EXPERIMENT – 1

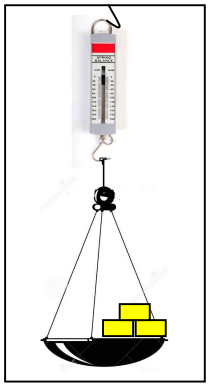
LIMITING FORCE

Aim : To find the limiting force that can be beared by a string.

Required : Spring balance, light strings of same substance (threads)-2, Weight hanger, weights, pan for spring balance, Sand

Description : If a body is suspended by a string, the gravitational force acts on the body and pull down. But the body does not fall down because it is supported by the string.

The supported force in the string which is opposite to the gravitational force is called Tension in the string.



Procedure:

1. Tie a light string to the fixed support and the tie the other end with the weight hanger consists of 50 g.
2. Add additional 50 g weight to the hanger. And continue the same until the string is broken.
3. Note down the weight (x) where the string is broken.
4. Suspend spring balance to a support.
5. Tie the light string at the end of the balance and at the other end suspend the pan for spring balance.
6. Place the weights (x-100 grams) in pan.
7. Observe the reading in the spring balance.
8. Add a small amount of sand in the pan by observing the readings.
9. Do the same till the string is broken.
10. Note down the weight (W) where the string is broken.
11. It is the limiting weight that can be beared by the string.

Precautions :

- Tie the string carefully so the length of string is same in both situations.
- Observe the reading in the balance carefully where the string is broken.
- Place the weights in the pan slowly.

Result : The limiting force that can be beared by the given string is …….. gm.wt

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