C. A. SWITZER.

OVEN FOR HEATING ASPHALT PAVEMENT.

APPLICATION FILED APR. 8, 1914.

1,136,294. Patented Apr. 20, 1915.

Fig. 1

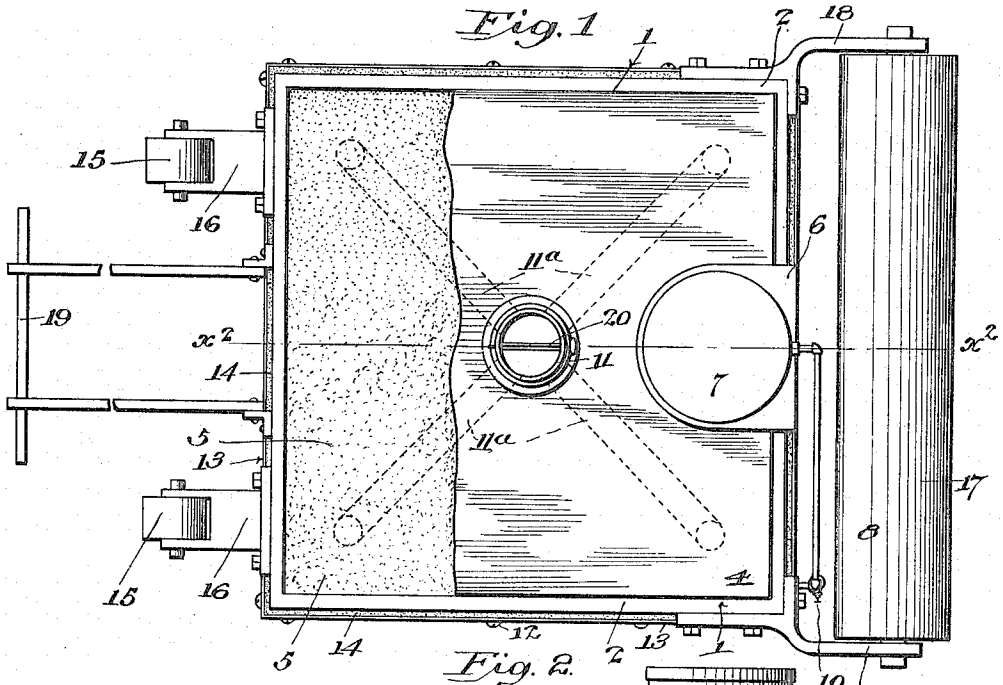


Fig. 2.

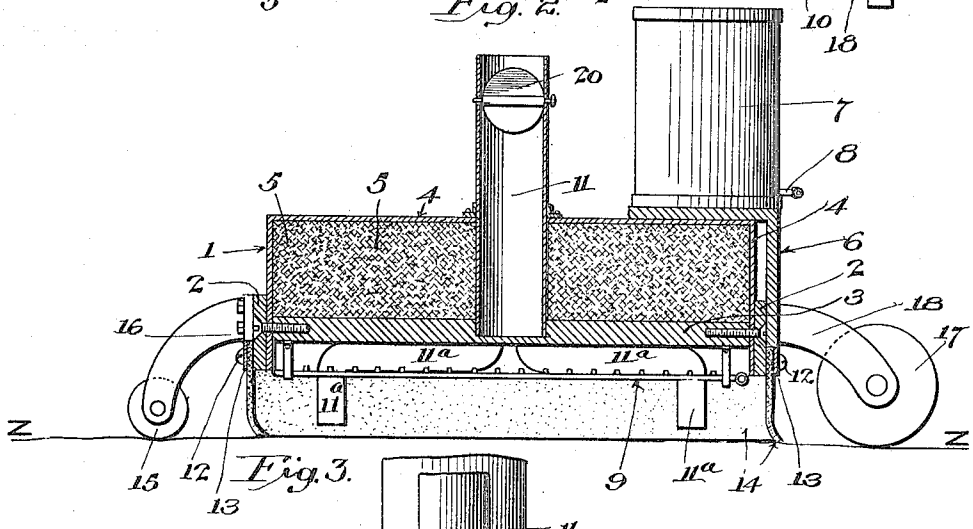
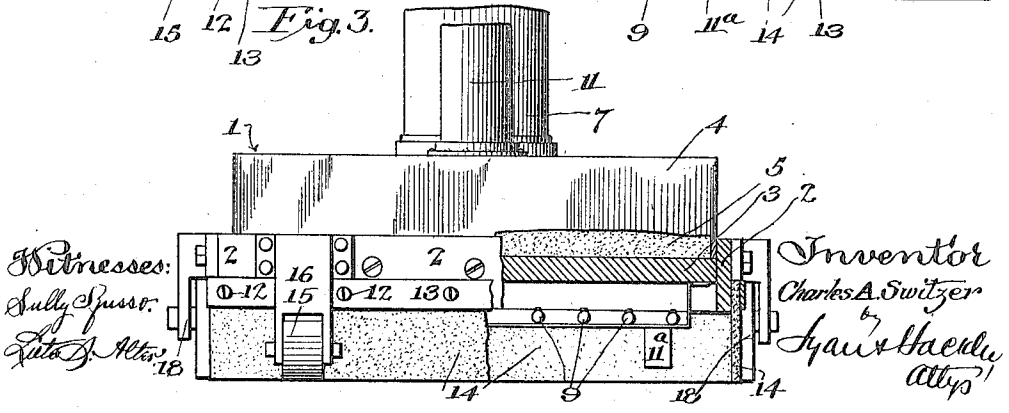


Fig. 3.



Witnesses:
Sully Spusso.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES A. SWITZER, OF PASADENA, CALIFORNIA.

OVEN FOR HEATING ASPHALT PAVEMENT.

1,136,294. Specification of Letters Patent. Patented Apr. 20, 1915.

Application filed April 8, 1914. Serial No. 830,387.

To all whom it may concern:

Be it known that I, CHARLES A. SWITZER, a citizen of the United States, residing at Pasadena, in the county of Los Angeles and State of California, have invented a new and useful Oven for Heating Asphalt Pavement, of which the following is a specification.

When bituminous pavement is subjected to the action of the sun's rays, it becomes soft and the surface forms ridges and projections. This unevenness in the softened pavement is further increased by vehicles and other objects that on account of their weight sink down into the softened material and make dents and grooves therein.

The repair of pavement in this condition has hitherto been made by breaking it up and by replacing it with new material at a great expense.

The object of this invention is to provide means for artificially heating the surface of the pavement and thereby to soften it so that, when a weighted roller has been run over the softened pavement, it is ironed out smooth.

These objects are attained by an oven, illustrated in the accompanying drawing, in which—

Figure 1 is a top view of the oven, partly broken. Fig. 2 is a vertical section of the same on line x^2—x^2, of Fig. 1. Fig. 3 is a front view partly broken.

The oven 1 is supported by a frame 2, made of iron or any other suitable material. To this frame is attached a plate 3, of heat-radiating material and of sufficient thickness to resist corrosion, caused by heat from the burners, which are hereinafter described. The space between this plate and the top 4 of the oven is filled with non-heat conducting material 5, preferably asbestos, which is either one solid piece or in such form as may be best suitable for the purpose. At one side of the frame 2 is a bracket 6 to which is attached an oil tank 7. A pipe 8 extends from the tank 7 to the burners 9 and is provided with a cock 10.

For the outlet of the superheated air and gases, a vent pipe 11 is provided and attached to the oven 1. On each side of the oven, securely fastened to the frame 2 by the screws 12 and the plate 13, is a curtain 14, made of flexible, non-heat conducting material, preferably asbestos, suspended so that it drags on the pavement, as represented by the wavy line z—z, in Fig. 2. Several branch pipes 11^a extend from the main vent pipe 11 to a point near the pavement so that the gases are drawn by the draft down close to the pavement before they escape.

The oven 1 travels on casters 15, fastened by brackets 16 to the frame 2. The rear end of the oven, instead of having such casters attached, however, may be provided with a heavy roller 17, fastened by brackets 18 to the oven, as illustrated in Fig. 1, the purpose of which roller in relation to the whole mechanism will be explained later. The oven may be drawn by the handle 19.

The oil tank 7 is first filled with distillate oil or any other suitable liquid fuel, which is regulated by the cock 10 to run in sufficient quantity to the burners 9. When the plate 3 has been sufficiently heated by the lighted burners 9, the non-heat conducting material 5 prevents heat radiation upward; but the downward heat radiation, intensified by the plates 3 and being confined to the space directly beneath the oven by the curtains 14, causes the pavement to soften. When the surface has thus been softened, the weighted roller irons the pavement smooth. The roller may be attached either to the rear of the oven, as shown in Fig. 1, or, if desired, it may be operated separately.

In order to prevent overheating of the pavement, the vent 11, as already mentioned, is attached to the oven 1. It is preferred in practice to provide this vent with a damper 20, for the purpose of regulating the heat radiation to the degree best adapted for the work.

When the pavement has been heated and the roller 17 has gone thereover, it presents a smooth, finished surface.

What I claim is:

1. An oven for softening pavement by downward heat radiation, burners in said oven, an oil tank above the oven for supplying liquid fuel to said burners by gravitation, a radiating plate of heat-radiating material above said burners, a layer of non-heat conducting material between said radiating plate and the top and sides of the oven for minimizing the heat radiation upwardly and outwardly from the upper part of the oven, and curtains of flexible, non-heat conducting material attached to the sides of the oven.

2. An oven for softening pavement by

downward heat radiation, burners in said oven, an oil tank above the oven for supplying liquid fuel to said burners by gravitation, a radiating plate of heat-radiating material above said burners, a layer of non-heat conducting material between said radiating plate and the top and sides of the oven for minimizing the heat radiation upwardly and outwardly from the upper part of the oven, curtains of flexible, non-heat conducting material attached to the sides of the oven, a vent pipe leading upwardly from the top of said oven, and damper means in said vent pipe.

3. An oven for softening pavement by downward heat radiation, casters supporting said oven, a roller at the rear end of the oven for smoothing the pavement, and curtains of flexible material extending down from the oven and inclosing a surface area which lies entirely within the contact points of the casters and roller.

In testimony whereof, I have hereunto set my hand at Los Angeles, California this 2d day of April 1914.

CHARLES A. SWITZER.

In presence of—
MELKER RUDHOLM,
LORRAINE E. DURROW.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."