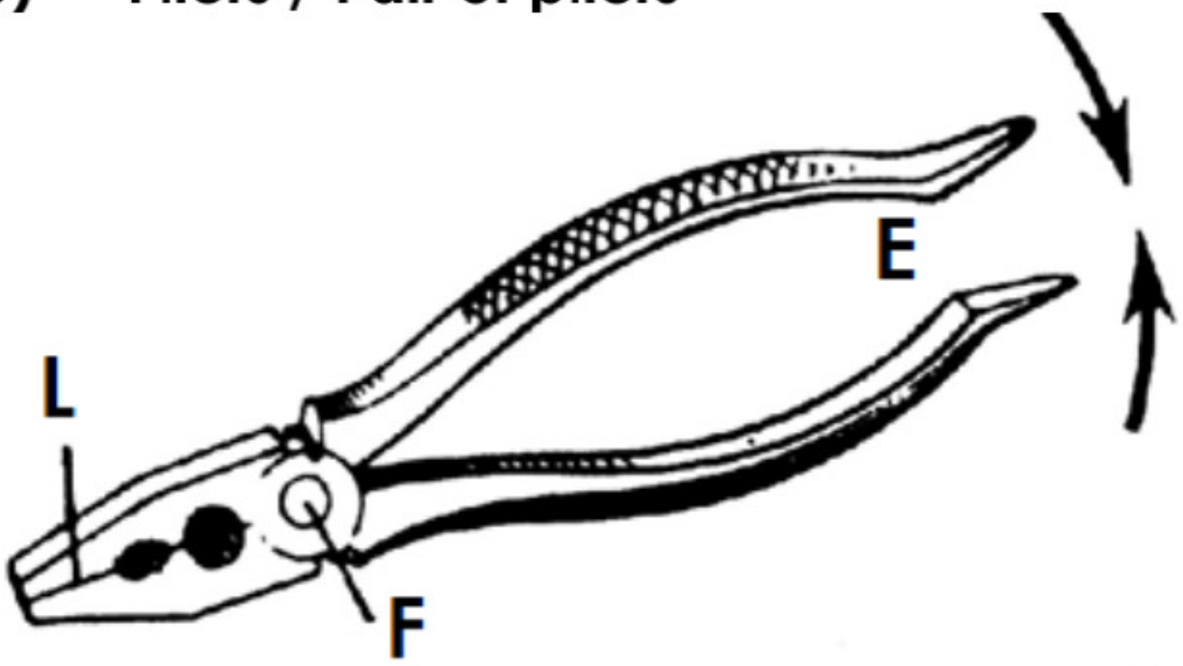
- The load and effort move in different directions.
- By increasing the effort arm and reducing the load arm.

Qn. Give the examples of machines in the first class.

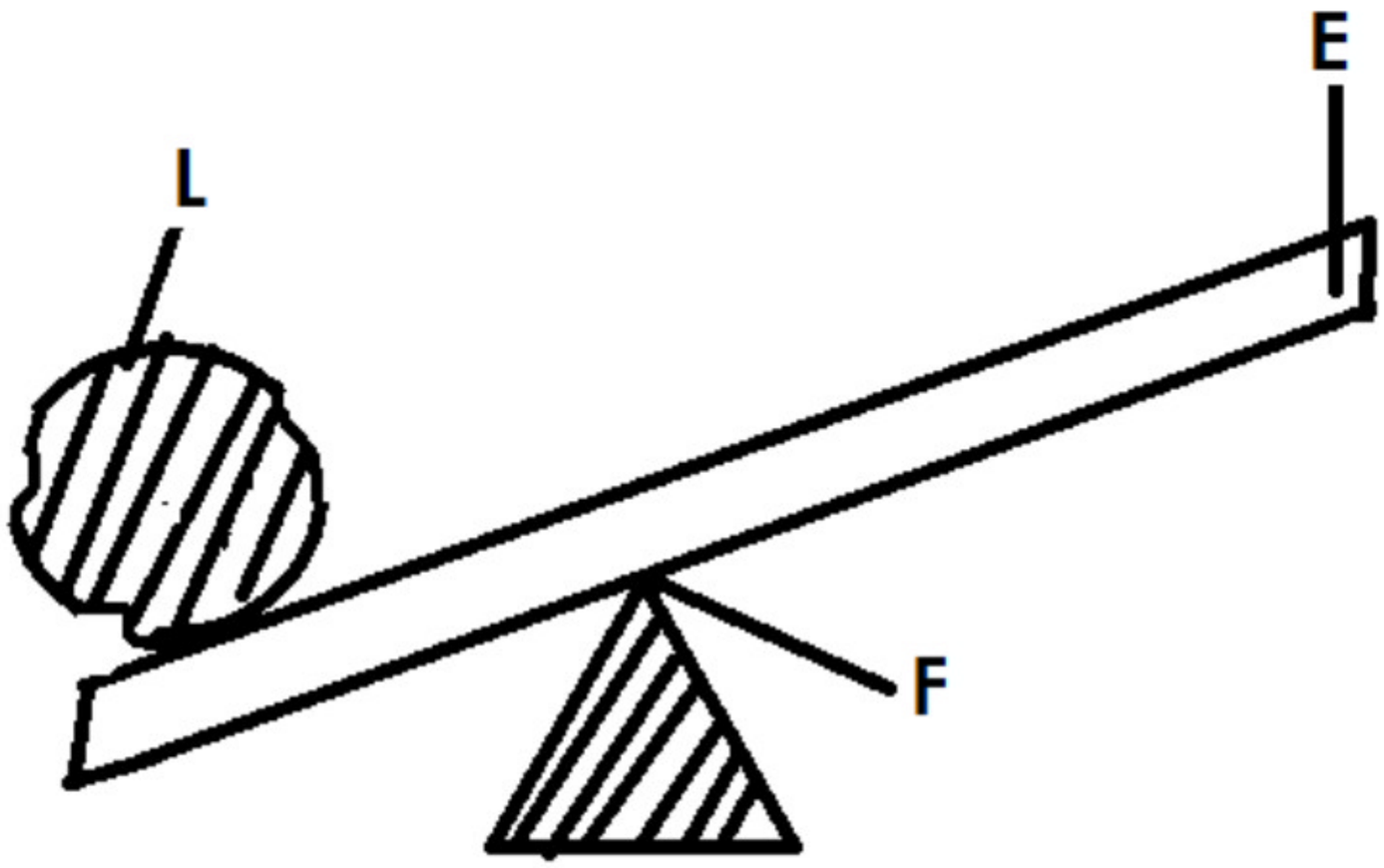
a) Pair of scissors.



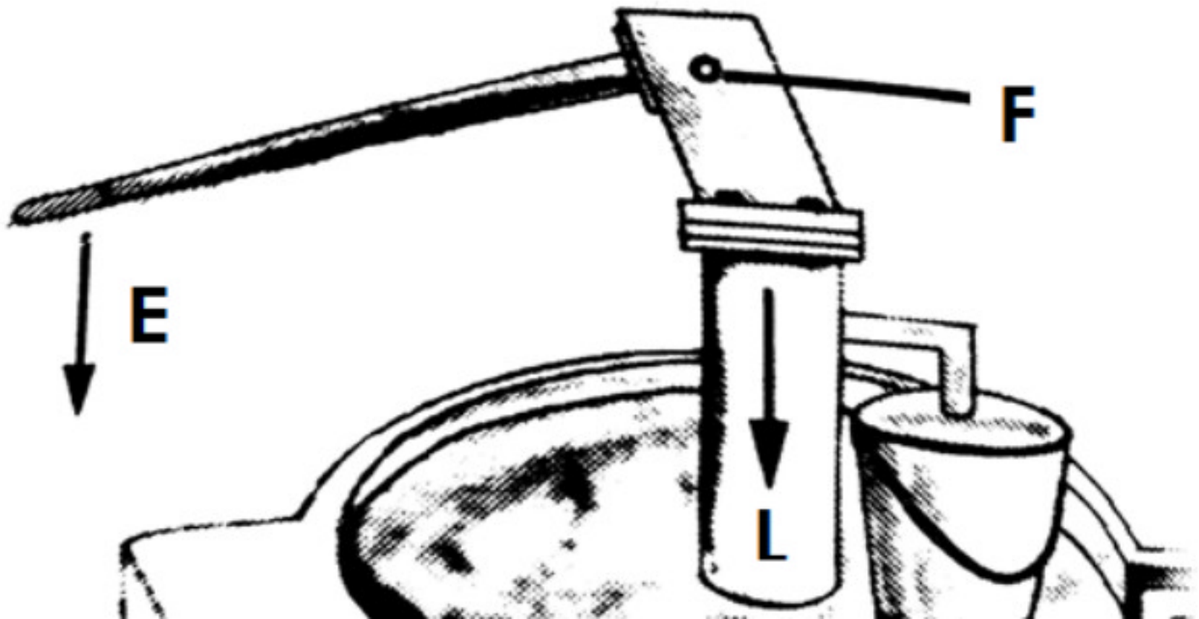
b) Pliers / Pair of pliers



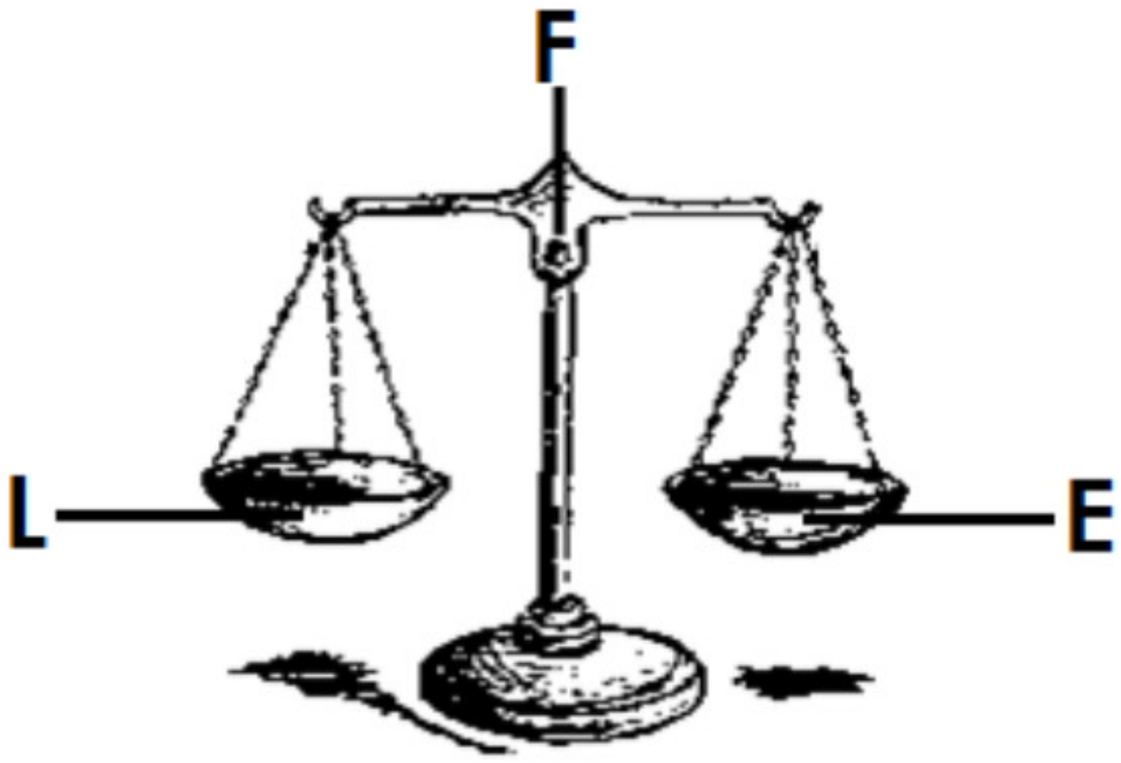
c) A crow bar



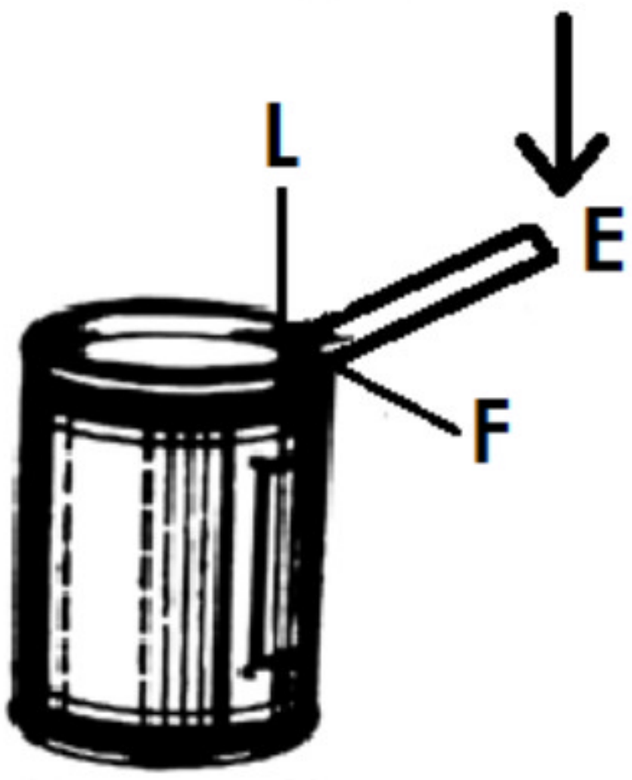
d) A borehole / water pump



h) Weighing scale



i) Lid opener

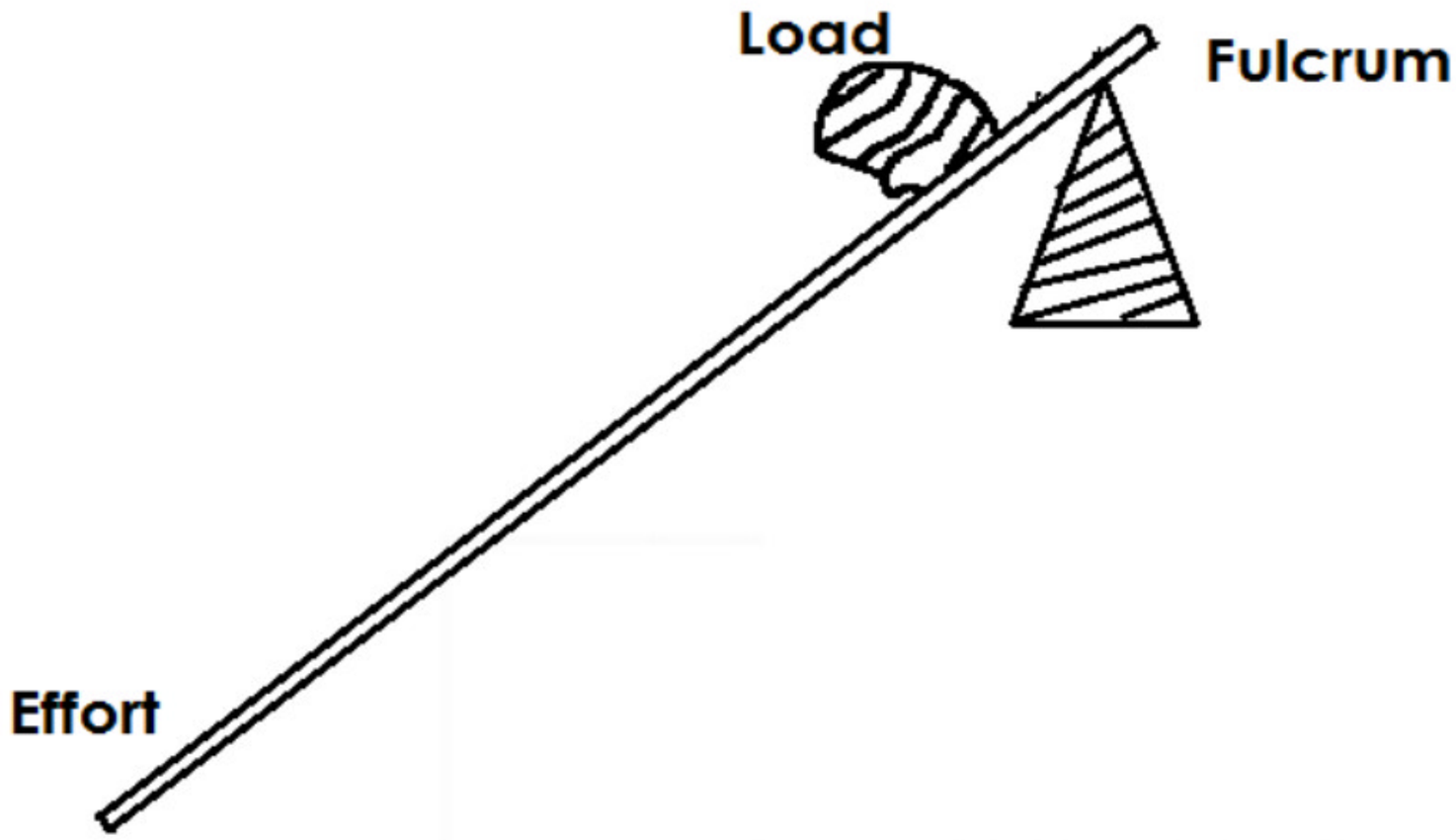


2. Second class levers

Qn. What are second class levers?

- Second class levers are levers in which the load is in between the pivot or fulcrum and the effort.

(ELF OR FLE)



Note:

- In the second class levers, the load is closer to the fulcrum than the effort.

Qn. State the advantages of using second class levers.

- Less effort is used compared to the load.

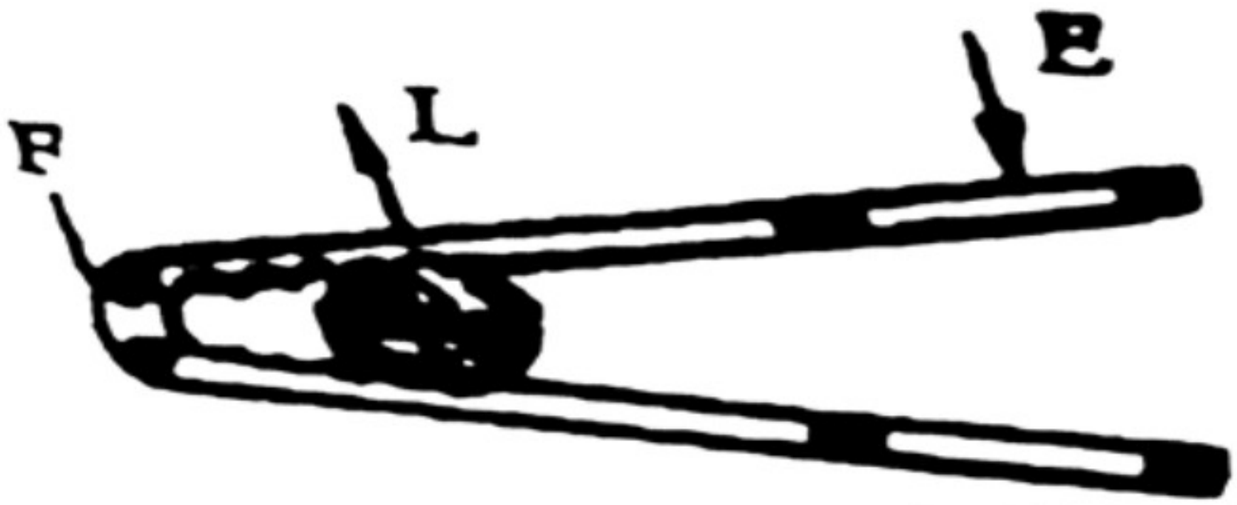
Qn. How do second class levers simplify work?

- By making the load and effort move in the same direction.

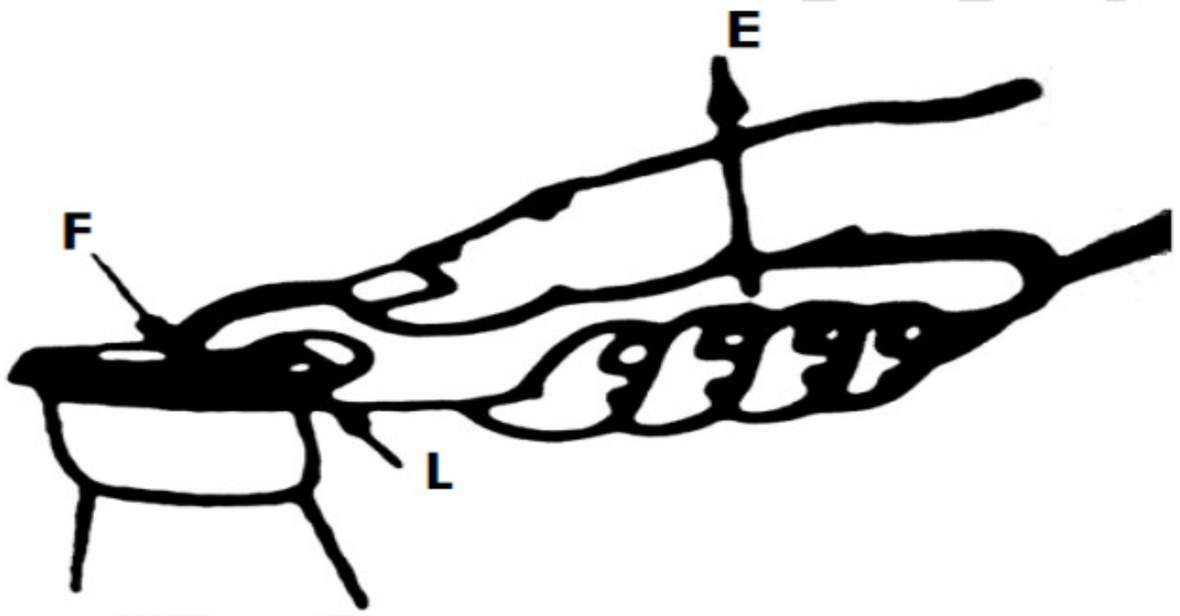
Qn. Give examples of machines in the second class levers.

a) A wheel barrow

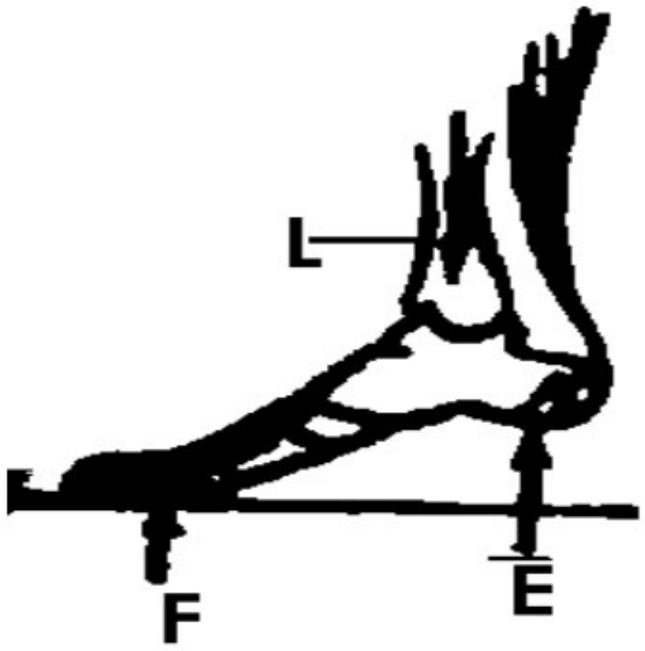
b) Nut cracker



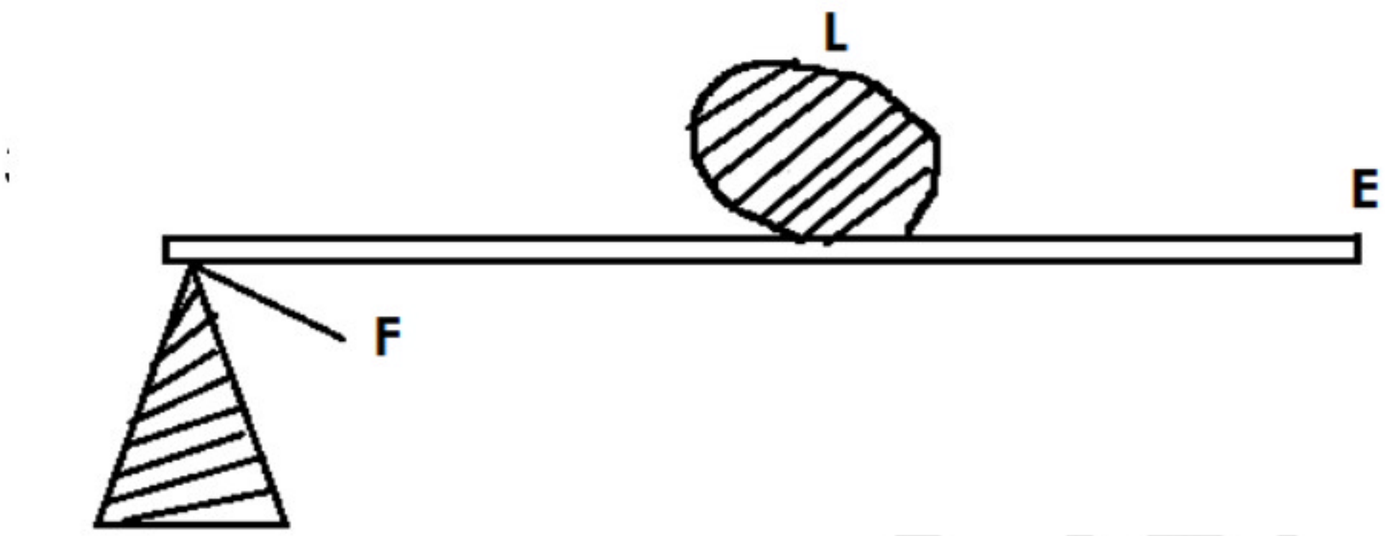
c) Bottle opener



d) Human foot



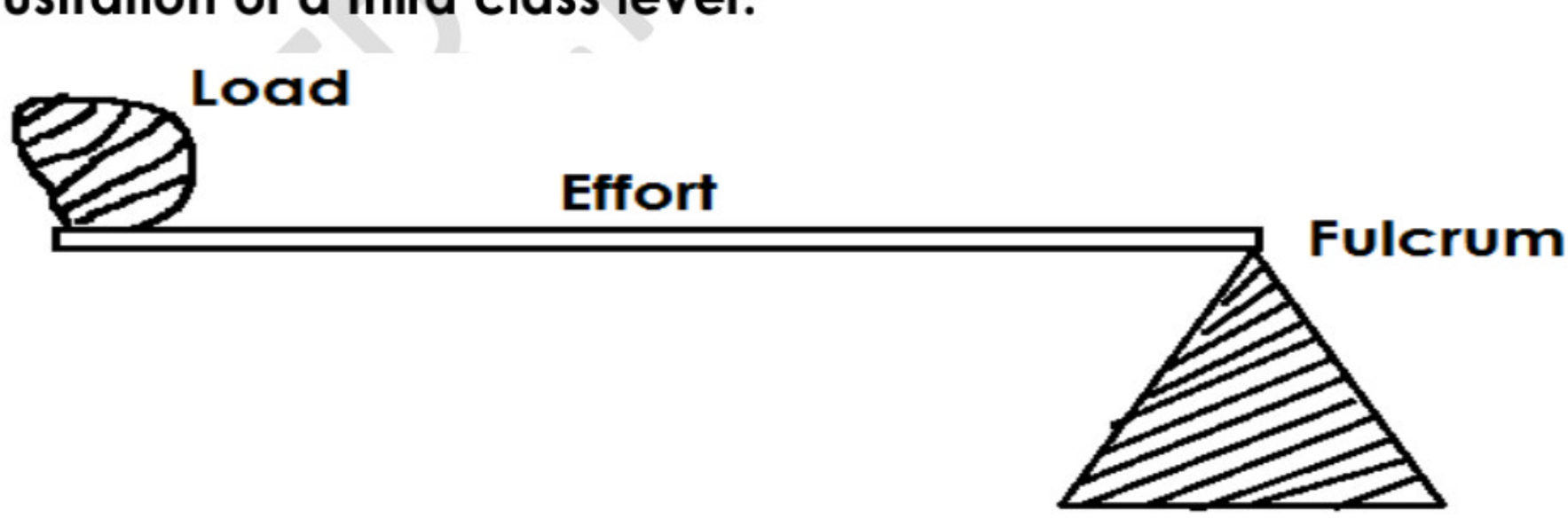
e) **Craw bar**



Qn. What are third class levers?

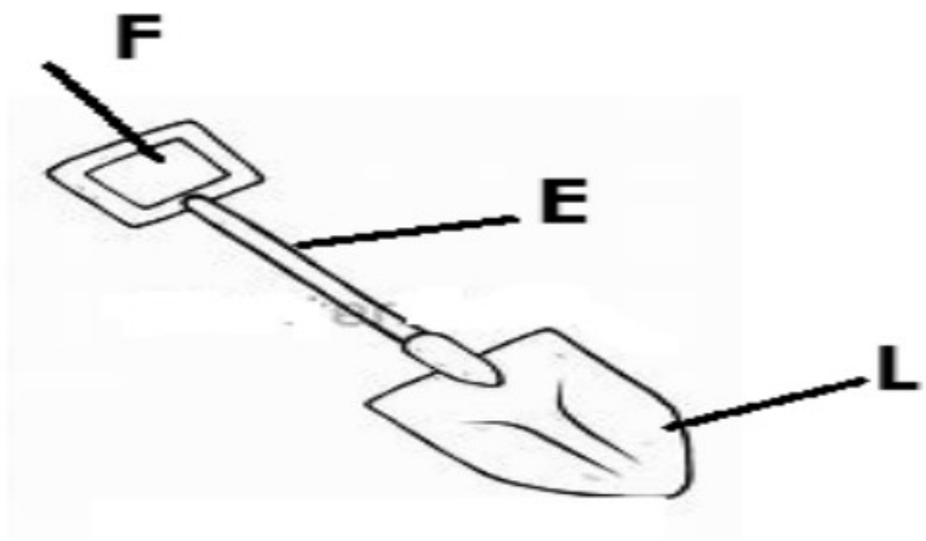
- Third class levers are levers where the effort is in between the pivot and the load. (LEP) or (PEL)

Illustration of a third class lever.

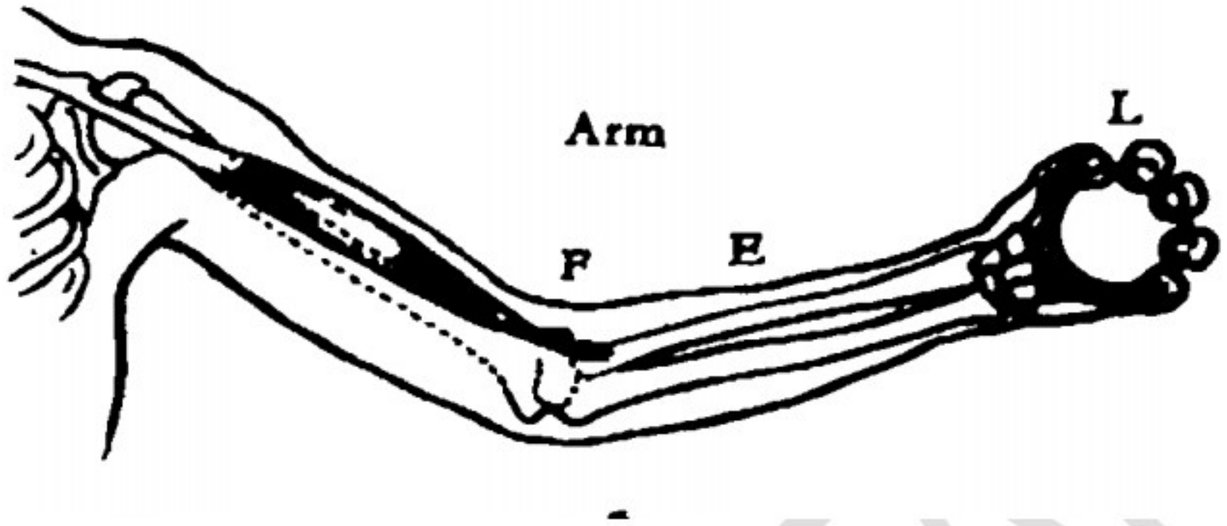


Qn. Give examples of machines in the third class levers.

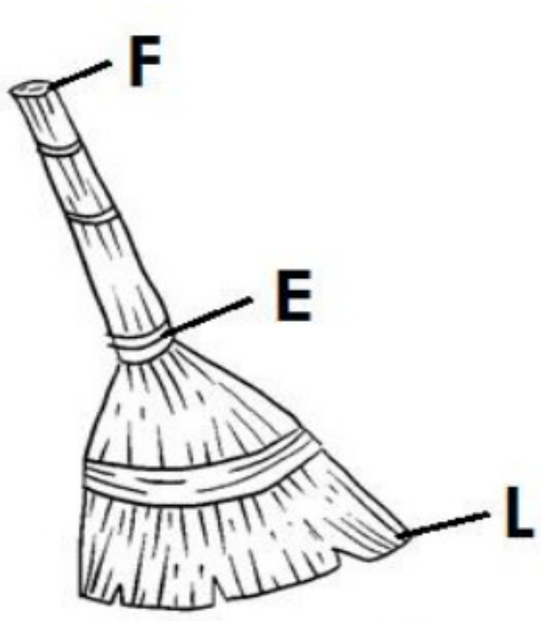
a) Spade



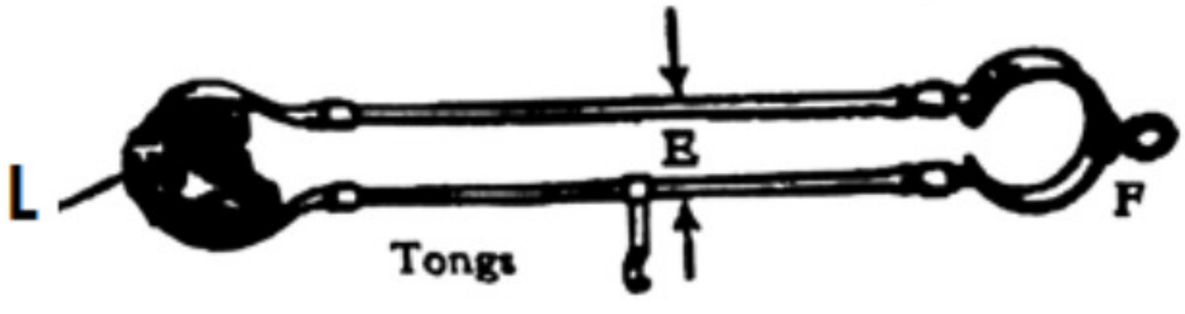
b) Human arm



c) Broom



d) Pair of tongs (sugar tongs)



e) A fishing rod