

CLAIMS

What is claimed is:

1. An apparatus for refining oil from tire, comprising a box body, an upper transmission channel, an upper transmission device, a lower transmission channel, a lower transmission device, a molten salt storage container, and a heat-conduction oil storage container, wherein the upper transmission channel is located above the lower transmission channel; a molten salt liquid channel and a heat-conduction oil channel are respectively disposed on an outside wall of the upper transmission channel and that of the lower transmission channel; the upper transmission channel comprises an upper transmission channel inlet and an upper transmission channel outlet; the lower transmission channel comprises a lower transmission channel inlet and a lower transmission channel outlet; the upper transmission channel outlet is connected to the lower transmission channel inlet; the upper transmission device is configured to transmit an object from the upper transmission channel inlet to the upper transmission channel outlet; the lower transmission device is configured to transmit an object from the lower transmission channel inlet to the lower transmission channel outlet; the molten salt storage container is configured to store heated molten salt liquid, wherein the heated molten salt liquid passes through the molten salt liquid channel and then flows back to the molten salt storage container; the heat-conduction oil storage container is configured to store heated heat-conduction oil, wherein the heated heat-conduction oil passes through the heat-conduction oil channel and then flows back to the heat-conduction oil storage container; and the upper transmission channel, the upper transmission device, the lower transmission channel, the lower transmission device, the molten salt liquid channel and the heat-conduction oil channel are disposed inside the box body.
2. The apparatus for refining oil from tire according to claim 1, wherein the upper transmission channel and the lower transmission channel are both a U-shaped trough with an opening upward, and the molten salt liquid channel and the heat-conduction oil channel both have a U-shaped cross-section.
3. The apparatus for refining oil from tire according to claim 1, wherein the top of the

box body is provided with an oil-gas outlet and a feeding inlet protruding from the box top, a channel of the feeding inlet is provided with a first valve and a second valve, and the first valve is located above the second valve.

4. The apparatus for refining oil from tire according to claim 3, further comprising a
5 condensing gas container, a gas container, and a refining oil container, wherein the refining
oil container and the condensing gas container are respectively located at a lower position
and a higher position, the condensing gas container comprises a condensing gas container
inlet, an uncondensed gas outlet and a refining oil outlet respectively disposed at an upper
part, a middle part and a lower part of the condensing gas container, the gas container
10 comprises a gas container inlet and a gas container outlet, the box body further comprises a
gas inlet of box body disposed at the bottom thereof, the oil-gas outlet is connected to the
condensing gas container inlet, the refining oil outlet is connected to the refining oil
container, the uncondensed gas outlet is connected to the gas container inlet, and the gas
container outlet is connected to the gas inlet of box body.

15 5. The apparatus for refining oil from tire according to claim 1, wherein the upper
transmission channel and the lower transmission channel are cylinder-shaped.

6. The apparatus for refining oil from tire according to claim 5, wherein a side wall of
the upper transmission channel and that of the lower transmission channel are each
provided with a gas outlet port.

20 7. The apparatus for refining oil from tire according to claim 1, wherein the molten
salt liquid channel in the box body is inclined downward.

8. The apparatus for refining oil from tire according to claim 1, further comprising a
holder, wherein the upper transmission channel, the upper transmission device, the lower
transmission channel, the lower transmission device, the molten salt liquid channel and the
25 heat-conduction oil channel are fixed on the holder, and the holder is provided with a wheel
at the bottom thereof.

9. A method for refining oil from tire, utilizing the apparatus for refining oil from tire
according to claim 1, comprising the following steps:

heat-conduction oil cycling: heating heat-conduction oil in the heat-conduction oil storage container, and driving the heat-conduction oil that has been heated to pass through the heat-conduction oil channel and then flow back to the heat-conduction oil storage container;

5 molten salt liquid cycling: after setting time for the heat-conduction oil cycling, driving molten salt liquid in the molten salt storage container to pass through the molten salt liquid channel and then flow back to the molten salt storage container; and

transmitting tire block in the upper transmission channel by the upper transmission device from the upper transmission channel inlet to the upper transmission channel outlet,
10 and transmitting tire block in the lower transmission channel by the lower transmission device from the lower transmission channel inlet to the lower transmission channel outlet.

10. The method for refining oil from tire according to claim 9, wherein the method utilizes the apparatus for refining oil from tire according to claim 2.

11. The method for refining oil from tire according to claim 9, wherein the method
15 utilizes the apparatus for refining oil from tire according to claim 3, further comprising the following steps:

closing the second valve and opening the first valve, so as to transmit the tyre block into the feeding inlet; and

closing the first valve and opening the second valve, so that the tire block enters into
20 the box body.

12. The method for refining oil from tire according to claim 11, wherein the method utilizes the apparatus for refining oil from tire according to claim 4, further comprising the following step:

pumping gas inside the gas container to the gas inlet of the box body.

25 13. The method for refining oil from tire according to any one of claims 9 to 12, further comprising the following step:

extracting gas inside the box body to the condensing gas container, wherein the inner

space of the box body is under a vacuum condition;

and wherein the temperature of molten salt liquid in the molten salt liquid channel is 200°C to 400°C, and the temperature of heat-conduction oil in the heat-conduction oil channel is 100°C to 250°C.

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CLAIMS

1. An apparatus for refining oil from tire, comprising a box body, an upper transmission channel, an upper transmission device, a lower transmission channel, a lower transmission device, a molten salt storage container, and a heat-conduction oil storage container, wherein the upper transmission channel is located above the lower transmission channel; a molten salt liquid channel and a heat-conduction oil channel are respectively disposed on an outside wall of the upper transmission channel and that of the lower transmission channel; the upper transmission channel comprises an upper transmission channel inlet and an upper transmission channel outlet; the lower transmission channel comprises a lower transmission channel inlet and a lower transmission channel outlet; the upper transmission channel outlet is connected to the lower transmission channel inlet; the upper transmission device is configured to transmit an object from the upper transmission channel inlet to the upper transmission channel outlet; the lower transmission device is configured to transmit an object from the lower transmission channel inlet to the lower transmission channel outlet; the molten salt storage container is configured to store heated molten salt liquid, wherein the heated molten salt liquid passes through the molten salt liquid channel and then flows back to the molten salt storage container; the heat-conduction oil storage container is configured to store heated heat-conduction oil, wherein the heated heat-conduction oil passes through the heat-conduction oil channel and then flows back to the heat-conduction oil storage container; and the upper transmission channel, the upper transmission device, the lower transmission channel, the lower transmission device, the molten salt liquid channel and the heat-conduction oil channel are disposed inside the box body; the molten salt liquid channel in the box body is inclined downward.

2. The apparatus for refining oil from tire according to claim 1, wherein the upper transmission channel and the lower transmission channel are both a U-shaped trough with an opening upward, and the molten salt liquid channel and the heat-conduction oil channel both have a U-shaped cross-section.

3. The apparatus for refining oil from tire according to claim 1, wherein the top of the box body is provided with an oil-gas outlet and a feeding inlet protruding from the

box top, a channel of the feeding inlet is provided with a first valve and a second valve, and the first valve is located above the second valve.

4. The apparatus for refining oil from tire according to claim 3, further comprising a condensing gas container, a gas container, and a refining oil container, wherein the refining oil container and the condensing gas container are respectively located at a lower position and a higher position, the condensing gas container comprises a condensing gas container inlet, an uncondensed gas outlet and a refining oil outlet respectively disposed at an upper part, a middle part and a lower part of the condensing gas container, the gas container comprises a gas container inlet and a gas container outlet, the box body further comprises a gas inlet of box body disposed at the bottom thereof, the oil-gas outlet is connected to the condensing gas container inlet, the refining oil outlet is connected to the refining oil container, the uncondensed gas outlet is connected to the gas container inlet, and the gas container outlet is connected to the gas inlet of box body.

5. The apparatus for refining oil from tire according to claim 1, wherein the upper transmission channel and the lower transmission channel are cylinder-shaped.

6. The apparatus for refining oil from tire according to claim 5, wherein a side wall of the upper transmission channel and that of the lower transmission channel are each provided with a gas outlet port.

7. The apparatus for refining oil from tire according to claim 1, further comprising a holder, wherein the upper transmission channel, the upper transmission device, the lower transmission channel, the lower transmission device, the molten salt liquid channel and the heat-conduction oil channel are fixed on the holder, and the holder is provided with a wheel at the bottom thereof.

8. A method for refining oil from tire, utilizing the apparatus for refining oil from tire according to claim 1, comprising the following steps:

heat-conduction oil cycling: heating heat-conduction oil in the heat-conduction oil storage container; and driving the heat-conduction oil that has been heated to pass through the heat-conduction oil channel and then flow back to the heat-conduction oil storage container;

molten salt liquid cycling; after setting time for the heat-conduction oil cycling, driving molten salt liquid in the molten salt storage container to pass through the molten salt liquid channel and then flow back to the molten salt storage container; and

transmitting tire block in the upper transmission channel by the upper transmission device from the upper transmission channel inlet to the upper transmission channel outlet, and transmitting tire block in the lower transmission channel by the lower transmission device from the lower transmission channel inlet to the lower transmission channel outlet.

9. The method for refining oil from tire according to claim 8, wherein the method utilizes the apparatus for refining oil from tire according to claim 2.

10. The method for refining oil from tire according to claim 8, wherein the method utilizes the apparatus for refining oil from tire according to claim 3, further comprising the following steps:

closing the second valve and opening the first valve, so as to transmit the tyre block into the feeding inlet; and

closing the first valve and opening the second valve, so that the tire block enters into the box body.

11. The method for refining oil from tire according to claim 10, wherein the method utilizes the apparatus for refining oil from tire according to claim 4, further comprising the following step:

pumping gas inside the gas container to the gas inlet of the box body.

12. The method for refining oil from tire according to any one of claims 8 to 11, further comprising the following step:

extracting gas inside the box body to the condensing gas container, wherein the inner space of the box body is under a vacuum condition;

and wherein the temperature of molten salt liquid in the molten salt liquid channel is 200°C to 400°C, and the temperature of heat-conduction oil in the heat-conduction oil channel is 100°C to 250°C.