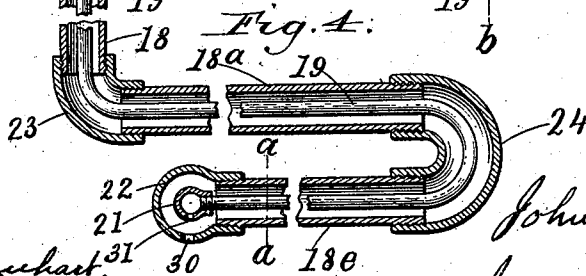
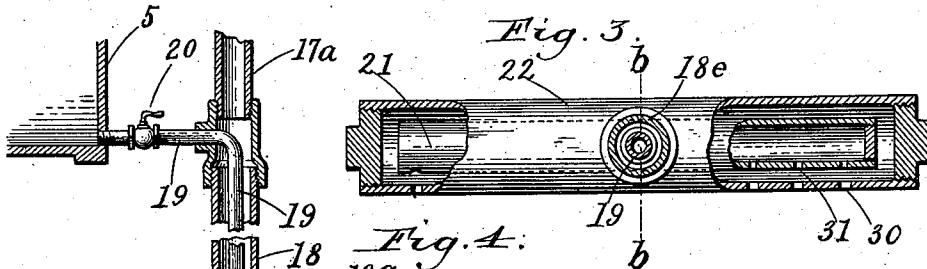
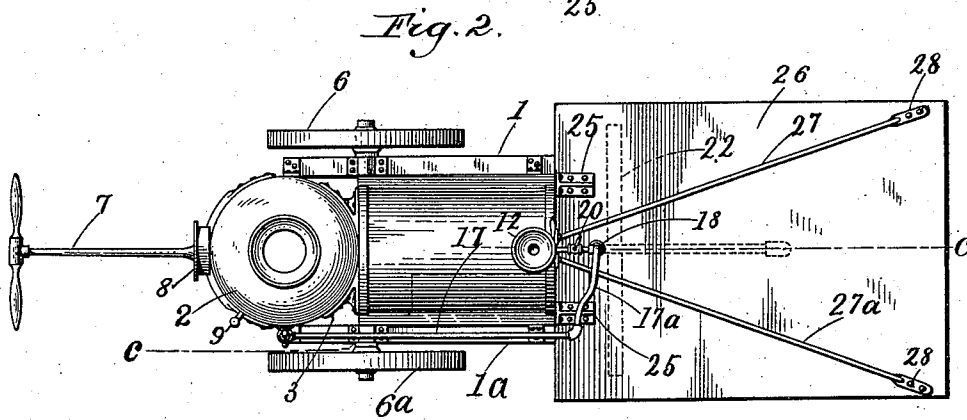
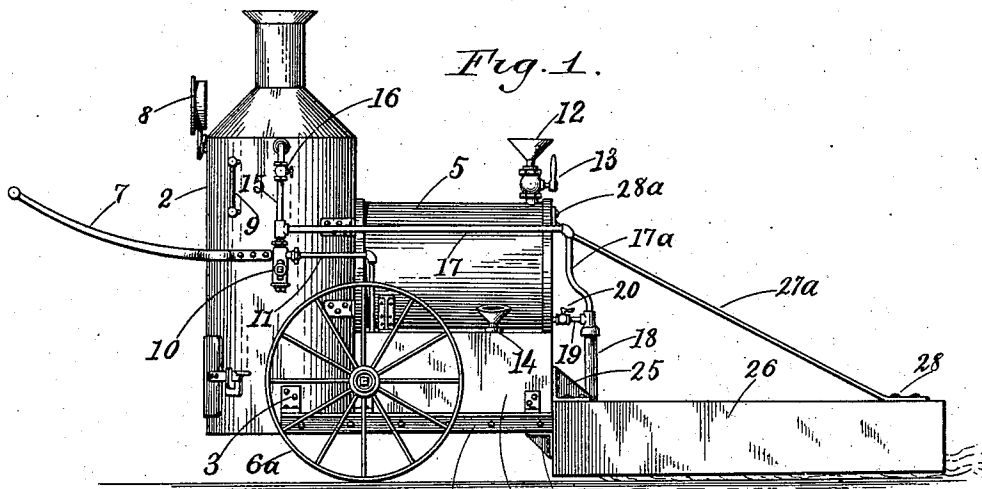


J. ROCHE.
ASPHALT PAVEMENT HEATING MACHINE.

No. 574,496.

Patented Jan. 5, 1897.



Witnesses,
Emil Neubart.
L. M. Spang.

John Roche, Inventor.

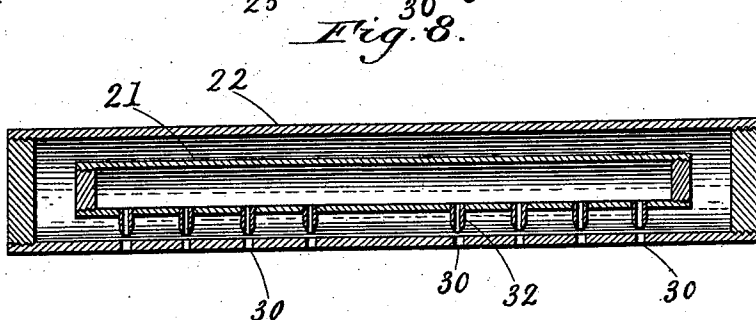
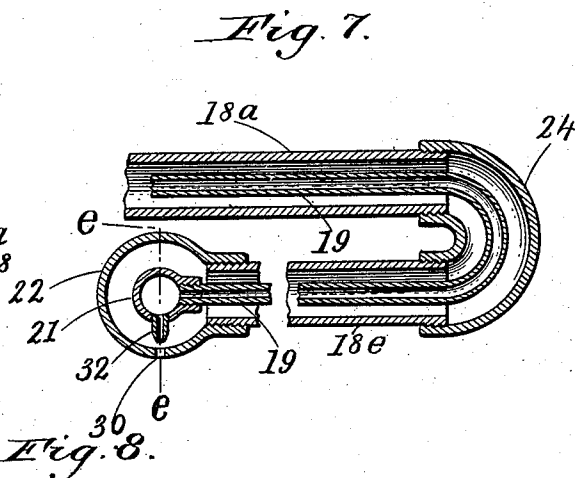
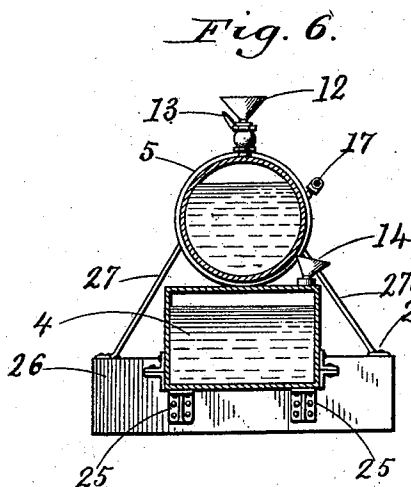
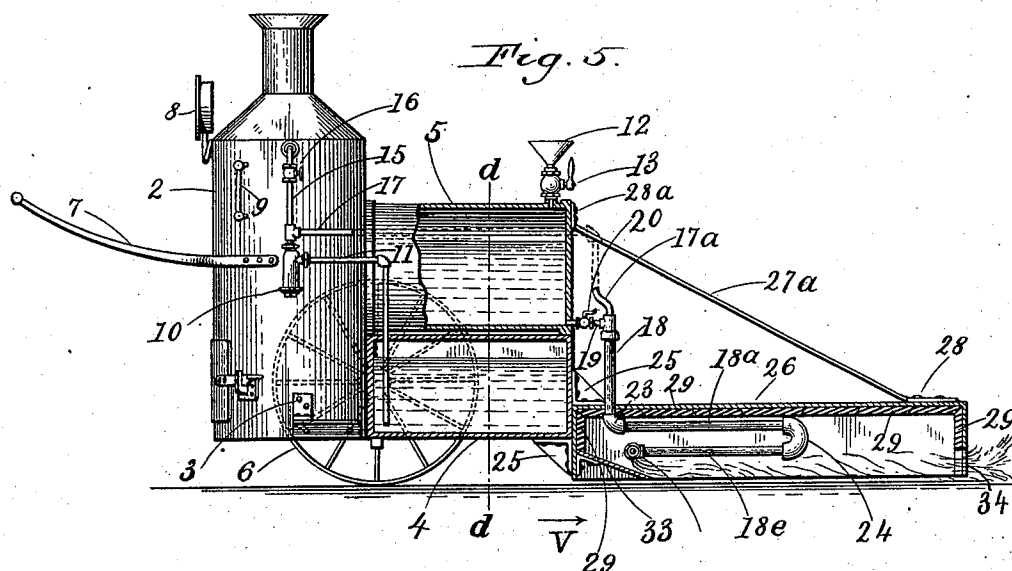
By James Sangster, Attorney.

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UNITED STATES PATENT OFFICE.

JOHN ROCHE, OF BUFFALO, NEW YORK, ASSIGNOR OF TWO-THIRDS TO
JOHN TRUMPFHELLER AND JACOB SCHNEIDER, OF SAME PLACE.

ASPHALT-PAVEMENT-HEATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 574,496, dated January 5, 1897.

Application filed April 11, 1896. Serial No. 587,123. (No model.)

To all whom it may concern:

Be it known that I, JOHN ROCHE, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Asphalt-Pavement-Heating Machines, of which the following is a specification.

My invention relates to that class of machines used for heating asphalt when repairing a road or street or for other purposes, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation of the machine complete. Fig. 2 represents a top plan view of the same. Fig. 3 is a vertical section on or about line *a a*, Fig. 4, showing a sectional elevation of the burner. Fig. 4 is a central longitudinal section through the steam-piping, showing the oil-piping within it and a vertical section through the transverse oil-burner on or about line *b b*, Fig. 3. Fig. 5 is a side elevation showing a section through the oil and water tanks and heat-deflector on or about line *c c*, Fig. 2. Fig. 6 represents a transverse section through the oil and water tanks on or about line *d d*, Fig. 5, looking in the direction of the arrow V. Fig. 7 represents a vertical longitudinal central section through the lower bent portion of the oil and steam piping and a cross-section through the burner, showing a modification of the burner. Fig. 8 is a vertical longitudinal central section through the modified burner on or about line *e e*, Fig. 7.

Referring in detail to the several parts of the machine as shown in said drawings, 1 and 1^a represent the base frame-pieces. An upright steam-boiler 2 is rigidly secured to the front part of the frame by rivets 3. Back of the boiler is secured the water-tank 4, and above the water-tank is the oil-tank 5.

Two supporting-wheels 6 and 6^a are secured to the frame in the usual and well-known way. On these wheels the machine is supported, and moved about by means of a handle 7. The boiler is provided with the usual pressure-gage 8 and water-gage 9, and also with a well-known injector 10, connected with the

boiler and by a pipe 11 with the water-tank for supplying it with water in the usual way.

At the top of the oil-tank is a funnel 12, by which the boiler is supplied with oil, and 13 represents a stop-cock for closing it when required. The water-tank is also provided with a funnel 14, through which the water is fed into the tank.

15 represents a steam-pipe connected with the boiler. It is provided with the usual valve 16 for shutting off or admitting steam to the burner. The steam-pipe 15 connects by a T with the pipe 17, which connects by an elbow with a pipe 17^a, through which the steam passes to a larger pipe 18.

An oil-pipe 19 is connected with the lower part of the oil-tank, and is provided with a stop-cock 20 for controlling the flow of oil. This oil-pipe 19 extends down through the enlarged steam-pipe 18 and connects with the interior or oil portion 21 of the burner steam-case 22. (See Figs. 3 and 4.) It will be noticed (see Fig. 4, also Fig. 5) that the oil and steam pipes 17, 17^a, and 18 extend vertically down to or about the position of the elbow 23, and from thence horizontally rearward to a return-bend 24, and from thence forward horizontally, or substantially so, to the burner 21 and 22, the object of which will appear farther on.

To the rear of the supporting-frame 1 is rigidly secured by angle-plates 25 and bolts or rivets a heat-deflector 26. It is further supported by diagonal brace-rods 27 27^a, which are connected by bolts or rivets 28 with the rear end of the deflector and with the upper part of the oil-tank by bolts 28^a.

The heat-deflector 26 is preferably constructed of sheet-iron, but it may be made of any suitable material. The interior of the heat-deflector is lined with fire-brick 29. (See Fig. 5.)

The burner consists of an outer pipe 22 and an inner pipe 21. The outer pipe 22 is provided with a series of fine perforations 30, (see Figs. 3 and 4,) the inner pipe 21 having a corresponding series of fine perforations 31.

In Figs. 7 and 8 I have shown a slight modification of the burner, which consists in adding a small tube or nozzle 32 to the perfora-

tions in the inner tube 21. Their object is to bring the outlets of the oil-nozzles 32 nearer to the perforations 30, so as to give the oil-gas a shorter passage through the superheated steam, and thereby carry less steam with it.

5 It will be noticed that the forward inner end of the heat-deflector is provided with a deflecting-plate 33. (See Fig. 5.) The object of the plate 33 is to deflect the heat toward the rear end of the heat-deflector. The rear end of the heat-deflector is also provided with an opening 34, extending across the end.

The operation of the device is as follows: The wheels 6 and 6^a being placed very near the center of gravity allows the machine to be easily managed by the handle 7, by which the heat-deflector may be easily raised or lowered or the machine moved along an asphalt street when it is desired to heat the asphalt. Steam being started in the boiler, the steam and oil valves are opened so as to allow the required quantity of oil to flow through the pipes, the oil passing down by gravity. A fire being started at the burner, the heat generated superheats the steam, which mingles with the oil-gas and produces an intense heat, which

is deflected down upon the asphalt pavement and imparts the required temperature to soften it for the purposes required, either for repairing the road or for other purposes.

I claim as my invention—

In an asphalt-heater, the combination of a supporting-frame, a steam-boiler and water-tank mounted and secured thereon, an oil-tank secured above the water-tank, a heat-deflector, secured to the rear end of the water-tank and having its upper sides lined with fire-brick, a steam-pipe communicating with the boiler and extending to and downward through the heat-deflector, then rearward under the top of the heat-deflector to a bend, from thence it extends forward to a transverse perforated steam-pipe, an oil-pipe extending from the oil-tank through the steam-pipe to a perforated oil-burner within the perforated steam-pipe, and means for controlling the flow of steam and oil, for the purposes described.

JOHN ROCHE.

Witnesses:

JAMES SANGSTER,
JOHN O'KEEFE.