

## **BEST OF SUBJECT CATEGORY AWARD PHYSICS – MUMBAI NATIONAL FAIR**

### **Life Saving Instruments**

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The model has been prepared with a view that in case of war earthquake of epidemics adequate number of staff is not available immediately. In such circumstances it is not easy to keep watch the saline bottle of any patient runs-out. Hence this model can warn 5 minutes before the saline runs out.

Within the limit of elasticity stress is directly proportional to strain. The work done in stretching the elastic spring is stored in the form of potential energy.

For elastic spring

$$F \propto X$$

$$F = KX$$

Where F is force and X is saline

If a saline bottle is suspended with a spring on a metallic plate, the metallic plate comes in contact with another metallic plate 5 minutes before the saline runs out, completing an electric circuit. An electric bell, and an electric bell etc are set in this circuit. The bell begins to sound and bulb glows indicating the patient whose saline is about to run out and the corresponding bulb in the control-room also glows up.

On the out-set I experimented with a 100 ml bottle and added a bulb in the circuit to indicate a particular patient.

The use of this equipment will not only bring a technical change in the medical world but also enable it to treat a large number of patients with a small staff and the lives of patients will be saved.