

No. 670,080.

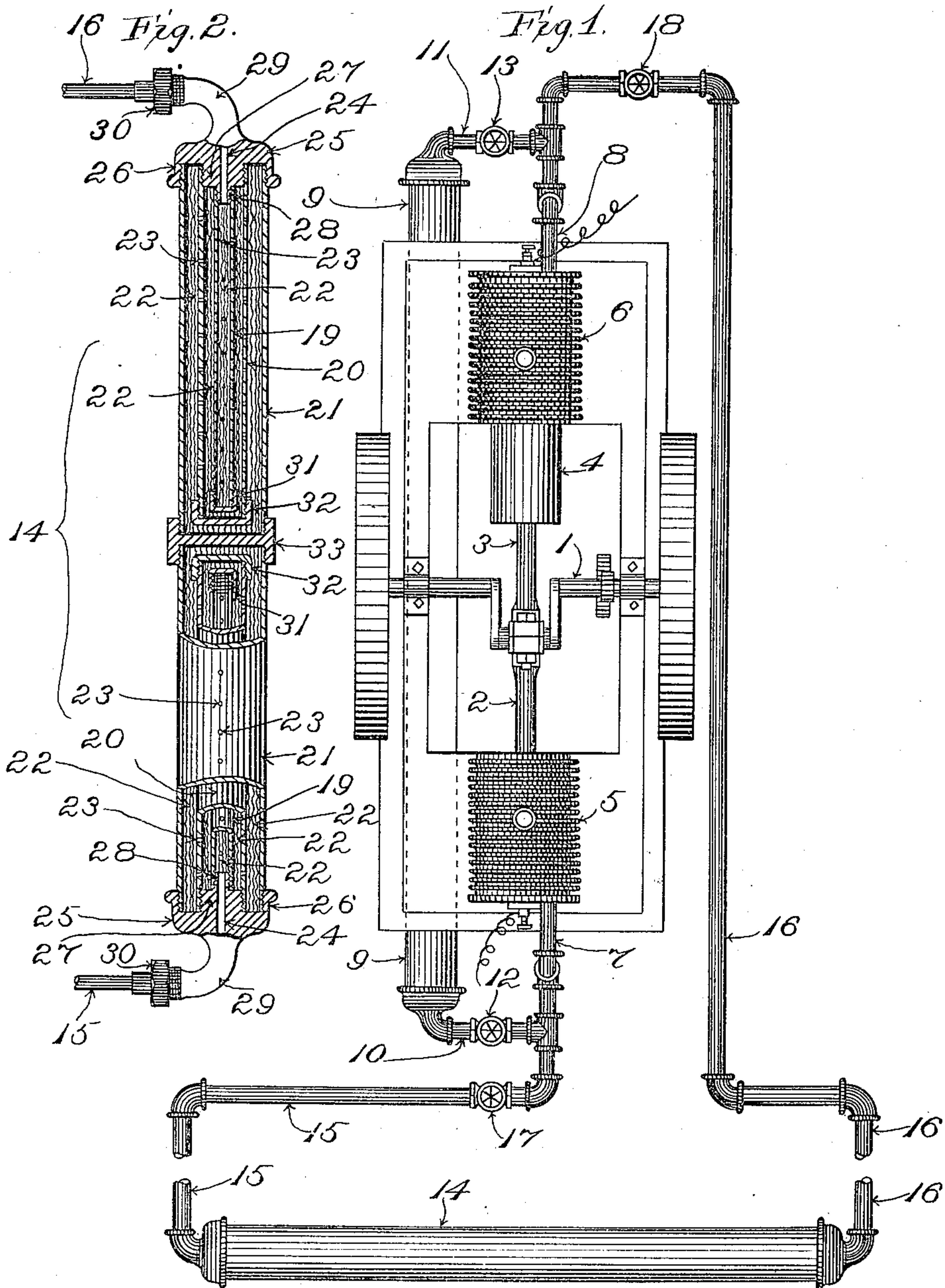
Patented Mar. 19, 1901.

E. KEMPSHALL.

DEVICE FOR UTILIZING ENGINE EXHAUST FOR HEATING PURPOSES.

(Application filed Mar. 23, 1900.)

(No Model.)



Witnesses:

Oscar F. Gill
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UNITED STATES PATENT OFFICE.

ELEAZER KEMPSHALL, OF NEWTON, MASSACHUSETTS.

DEVICE FOR UTILIZING ENGINE-EXHAUST FOR HEATING PURPOSES.

SPECIFICATION forming part of Letters Patent No. 670,080, dated March 19, 1901.

Application filed March 23, 1900. Serial No. 9,901. (No model.)

To all whom it may concern:

Be it known that I, ELEAZER KEMPSHALL, a citizen of the United States, residing at Newton, in the county of Middlesex, State of Massachusetts, have invented a certain new and useful Improvement in Devices for Utilizing Engine-Exhaust for Heating Purposes, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improvement in engines for use in motor-carriages, and has especial reference to that class of such engines which are internally explosive.

The object of my invention is to utilize the exhaust gas or steam, as the case may be, to heat a foot-warmer or other form of heater located at such place as may be convenient and serviceable to the rider.

My invention will now be fully and clearly described, having reference to the accompanying drawings, and the novel features thereof will be particularly pointed out in the claim at the close of this specification.

The drawings represent in Figure 1 thereof a plan of one form of engine embodying my invention. The form of engine shown is an internally-explosive double-cylinder gasoline-engine, but my invention is equally applicable to engines in which steam is employed as the motive force and also to engines in which only one cylinder is used. Fig. 2 is a partly-sectional view showing a form of muffler which may be employed in carrying my invention into effect.

1 represents the crank; 2 3, the piston-rods; 4, one of the pistons, and 5 6 the two cylinders. 7 8 are the two exhaust-pipes, leading, respectively, from said cylinders and are connected with the ordinary exhaust-cylinder or muffler 9 by the pipes 10 11. Said pipes 10 11 are provided, respectively, with valves 12 13, by which the passage to the said muffler 9 may be closed.

A secondary exhaust-cylinder or muffler 14 is connected with exhaust-pipe 7, which leads from cylinder 5, by pipe 15 and with exhaust-pipe 8, which leads from the other cylinder 6,

by pipe 16. Pipes 15 16 are respectively provided with valves 17 18, which control the admission of exhaust gases or steam into the muffler 14. This secondary exhaust-cylinder or muffler 14 may be adapted as a foot-warmer and placed in any suitable location and be of any suitable form for the purpose, or it may be of any form and placed in any location in the wagon to serve as a heat-radiator.

When it is desired to utilize the heater-muffler, the valves 12 13, leading to the muffler 9, are closed and the valves 17 18 are opened. When it is not desired to warm the heater, the valves 17 18 are closed and the valves 12 13 are opened. The object of having the two sets of mufflers is to have the ordinary muffler 9 located in such position removed from the person of the rider that he will not be inconvenienced by the heat when he is sufficiently warm without it.

The cylinders 9 and 14 are each preferably divided midway of their length, so that each in reality contains two mufflers, one for each exhaust, as in the application of G. L. Reenstierna, filed March 21, 1900. I have shown in Fig. 2 of the accompanying drawings a muffler constructed substantially as shown and described in the said application, which comprises, essentially, two series of tubes or cylinders arranged concentrically, as at 19, 20, and 21 in Fig. 2. The respective cylinders of each series are perforated, as at 23 23, so that the exhaust upon being admitted to the innermost cylinder 19 escapes outwardly through the openings 23 in the successive cylinders until it reaches the atmosphere. The pipes leading from the engine-cylinders are connected, respectively, with heads 25 25, applied to the opposite ends of the muffler, each head 25 having a central passage-way 24, which discharges into the interior of the innermost cylinder 19 of the corresponding series. The proximate ends of the cylinders of the two series are closed by means of caps 31 and 32, fitted upon the cylinders 19 and 20, and a double cap or junction device, as 33, engaging with the proximate ends of the cylinders 21. The successive spaces between the cyl-

inders contain finely-reticulated material 22, which may be constituted of woven-wire netting.

What I claim is—

5 The combination with an engine, of two mufflers adapted to receive the exhaust therefrom, one thereof situated to serve for heating purposes, independent connections between said mufflers and the exhaust of the
10 engine, and valves for controlling each of said

independent connections, whereby either one of said mufflers may be employed according as heating is desired, substantially as described.

In testimony whereof I affix my signature 15 in presence of two witnesses.

ELEAZER KEMPSHALL.

Witnesses:

W. T. ALLIS,

J. J. HALSEY.

DISCLAIMER.

670,080.—*Eleazer Kempshall*, Newton, Mass. DEVICE FOR UTILIZING ENGINE-EXHAUST FOR HEATING PURPOSES. Patent dated March 19, 1901. Disclaimer filed May 18, 1916, by the assignee, *The Perfection Spring Service Co.*

Enters this disclaimer—

“To those parts of the specification which are in the following words:

“Page 1 of the printed specification, line 16, the words, ‘or steam, as the case may be.’

“Page 1 of the printed specification, lines 30 and 31, the words, ‘to engines in which steam is employed as the motive force and also.’

“Page 1 of the printed specification, line 51, the words, ‘or steam.’”

[*Official Gazette*, June 6, 1916.]

Disclaimer in Letters Patent No. 670,080.

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