

1. This heading is the general heading for the separation of articles and particles using electrostatic and magnetic fields. In particular, the heading is concerned with apparatus and processes for the segregation or precipitation of articles and solid and liquid particles by the application of electrostatic or magnetic fields
2. This heading is also concerned with non-electrolytic apparatus and processes for the treatment of water, sewage &c by the application of electrostatic or magnetic fields where no separation occurs *eg* to reduce precipitation of dissolved substances
3. The heading also includes certain unit functions and servicing arrangements which occur in the above operations; and associations of the above operations with other operations

Explanation of heading subject matter and relationships with other headings

Note: The expression “separating &c” is intended to include the separation techniques referred to in paragraph 1 above and the other techniques referred to in paragraph 2

Unit functions: Sub-systems and elements therefor:

Classified here are disclosures concerned with unit functions, sub-systems and elements involved in separating &c using electrostatic and magnetic fields. This subject matter is mainly concerned with the construction of electrodes and magnets and assemblies thereof

It should be noted that arrangements of magnetic elements which divide a main force field into a plurality of small force fields and act as a labyrinth so as to retain particles and impurities are dealt with under packing and filter elements. Screen and mesh constructions may be included here

Mere assemblies of magnets wherein the main force field comprises the sum of the individual magnets are dealt with under magnets and magnet assemblies

Novel methods and means *per se* for effecting unit functions, *eg* heating or cooling are classified elsewhere where suitable headings exist

Excluded are:

- . construction of magnetic and electric holding-devices—H1P, Electromagnets, permanent magnets &c
- . electrical supply circuits *per se*—H2H, Electricity supply systems &c

Organisation of plural distinct or single electrostatic and/or magnetic separating &c functions:

Classified here are disclosures concerned with constructional and functional organisation and modes of operation of single and plural apparatus and processes for separating &c by the application of electrostatic or magnetic fields, with the relationships between unit functions and sub-systems and with process characteristics

Classified under plural distinct operations are disclosures concerned with combinations and associations of more than one separating &c operation, which operations may be similar or diverse

The overall organisation of stacks or stages of unlike members, *eg* electrostatic and magnetic members, is dealt with under combination electrostatic and magnetic units, and the organisation of stacks of like elements or members, *eg* electrostatic or magnetic members, is dealt with under organisation of single separating &c apparatus

Excluded are:

- . coating using an electric potential difference or magnetic force to assist in the deposition—B2L, Coating apparatus
- . separating sheets from piles—B8R, Handling thin material
- . separation dependent on chemical properties; deposition—
 - . . by electrophoresis—C7B, Electrolysis; G1N, Electrophysical and electrochemical measurement &c
 - . . by electrolysis, electro-osmosis—C7B, Electrolysis

Associations &c:

Classified here are combinations and associations of electrostatic and/or magnetic separating &c operations with another operation (which may be another separating operation) which does not perform a *perfecting function*

Perfecting functions are classified according to which function or operation is perfected and the combination of a perfecting function of a unit operation with another function is dealt with at the organisation level

Note: Related subject-matter may be found in headings concerned with the other, *including* other separating, operations

Excluded are:

- . associations of electrostatic or magnetic treatment with other processes for treating water, sewage &c—C1C, Treating water, sewage &c

Servicing arrangements:

Classified here are indicators, alarms, and those servicing arrangements not included under unit functions

Control:

Control of electrostatic or magnetic separating &c operations is dealt with under term JB1 to JB3 and JG

Excluded are:

- . sensing and control subjects of general interest—*See* G1- and G3- headings as appropriate *eg* for indirect separation by measuring electric or magnetic parameters to control separating devices—*See* G1N, Electro-physical measurement, control &c

The exclusion references in this heading are not exhaustive. Reference should be made to the appropriate general heading/s for processes, materials, elements or devices which may be more widely applicable than can appropriately be classified in this heading

Relationship with the Universal Indexing Schedules (heading U1S)

In addition to recording the nature of broader processes or apparatus with or in which inventions classified here may be used, U1S is used, subject to its indexing rules, to index materials operated on and useful products obtained, except that where it is clearly intended to produce only a single useful product from a mixture of starting materials the latter are not indexed

Operative date for Key entries

The operative dates of the terms in this heading are:

1. for terms annotated by a marginal code, that of the Edition corresponding to that code
2. for all other terms, that of Edition A

Classifying Schedule

See also Indexing schedule 1

- JA associations of electrostatic and/or magnetic separating &c operations with another operation (*including* other separating &c operations)
- JB1 organisation of plural distinct electrostatic and/or magnetic separating &c operations (*including* control)—
- JB2 . similar electrostatic or magnetic units
- JB3 . diverse electrostatic or magnetic units
- JC . combination electrostatic and magnetic units (*including* stacks or stages of unlike members or members which differ in some significant respect, *eg* electrostatic with magnetic members)
- JD1 . organisation of single electrostatic and single magnetic separating &c operations—
- JD2 . overall organisation of apparatus; methods of operation and procedures (*including* stacks of like members, *eg* electrostatic or magnetic members)—
- JE . . magnetic separation &c
- JF . . electrostatic separation &c—
- JG . . . involving electric discharges in gases or vapours
- JH . . . other electrostatic separation &c techniques
- JI . concerned with particular conditions and parameters
- JJ . concerned with organisation of feeds, operational zones, distribution between zones or stages
- JK . other subjects *including* control
- JL . unit functions; sub-systems and elements therefor—
- JM . electrodes and electrode assemblies—
- JN . . collector electrodes and assemblies
- JO . . combinations of ionizer and collector electrodes
- JP . . other *eg* ionizer electrodes and assemblies *including* non-collecting counter electrodes in ionization section
- JQ . packing and filter elements—
- JR . . magnetic
- JS . . electrostatic
- JT . magnets and magnet assemblies
- JU . housings (*including* choice of material of other parts of apparatus *not provided for above*)
- JV . heating and cooling
- JW . mounting and supporting electrodes, magnets and assemblies thereof
- JX . electrical supply *including* insulating-arrangements
- JY . introducing, distributing and guiding materials in apparatus
- JZ . cleaning; removing material from electrodes and magnets; removing separated material from apparatus
- KA . . *See also* Indexing schedule 2
- KB . other unit functions
- KC . pre-treatment of materials to be separated for improving separation
- KD . search should also be considered in heading C1A, Inorganic substances
- KE . servicing arrangements *not included* under unit functions, *eg* indicators, alarms, access hatches
- KF . other subjects

Indexing Schedule 1

Terms from this schedule are assignable throughout the classifying schedule

- separation of—
- J101 . different phases *eg* liquid mist from gases, solids from fluids, gas bubbles from solids
 - J102 . solids from solids
 - J103 . gas from gas or liquid from liquid *including* emulsion breaking
 - i J105 . treatment by electrostatic or magnetic field for purpose other than separation *eg* to reduce precipitation of dissolved substances
- general nature of electrostatic devices—
- J201 . wet type precipitators
 - J202 . dry type precipitators
 - J203 . filter type
 - J212 . other
- details of electrostatic devices—
- J204 . with preliminary ionization
 - J206 . electrodes lying in planes generally parallel to the fluid flow
 - J207 . electrodes lying in planes generally transverse to the fluid flow (*including* electrodes permeable to fluid flow)
 - J208 . electrode of tubular form enclosing complementary electrode
 - J209 . rotating electrode
 - J210 . translationally movable electrode
 - J211 . with rotation of fluid
- general nature of magnetic devices—
- J301 . scavenging magnets for lubricating systems
 - J302 . hold-back or lift-off type *other than* filter type
 - J303 . deflection type *ie* dividing material into streams without trapping material
 - J304 . filter type
 - J305 . other
- details of magnetic devices—
- J306 . permanent magnets
 - J307 . electromagnets
 - . . . moving magnets in the form of, or carried by—
 - J308 . . . discs
 - J309 . . . drums
 - J310 . . . other or unspecified
 - . . . stationary magnets associated with moving material-receiving members *eg* pulleys, drums or discs—
 - J311 . . . moving pole-pieces and external fixed magnets
 - J312 . . . moving pole-pieces or non-magnetic shells and internal fixed magnets

Indexing Schedule 2

Terms from this schedule are only assigned when term JT has been assigned from the Classifying schedule

- cleaning by—
- J401 . scraping or brushing
 - J402 . hammering or vibrating
 - J403 . flushing with liquids
 - J404 . blowing with gas or applying suction
 - J405 . other techniques