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THE ELECTRONIC LUNG

The Barnet Ventilator is used to assist breathing in any medical or surgical condition in which the efforts of the patient are insufficient for the needs of the body.

This patient is suffering from chronic bronchitis. Breathing is inadequate; the amount of oxygen taken into the lungs is not enough. The Barnet Ventilator supplies the deficiency without putting any strain upon the patient. The Ventilator is adjusted to the rhythm of the patient's breathing. The unique patient-triggering device in the Ventilator ensures that the machine always follows immediately any change in the patient's respiratory rate.

The Ventilator is set, and thereafter the nurse checks its working when making her normal round of the ward to take pulse and temperature.

In cases of poliomyelitis and other conditions in which there is paralysis of the muscles of respiration, the Barnet Ventilator breathes for the patient. The iron lung, which renders the patient completely helpless, is no longer necessary in such cases. These two patients are recovering from polio. The girl is taken out of the iron lung for short periods every day.

In surgery, the Barnet Ventilator is used to

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Administer the anaesthetic. It goes with the patient into the operating theatre and on, if necessary , to the ward.

ELECTRONIC LUNG REPLACES IRON LUNG

Following extensive research and close co-operation between precision engineers and the medical profession, Pye is able to announce the introduction of an electronic lung which can replace iron lungs.

Called the Barnet Ventilator, the lung has been a joint venture by several companies of the Pye Instrument Group, each of which contributed specialised knowledge and technical facilities. The instrument is manufactured by W. Watson & Sons Limited, a member of the Pye Instrument Group.

Paralysis of the muscles of respiration is a frequent result of poliomyelitis and the life of patients suffering from this manifestation of the disease depends upon prolonged artificial respiration. In the past patients have had to be put in an iron lung, which is essentially an air-tight box in which pressure is varied, by means of pumps, between positive and negative values, each cycle causing the lungs to inflate and deflate within correct physiological limits. The iron lung is an effective machine for sustaining life but, since only the head of the patient is outside the lung, dependence upon nursing staff is complete. The patient has no liberty whatsoever.

Treatment of such cases by means of the Barnet Ventilator gives the patient considerable freedom. Instead of being encased in a box the patient is linked to the Ventilator by two plastic tubes, breathing is sustained by the alternation of positive and negative pressure, air being pumped into the lungs during the positive phase and extracted during the negative. The number of respirations per minute, the ratio of inspiratory to expiratory times and the volume of air entering and leaving the lungs, are matters of very great importance. By using the Barnet Ventilator any, or all, of these facilities can be instantly and precisely adjusted within physiological limits.

The iron lung is large and heavy and when it is necessary to move a patient, serious transport problems arise. The Barnet Ventilator, on the other hand, is very portable and weighs only 56-lbs. It has built-in batteries from which its transistorised circuit will run for up to twenty hours without re-charging. Thus the polio patient can be moved from one hospital to another, or by air between continents, without difficulty.

In addition to its use in polio, the Barnet Ventilator is of the utmost value in every case of respiratory insufficiency arising from any cause. It can also be used in operating theatres for the administration of anaesthetics.