

UNCLASSIFIED

| |
|---|
| |
| |
| |
| AD NUMBER |
| AD849335 |
| NEW LIMITATION CHANGE |
| TO Approved for public release, distribution unlimited |
| FROM Distribution authorized to U.S. Gov't. agencies only; Administrative/Operational Use; 04 MAR 1969. Other requests shall be referred to Army Foreign Science and Technology Center, Charlottesville, VA 22911. |
| AUTHORITY |
| USAFSTC ltr, 8 May 1969 |

THIS PAGE IS UNCLASSIFIED

U.S. ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER



AD849335

SOVIET PATENT NO.: 209915

A MANUAL AEROSOL GENERATOR

COUNTRY: USSR

TECHNICAL TRANSLATION D C

The translation rights for this document have not been obtained. This document is not in the public domain.

Each transmittal of this document outside the agencies of the U.S. Government must have prior approval of the U.S. Army Foreign Science and Technology Center.

RECEIVED
 MAR 25 1969
 C

WASH DC 20315

TECHNICAL TRANSLATION

FSTC-HT-23-1031-68

SOVIET PATENT NO.: 209915

A MANUAL AEROSOL GENERATOR

Inventors: I. M. Zagorskiy and S. P. Kuchin

**Date of Application: July 24, 1965
(No. 1020035/30-15)**

**Date of Publication: January 26, 1968,
Bulletin No. 5**

Date of Publication of the Description: March 20, 1968

**Assignee: The Leningrad Scientific Research
Institute of the Forestry Industry**

Translated for FSTC by Techtran Corporation

This translation is a rendition of the original foreign text without any analytical or editorial comment. Statements or theories advocated or implied are those of the source and do not necessarily reflect the position or opinion of the US Army Foreign Science and Technology Center. This translation is published with a minimum of copy editing and graphics preparation in order to expedite the dissemination of information. Requests for additional copies of this document should be addressed to the Defense Documentation Center, Cameron Station, Alexandria, Virginia, ATTN: OSR-2

SOVIET PATENT NO.: 209915
A MANUAL AEROSOL GENERATOR

Known manual aerosol generators consist of a combustion chamber enclosed in a cooling housing, a device for the preparation of the operating mixture, a starting pump, an ignition system and a supply connection with by-pass valves.

In the proposed generator, the device for the preparation of the operating mixture has a mixing pipe, which is connected to the atomizer, and one end of the pipe is equipped with a diffuser and connected to the combustion chamber; the opposite end is equipped with an air oscillating valve.

For this reason, a higher grade operating mixture preparation and reliable generator starter are provided.

The mouth of the atomizer is situated at right angles to the mixing pipe.

The drawing shows a cross-section of the generator described.

The generator consists of combustion chamber 1, enclosed within cooling housing 2, within which are situated cooling pipes 3, which are connected to the combustion chamber, apparatus 4 for the preparation of the operating mixture, which has mixing pipe 5, connected to atomizer 6. Mouth 7 of the atomizer is connected with mixer 8 and is situated at right angles to the mixing pipe. Axial and radial calibrated openings are provided in the atomizer for fuel atomization. The output end of the mixing pipe is equipped with diffuser 9 and is connected with the combustion chamber; oscillating air valve 10 is installed on the opposite end to provide an air intake during the combustion cycle. The upper part of the mixing pipe is the location of check valve 11, through which exhaust gases pass by means of pipe 12 into the mixer and simultaneously through pipe 13 into fuel tank 14. Under the influence of excess pressure, fuel from the fuel tank passes through pipe 15 to the

atomizer and exhaust gases from valve 11 pass through pipeline 16 to tank 17 for the operating liquid. From this tank the operating liquid passes through pipeline 18 with by-pass valve 19 to nozzle 20, which is installed at the output of the combustion chamber 1. The generator is started by means of starting pump 21 and ignition system 22. In order to protect against overheating of fuel tank 14 and tank 17, protective shield 23 is provided between the tanks and the combustion chamber.

The generator operates in the following manner.

The starting pump delivers the operating mixture to the combustion chamber; the operating mixture is ignited and forms hot gases which create increased pressure. Part of the gases are passed through the check valve and the supply pipe to the operating liquid tank, which provides for delivery of the liquid to the atomizing nozzle. In issuing from the nozzle, the atomized operating liquid is picked up by the flow of hot gases and is converted into an aerosol. Simultaneously another portion of the gases passes to the mixer, and from the mixer to the fuel tank, in which excess pressure is created. Under the influence of this pressure, the fuel is delivered to the atomizer. The preliminary atomization of the fuel occurs under the pressure of the air in the mixer, from which, during the intake cycle, the fuel passes to the axial opening in the atomizer and is carried along by the gasoline passing through the radial openings, and thus forms the operating mixture. A vacuum is created in the combustion chamber in proportion to gas exit from the nozzle, and as a result the air oscillating valve opens and atmospheric air enters the mixing pipe. The air is mixed in the pipe with the previously formed operating mixture and the prepared mixture is directed through the diffuser to the combustion chamber where it is ignited and the operating cycle is repeated.

During generator operation the combustion chamber is cooled under the influence of forced cold air.

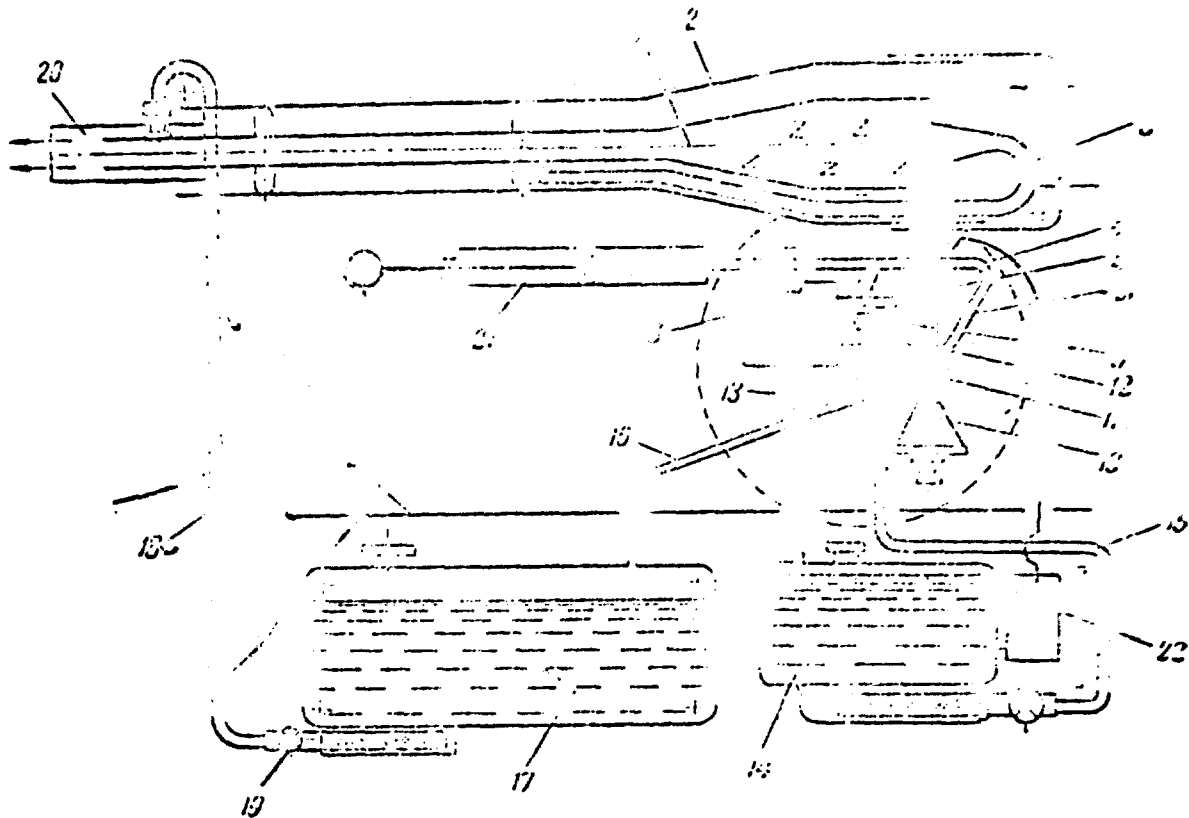
The generator is intended for the processing of forest plantings with insecticides, and also for the struggle with insects and enemies of agricultural growth.

Claims

1. The manual aerosol generator consisting of a combustion chamber enclosed within a cooling housing, a device for the preparation of the operating mixture, a starting pump, an ignition system and a delivery

system with by-pass valves is improved by the fact that, with the purpose of providing a higher-grade preparation of the operating mixture and reliable starting of the generator, the device for the preparation of the operating mixture has a mixing pipe which connects with the atomizer; one end of the pipe is equipped with a diffuser and connects to the combustion chamber, while an air oscillating valve is installed on the other end of the pipe.

2. The generator, as outlined in claim No. 1, is improved due to the fact that the mouth of the atomizer is installed at right angles to the mixing pipe.



UNCLASSIFIED
Security Classification

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

| | | | |
|--|-----------------------------|---|--|
| 1. ORIGINATING ACTIVITY (Corporate author) Foreign Science and Technology Center US Army Materiel Command Department of the Army | | 2a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED | |
| 2b. GROUP | | | |
| 3. REPORT TITLE Soviet Patent No. 209915, A Manual Aerosol Generator | | | |
| 4. DESCRIPTIVE NOTES (Type of report and inclusive dates) Translation | | | |
| 5. AUTHOR(S) (First name, middle initial, last name) I. M. Zagorskiy and S. P. Kuchin | | | |
| 6. REPORT DATE 4 Mar 69 | 7a. TOTAL NO. OF PAGES 3 | 7b. NO. OF REFS N/A | |
| 8a. CONTRACT OR GRANT NO. A. PROJECT NO. a. 9223628 2301 d. | | 8b. ORIGINATOR'S REPORT NUMBER(S) FSTC-HT-23-1031-68 | |
| 8c. OTHER REPORT NO(S) (Any other numbers that may be assigned this report) ACSI Control Number (None) | | | |
| 10. DISTRIBUTION STATEMENT Each transmittal of this document outside the agencies of the U. S. Government must have the prior approval of the US Army Foreign Science and Technology Center. | | | |
| 11. SUPPLEMENTARY NOTES The translation rights for this document have not been obtained. This document is not in the public domain. | | 12. SPONSORING MILITARY ACTIVITY US Army Foreign Science and Technology Center | |
| 13. ABSTRACT This patent describes an improved manually operated aerosol generator intended for the spraying of insecticides and other liquids. The improvements claimed include high-grade preparation of the operating mixture and reliable starting characteristics. | | | |

DD FORM 1473

FORM 1473 USE PREVIOUS EDITIONS. 1 JAN 64. GPO: 1964 O-348-108.

UNCLASSIFIED
Security Classification

~~UNCLASSIFIED~~
Security Classification

| 14. KEY WORDS | LINK A | | LINK B | | LINK C | |
|--|--------|----|--------|----|--------|----|
| | ROLE | WT | ROLE | WT | ROLE | WT |
| Aerosol generator Check valve Combustion chamber | | | | | | |

~~UNCLASSIFIED~~
Security Classification

SUPPLEMENTARY

INFORMATION

DISTRIBUTION AND AVAILABILITY CHANGES

| IDENTIFICATION | FORMER STATEMENT | NEW STATEMENT | AUTHORITY |
|---|---|----------------------|--------------------------|
| AD-849 335L Army Foreign Science and Technology Center, Washington, D. C. Rept. no. FSTC-HT- 23-1031-68 4 Mar 69 | USGO: others to Army Foreign Science and Technology Center, Washington, D. C. | No limitation | USAFSTC ltr, 8 May 69 |