[0017] In another preferred embodiment, the system may include a housing, an oil distributor, a three-stage filter, and a heating element. The housing may enclose a platen having an evaporation surface. The oil distributor may also be located in the housing and may be configured to receive an incoming oil stream and to direct the oil over at least a portion of the evaporation surface. The heating element may be in thermal communication with the platen. The three stage filter may remove particles from the oil stream prior to the oil stream being introduced to the oil distributor. The first stage of the filter may be exterior to the second stage and configured to remove particles between about 25-40 microns. The second stage of the filter may be exterior to the third stage and configured to remove particles between about 10-25 microns. The third stage of the filter may be configured to remove particles greater than 3 microns. The evaporation surface may be heated to a temperature sufficient to volatilize the contaminants, resulting in a purified liquid oil which may be collected and reused with the engine.

[0018] In one preferred method of practicing the invention a method of separating contaminants from an oil stream associated with an internal combustion engine is provided. The method may include the steps of introducing a contaminated oil stream from the engine to an oil distributor; transforming the contaminated oil stream to a mist; distributing the mist over an upper portion of an evaporation surface located in a housing; heating the evaporation surface; discharging the contaminants from the housing; collecting the purified oil from a lower portion of the evaporation surface; and reintroducing the purified oil to the engine.

[0019] Other systems, methods, features, and advantages of the present invention will be, or will become, apparent to one having ordinary skill in the art upon examination of the following drawings and detailed description. It is intended that all such additional systems, methods, features, and advantages be included within this description, be within the scope of the present invention, and be protected by the accompanying claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] The novel features which are characteristic of the invention are set forth in the appended claims. The invention itself, however, together with further objects and attendant advantages thereof, can be better understood by reference to the following description taken in connection with the accompanying drawings, in which:

[0021] FIG. **1** is a diagrammatic view illustrating a lubricating system employing an embodiment of the oil purifier of the present invention which includes a purifier filter and a purifier chamber;

[0022] FIG. **2** is a sectional view of the purifier chamber of FIG. **1**, including a flow platen;

[0023] FIG. **3** is a sectional view of the flow platen of FIG. **2**; and

[0024] FIG. **4** is a block diagram of a preferred embodiment of a process of practicing the present invention.

[0025] The components in the drawings are not necessarily to scale, emphasis instead being placed upon clearly illustrating the principles of the present invention. In the drawings, like reference numerals designate corresponding parts throughout the several views.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0026] Set forth below is a description of what are believed to be the preferred embodiments and/or best examples of the invention claimed. Future and present alternatives and modifications to the preferred embodiments are contemplated. Any alternatives or modifications which make insubstantial changes in function, in purpose, in structure, or in result are intended to be covered by the claims of this patent.

[0027] FIG. **1** shows a lubricating system **100** employing a preferred embodiment of oil purifier **102** of the current invention. In lubricating system **100**, lubricating oil that has drained and collected in an oil pan **21** may be withdrawn by an engine lubricating oil pump **22** connected to conduit **23**. Conduit **23** may be associated with a lubricating oil screen structure **24** that may be located in the oil pan **21**. From pump **22**, the oil may be passed to a main lubricating oil stream successively through respective conduits **26** and **27** and into a replaceable oil filter **28** or the like.

[0028] In filter **28**, the pressurized oil stream from conduit **27** may be filtered to remove filterable contaminants, such as particulates and sludge. The filtered oil may pass into a conduit system **33** through which it may be conveyed to engine bearings **34** for lubrication purposes. From the bearings **34**, the oil may drain (not detailed in FIG. **1**) and may again collect in the oil pan **21** for recycling through pump **22**. For a description of conventional portions of system **100**, see U.S. Patent Publication 2005/0040077 to DePaul, which is entirely incorporated herein by reference.

[0029] A by-pass valve or proportional flow divider **104** may be placed between conduits **26** and **27**. The flow divider **104** may separate the oil stream into a main oil stream in conduit **27** and a bypass oil stream that may be introduced to conduit **31**. The flow divider **104** may include a number of passageways, or holes, for accurately regulating the amount of oil entering the bypass oil stream. The bypass oil stream that enters and flows through conduit **31** may be introduced to oil purifier **102**. Oil purifier **102** may include a purifier filter **106** and a purifier chamber **108**.

[0030] The invention is not limited to any particular engine application. As non-limiting examples, the invention may be used with automobile engines, marine engines, truck engines, construction equipment engines, recreational vehicle engines, agricultural engines, and other types of engines, including any diesel engines that employ oil for lubricating and/or cooling. In one embodiment, the bypass oil stream may constitute particular application, in the case of a typical truck engine having approximately a 40-quart lubricating oil capacity, a 14% bypass permits sufficient oil purification through the current invention, while ensuring sufficient main oil stream flow for lubricating engine components, such as bearings **34**.

[0031] Under pressure generated by pump **22**, the bypass oil stream may be introduced to oil purifier **102** and may be processed as described herein, first to separate filterable contaminants and then to separate volatile, i.e. low boiling point, contaminants from the bypass oil stream. The resulting processed and purified oil may exit from oil purifier **102** through interconnecting conduit **36**, which may be a 0.75-inch diameter conduit. In one embodiment, conduit **36** may