U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

CLASSIFICATION ORDER 1857

October 3, 2006

Project No. C-4579

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<th>Subclass</th>
<th>Art Unit</th>
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<td>Abolished:</td>
<td>210</td>
<td>167-170, 172</td>
<td>1724</td>
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Cross-Reference Art Collection 931 1724 RND-815

The following classes are impacted by this project:

Class(es): 4, 37, 52, 62, 99, 119, 123, 137, 174, 184, 209, 405, 422

This order includes the following:

A. CLASSIFICATION MANUAL CHANGES

B. LISTING OF PRINCIPAL SOURCE OF ESTABLISHED AND DISPOSITION OF ABOLISHED PAGES

C. CHANGES TO THE U.S. – I.P.C. CONCORDANCE

D. DEFINITION CHANGES
U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

CLASSIFICATION ORDER 1857

October 3, 2006

Project No. C4579

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Examiner(s): Peter Hruskoci
Editor: Mildred Chisholm
Processes

Treatment by living organism

Including plant or animal of higher order

Including collecting or storing gas (e.g., fuel, carbon monoxide, etc.)

...And reusing oxidant

...Anaerobically, with subsequently aerobically treating liquid

...Adding enzyme or releasing same by treating microorganism

...Dividing, treating, and recombining liquid

...Regulating floating constituent

...Including dewatering sludge

...Including adding ancillary growth medium for microorganism

...For or with specific microorganism

...And regulating temperature during biological step

...Digesting sludge

...Utilizing contact surfaces supporting microorganism (e.g., trickling filter, etc.)

...Particulate media

...In bed form

...And rehabilitating or regenerating same

...Rotating contactor

...Aerobic treatment

...Recirculating to prior step

...Of separated liquid

...Of sludge or separated solid

...And returning to or withdrawing from diverse treating zones

...Treating outside mainstream

...To mainstream oxygenation (e.g., activated sludge, etc.)

......Utilizing specific oxidant, other than air alone (e.g., oxygen-enriched air, ozone, peroxide, etc.)

......Utilizing mechanical aeration means

...And internally circulating the liquid

...And anaerobic treatment

...And additional treating agent other than mere mechanical manipulation (e.g., chemical, sorption, etc.)

.Treating by enzyme

.Extracting utilizing solid solute

.Liquid/liquid solvent or colloidal extraction or diffusing or passing through septum selective as to material of a component of liquid; such diffusing or passing being effected by other than only an ion exchange or sorption process

.Liquid/liquid or gel type (i.e., jellylike) chromatography

...Including cleaning or sterilizing of apparatus
CLASS 210 LIQUID PURIFICATION OR SEPARATION

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ION EXCHANGE OR SELECTIVE SORPTION

- Including rehabilitating or
  regenerating exchange material or
  sorbent

- Of oil sorbent material

- Fractional, selective, or partial
  type

- Utilizing gas, water, or chemical
  oxidizing or reducing agent

- Utilizing organic regenerant

- Rehabilitating or regenerating in
  diverse zone or chamber

- Continuous cyclic process

- Using conserved or recirculated fluid

- Including liquid flow direction
  change

- Utilizing exchange or sorbent material
  associated with inert material

- Including oil sorbent

- Removing ions

- Radioactive

- Anions

- Metal complexed (e.g., chromate,
  ferricyanide, chlorplatinate,
  etc.)

- Including cation

- Utilizing mixed bed or amphoteric
  material

- Calcium or magnesium (e.g., hardness,
  water softening, etc.)

- Heavy metal

- Sorbing water from diverse liquid

- Sorbing organic constituent

- From aqueous material

- Utilizing synthetic resin

- Oil removed

- Utilizing activated carbon

- Using magnetic force

- Preventing, decreasing, or delaying
  precipitation, coagulation or
  flocculation

- Utilizing inorganic phosphorus agent

- Utilizing organic agent

- Phosphorus containing

- Nitrogen containing

- Acrylic polymer

- Making an insoluble substance or
  accreting suspended constituents

- Effecting flotation

- Including chemical addition (with or
  without bouyancy gas)

- Chemically specified precipitant,
  coagulant, or flocculent

- And significant characteristic of
  the bouyancy gas, other than
  more addition of same

- Generating gas in situ

- Including emulsion breaking

- Controlling process in response to
  stream condition

- Treating the insoluble substance

- For recovery of a treating agent

- Including recycling

- Of separated solids

# Title Change
* Newly Established Subclass

# Indent Change
& Position Change
PROCESSES

Chemical treatment

By oxidation

Liquid phase high temperature and pressure (e.g., "wet air", etc.)

Catalytic

Catalytic

Destroying microorganisms

Including liquid recirculation

Including temperature change

Separating

Including treating separated solids

Destroying cake or solid component

Including drying (e.g., by squeezing or heating, etc.)

By gas contact

Washing with a fluid other than the prefilt

Including preliminary conversion to liquid state

Including temperature change

Thermal diffusion

Skimming

Including precoating filter medium with filter aid

With or by addition to prefilt

Discharging residue to prefilt

Including movement of filter during filtration

Centrifugally extracting

Blood

Rotating belt

Rotating drum

Cleaning filter utilizing wave energy (e.g., vibrating, pulsating, etc.)

Of particulate bed (e.g., fluidized or moving bed, etc.)

Cyclonic, or centrifugal (e.g., whirling or helical motion or by vortex, etc.)

Introducing liquid tangentially

Isolating layer

Dividing and recombining

Rehabilitating or regenerating filter medium

Particulate bed

Reverse flow

Including addition of diverse fluid

Expanded bed

Including mechanical agitation

By diverse fluid

Reverse flow

Filtering immiscible liquids

Utilizing gravitational force

Including change of mainstream flow direction

Utilizing parallel separation passages

Including specified feature of settled solids removal

And additional diverse separation

And recirculating liquid

Plural separating

Utilizing particulate bed

Including specified pressure change

With alarm, indicator, register, recorder, signal or inspection means

Material level or thickness responsive

Responsive to fluid flow

Meter-controlled cyclic systems

With time control

Fluid pressure responsive

Position or extent of motion

Test valve

In effluent conduit

Transparent

Sight glass

CONSTITUENT MIXTURE VARIATION RESPONSIVE

With membrane

FLOW, FLUID PRESSURE OR MATERIAL LEVEL, RESPONSIVE

Fluid current controlled cyclic systems

Prefilt deverting to drain by prefilt accumulation

Flow cut-off requiring reset

Proportionate feed means

Programming plural units

Diverse sensing means

Responsive to material level

With control for auxiliary liquid inlet

Filter cleaning

Rotary movement of filter or mechanical cleaner

Backwash or blowback

Discharge of treated material

With separator inlet control

Responsive to prefilt accumulation or filter clogging

Heavier constituent

By weight of solids

By treated liquid accumulation

With lighter constituent outlet control

Permitted by filtrate accumulation

Check valve controlled

Non-closing, e.g., sand valve

Float type

Vent control

Float

Controls movable separator

Controls valve

Controls flow between two separators

Separator between float and valve

Float in separate rehabilitating fluid tank

Additional fluid inlet control

Float in receptacle other than that of separator

In flow between inlet and separator

Fluid pressure responsive by-pass

By movement of separation medium
FLOW, FLUID PRESSURE OR MATERIAL LEVEL, RESPONSIVE

*167.18...Skimmer arm at skimmer opening at water surface
*167.19...Mesh or screen filter at or near water surface
*167.2...Having floating means
*167.21...For aquarium
*167.22...Separator using living organism
*167.23...Separator or part thereof associated with bottom of aquarium (e.g., means positioned under gravel, etc.)

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WITH TIME CONTROL

*167.24...Having solid sorbent
*167.25...Particulate filter or particulate sorbent
*167.26...Separator with aerator
*167.27...Separator mounted on top edge of aquarium wall

WITH PROGRAM ACTUATOR

*167.28...For cooking oil system
*167.29...Having magnetic treating means
*167.3...With means to add treating material
*167.31...Plural separators
*167.32...With heating or cooling means
*170.01...Geographic
*170.02...For fishpond
*170.03...For stormwater treatment (e.g., rainwater runoff, storm sewer treatment, etc.)

WITH GAS-LIQUID SURFACE CONTACT MEANS

*170.04...For excavating means
*170.05...Floating means
*170.06...Separator with aerator
*170.07...Groundwater
*170.08...Septic tank or waste liquid treatment system
*170.09...Body of freshwater (e.g., pond, lake, reservoir, etc.)
*170.1...Surface flowing freshwater (e.g., stream, river, ditch, canal, etc.)
*170.11...Body of saltwater (e.g., sea, ocean, etc.)

WITH GAS-LIQUID SURFACE CONTACT MEANS

*171...Machinery
*172.1...Separator ancillary to storage tank
*172.2...Submerged separator
*172.3...On pump suction intake
*172.4...Filter supported by frame (e.g., bag shaped filter in fuel tank for engines, etc.)

*172.5...Having tethering means
*172.6...In tank inlet

WITH GAS-LIQUID SURFACE CONTACT MEANS

*173...Comminuting
*174...Cylindrical strainer
*175...With heater or heat exchanger
*176...Thermal diffusion
*177...With treating fluid addition
*178...With mechanical agitator or movable separator

*179...With mechanical agitator or movable separator
*180...Vapor or gas removal
*181...Flow line connected in series with distinct separator
*182...Diverse separators
*183...Common casing coaxial with heater
WITH HEATER OR HEAT EXCHANGER
..For filter
..Imbedded or between filter media
..External of casing
..Within gravitational separator
WITH GAS SEPARATOR
PLURAL CHAMBERS WITH MOVEMENT OF CHANNELS THRESHBETWEEN
WITH EXTERNAL SUPPLY MEANS FOR REGNERATING MEDIUM, R.G., WATER SOFTENING SYSTEM
..With pump, injector or siphon
WITH PRELIMINARY CHEMICAL MANUFACTURE
WITH PRECOAT ADDING OR APPLYING MEANS
RECIRCULATION
..Serially connected distinct treating or storage units
..With semipermeable membrane, e.g., dialyzer, etc.
..With sediment recycle means directly to main stream
..Means is baffle slot
..Of filtrate
..From bottom of separator
WITH MEANS TO ADD TREATING MATERIAL
..Chromatography
..Thin layer, e.g., plate, etc.
..Spaced along flow path
..Plural distinct separators
..Serially connected
..Diverse type
..Filters
..Sectional chamber press type
..With distinct reactor tank, trough or compartment
..Chemical holder in series with separator
..Within gravitational separator
..With mechanical agitator
..Directly applied to separator
..To interior of moving filter, e.g., drum
..Through separator supporting rotary shaft
..With stationary casing closure feature
..With coaxial rotary impeller or distributor
..With stationary mount for movable distributor
..With effluent dividing means
..Moving filter medium
..Drum
..Gas removed from closed tank
..With mechanical agitator
..Submerged fluid inlet
..With outlet at surface, e.g., froth flotation, etc.
..And gas injecting means other than by mechanical agitation
MAGNETIC
..With additional separator
SECTIONAL CHAMBER PRESS TYPE

WITH RESIDUE REMOVAL OR LIQUID AGITATION
..With porous filler
..Medium clamped in joint
..With spacing frame
..Imperforate base recess in plate
..With repair or assembling means
..Plates or frames
WITH REPAIR OR ASSEMBLING MEANS
..Piercing or closure knock out means
..Removable treatment part with normally disabled flow controller
..Placement of container opens flow controller
..Sliding or rolling on guides means
..Hoist or handle means
..Hand manipulable
CONVERTIBLE
..Filter having selectively usable flow connector means
WITH MOVABLE SUPPORT
..Float
..With aerating means
..With oil water skimmer
..With oil water sorption means
..ELECTRICAL INSULATING OR ELECTRICITY DISCHARGING
PORTABLE RECEPTACLE WITH HOOD OR CLOSURE
..Attached variable flow controller
..Limited opening cover
..FILTERATE SPLASH PLATE AND/OR DEFLECTOR WITH DRAIN, OVERFLOW OR CONTENT DRAINING FEATURE
..BRACKET OR LEG SUPPORT FOR STATIC SEPARATOR ASSEMBLY
..Leg
..COMBINED
SERIALLY CONNECTED DISTINCT TREATING WITH OR WITHOUT STORAGE UNITS
..Parallel
..With by-pass
..Cascade
..One unit inside another
..With storage unit
..Having membrane
..With pump, gas pressure or vacuum source
..Diverse
..Including multiple operation unit
..One unit supports another
..On different levels
..PARTICULAT MATERIAL TYPE SEPARATOR, E.G., ION EXCHANGE OR SAND BED
..Selective units or compartments
..With gravitational separator
..With spaced non-particulate separating means
..Trunnion mounted casing
..Gravity flow of particles type
..With rehabilitation means
PARTICULATE MATERIAL TYPE SEPARATOR, 
E.G., ION EXCHANGE OR SAND BED
. With rehabilitation means
270 . . Movable means for particle pickup and redeposit
271 . . Surface traversing type
272 . . Rotating on stationary axis
273 . . Moving fluid distributor
274 . . Including means to apply gas to bed
275 . . Backwash or blowback means
276 . . With mechanical agitator or residue remover
277 . . Flow controller external of closed casing
278 . . Multi-way valve unit
279 . . With embedded fluid distributor
280 . . With agitator
281 . . With access opening to normally closed casing
282 . . Removable cartridge or hand-manipulated container
283 . . Pervious divider between and contacting beds
284 . . Spaced beds
285 . . Embedded baffle
286 . . Vertical
287 . . Within flow line or flow line connected closed casing
288 . . Conduit through bed, inlet and outlet at same end of casing
289 . . With particular liquid receiving means or foraminous bed retainer
290 . . With multi-layer beds
291 . . Particular liquid receiving means or foraminous bed retainer
292 . . Hood or top protector type
293 . . Floor type, e.g., false bottom
294 DIVERSE DISTINCT SEPARATORS
295 . Including a filter
296 . . Including liquid as a separating medium
297 . . Moving filter medium
298 . . With mechanical residue or sediment mover
299 . . Including constituent trapping feature
300 . . Alternate filters and traps in series
301 . . Plural traps
302 . . Flow-line valve upstream of separator
303 . . Cut-off sediment trap
304 . . Tangential flow, spiral or convolute baffle
305 . . Baffle preceding or within sediment trap
306 . . Deflecting prefilt from filter medium
307 . . Downstream of filter medium
308 . . Directly communicating with tubular filter interior
309 . . Attached to filter element
310 . . Lateral trap
311 . . Downflow inlet, upflow through filter medium
312 . . Sediment discharge means
313 . . Valve controlled
314 . . Spaced filters

# Title Change
* Newly Established Subclass

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315 . . One within another
316 . . One adjacent inlet or outlet conduit
317 . . Including non-self-supporting medium
318 . . Incompatible shapes
319 . . With agitator
320 . . With baffle perpendicular to flow direction
321.6 CASING DIVIDED BY MEMBRANE INTO SECTIONS HAVING INLET(S) AND/OR OUTLET(S)
321.61 . Membrane secured with adhesive of specified composition
321.62 . Antithrombogenic membrane
321.63 . Rotating mechanical agitator adjacent membrane
321.64 . Plural diverse structured membranes within a single casing
321.65 . Permeated liquid quantity measurement or control
321.66 . Energy recovery from treated liquid
321.67 . Membrane movement during purification
321.68 . Nontranslatory rotary
321.69 . With membrane cleaning or sterilizing means (other than by filter movement or rotating agitator)
321.7 . Solid cleaning material (e.g., balls)
321.71 . Dialyzer with dialysate proportioning means
321.72 . Each section having inlet(s) and outlet(s)
321.73 . None coiled nonannular cross section tube
321.74 . Coiled membrane
321.75 . Planar membrane
321.76 . Spiral flow
321.77 . Pleated membrane
321.78 . Cylindrical membrane
321.79 . Plural cylindrical membranes all connected for parallel flow
321.8 . All cylindrical membranes are parallel
321.81 . . With embedded baffle
321.82 . . None coiled nonannular cross section tube
321.83 . . Coiled membrane
321.84 . . Planar membrane
321.85 . . Spiral flow
321.86 . . Pleated membrane
321.87 . . Cylindrical membrane
321.88 . . Plural cylindrical membranes all connected for parallel flow
321.89 . . All cylindrical membranes are parallel
321.9 . . With embedded baffle
322 PLURAL DISTINCT SEPARATORS
322.1 . Filters
322.2 . Tubular
322.4 . Movable separating elements
325 . . Planetary
326 . . Drum type on parallel axis

& Position Change

# Indent Change

@
PLURAL DISTINCT SEPARATORS

..Filters
...Movable separating elements
327
...Plural cleaners and plural movable elements
328
...Pivotedly mounted sections
329
...Relatively movable
330
...Connected for group operation
331
...Spaced filter wall type, e.g., multiple hollow leaves
332
...With residue removal or liquid agitation
333.01
...Backwash or blowback
333.1
...Sequential backwash
334
...Alternating filter and residue remover
335
...In series for prefilt flow
336
...Tortuous path
337
...Nested units
338
...Concentric filter elements
339
...Internal flange supporting filter element
340
...Parallel filters with flow controller
341
...Individually controlled for removal with common receiver
342
...One element within another
343
...Alternating oppositely opening liquid distributors
344
...Abutted alternating medium and pan type receiver
345
...Radial or radially connected to central header
346
...Speeded wall-type filters
347
...Central header
348
FILTER
...Pulsation dampener or gas trapping
349
...With movable means to compress medium
350
...Actuating means external of closed casing
351
...Internal spring
352
...Free cleaning means, e.g., loose abrading particles
353
...Medium, cleaner or agitator moved by fluid
354
...Cleaner
355
...Medium flexed
356
...Relatively movable members interleaved for cleaning
357
...Impervorate drum, medium on arc, chord or end
358
...Movable medium
359
360.1
...Centrifugal extractor
360.2
...With inward flow of feed component
361
...With individual article container or support
362
...Container or support reversible
363
...With adjustable rotation stabilizer
364
...Casing, shaft and filter unit gyratorily mounted
365
...Shaft and filter unit gyratorily mounted
366
...Gyratory mounting above filter
367
...Filter gyratorily mounted on shaft
368
...With rotation brake
369
...Discharging residue
370
...Secondary motion of filter medium
371
...With variable flow controller
372
...By residue engaging means
373
...Fixed
374
...Rotatable
375
...Pivoted
376
...Axially reciprocable
377
...Internal work distributor
378
...Including filtrate receiving means having plural filtrate outlets
379
...Including filtrate receiving trough adjacent top discharge
380.1
...Rotating element construction
380.2
...Laundry
380.3
...Horizontal axis
381
...Inwardly extending partitions
382
...Top filtrate discharge
383
...Separate agitator
384
...Vibrator and unidirectional motion filter medium
385
...With plural motion
386
...Rolls or confining members contacting residue
387
...Unrollable
388
...Vibrating or longitudinally reciprocating
389
...Longitudinally moving prefilt type
390
...Mounted on movable valve element
391
...With cleaning means
392
...Fixed position or attached valve blocking means
393
...Backwash or blowback and additional cleaner
394
...Discharging inside, e.g., internal-type drum
395
...With filter-driven valve means
396
...Solid cleaner, e.g., scraper
397
...With plural outlets from filter casing
398
...Within sealed enclosure
399
...Movable casing
400
...Belt type
401
...Superimposed on additional moving support
402
...Drum type
403
...Internal feed
404
...Annular segmented compartment
405
...Movable prefilt distributor
406
...Vacuumized filtrate receiver
407
...With residue removing means or agitation of liquid
408
...Diverse, e.g., combined agitators, scrapers, aeration blowback
409
...Fluid cleaning
410
...Air pump type
411
...Backwash or blowback
412
...Liquid pulsator
413
...Fixed filter medium and movable stirrer or cleaner
FILTER
- With residue removing means or agitation of liquid
- Fixed filter medium and movable stirrer or cleaner
- With plural outlets from filter casing
- Nontranslatory rotary
- With pump, gas pressure, or suction source
- For aquarium or swimming pool
- For drinking water
- For fuel system
- For lubricating or oil treating system
- Alternating oppositely opening liquid distributors
- With flow controller for material being treated
- Attached to or within portable prefilt receiver
- Selective directive flow relative to filter
- Pivoted prefilt deflector
- Plural outlets from filter casing
- Attached unitary plural passage header
- Multi-way valve
- Backwash
- Encased
- Backwash
- Combining or dividing flow passages with filter in combined passage
- Filter coaxial with valve seat or valve stem
- Filter surrounds valve
- Filter fixed to valve seat, opposed to valve head
- Filter in valve body recess
- Divided filtered, and unfiltered liquid passages
- Recombining
- Within flow line or flow line connected close casing
- Vented
- Central internal liquid receiver, e.g., tube
- Imperforate central liquid tube
- Axial flow through filter element
- Inlet and outlet at same end
- Attached to casing
- Head and base connected
- Inlet and outlet at same end
- Filter suspended from head
- Clamped in casing joint
- Axially aligned inlet and outlet
- Laterally removable
- Single open-end-type filter element
- Pipe end attached closed casing, e.g., faucet
- Gasket within casing or spaced removable end members
- Internal fixed shoulder supporting filter element
- Single open-end-type filter element

Filter element clamped between closure and end wall
Filter element attached to closure
Receptacle and modified spacing surface or support for filter medium
Prefilt flow distributor or divoter
With central pervious tubular receiver
Plural concentric receivers
Pipe or plate attached type
Attached to open end of pipe
Spaced wall-type element
Pipe is connection to plate
Inserted holder
Portable receptacle draining type
Cooperating handles on receptacle and drainer
Receptacle spout
Within receptacle proper
Spaced from spout discharge
On or adjacent receptacle upper edge
Handled
Ring type
Vented
Resting on supporting receiver, e.g., portable
At upper edge of filtrate receiver
Filter offset in cover
Telescoped receivers or receiver sections
Resting on internal stop or surface
Unitary filter medium and radially expandable retainer
Inner separate retainer
With contractor for expandable retainer
Longitudinal retainer or guide, (e.g., reflex coffee maker)
At lower end or prefilt receiver
Supported, shaped or superimposed formed mediums
Medium within foraminous supporting container or sheath
External cage-type support
Spaced wall type, e.g., hollow leaf
Concentric, convolute or pleated
Abutted or superimposed members
For series flow
Integral or coated layers
All fibrous
Alternating dissimilar
Pleated
Bonded end caps
Rectangularly shaped
Spirally formed
Filter element
Convolute
Metal
With edge spacer
Single ring or closed frame type

# Title Change
* Newly Established Subclass
& Indent Change
% Position Change
FILTER
 Supported, shaped or superimposed formed mediums
 Bound, fused or matted, e.g., porous shapes, sponges, etc.
 Helically wound
 Filter blank
 Conical
 Perforated or grooved plates
 Screens, e.g., woven
 Material
 Semi-permeable membrane
 Isotropically pored
 Hollow fiber or cylinder
 Antithrombogenic coating or membrane
 Metal containing
 Glass
 Organic
 Cyclic
 Cellulosic
 Cellulose acetate
 Cellulose diacetate
 Cellulose triacetate
 Homocyclic
 Styrene
 Acrylate
 Alkene other than vinyl
 Amine
 Amide
 Imide
 Carbonate
 Sulfone
 Vinyl
 Acrylonitrile
 Sterilizing or neutralizing agent containing
 Sorptive component containing
 Diverse granular or fibrous
 With adhered coating or impregnant
 Including fibers
 Coated or impregnated, e.g., adhesively bound
 Fabrics
 Fibrous
 Inorganic
 Porous unitary mass
 LIQUID AS SEPARATING MEDIUM
 TANGENTIAL FLOW OR CENTRIFUGAL FLUID ACTION
 Multiple cyclone
 With movable means affecting flow
 PORTABLE INVERTIBLE SEPARATOR
 Portable invertible, e.g., milk and cream separator
 Selective withdrawal of constituents
 Resilient deformable isolator
 Hinged to handle
 Sectional isolator
 Material supply distributor
 Rotatable
 Superposed compartments or baffles, e.g., parallel plate type
 Each with lighter constituent discharge
 Mechanical constituent mover
 Diverse serial
 Scum sediment removal
 Endless belt or chain
 Rectilinearly movable supporting means
 Horizontally rotating scraper
 Polygonal container and correlating mover
 Tank rim-supported carriage
 Elevable scrapers
 Septic tank
 Closure or valve controlled discharge
 In sloping recess
 Downstream of separator
 In side wall of separator
 With discharge means for two or more lighter constituents
 Lighter constituent trap
 Gas vent or bypass
 With discharge port
 ADJUNCTS
 MISCELLANEOUS
 CROSS-REFERENCE ART COLLECTIONS
 MATERIALS REMOVED
 Nitrogenous
 -CN containing
 Protein
 Phosphorus containing
 Phosphate slimes
 Organic
 Aromatic compound (e.g., PCB, phenol, etc.)
 Nonbiodegradable surfactant
 Cumulative poison
 Heavy metal
 Chromium
 Mercury
 Fluorine containing
 Odor (including control or abatement)
 Color
 MISCELLANEOUS SPECIFIC TECHNIQUES
 Using combined systems by merging parallel diverse waste systems
 Using combined systems of sequential local and regional or municipal sewage systems
 Flow equalization or time controlled stages or cycles
 Oil spill cleanup (e.g., bacterial, etc.)
MISCELLANEOUS SPECIFIC TECHNIQUES

Oil spill cleanup (e.g., bacterial, etc.)
923 . . . Using mechanical means (e.g., skimmers, pump, etc.)
924 . . . Using physical agent (e.g., sponge, mop, etc.)
925 . . . Using chemical agent
926 . . . Using oxidation ditch (e.g., carousel, etc.)

Paper mill waste (e.g., white water, black liquor, etc.) treated
929 HEMOUTRAFFICANTS VOLUME MEASUREMENT OR CONTROL PROCESSES
930 PAINT DETACKIFYING
931 ZEBRA MUSSEL MITIGATION OR TREATMENT

FOR 000 CLASS-RELATED FOREIGN DOCUMENTS

Any foreign patents or nonpatent literature from subclasses that have been reclassified have been transferred directly to the FOR Collection listed below. These Collections contain ONLY foreign patents or nonpatent literature. The parenthetical references in the Collection titles refer to the abolished subclasses from which these Collections were derived.

STRUCTURAL INSTALLATION (210/153)
* FOR 100 . Closed circulating systems (210/167)
* FOR 101 . Lubrication (210/168)
* FOR 102 . Aquarium or swimming pool (210/169)
* FOR 103 . Geographic (e.g., drainage ditch, septic, pond) (210/170)
* FOR 104 . Ancillary to storage tank (210/172)

DIGESTS

# DIG 3 BELT ALIGNMENT
# DIG 5 COALESER
# DIG 6 DEHYDRATORS
# DIG 7 DRIER BLOCKS
# DIG 8 FAT FRYER
# DIG 9 FLOATING COVER
# DIG 13 PART FLOW-FULL FLOW
# DIG 17 TWIST-ON
SOURCE CLASSIFICATION(S) OF PATENTS
IN NEWLY ESTABLISHED SUBCLASSES REPORT

<table>
<thead>
<tr>
<th>New Classification</th>
<th>Number Of ORs</th>
<th>Source Classification</th>
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Project No. C-4579  

October 3, 2006  

DISPOSITION CLASSIFICATION(S) OF PATENTS  
FROM ABOLISHED SUBCLASSES REPORT  

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### U.S. Department of Commerce
Patent and Trademark Office

**CLASSIFICATION ORDER 1857**

Project No. C-4579

October 3, 2006

**DISPOSITION CLASSIFICATION(S) OF PATENTS FROM ABOLISHED SUBCLASSES REPORT**

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D. CHANGES TO THE DEFINITIONS

CLASS 4 – BATHS, CLOSETS, SINKS, AND SPITTOONS

Definitions Modified: (Place modifications in numerical sequence, where applicable):

Subclass 490: Under SEE OR SEARCH CLASS:

Delete:

The reference to Class 210

Insert:

210, Liquid Purification or Separation, subclasses 167.1 and 167.2 for liquid purification or separation means in a structural installation with a closed circulating system for a swimming pool or spa.
D. CHANGES TO THE DEFINITIONS

CLASS 37 – EXCAVATING

Definitions Modified: (Place modifications in numerical sequence, where applicable):

Class Definition: Under Section III – References to Other Classes

Insert:

210, Liquid Purification or Separation, subclass 170.04 for liquid purification or separation means for excavating means.
D. CHANGES TO THE DEFINITIONS

CLASS 52 – STATIC STRUCTURES (E.G., BUILDINGS)

Definitions Modified: (Place modifications in numerical sequence, where applicable):

Subclass 169.1: Under SEE OR SEARCH CLASS:

Delete:

The reference to Class 210

Insert:

210, Liquid Purification or Separation, subclasses 170.01-170.11 for liquid purification or separation means installed in a geographic feature.
D. CHANGES TO THE DEFINITIONS

CLASS 62 – REFRIGERATION

Definitions Modified: (Place modifications in numerical sequence, where applicable):

Subclass 470: Under SEE OR SEARCH CLASS:

Delete:

The reference to Class 210

Insert:

210, Liquid Purification or Separation, subclasses 167.02-167.09 for liquid purification or separation means in a structural installation with a closed circulating system for a lubrication system.
D. CHANGES TO THE DEFINITIONS

CLASS 99 – FOODS AND BEVERAGES: APPARATUS

Definitions Modified: (Place modifications in numerical sequence, where applicable):

Subclass 408: Under SEE OR SEARCH CLASS:

Delete:

The reference to Class 210

Insert:

210, Liquid Purification or Separation, subclass 167.28 for liquid purification or separation means in a structural installation with a closed circulating system for a cooking oil system.
D. CHANGES TO THE DEFINITIONS

CLASS 119 – ANIMAL HUSBANDRY

Definitions Modified: (Place modifications in numerical sequence, where applicable):

Subclass 211: Under SEE OR SEARCH CLASS:

Delete:

The reference to Class 210

Insert:

210, Liquid Purification or Separation, subclasses 167.21-167.27 for liquid purification or separation means in a structural installation with a closed circulating system for an aquarium.

Subclass 226: Under SEE OR SEARCH CLASS:

Delete:

The reference to Class 210

Insert:

210, Liquid Purification or Separation, subclasses 167.21-167.27 for liquid purification or separation means in a structural installation with a closed circulating system for an aquarium, subclass 170.02 for liquid purification or separation means for a fishpond, and subclass 416.2 for a filter with a cooperating pump adapted for use in an aquarium.

Subclass 259: Under SEE OR SEARCH CLASS:

Delete:

The reference to Class 210

Insert:

210, Liquid Purification or Separation, subclasses 167.21-167.27 for liquid purification or separation means in a structural installation with a closed circulating system for an aquarium.
D. CHANGES TO THE DEFINITIONS

CLASS 123 – INTERNAL-COMBUSTION ENGINES

Definitions Modified: (Place modifications in numerical sequence, where applicable):

Subclass 196: Under SEE OR SEARCH CLASS:

Delete:

The reference to Class 210

Insert:

210, Liquid Purification or Separation, subclasses 153+ for liquid purification or separation means in a structural installation, especially subclasses 167.02-167.09 for a closed circulating system for a lubrication system and subclass 171 for machinery wherein an internal-combustion engine may be broadly recited as the source of the material to be treated.
D. CHANGES TO THE DEFINITIONS

CLASS 137 – FLUID HANDLING

Definitions Modified: (Place modifications in numerical sequence, where applicable):

Subclass 234.6: Under SEE OR SEARCH CLASS:

Delete:

The reference to Class 210

Insert:

210, Liquid Purification or Separation, subclasses 170.01-170.11 for liquid purification or separation means installed in a geographic feature.
D. CHANGES TO THE DEFINITIONS

CLASS 174 – ELECTRICITY: CONDUCTORS AND INSULATORS

Definitions Modified: (Place modifications in numerical sequence, where applicable):

Subclass 14: Under SEE OR SEARCH CLASS:

Delete:

The reference to Class 210

Insert:

210, Liquid Purification or Separation, subclasses 167.01-167.32 for liquid purification or separation means in a structural installation with a closed circulating system and subclass 243 for liquid purification or separation means with electrical insulation or electricity discharge.
D. CHANGES TO THE DEFINITIONS

CLASS 184 – LUBRICATION

Definitions Modified: (Place modifications in numerical sequence, where applicable):

Subclass 6: Under SEE OR SEARCH CLASS:

Delete:

The reference to Class 210

Insert:

210, Liquid Purification or Separation, appropriate subclasses for processes and apparatus for separating a component from a liquid, particularly subclasses 167.02-167.09 for liquid purification or separation means in a structural installation with a closed circulating system for a lubrication system.

Subclass 6.24: Under SEE OR SEARCH CLASS:

Delete:

The reference to Class 210

Insert:

210, Liquid Purification or Separation, appropriate subclasses for processes and apparatus for separating a component from a liquid, particularly subclasses 167.02-167.09 for liquid purification or separation means in a structural installation with a closed circulating system for a lubrication system.
D. CHANGES TO THE DEFINITIONS

CLASS 209 – CLASSIFYING, SEPARATING, AND ASSORTING SOLIDS

Definitions Modified: (Place modifications in numerical sequence, where applicable):

Subclass 501: Under SEE OR SEARCH CLASS:

Delete:

The reference to Class 210

Insert:

210, Liquid Purification or Separation, subclasses 167.01-167.32 for liquid purification or separation means in a structural installation with a closed circulating system and subclasses 194+ for liquid purification or separation means having recirculation means.
D. CHANGES TO THE DEFINITIONS

CLASS 210 – LIQUID PURIFICATION OR SEPARATION

Definitions Abolished:

Subclasses

167-170, 172

Definitions Modified: (Place modifications in numerical sequence, where applicable):

Subclass 171: Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Delete:

The reference to subclass 168

Insert:

167.02-167.09, for a closed circulating system for a lubrication system.

Subclass 175: Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Insert:

167.06, for liquid purification or separation apparatus comprising a closed circulating system for a lubrication system with heating or cooling means.

167.32, for liquid purification or separation apparatus comprising a closed circulating system with heating or cooling means.

Subclass 194: Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Delete:

The reference to subclass 167+

Insert:

167.01-167.32, for a structural installation with a closed circulating system.
Subclass 198.1: Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Insert:

167.11, for liquid purification or separation apparatus comprising a closed circulating system for a swimming pool or spa with means to add a treating material.

167.3, for liquid purification or separation apparatus comprising a closed circulating system with means to add a treating material.

Subclass 222: Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Insert:

167.03, for liquid purification or separation apparatus comprising a closed circulating system for a lubrication system having magnetic treating means.

167.29, for liquid purification or separation apparatus comprising a closed circulating system having magnetic treating means.

Subclass 252: Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Delete:

The reference to subclass 172

Insert:

172.1-172.6, for a structural installation in which the separator is ancillary to a storage tank.

Subclass 291: Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Delete:

The reference to subclass 172

Insert:

172.1-172.6, for a structural installation in which the separator is ancillary to a storage tank.

Subclass 383: Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Delete:
The reference to subclass 167+

Insert:

167.01-167.32, for a structural installation with a closed circulating system.

Subclass 416.1: Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Delete:

The reference to subclass 167

Insert:

167.01-167.32, for a structural installation with a closed circulating system.

Subclass 416.2: Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Delete:

The reference to subclass 169

Insert:

167.1-167.2, for a closed circulating system for a swimming pool or spa.
167.21-167.27, for a closed circulating system for an aquarium.

Subclass 416.5: Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Delete:

The reference to subclass 168

Insert:

167.02-167.09, for a closed circulating system for a lubrication system.

Subclass 459: Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Delete:

The reference to subclass 172

Insert:
172.1-172.6, for a structural installation in which the separator is ancillary to a storage tank.

Subclass 532.2: Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Delete:

The reference to subclass 170

Insert:

170.08, for a septic tank installed in a geographic feature.

Subclass 601: Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Insert:

167.22, for a closed circulating system for an aquarium using a living organism.

Subclass 805: Under SEE OR SEARCH THIS CLASS, SUBCLASS:

Delete:

The reference to subclass 167

Insert:

167.01-167.32, for a structural installation with a closed circulating system.

Definitions Established: (Place established subclasses in numerical sequence:)

167.01 Closed circulating system:
This subclass is indented under subclass 153. Apparatus comprising a group of devices, including liquid purification or separation means, through which the liquid being purified or separated is continuously returned and reused.

SEE OR SEARCH THIS CLASS, SUBCLASS:

194+, for liquid purification or separation apparatus including recirculation means.

SEE OR SEARCH CLASS:

68, Textiles: Fluid Treating Apparatus, subclass 18 for textile fluid treating apparatus including recirculation means and liquid purification or separation means for the used solvent.

118, Coating Apparatus, subclasses 600+ for coating apparatus with means for treatment of the coating material involving recirculation and liquid purification or separation.
123, Internal-Combustion Engines, subclass 41.55 for internal-combustion engine cooling system combined with liquid purification or separation means and subclass 196 for internal-combustion engine lubricator means combined with liquid purification or separation means.

134, Cleaning and Liquid Contact With Solids, subclasses 10+ and 109+ for cleaning and liquid contact with solids processes and apparatus including means for purifying or separating the cleaning or contact liquid.

167.02 For lubrication system:
This subclass is indented under subclass 167.01. Apparatus in which the liquid purification or separation means is adapted for use in a closed circulating system that provides lubricant to moving parts of a machine.

SEE OR SEARCH THIS CLASS, SUBCLASS:
416.5, for a filter, with a pump, gas pressure, or suction source, adapted for use in a lubricating or oil treating system.

SEE OR SEARCH CLASS:
123, Internal-Combustion Engines, subclass 196 for internal-combustion engine lubricator means combined with liquid purification or separation means.

184, Lubrication, subclass 1.5 for automobile crank and gear case service apparatus including liquid purification of separation means and subclasses 6.24+ for lubrication systems combined with liquid purification or separation means.

167.03 Having magnetic treating means:
This subclass is indented under subclass 167.02. Apparatus having means that attract iron and certain other materials because of a surrounding field of force produced by motion of its atomic electrons and alignment of its atoms.

(1) Note. The magnetic treating means generally is used to cause separation of iron-containing material from the lubricant. However, the magnetic treating means may subject the lubricant to a process that otherwise improves or alters the lubricant (e.g., mixing, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:
167.29, for liquid purification or separation apparatus comprising a closed circulating system having magnetic treating means not for a lubrication system.

222+, for liquid purification or separation apparatus including magnetic treating means not in a closed circulating system.

167.04 Plural separators:
This subclass is indented under subclass 167.02. Apparatus that has two or more means for liquid purification or separation.

167.05 Having bypass line:
This subclass is indented under subclass 167.04. Apparatus that has means to conduct the lubricant around a device in the closed circulating system.
167.06 With heating or cooling means:
This subclass is indented under subclass 167.02. Apparatus that has means to raise or lower the temperature of the lubricant.

SEE OR SEARCH THIS CLASS, SUBCLASS:
167.32, for liquid purification or separation apparatus comprising a closed circulating system with heating or cooling means not for a lubrication system.
175+, for liquid purification or separation apparatus with a heater or a heat exchanger not in a closed circulating system.

167.07 Evaporator:
This subclass is indented under subclass 167.06. Apparatus in which the means to raise the temperature of the lubricant vaporizes a component to be separated.

167.08 Separator for transmission system:
This subclass is indented under subclass 167.02. Apparatus in which the liquid purification or separation means is adapted for use in a closed circulating system that comprises an assembly of parts by which power is transmitted from an engine to a drive axle.

SEE OR SEARCH CLASS:
180, Motor Vehicles, subclasses 337+ for motor vehicle transmission mechanisms.

167.09 With separator cleaning means:
This subclass is indented under subclass 167.02. Apparatus in which means are provided to remove the separated component from the liquid purification or separation means.

167.1 For swimming pool or spa (e.g., skimmer, etc.):
This subclass is indented under subclass 167.01. Apparatus in which the liquid purification or separation means is adapted for use with a tank, made of concrete, plastic, or other materials, for holding water that is open at the top for a user to enter, for swimming, relaxation, or recreation (e.g., swimming pool, spa, hot tub, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:
416.2, for a filter, with a pump, gas pressure, or suction source, adapted for use with a swimming pool.
470, for a filter with a handle.

SEE OR SEARCH CLASS:
4, Baths, Closets, Sinks, and Spittoons, subclasses 488+ for pools for swimming, relaxation, or recreation.

167.11 With means to add treating material:
This subclass is indented under subclass 167.1. Apparatus in which the liquid purification or separation means is combined with means to supply a substance to the water being purified or separated that subjects the water to a chemical or physical process that improves or alters the water.
SEE OR SEARCH THIS CLASS, SUBCLASS:

167.3, for liquid purification or separation apparatus comprising a closed circulating system with means to add a treating material not for a swimming pool or spa.

198.1+, for liquid purification or separation apparatus with means to add a treating material not in a closed circulating system.

SEE OR SEARCH CLASS:

422, Chemical Apparatus and Process Disinfecting, Deodorizing, Preserving, or Sterilizing, subclasses 255+ for physical type apparatus having means separating or dissolving a material constituent, particularly subclasses 261+ for liquid-solid contact means and particularly subclass 265 for buoyant holders.

167.12 Separator external to swimming pool or spa:
This subclass is indented under subclass 167.1. Apparatus in which the liquid purification or separation means is located outside of the swimming pool or spa.

(1) Note. The liquid purification or separation means may be attached to the exterior of the swimming pool or spa or may be connected to the swimming pool or spa by a system of pipes.

167.13 Particulate solid filter:
This subclass is indented under subclass 167.12. Apparatus in which the liquid purification or separation means comprises a plurality of small, distinct, separate, nonfilamentous solids in which a component of the water is entrapped and retained while permitting the water to pass through (e.g., sand filter, etc).

167.14 With separator cleaning means (e.g., backwash means, etc.):
This subclass is indented under subclass 167.12. Apparatus in which means are provided to remove the separated component from the liquid purification or separation means.

167.15 Separator for use on swimming pool or spa bottom and separator for use at water surface:
This subclass is indented under subclass 167.1. Apparatus that has two or more means for liquid purification or separation in which one means is located on a surface that is lowest in the swimming pool or spa during operation and another means is located at a surface of the water that is highest in the swimming pool or spa during operation.

167.16 Separator for use on swimming pool or spa bottom:
This subclass is indented under subclass 167.1. Apparatus that has means for liquid purification or separation located on a surface that is lowest in the swimming pool or spa during operation.

167.17 Debris collecting bag:
This subclass is indented under subclass 167.16. Apparatus in which the liquid purification or separation means comprises a usually flexible container that may be closed that is used to gather the component that is separated from the water.

167.18 Skimmer arm at skimmer opening at water surface:
This subclass is indented under subclass 167.1. Apparatus in which the liquid purification or separation means comprises a deflecting device that is positioned at a surface of the water that is highest at an opening of a weir in a wall of the swimming pool or spa and that diverts a portion of the water and debris into the opening.
167.19 **Mesh or screen filter at or near water surface:**
This subclass is indented under subclass 167.1. Apparatus in which the liquid purification or separation means comprises a material with an open network of interlacing threads or wires in which a component of the water is entrapped and retained while permitting the water to pass through and is located at or near a surface of the water that is highest in the swimming pool or spa.

167.2 **Having floating means:**
This subclass is indented under subclass 167.19. Apparatus having means to support buoyantly the mesh or screen filter at or near the water surface in the swimming pool or spa.

167.21 **For aquarium:**
This subclass is indented under subclass 167.01. Apparatus in which the liquid purification or separation means is adapted for use with a water-filled container in which aquatic animals are kept, with the container having one or more transparent portions so that the aquatic animals therein can be observed from the exterior.

SEE OR SEARCH THIS CLASS, SUBCLASS:
416.2, for a filter, with a pump, gas pressure, or suction source, adapted for use in an aquarium.

SEE OR SEARCH CLASS:
119, Animal Husbandry, subclasses 259+ for specific aquarium structure in combination with liquid purification or separation means.

167.22 **Separator using living organism:**
This subclass is indented under subclass 167.21. Apparatus in which the liquid purification or separation means includes an agent that has the ability to reproduce itself.

(1) Note. For purposes of this subclass, living organism includes animals, plants, and microorganisms (e.g., bacteria, fungus, algae, etc.), but not enzymes. The organism may reproduce sexually, asexually, or by mechanical division (caused by external agents) and regeneration (e.g., layering or cloning, etc.).

167.23 **Separator or part thereof associated with bottom of aquarium (e.g., means positioned under gravel, etc.):**
This subclass is indented under subclass 167.21. Apparatus in which the liquid purification or separation means or a portion thereof (e.g., an inlet or an outlet, etc.) is located at or near a surface that is lowest in the aquarium (e.g., means positioned under gravel, etc.).

167.24 **Having solid sorbent:**
This subclass is indented under subclass 167.23. Apparatus having a solid sorbent that is used to retain on its internal or external surfaces a component of the water passing in contact therewith.

(1) Note. A solid sorbent is a solid material that separates one or more components from a fluid mixture containing such components in a "quasi-chemical" manner. The action in most instances is that of selective retention (i.e., the sorbent removes only that part of the fluid mixture for which it has the greatest affinity). The retained component cannot be removed by shaking, brushing, or similar
mechanical action, but can generally be removed by heating, pressure reduction, or use of a stripping or denuding fluid.

A filter has no particular “chemical” affinity for a component of a fluid mixture. The separation in the case of a filter depends on a mechanical entrapment of solid particles because of their relatively large size compared with the interstices or spaces between individual elements of the filter. The retained particles can be removed by brushing, wiping, shaking, or similar mechanical action.

167.25 Particulate filter or particulate sorbent:
This subclass is indented under subclass 167.21. Apparatus in which the liquid purification or separation means comprises a plurality of small, distinct, separate, nonfilamentous solids in which a component of the water is entrapped and retained while permitting the water to pass through or apparatus having a solid sorbent that is used to retain on its internal or external surfaces a component of the water passing in contact therewith.

(1) Note. A solid sorbent is a solid material that separates one or more components from a fluid mixture containing such components in a “quasi-chemical” manner. The action in most instances is that of selective retention (i.e., the sorbent removes only that part of the fluid mixture for which it has the greatest affinity). The retained component cannot be removed by shaking, brushing, or similar mechanical action, but can generally be removed by heating, pressure reduction, or use of a stripping or denuding fluid.

A filter has no particular “chemical” affinity for a component of a fluid mixture. The separation in the case of a filter depends on a mechanical entrapment of solid particles because of their relatively large size compared with the interstices or spaces between individual elements of the filter. The retained particles can be removed by brushing, wiping, shaking, or similar mechanical action.

167.26 Separator with aerator:
This subclass is indented under subclass 167.21. Apparatus in which the liquid purification or separation means is combined with means to supply the water with a gas (e.g., oxygen, air, etc.).

167.27 Separator mounted on top edge of aquarium wall:
This subclass is indented under subclass 167.21. Apparatus in which the liquid purification or separation means is located on an upper rim of the aquarium.

167.28 For cooking oil system:
This subclass is indented under subclass 167.01. Apparatus in which the liquid purification or separation means is adapted for use with a cooking apparatus in which food articles or materials are supported or manipulated for heat treating by contact with a body of heated oil (e.g., deep fat fryer, etc.).

SEE OR SEARCH CLASS:
99. Foods and Beverages: Apparatus, subclass 408 for a deep fat fryer type cooker with crumb or sediment segregation means.
Having magnetic treating means:
This subclass is indented under subclass 167.01. Apparatus having means that attract iron and certain other materials because of a surrounding field of force produced by the motion of its atomic electrons and the alignment of its atoms.

(1) Note. The magnetic treating means generally is used to cause separation of iron-containing material from the liquid. However, the magnetic treating means may subject the liquid to a process that otherwise improves or alters the liquid (e.g., mixing, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:
167.03, for liquid purification or separation apparatus comprising a closed circulating system having magnetic treating means for a lubrication system.
222+, for liquid purification or separation apparatus including magnetic treating means not in a closed circulating system.

With means to add treating material:
This subclass is indented under subclass 167.01. Apparatus in which the liquid purification or separation means is combined with means to supply a substance to the liquid being purified or separated that subjects the liquid to a chemical or physical process that improves or alters the liquid.

SEE OR SEARCH THIS CLASS, SUBCLASS:
167.11, for liquid purification or separation apparatus comprising a closed circulating system with means to add a treating material for a swimming pool or spa.
198.1+, for liquid purification or separation apparatus with means to add a treating material not in a closed circulating system.

Plural separators:
This subclass is indented under subclass 167.01. Apparatus that has two or more means for liquid purification or separation.

With heating or cooling means:
This subclass is indented under subclass 167.01. Apparatus that has means to raise or lower the temperature of the liquid.

SEE OR SEARCH THIS CLASS, SUBCLASS:
167.06, for liquid purification or separation apparatus comprising a closed circulating system with heating or cooling means for a lubrication system.
175+, for liquid purification or separation apparatus with a heater or a heat exchanger not in a closed circulating system.

Geographic:
This subclass is indented under subclass 153. Apparatus in which liquid purification or separation means are part of a system installed in the ground or related to a particular feature of the earth’s surface (e.g., a body of water, etc.).

(1) Note. Included in this subclass is in situ purging of flowing or still liquid (e.g., drainage ditch, septic system, pond, etc.) in a structural installation in which the liquid purification or separation means is (a) part of a system installed on natural
or modified terrain to convey rain, snowmelt, a river, sewage, well water or oil, etc. or (b) related to a particular nonland geographic feature, such as a lake, ocean, sea, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:
154+, for a flume stream type separator.

SEE OR SEARCH CLASS:
137, Fluid Handling, subclass 236.1 for a distribution system involving a geographic feature.
405, Hydraulic and Earth Engineering, subclasses 36+ for drainage devices for collecting and removing surplus water from soil and subclasses 52+ for fluid control, treatment, or containment.

170.02 For fishpond:
This subclass is indented under subclass 170.01. Apparatus in which the liquid purification or separation means is adapted for use with a small, still body of clear water stocked with fish.

SEE OR SEARCH CLASS:
119, Animal Husbandry, subclasses 226+ for a fish enclosure of the recirculating type with treatment means and subclasses 228+ for a fish enclosure of the nonrecirculating type with treatment means.

170.03 For stormwater treatment (e.g., rainwater runoff, stormsewer treatment, etc.):
This subclass is indented under subclass 170.01. Apparatus in which the liquid purification or separation means is adapted for use to subject fallen precipitation to a chemical or physical process that improves or alters the fallen precipitation (e.g., rainwater runoff, stormsewer treatment, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:
163+, for a grated inlet surface drain.

170.04 For excavating means:
This subclass is indented under subclass 170.01. Apparatus in which the liquid purification or separation means is adapted for use with an apparatus that digs, moves, and handles material either on the earth’s surface or beneath a body of water.

SEE OR SEARCH CLASS:
37, Excavating, for excavating apparatus.

170.05 Floating means:
This subclass is indented under subclass 170.01. Apparatus in which the liquid purification or separation means is buoyed on or in the liquid.

170.06 Separator with aerator:
This subclass is indented under subclass 170.01. Apparatus in which the liquid purification or separation means is combined with means to supply the liquid with a gas (e.g., oxygen, air, etc.).
170.07 **Groundwater:**  
This subclass is indented under subclass 170.01. Apparatus in which the liquid purification or separation means purifies or separates water within the earth’s surface.

SEE OR SEARCH CLASS:
166, Wells, for well apparatus.
405, Hydraulic and Earth Engineering, subclasses 128.1+ for soil remediation.

170.08 **Septic tank or waste liquid treatment system:**  
This subclass is indented under subclass 170.01. Apparatus in which the liquid purification or separation means comprises a tank in which a continuous flow of waste material is decomposed by bacteria or comprises a group of devices, including liquid purification or separation means, that purify or separate the waste liquid.

SEE OR SEARCH THIS CLASS, SUBCLASS:
532.2, for a septic tank not associated with a geographic feature.

170.09 **Body of freshwater (e.g., pond, lake, reservoir, etc.):**  
This subclass is indented under subclass 170.01. Apparatus in which the particular feature of the earth’s surface that the liquid purification or separation means is related to is a bounded aggregate of still water that is not salty (e.g., pond, lake, reservoir, etc.).

170.1 **Surface flowing freshwater (e.g., stream, river, ditch, canal, etc.):**  
This subclass is indented under subclass 170.01. Apparatus in which the particular feature of the earth’s surface that the liquid purification or separation means is related to is a bounded aggregate of nonsalty, running water flowing on the earth’s surface (e.g., stream, river, ditch, canal, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:
154+, for a flume stream type separator.

170.11 **Body of saltwater (e.g., sea, ocean, etc.):**  
This subclass is indented under subclass 170.01. Apparatus in which the particular feature of the earth’s surface that the liquid purification or separation means is related to is an aggregate of salt water covering most of the earth’s surface (e.g., sea, ocean, etc.).

172.1 **Separator ancillary to storage tank:**  
This subclass is indented under subclass 153. Apparatus in which the liquid purification or separation means is auxiliary to a supply container.

172.2 **Submerged separator:**  
This subclass is indented under subclass 172.1. Apparatus in which the liquid purification or separation means is covered with liquid.

172.3 **On pump suction intake:**  
This subclass is indented under subclass 172.2. Apparatus in which the liquid purification or separation means is located on an inlet to a pump.

172.4 **Filter supported by frame (e.g., bag shaped filter in fuel tank for engine, etc.):**  
This subclass is indented under subclass 172.3. Apparatus in which the liquid purification or separation means comprises a medium, in which a component of the liquid is entrapped and retained while permitting the liquid to pass through, that is held up by a skeletal structure (e.g., bag shaped filter in fuel tank for engine, etc.).
172.5 **Having tethering means:**
This subclass is indented under subclass 172.2. Apparatus in which the liquid purification or separation means is fastened to a part of the supply container by something (e.g., a rope or chain, etc.) with a set radius that allows the liquid purification or separation means to move about.

172.6 **In tank inlet:**
This subclass is indented under subclass 172.1. Apparatus in which the liquid purification or separation means is located at the opening to the supply container.

931 **ZEBRA MUSSEL MITIGATION OR TREATMENT**
Collection of disclosures directed to apparatus used to remove or kill a freshwater Eurasian lamellibranch mollusk (*Dreissena polymorpha*) or directed to apparatus using a freshwater Eurasian lamellibranch mollusk (*Dreissena polymorpha*) to improve or alter water.

**FOREIGN ART COLLECTIONS**

The definitions below correspond to abolished subclasses from which these collections were formed. See the Foreign Art Collection Schedule of this Class for specific correspondences. [Note: the titles and definitions for indented art collections include all the details of the one(s) that are hierarchically superior].

**FOR 100** **Closed circulating systems:**
Foreign art collection having apparatus with means to recirculate a liquid therebetween.

**FOR 101** **Lubrication:**
Foreign art collection having systems designed to lubricate moving parts of a machine.

**FOR 102** **Aquarium or swimming pool:**
Foreign art collections having systems designed to accommodate living animals.

**FOR 103** **Geographic (e.g., drainage ditch, septic, pond):**
Foreign art collection having apparatus in which a separator is part of a system installed in the ground or related to a particular geographic feature, as a lake.

**FOR 104** **Ancillary to storage tank:**
Foreign art collection having apparatus including a supply tank for an apparatus or a system having a function external to the subject matter of this class and purification is incidental to the storage of the liquid for use in that system or apparatus.
D. CHANGES TO THE DEFINITIONS

CLASS 405 – HYDRAULIC AND EARTH ENGINEERING

Definitions Modified: (Place modifications in numerical sequence, where applicable):

Subclass 36: Under SEE OR SEARCH CLASS:

Insert:

210, Liquid Purification or Separation, subclasses 170.01-170.11 for liquid purification or separation means installed in a geographic feature and subclass 747 for liquid purification or separation processes including a geographic feature.

Subclass 52: Under SEE OR SEARCH CLASS:

Delete:

The reference to Class 210

Insert:

210, Liquid Purification or Separation, subclasses 170.01-170.11 for liquid purification or separation means installed in a geographic feature and subclass 747 for liquid purification or separation processes including a geographic feature.

Subclass 74: Under SEE OR SEARCH CLASS:

Delete:

The reference to Class 210

Insert:

210, Liquid Purification or Separation, subclasses 170.01-170.11 for liquid purification or separation means installed in a geographic feature and subclass 747 for liquid purification or separation processes including a geographic feature.
D. CHANGES TO THE DEFINITIONS

CLASS 422 – CHEMICAL APPARATUS AND PROCESS DISINFECTING, DEODORIZING, PRESERVING, OR STERILIZING

Definitions Modified: (Place modifications in numerical sequence, where applicable):

Subclass 255: Under SEE OR SEARCH CLASS: In the reference to Class 210, before the period,

Insert:

and subclass 167.11 for liquid purification or separation apparatus comprising a closed circulating system for a swimming pool or spa with means to add a treating material.

Subclass 261: Under SEE OR SEARCH CLASS:

Insert:

210, Liquid Purification or Separation, subclass 167.11 for liquid purification or separation apparatus comprising a closed circulating system for a swimming pool or spa with means to add a treating material.

Subclass 265:

Insert:

SEE OR SEARCH CLASS:

210, Liquid Purification or Separation, subclass 167.11 for liquid purification or separation apparatus comprising a closed circulating system for a swimming pool or spa with means to add a treating material.