

(No Model.)

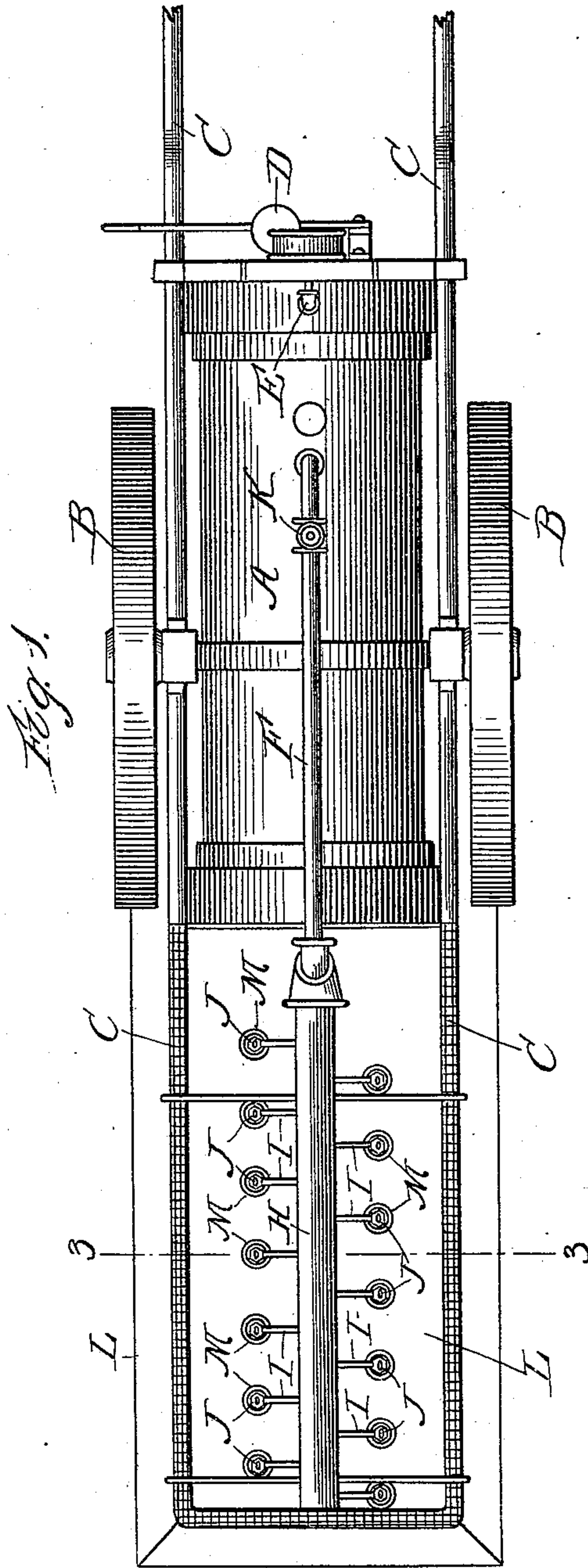
2 Sheets—Sheet 1.

A. H. PERKINS.

APPARATUS FOR REPAIRING ASPHALT PAVEMENTS.

No. 542,349.

Patented July 9, 1895.



Witnesses:
Wm. J. Hanning
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Inventor:
By A. H. Perkins
Raymond & Quinlan

(No Model.)

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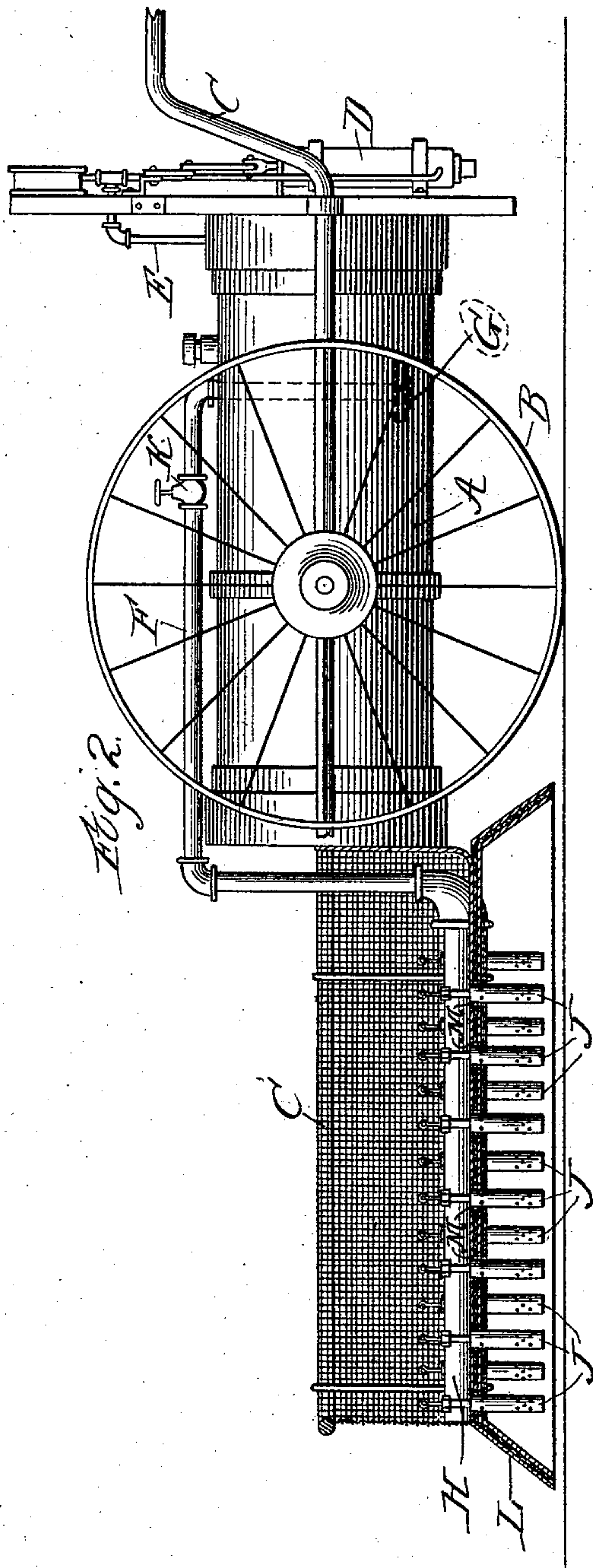


Fig. 2.

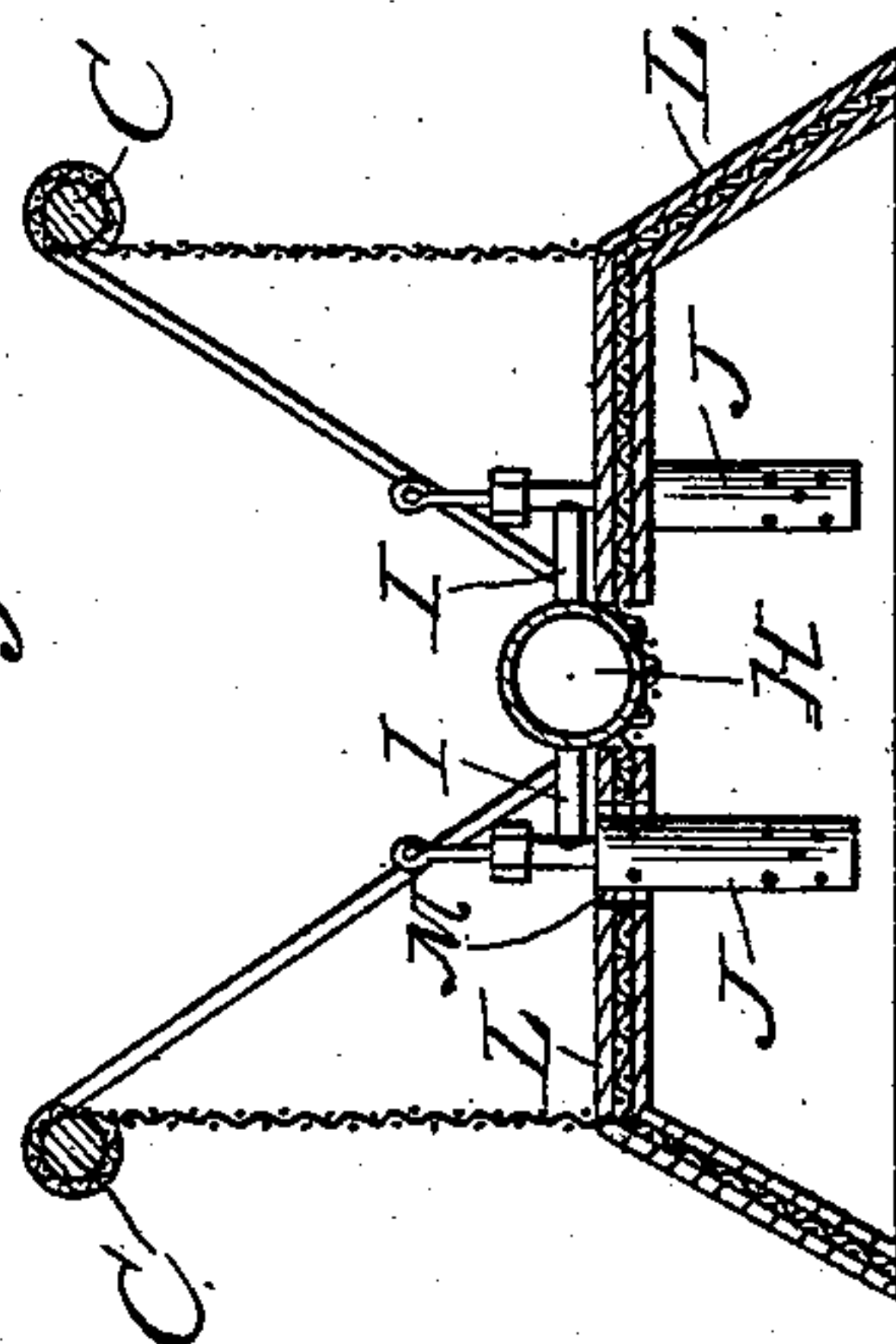


Fig. 3.

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Inventor:
A. H. Perkins
By Raymond C. O'Connell, Atty.

UNITED STATES PATENT OFFICE.

AMOS H. PERKINS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE UNITED STATES REPAIR AND GUARANTY COMPANY, OF SAME PLACE.

APPARATUS FOR REPAIRING ASPHALT PAVEMENTS.

SPECIFICATION forming part of Letters Patent No. 542,349, dated July 9, 1895.

Application filed July 30, 1894. Serial No. 519,003. (No model.)

To all whom it may concern:

Be it known that I, AMOS H. PERKINS, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented certain new and useful Improvements in Apparatus for Repairing Asphalt Pavements, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in apparatus for repairing asphalt pavements, but is more particularly designed as an improvement upon the invention set forth in Letters Patent of the United States No. 501,536, granted me on the 18th day of July, 1893. In that patent an air-pump attached to the apparatus was used at intervals to maintain a pressure upon the liquid fuel in the tank for forcing the same to the burners, and the burners were shown and described as hooded with a sheet-metal shield to hold and confine the heat to that portion of the pavement against which the burners were directed. Such construction necessitated the occasional and sometimes frequent operation of the air-pump, which necessarily resulted in frequent changes of pressure in the tank and consequent difference in the temperature of the blast of heat, besides which the sheet-metal hood from the excessive temperature to which it was subjected would soon become warped and bent beyond usefulness.

The objects of my invention are to have the apparatus of such character that the heat of the burners may be utilized to produce and maintain pressure in the fuel-tank, whereby a more uniform heat is produced, and to have a hood of novel, cheap, and durable construction, which will not become warped or bent by the action of heat in use. These objects are attained by the devices illustrated in the accompanying drawings, in which—

Figure 1 represents a top or plan view of an apparatus embodying my invention; Fig. 2, a side elevation thereof, and Fig. 3 a detail transverse vertical section on the line 3 3 of Fig. 1.

Similar letters of reference indicate the same parts in the several figures of the drawings.

In the general parts and arrangement of parts of my present apparatus it is substantially the same as that contained in the foregoing patent, consisting generally of a tank A for containing liquid fuel—such as gasoline—mounted upon a pair of ground-wheels B and controlled in its movements by handles C, extending to the rear thereof. On the rear end of the tank is mounted an air-pump D of any suitable construction and mode of operation, connected by a pipe E with the upper portion of the tank for producing the initial pressure upon the fuel contained in the tank. Leading from the tank is a pipe F, which preferably passes through the upper side of the tank and terminates in a suitable nozzle G, near the bottom of the tank, as indicated by the dotted lines in Fig. 2. This pipe leads to the main supply-pipe H, having any desirable number of lateral branch-pipes I, leading to burners J of ordinary construction, the main supply-pipe being arranged in a horizontal position projecting forward from the tank. The pipe F is provided with a suitable valve K to control the passage of the fuel from the tank to the main supply-pipe and burners. Suspended from the handles C or from a separate and suitable framing, and in any suitable manner, is a hood L of oblong or rectangular shape, and preferably having a flat top and flaring sides and ends, which are designed to reach nearly to the surface of the pavement being operated upon, although in practice the exact shape of the hood is not material, as obviously it may be curved or otherwise suitably formed, so as to confine the heat in the immediate neighborhood of the burners. The top of this hood preferably lies in a plane slightly below the center of the main supply-pipe H, and is provided along each side of said pipe with a series of holes M, through which the burners J project, the arrangement being such that the branch pipes I leading to the burners and the valves controlling the same will lie above the top of the hood, protected from the heat of the burners, while the supply of air to the burners is obtained through the openings M, which are of sufficiently greater diameter than the burners to supply the required amount of oxygen thereto. That portion of the hood underlying the main sup-

ply-pipe H is perforated, cut away, or otherwise constructed, so as to expose the end part of the said pipe to the heat under the hood, and this heat converts the liquid fuel in the pipe into a gas, part of which is used by the burners and part of which flows back through the pipe F into the tank, where it creates and maintains the desired pressure in the tank to expel all of the fuel therefrom into the supply-pipe for continuous conversion into gas.

The hood shown in the drawings, and the one I have used in practice, is composed of wire cloth or netting, which is covered, preferably on both sides, with asbestos cement or some other non combustible equivalent material which serves to retain the hood in the desired shape notwithstanding the action of the heat thereon, and also confines the heat, which is thrown down upon the pavement or surface to be heated. That portion of the wire cloth or netting which underlies the supply-pipe H is left without any asbestos cement or other covering, so as to expose the said pipe to the action of the heat from the burners.

While I prefer the construction shown in the drawings, it is obvious that the burners may get their supply of fuel, either liquid or gaseous, through an entirely separate pipe or pipes from that which is exposed to the heat of the burners, and it is equally obvious that the pipe or pipes which are exposed to the heat of the burners so as to produce and maintain gas-pressure in the tank may lie or extend under the hood instead of having the opening in the hood, as shown in the drawings, these changes of construction being so simple and obvious as not to require illustration herein.

A machine constructed in accordance with my present invention possesses the advantage of being self-feeding and utilizing the heat produced thereby for the further purpose of producing and maintaining a pressure upon the fuel in the tank, which will remain practically constant during the use of the machine, giving a steady blast of intense heat and greatly economizing in fuel. Fur-

thermore, a hood of the peculiar construction herein shown will successfully withstand the heat to which it is constantly subjected in use without warping or twisting, and hence avoids the loss of heat which would result from the warping and bending of the hood and also avoids the danger of the burners being extinguished by air-currents, which would pass under a warped hood.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an apparatus for repairing asphalt pavements the combination with a series of hooded fluid burners and a reservoir for supplying fuel thereto, said reservoir and burners being portably mounted, of a supply pipe connecting the reservoir with the burners and exposed to the heat of the burners, substantially as described.

2. In an apparatus for repairing asphalt pavements, the combination with a series of fluid burners and a reservoir for supplying fuel thereto, said reservoir and burners being portably mounted, of a hood for said burners and a supply pipe connecting said burners with the reservoir, lying in a plane with or slightly above the hood, that portion of the hood underlying said pipe being perforated or cut away so as to expose said pipe to the heat of the burners, substantially as described.

3. In an apparatus for repairing asphalt pavements, the combination with a series of fluid burners and a reservoir for supplying fuel thereto, said reservoir and burners being portably mounted of a supply pipe connecting the burners with the reservoir, a hood for said burners lying in a plane with, or slightly below, said pipe, said hood consisting of wire cloth or netting plastered with asbestos cement or equivalent material except that portion underlying the said pipe, substantially as described.

AMOS H. PERKINS.

Witnesses:

W. R. OMOHUNDRO,
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