

INFORMATION

NEW APPARATUS

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UDC 615.47

The RD-3 Apparatus for Artificial Respiration (Fig. 1) is used in the event of respiratory insufficiency or complete absence of breathing both in adult patients and in children.

It is needed in first aid, at rescue stations, and in other cases of emergency resuscitation. Its operating principle and design are based on the interaction of flows of compressed air.

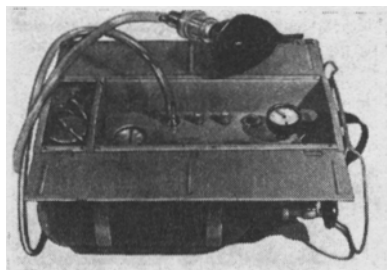


Fig. 1. RD-3 artificial respiration apparatus.

The small RD-3 is distinguished by high reliability and stability in service and resistance to wear and corrosion.

The minute ventilation, inspiration pressure, and expiration time are regulated in the apparatus. A rapid drop of pressure is accomplished at the start of the expiratory phase, thanks to which the average intrathoracic pressure decreases, eliminating the adverse effect of artificial ventilation of the lungs on blood circulation. In the apparatus the separation of the passages of the gas during inspiration and expiration prevent infection of the patient.

The apparatus can operate from compressed-oxygen cylinders and from a centralized distribution line (under hospital conditions). It is equipped with a vacuum pressure gauge and a device for aspirating secretion from the upper air passages of the patient.

SPECIFICATIONS

Inspiration pressure	100-300 mm H ₂ O
Minute ventilation	8-25 liters/min
Expiration time	3-4 sec
Oxygen content in inspired mixture	40%
Working time without refilling cylinders	60-80 min
Overall dimensions	420 × 320 × 150 mm
Weight	13 kg

It was developed by the All-Union Scientific-Research Institute of Medical Instrument Manufacture. Its mass production is being mastered by the Leningrad "Krasnogvardeets" Manufacturing Combine.



Fig. 2. Universal anesthetic vaporizer.

The Universal Anesthetic Vaporizer (Fig. 2) is intended for inhalation anesthesia by ether, fluorothane, chloroform, and trichloroethylene. It can be connected to any domestic anesthetizing apparatus. It accomplishes exact measuring of the anesthetic mixture within a wide range of flow rates of the gas carrier and working temperatures.

Since there are no wicks in the vaporization chamber, it provides economic consumption of anesthetics and the possibility of quick (within 3 min) change during surgery from one anesthetic to another.

Translated from *Meditsinskaya Tekhnika*, No. 6, pp. 57-60, November-December, 1970.

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The vaporizer is placed outside the respiratory circuit of the patient.

The broad functional possibilities of the universal vaporizer promote safe and effective conduction of anesthetization.

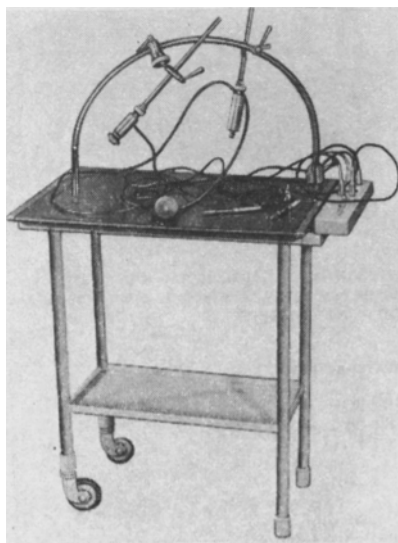


Fig. 3. "Pulse-10" contactless pulsographic attachment.

SPECIFICATIONS

Regulation of the concentrations of anesthetics within:

for ether	0-12 vol.%
for fluorothane	0-6 vol.%
for chloroform	0-4 vol.%
for trichloroethylene	0-2 vol.%

Intervals of variation:

flow rate of gas carrier	1-10 liters/min
working temperature	15-30°

Concentration of anesthetic mixture at indicated flow rates of gas carrier and temperatures is maintained constant within $\pm 5\%$ of the range of the scales.

Quantity of anesthetics poured

into vaporizer 50-150 ml

Overall dimensions 185 × 165 × 165 mm

Weight about 6 kg

It was developed by the All-Union Scientific-Research Institute of Medical Instrument Manufacture. Its mass production is being mastered by the Leningrad "Krasnogvardeets" Manufacturing Combine.

The "Pulse-10" Contactless Pulsographic Attachment (Fig. 3) is intended for contactless recording of the venous pulse (venopulsograms) and oscillations of the thorax related with the work of the heart (kinetocardiograms). The "Pulse-10" is made in the form of a two-channel attachment to the "ÉLKAR-2-4-6" electrocardiograms produced by the Leningrad "Krasnogvardeets" Manufacturing Combine. It can be connected to any multichannel electrocardiograph. The use of the "Pulse-10" improves the possibilities of diagnosing many cardiovascular diseases (heart defects, impairment of coronary circulation, hypertonia, etc.).

The attachment has a high, adjustable sensitivity and does not require an absolutely accurate orientation of the sensors over the site of pulsations. It can record simultaneously by two sensors (for venopulsography and kinetocardiography) placed at a distance of several millimeters from the body surface. Convenient placement of the sensors in any position relative to the portion of the body being investigated is provided by a hinge connection of the arch of the attachment with its base and of the sensors with the arch.

SPECIFICATIONS

Sensitivity of the attachment without additional attenuation of the output signal at a distance of 3 mm from the receiving electrode to the object	not more than 25 μ V
Amplitude of the output signal caused by noise of the semiconductor devices, resistors, and as a consequence of power-line induction	not more than 25 μ V
Overall dimensions	550 × 400 × 120 mm
Weight	10 kg
Fivefold discrete attenuation of the output signal is provided for in the attachment	
Power is from three series-connected 316 dry cells	

It was developed by the All-Union Scientific-Research Institute of Medical Instrument Manufacture. It is being mass-produced by the Leningrad "Krasnogvardeets" Manufacturing Combine.

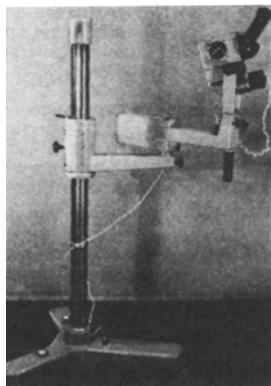


Fig. 4. KS-1 colposcope.

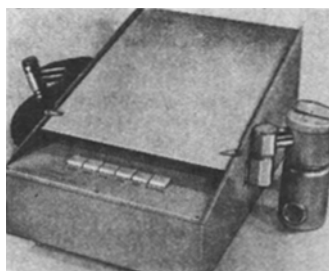


Fig. 5. NAPP-2 discontinuous-flow inhalation anesthetizing apparatus.

The KS-1 Colposcope Fig. 4) is intended for examination of the vagina, uterine cervix, and lower third of the cervical canal by the contactless method of observation of the investigated area under magnification.

In comparison with the Ginzburg colposcope used in gynecological practice, the KS-1 colposcope is distinguished by a more perfect design and greater convenience in operation. The optical system of the colposcope permits binocular observation of the image of the object at different magnifications. The magnification is changed by turning a handle. The illuminator, built into the optical head, brightly illuminates the investigated object. The design of the stand provides free movement of the optical head for placing it in the required position.

The instrument will find wide use in maternity homes, maternity consultation centers, and in gynecological departments of city and regional hospitals and polyclinics.

SPECIFICATIONS

Working distance	195 mm
Magnification	4, 6, 3, 10, 16, 25 times
Field of view	45, 27, 18, 11, 7 mm
Diameter of illuminated field	27 mm
Illumination	18,000 lx
Voltage	127/220 V
Overall dimensions	1200 × 500 × 500 mm
Weight	30 kg

It was developed by the All-Union Scientific-Research Institute of Medical Instrument Manufacture jointly with the Leningrad "Krasnogvardeets" Manufacturing Combine, which is mass-producing it.

The NAPP-2 Discontinuous-Flow Inhalation Anesthetizing Apparatus (Fig. 5) is intended for mask administration of nitrous oxide, trichloroethylene, and fluorothane. It is an improved model of the NAPP-1 and "Avtonarkon-SI" apparatus.

The NAPP-2 is used in obstetric aid, in dental and jaw and facial surgery, and also for postoperative and therapeutic anesthetization. In addition, it can be used for inhalation of oxygen or its mixture with air.

The apparatus provides the delivery of the anesthetic-respiration mixture only during inspiration. In the case of expiration, disconnection of the patient, or absence of oxygen supply, the delivery of the mixture is automatically stopped. In the event of the patient's cessation of spontaneous respiration the possibility of conducting manual artificial respiration is provided.

The design of the NAPP-2 precludes the possibility of overfilling of the bellows with gases. Keyboard control provides convenient operation for the anesthesiologist.

The NAPP-2 can operate from a central gas line or from cylinders and accordingly has two modifications: on a small table (without cylinders) and on a stand (with cylinders).

SPECIFICATIONS

Concentrations of main gaseous mixtures (nitrous oxide, oxygen, air)	75% N ₂ O + 25% O ₂ 65% N ₂ O + 35% O ₂ 50% N ₂ O + 50% O ₂ 40% N ₂ O + 60% O ₂ 50% air + 50% O ₂ 100% O ₂
Concentration of fluorothane	0-4 vol.%
Concentration of trichloroethylene	0-1.5 vol.%
Resistance of apparatus (with ventilation of 8 liters/min):	
to inspiration	not less than 10 mm H ₂ O
to expiration	not less than 5 mm H ₂ O
Maximum flow rate to mask:	
anesthetic-respiration mixture having in its composition nitrous oxide	60 liters/min
other mixtures (not containing nitrous oxide) and pure oxygen	90 liters/min

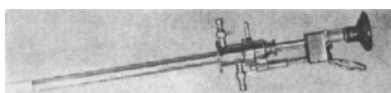


Fig. 6. Resectoscope

The apparatus is supplied with compressed oxygen and compressed nitrous oxide.

It was developed by the All-Union Scientific-Research Institute of Medical Instrument Manufacture and the Leningrad "Krasnogvardeets" Manufacturing Combine, which is mass-producing it.

The Resectoscope (Fig. 6) is intended for transurethral resection (electroresection) by means of high-frequency currents.

It is used in the treatment of adenoma of the prostate, neoplasms in the urinary bladder, and for hemostasis (arrest of a flow of blood) in the region of the urinary bladder. The instrument is inserted into the urinary bladder via the urethra. Its use broadens the possibilities of treating patients with adenoma and cancer of the prostate. All manipulations in the region of the urinary bladder are done under visual control. The original design of the instrument and the use of a special spring smoothly returning the cutting loop prevent the occurrence of deep necrosis. The tube of the instrument is made of electrically insulated material and ensures electrical safety of the patient. The instrument is simple in design and convenient to handle; it is controlled by one hand. The obturator with a controlled distal end facilitates insertion of the tube into the region of the urinary bladder. The possibility of intense lavage through a hollow tube is provided.

SPECIFICATIONS

Tube gauge on Charriere's scale	No. 28
Working length of tube	210 mm
Magnitude of movement of cutting loop	25 mm
Direction of observation of optical tube	162°
Voltage of illuminating lamp	2.5 V
The instrument operates from a high-frequency current generator with a power of less than 200 W and frequency not less than 1600 kHz	

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