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THE USE OF PARA-FORMALIN DISINFECTING CHAMBERS

IN VETERINARY PRACTICE

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THE USE OF PARA-FORMALIN DISINFECTING CHAMBERS IN VETERINARY PRACTICE

by

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THE USE OF PARA-FORMALIN DISINFECTING CHAMBERS IN VETERINARY PRACTICE

Very important in the general complex of anti-epizootic measures is the disinfection of sanitary, special, and personal clothes and shoes of the service staff caring for animals, and also of workers in the veterinary service. In recent years the veterinary network of our land has used several forms of disinfecting para-formalin chambers with shower equipment and without it.

Disinfecting para-formalin chamber with shower equipment mounted on a truck (APKD-M) is designed for disinfection and disinfestation of clothes and soft inventory (Figure 1). Dimensions of equipment (in meters): length - 5.75, width - 2.3, height - 2.75 (GAZ-51) and 2.85 (GAZ-63). The interior dimensions of a section of the chamber: length - 1.87, width - 0.932, height - 1.476. The working volume of the chamber - 2.6 m^3. The maximum output of steam (steam production of the boiler): upon heating by diesel fuel, 130 kg/hours; with firewood of average moisture - 90 kg/hour. The working pressure of the boiler is 4 kg/cm^2; consumption of diesel fuel is 15 kg/hour; wood of average moisture, 40 kg/hour; warm-up period of the boiler is 30 to 35 minutes.

This device is mounted on the chassis of the GAZ-51 or GAZ-63 trucks and consists of the following basic parts: disinfecting chamber, steam boiler with water heater, boiler-accumulator, cabin for service personnel, hand pump injector, a steam jet elevator, water supply system, packing containers, shower device with underfoot gratings, rubber sleeves, digging instruments, and fire extinguisher.

The disinfecting chamber is mounted inside a wood housing with a metal covering. The housing has five doors. Two of these (located opposite each other) are designed for loading and unloading objects from the chamber, two are for access to the boiler and auxiliary compartments and one is for access to the cabin of the service personnel. The heating

pipes with openings for the escape of steam, are fastened to the floor of one section of the chamber. There are open gratings in the floor of the chamber for the outflow of condensate and in order to avoid the development of excessive pressure. Three steel rods are fastened under the ceiling of the chamber for hanging articles put on clothes hangers.

For treatment of fur articles with Formalin one uses a spraying steam jet, mounted in the upper part of the front wall of the chamber. For measuring the temperature inside the chamber, a thermometer is mounted in a special case. In order to remove steam and gas, and to ventilate the chamber, two opposing doors are opened.

One transports the equipment to the work site without water, since it significantly increases the mobile weight, and in the winter time may cause freezing of individual parts of the boiler, pump, boiler-accumulator or piping. In the travel line one periodically inspects the condition of the equipment, and special attention is turned to the installation of fixtures, attachment of the boiler, chambers, and other equipment.

For opening the disinfecting shower device one selects a uniform and dry area near a reservoir with clean water. The height of suction for the hand pump is up to 4.5 m; therefore, the APKD-M equipment is located closer to the water. There must be a sufficient quantity of water in the reservoir, since the forced work of the boiler delivers up to 3,000 l of water per hour to the shower system. This equipment is produced by the Kazan Medical Apparatus Factory. It costs 3000 rubles.

The combined DDP-1 disinfecting - shower equipment mounted on a single-axle IAP-3-738 trailer is designed for washing people and disinfecting (disinfesting) special clothes under field conditions (Figure 2). The overall weight of the equipment, equipped with appliances and spare parts is 1900 kg. The disinfecting shower equipment is hauled by trucks. The equipment has a steam-boiler, disinfecting chamber, boiler -accumulator, hand pump, injector, and a steam jet elevator, system of piping (water, steam), and packing containers. All this equipment is securely mounted on the chassis of the auto-trailer.

Before transportation water is removed from the equipment and during travel its condition is periodically inspected with particular attention devoted to the packing of accessories and securing of the equipment. For work, the apparatus is placed on a level site near a clean reservoir. The height of suction for the hand pump is 4.5 m. The operation of the combined disinfecting shower equipment is similar to that of the APKD-M equipment. This equipment is manufactured by the Penza Decontamination Equipment Factory. It costs 1,225 rubles.

The DKP-3 disinfecting para-formalin chamber mounted on a truck is designed for disinfecting and disinfestation of articles of fur, cloth, cotton, and leather by the steam and para-formalin methods. The inside dimensions of the chamber are: 1500 × 846 × 1446 mm. The volume is 1.8 m^3. The weight of the equipment in the assembled state is 1525 kg.

The disinfecting chamber consists of the following basic parts: chamber, steam boiler, hand pump, single-axle trailer, equipment and spare parts. The chamber is made of steel with a welded frame, covered with plywood on the outside and lined with steel roofing sheets. The inner layer between the frame and the plywood decreases the emission of heat. On the floor of the chamber, as in the APKD-M equipment, there is a steam pipe with outlets for the escape of steam and the para-formalin mixture. The temperature inside the chamber is controlled by a thermometer.

Three steel rods extend under the ceiling of the chamber for hanging clothes. For the extraction of formaldehyde from Formalin a Bel'yaminson-Kruchin formalin tank is installed. In the chamber there is a ventilating device for removal of steam and reduction of the moisture of substances after treatment. The conditions of transporting and setting up this chamber are similar to those of the equipment described above. This equipment is produced by the Saransk Medical Equipment Factory. The price is 1785 rubles.

The disinfecting para-formalin chamber of the stationary type DKSK - 1.8 with a RI-1A steam boiler is shown in Figure 3. The capacity of this equipment is 90 kg of steam per hour when running on liquid fuel and 60 kg when used with solid fuel. The quipment was designed for disinfection and disinfestation of articles made from fur, cloth, cotton, and leather by para-formalin and steam methods. The design of the chamber is 1.8 m^3, and the internal dimensions are 1500 × 846 × 1446 mm. Such a chamber is made by the Saransk Medical Equipment Factory. The proposed price is 2100 rubles.

All the para-formalin disinfecting chambers described above may be ordered at the "veterinary supply" unions. For more detailed information one may apply to the manufacturer with a request to obtain instructions from him. The equipment described is produced for medical purposes, but may be used successfully in veterinary practice.

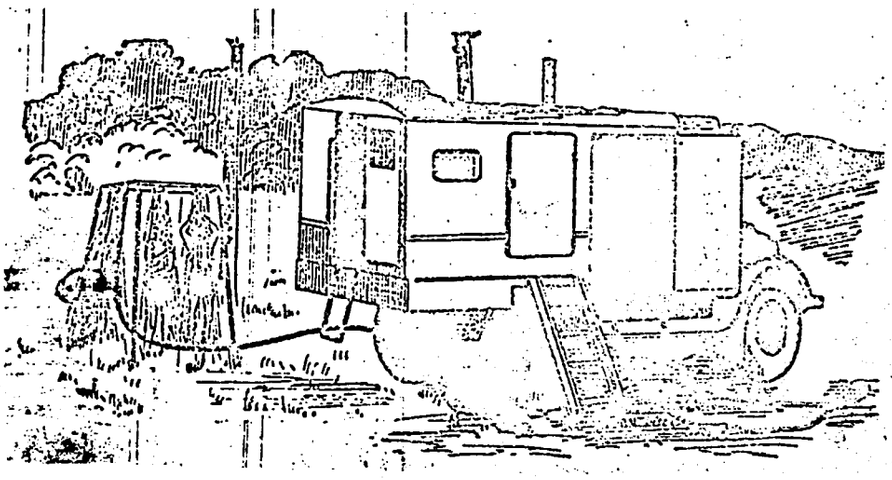

Figure 1. Disinfecting para-formalin chamber with shower equipment (APKD-M) in operating position.

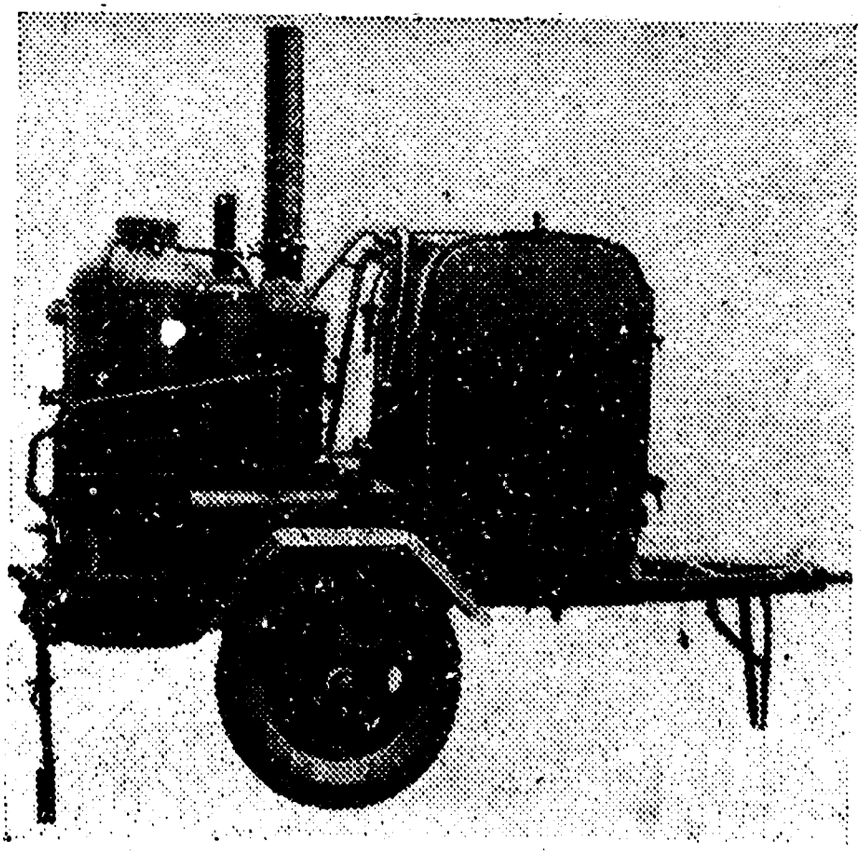

Figure 2. DDP-1 Disinfecting shower equipment

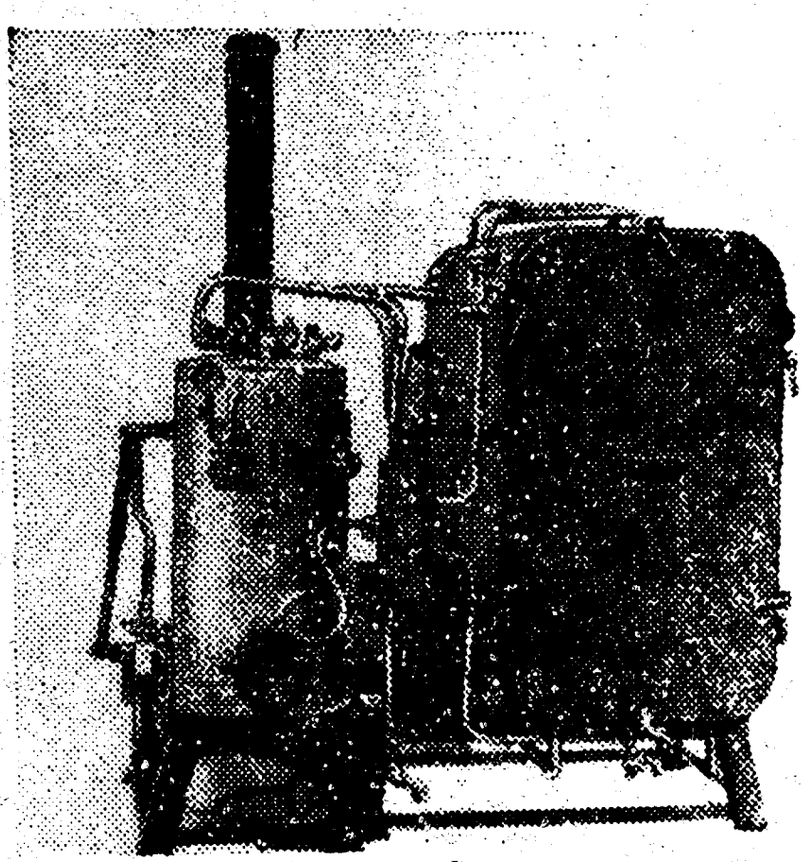

Figure 3. Disinfecting para-formalin chamber of the stationary type DKSK-1.0 with RI-1A steam boiler.

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13. ABSTRACT

Four types of para-formalin chambers are described for disinfection and disinfestation of clothing, shoes, and personnel. Three of the devices are mounted on automobiles or trailers for field use and one is a stationary model. Detailed descriptions of design, dimensions, and cost are provided.

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