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Tuesday 19th Oct

Recorders

In order to quantify physiological events, it is necessary to record them. Graphic recording was introduced by Ludwig. In 1847 he invented the kymograph which remained the major physiological recording apparatus for virtually a hundred years.

The kymograph consists of a motor with a gearbox which drives a spindle at known rates. A drum covered with a sheet of smoked paper is clamped to the spindle and rotates against a lever attached to the preparation. Movements of the lever produce traces in the smoke which are then made permanent by dipping the paper in a solution of shellac. Like all recording systems, the kymograph has limitations, particularly in that it requires a mechanical signal and because of the inertia of the lever, fast moving events will not be accurately followed. However, it has the advantages that it is cheap, robust and simple to operate.

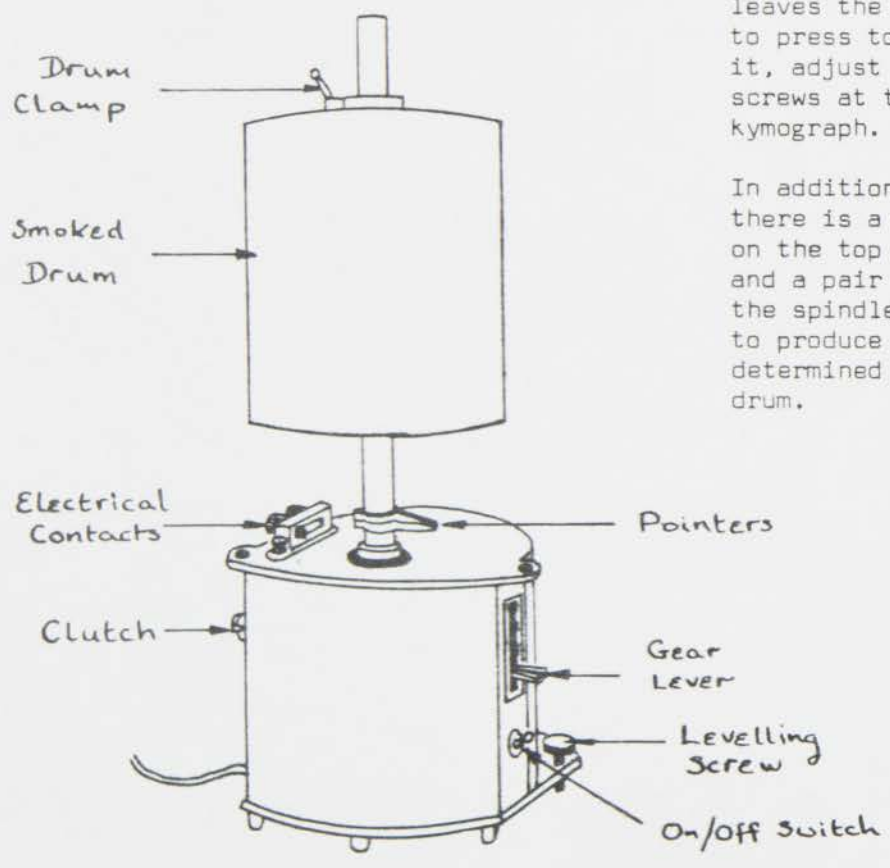
Use

On the right hand side is an on/off switch and a gear selection lever. On the left hand side is a knob which operates the clutch. Before switching on, the clutch should be disengaged (knob pointing vertically). You will be told at the start of each experiment which will be the most suitable drum speed and this should be selected by squeezing together the two parts of the gear lever and moving them to the appropriate notch. At the back of the kymograph there is a lever which allows the speed to be continuously varied within the selected range. To start the drum, turn the clutch knob a quarter turn.

In order to get good records, it is necessary that the recording moves parallel with the face of the drum. Set the point of the lever against the drum, near where the paper is joined. The lever should be at a tangent to the drum. Gently lift the lever on the back of your finger. It should stay lightly in contact with the drum

right to the top. If it leaves the drum or begins to press too hard against it, adjust the levelling screws at the back of the kymograph.

In addition to the controls, there is a pair of contacts on the top of the kymograph and a pair of pointers on the spindle. These are used to produce stimuli at pre-determined places on the drum.



KYMOGRAPH