CLAIMS

What is claimed is:

1. A packing container melting system comprising:

a melting tank; and

a heating means disposed in the melting tank to melt a soluble and meltable packing (SMP) container; wherein the SMP container is packed with bitumen;

wherein the melting tank is a double walled melting tank (401) with an inner wall and an outer wall; wherein a void is formed between the inner wall and the outer wall;

wherein the void of the doubled walled melting tank (401) is fluidly coupled with a first inlet connection (403) that is in turn fluidly coupled with an external source of heating medium; wherein the first inlet connection (403) introduces the heating medium into the void of the double walled melting tank (401);

wherein the void of the double walled melting tank (401) is fluidly coupled with a first outlet connection (404) that is in turn fluidly coupled with an external reservoir for heating medium; wherein the first outlet connection (404) discharges the heating medium from the void of the double walled melting tank (401); and

wherein the heating means (405) are heating hollow coils through which the heating medium is pumped to melt the SMP container and its packed bitumen.

2. The packing container melting system of claim 1, wherein the heating hollow coils are thick-walled steel pipes; wherein the upper circumferences of the heating hollow coils are fitted with sharp leading ends.

3. The packing container melting system of claim 1, further comprising:

a mixing means being disposed within the double walled melting tank (401), wherein when the SMP container and its packed bitumen are melted, the mixing means mixes the melted SMP container and packed bitumen to ensure that the melted SMP container is completely dissolved in the melted packed bitumen.

4. A packing container melting system comprising:

a melting tank;

a heating means disposed in the melting tank to melt a soluble and meltable packing (SMP) container; wherein the SMP container is packed with bitumen; and

an insulated common heating tank (501);

wherein the melting tank is comprised of a plurality of single walled tanks (502) disposed in the insulated common heating tank (501); wherein each of the plurality of single walled tanks (502) is equipped with the heating means, an inlet connection (503) for supplying heating medium to the heating means (513), and an outlet connection (504) for discharging the heating medium after the heating medium has passed the heating means (513);

wherein the insulated common tank (501) is provided one or more discharge valves (505) disposed at its bottom for discharging the melted packing container and bitumen;

wherein the packing container melting system further comprises:

a common holding tank (506) for holding the melted packing container and bitumen discharged from the plurality of single walled tanks (502);

a common holding tank discharge valve (507) disposed at the bottom of the common holding tank (506), where the common holding tank discharge valve (507) controls the discharge of the melted packing container and bitumen from the common holding tank (506);

a recirculation pump (508) fluidly coupled with the common holding tank discharge valve (507); and

a mixer (509) fluidly coupled with the recirculation pump (508), where the mixer (509) mixes the melted packing container and bitumen and discharges back to the common holding tank (506).

5. The packing container melting system of claim 4, further comprising:

a plurality of mixing means; at least one of the plurality of mixing means is disposed within one of the plurality of single walled tanks (502), wherein when the SMP container and its packed bitumen are melted, the mixing means mixes the melted SMP container and packed bitumen to ensure that the melted SMP container is completely dissolved in the melted packed bitumen.

6. A packing container melting system comprising:

a melting tank;

a heating means disposed in the melting tank to melt a soluble and meltable packing (SMP) container; wherein the SMP container is packed with bitumen; and

an insulated common heating tank (501);

wherein the melting tank is comprised of a plurality of single walled tanks (502) disposed in the insulated common heating tank (501); wherein each of the plurality of single walled tanks (502) is equipped with the heating means, an inlet connection (503) for supplying heating medium to the heating means (611), and an outlet connection (504) for discharging the heating medium after the heating medium has passed the heating means (611);

wherein the packing container melting system further comprises:

a plurality of internal temperature resistant swivel joints (601) and external temperature resistant swivel joints (602), wherein each of the swivel joints (601) and (602) is disposed to each of the plurality of single walled tanks to couple with the heating means (611);

a belt drive unit (605), wherein the belt drive unit (605) comprises a motor and a gearbox for driving the plurality of swivel joints (601) and (602); thereby when the plurality of swivel joints (601) and (602) are turning, the heating means (611) are driven into turning and mixing the melted SMP container and bitumen while permitting the heating medium flow through the heating means (611);and

a bitumen product discharge valve (607) disposed at the lower portion of the singled walled tank for discharging the mixed melted packing container and bitumen.

7. The packing container melting system of claim 6, wherein each of the plurality of swivel joints comprises:

a hot fluid input pipe (603) for inputting the heating medium into the single walled tanks; and

a hot fluid return pipe (604) for discharging the heating medium from the single walled tanks.

8. A packing container melting system comprising:

a melting tank; and

a heating means disposed in the melting tank to melt a soluble and meltable packing (SMP) container; wherein the SMP container is packed with bitumen;

wherein the melting tank is a single walled tank (701) with a guide (702);

wherein the single walled tank (701) is disposed a tank heating belt (703) around and powered by electricity;

wherein the heating means are steel probes (704) with a pointed leading end; wherein the steel probes (704) are disposed within the single walled tank (701);

wherein the steel probes (704) are disposed of cartridge heating elements (705) inside; and

wherein the lower portion of the single walled tank (701) is disposed a bitumen discharge valve (706) for discharging the melted container and bitumen.

9. A packing container melting system comprising:

a melting tank; and

a heating means disposed in the melting tank to melt a soluble and meltable packing (SMP) container; wherein the SMP container is packed with bitumen;

wherein the melting tank is comprised of a plurality of single walled tanks (801), where each of the plurality of single walled tanks (801) has a guide (802);

wherein each of the plurality of the single walled tank (801) is disposed a tank heating belt (803) around and powered by electricity;

wherein the heating means are steel probes (804) with cartridge heating elements being disposed within the steel probes (804);

wherein the packing container melting system further comprises:

a thrust bearing (805) enabling the steel probes (804) mounted on a circular base to rotate;

a belt drive spindle (806);

a rotary electrical connector (807);

a product discharge valve (808);

an electrical drive unit (809) for operating an individual heater/mixer;

a motor, gear box and drive belt spindle assembly (810);

a drive belt (811); and

a common base plate (812) on which the individual heaters/mixers are fixed.