An apparatus for recycling asphalt pieces obtained from the repairing work site, to repair rapidly potholes and cracks in roadway and at a minimum cost, and of which it is possible to produce a usable hot asphalt at a temperature about -12 to -15 degrees Celsius.
ASPHALT RECYCLING APPARATUS

BACKGROUND OF THE INVENTION

[0001] Field of the Invention

[0002] This invention relates to an apparatus for recycling asphalt pieces, of which is mounted on the tow bar of a trailer, and of which is used for heating asphalt on site to repair rapidly potholes and cracks in roadway.

[0003] Description of Related Art

[0004] It has long been recognized that asphalt-based material deteriorates in use, and it is known to remove and recycle asphalt of deteriorated roadway to be replaced with new asphalt.

[0005] A search of prior art records has unveiled the following patents:

[0006] 1. CA 2,310,490 registered in 2000 to Zickell;


[0008] 3. U.S. Pat. No. 4,359,381 issued in 1892 to Jinno;


[0010] 5. U.S. Pat. No. 4,124,325 issued in 1978 to Cutler; and


SUMMARY OF THE INVENTION

[0012] To overcome the problem of the repair of potholes and cracks in roadway, there is disclosed an apparatus which is mounted on the tow bar of a trailer, of which is relatively simple to manufacture, and wherein it is possible to produce a usable hot asphalt at a temperature about −12 to 15 degrees Celsius.

[0013] Inevitably, however, the passage of time and traffic and the impingement of weather causes the surface to become brittle and crack.

[0014] Even if cracking does not occur, the passage of traffic can polish the upper road surface, and a polished, slippery road surface may be dangerous.

[0015] It is accordingly the general object of the present invention to provide apparatus for recycling asphalt pieces to repair rapidly potholes and cracks in roadway and at a minimum cost.

[0016] Other objects and advantages of the invention will become apparent upon reading the following detailed description and upon reference to the drawings throughout the drawings like reference numerals refer to like parts.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] This invention will be further explained with reference to the accompanying drawings, wherein:

[0018] FIG. 1 is a perspective view showing a preferred embodiment of an asphalt recycling apparatus according to this invention;

[0019] FIG. 2 is a perspective top view of the asphalt recycling apparatus showing the upper portion of the tank;

[0020] FIG. 3 is a perspective view of the asphalt recycling apparatus showing the lower portion of the tank; and

[0021] FIG. 4 is a side view showing the step of heating operation of the asphalt recycling apparatus of this invention.

DETAILED DESCRIPTION OF THE INVENTION

[0022] In the following, this invention will be explained about a preferred embodiment wherein an asphalt recycling apparatus of this invention is adapted to be mounted on the tow bar of a trailer (B), thus leaving sufficient space for transporting accessories and equipments.

[0023] Referring to FIG. 1 to FIG. 4, the apparatus (A) for recycling asphalt material, comprises a tank housed in a casing (11) to be protected against bad weather, wherein the casing (11) is designed to be movable for repairing a burner (8) located outside the tank and projects toward the interior of the tank to provide a heating flame projecting toward the interior of the tank for heating asphalt pieces (15) obtained from the repairing work site, and wherein the outer surface of the tank is thermally insulated (5) and covered with a box (4) generally made of metal sheet; a roof (1) hinged (2) at the upper portion of the tank for covering the top opening of the passage to prevent heat from escaping, and which can be tilted through the manipulation of handles (3) secured therewith; and a door (12) with handle portion (13) is hinged at the bottom portion of the tank. The oil burner (8) heats the recycled asphalt pieces (15) disposed on a wire netting (10), and wherein a mass of asphalt falls gravitationally at bottom of the tank during the heating operation to be discharged from the bottom of the tank through the door (12) for repairing potholes and cracks in roadway; a plate (6) secured above the burner (8) for it from the hot asphalt falling at bottom of the tank; a plate (9) secured in front of the burner (8) for protecting the tank from the flame of the burner; and a deflector (7) for diverting heat pushed by the fan of the burner to prevent the overheating.

[0024] In addition, an endless screw (not shown) can be fitted therein the tank for agitating asphalt. The oil burner property is excellent, thereby enhancing the asphalt dissolving efficiency and therefore the safety of the heating operation is assured.

[0025] Although only a single embodiment of the present invention has been described and illustrated, the present invention is not limited to the features of this embodiment, but includes all variations and modifications within the scope of claims.

The embodiments of the invention for which an exclusive property or privilege is claimed, are defined as follows:

1. An apparatus for recycling asphalt material, which comprises:

   a tank housed in a casing to be protected against bad weather, wherein the casing is designed to be movable for repairing a burner located outside the tank and projects toward the interior of the tank to provide a heating flame projecting toward the interior of the tank for heating asphalt pieces obtained from the repairing work site, and wherein the outer surface of the tank is thermally insulated and covered with a box generally made of metal sheet;

   a roof hinged at the upper portion of the tank for covering the top opening of the passage to prevent heat from escaping, and which can be tilted through the manipulation of handles secured therewith; and

   a door hinged at the bottom portion of the tank.

2. An apparatus according to claim 1 wherein said oil burner heats the recycled asphalt pieces disposed on a wire netting, and wherein a mass of asphalt falls gravitationally at bottom of the tank during the heating operation to be discharged from the bottom of said tank through the door for repairing potholes and cracks in roadway.
3. An apparatus according to claim 1 including plate means secured therein said tank for protecting oil burner from the hot asphalt falling at bottom of the tank.

4. An apparatus according to claim 1 including plate means secured in front of said burner for protecting said tank from the flame of the burner.

5. An apparatus according to claim 1 including deflector means for diverting heat pushed by the fan of the burner to prevent the overheating.

6. An apparatus according to claim 1 including endless screw means for agitating asphalt.

* * * * *