

D21D

TREATMENT OF THE MATERIALS BEFORE PASSING TO THE PAPER-MAKING MACHINE

Definition statement

This subclass/group covers:

Beating and refining methods and equipments for fibrous materials; purification methods and equipments for pulp suspensions acting by mechanical means, i.e. straining, screening, centrifugal cleaning, sorting, de-aeration; tanks for storing or agitating pulp.

References relevant to classification in this subclass

This subclass/group does not cover:

| | |
|--|----------------------|
| Methods for making pulp by refining wood chips | D21B |
|--|----------------------|

Informative references

Attention is drawn to the following places, which may be of interest for search:

| | |
|--|---------------------------|
| Discs for beating or refining in general | B02C 7/00 |
| Cyclones in general | B04C |

Special rules of classification within this subclass

Subgroups and head groups.

If a document concerns embodiments which are covered by several subgroups dependent on a higher hierarchy group, the following rules apply:

- the specific technical information relevant for some of the subgroups is classified in all said subgroups;
- if relevant, the structural association (e.g. the combination) of the elements covered by the subgroups is classified in the head group;
- analogously, if generic technical information common to all of the subgroups is disclosed and only schematic embodiments of the specific subgroup embodiments are represented, the documents is classified in the head group only.

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

| | |
|-----------|---|
| Hollander | special historical equipment for beating fibrous suspensions, see definition statement of D21D 1/02 |
| Beating | treatment of fibrous suspensions in Hollander type equipment in order to fibrillate, shorten or flexibilize fibers |
| Refining | treatment of fibrous suspensions for the same purpose in all other types of equipment |
| Jordan | refiner having a frusto-conical rotor revolving inside a complimentary stator |
| Bed plate | stator of Hollander or Jordan devices |

D21D 1/00

Methods of beating or refining; Beaters of the Hollander type (knotter screens D21F)

Definition statement

This subclass/group covers:

Methods of beating and refining of pulp fibers in general.

References relevant to classification in this subclass

This subclass/group does not cover:

| | |
|-----------------|----------------------|
| knotter screens | D21F |
|-----------------|----------------------|

D21D 1/004

[N: Methods of beating or refining including disperging or deflaking]

Definition statement

This subclass/group covers:

Disperging (i.e. separating rather small impurities sticking to the surface of a fiber) or deflaking (i.e. separating flakes or flocs formed by fibers into the individual fibers again) methods and equipments for fibrous materials.

D21D 1/006

[N: Disc mills]

Definition statement

This subclass/group covers:

Disc mills only if particularly suitable for disperging or deflaking.

D21D 1/008

[N: Discs]

Definition statement

This subclass/group covers:

Discs for disc mills only if particularly suitable for disperging or deflaking.

D21D 1/02

Methods of beating; Beaters of the Hollander type

Definition statement

This subclass/group covers:

Treatment in Hollander equipment, i.e. in a device using at least one wheel like beating rotor (roll) equipped with beating tools (knives) revolving in a trough having a beating stator (bed plate), also equipped with beating tools (knives), in which trough the suspension is circulated to pass multiple times through the beating zone formed between the rotor and the stator.

D21D 1/34

Other mills or refiners

Definition statement

This subclass/group covers:

Refiners or mills not provided before, for example cylindrical rotors and stators, belt refiners, kneaders causing a refining action, compression refiners, planetary gear like equipment.

References relevant to classification in this group

This subclass/group does not cover:

| | |
|-------------------|---------------------------|
| Beaters | D21D 1/02 |
| Jordans | D21D 1/22 |
| Ball or rod mills | D21D 1/28 |
| Disc mills | D21D 1/30 |
| Hammer mills | D21D 1/32 |

D21D 1/40

Washing the fibres

Definition statement

This subclass/group covers:

Equipment and methods for washing and dewatering pulp.

References relevant to classification in this subclass

This subclass/group does not cover:

| | |
|---|--|
| Washing pulp from cooking liquors | D21C 9/02 |
| Recovering fibrous materials from suspensions in the paper machine approach system or white water | D21F 1/66 , D21F 1/74 , D21F 1/76 , D21F 1/78 |

D21D 5/00

Purification of the pulp suspension by mechanical means; Apparatus therefor (centrifuges, cyclones B04)

Definition statement

This subclass/group covers:

Purification methods and equipments for pulp suspensions acting by mechanical means, i.e. straining, screening, centrifugal cleaning, sorting, de-aeration; tanks for storing or agitating pulp.

References relevant to classification in this subclass

This subclass/group does not cover:

| | |
|-----------------------|-----|
| centrifuges, cyclones | B04 |
|-----------------------|-----|

Informative references

Attention is drawn to the following places, which may be of interest for search:

| | |
|--|----------------------------|
| Other filters with filtering elements stationary during filtration, e.g. pressure or suction filters in general | B01D 29/00 |
| Sieving, screening, sifting, or sorting solid materials using networks, gratings, grids, or the like, in general | B07B 1/00 |
| Degasification of liquids in general | B01D 19/00 |

D21D 5/005

[N: Forming fibrous aggregates]

Definition statement

This subclass/group covers:

Forming fiber bundles by agitating suspensions; magnetic deinking of suspensions by attaching ink particles in the paper pulp to a magnetic carrier material with the help of an agglomeration agent.

D21D 5/18

with the aid of centrifugal force

Definition statement

This subclass/group covers:

Purification, sorting and fractioning methods using centrifugal force.

Equipment for performing the methods.

D21D 5/24

in cyclones

Informative references

Attention is drawn to the following places, which may be of interest for search:

Attention is drawn to following places, which may be of interest for search:

| | |
|---------------------|----------------------|
| cyclones in general | B04C |
|---------------------|----------------------|

D21D 5/26

De-aeration of paper stock

Informative references

Attention is drawn to the following places, which may be of interest for search:

Attention is drawn to following places, which may be of interest for search:

| | |
|---------------------------------|----------------------------|
| Degassing of liquids in general | B01D 19/00 |
|---------------------------------|----------------------------|

D21D 99/00

Subject matter not provided for in other groups of this subclass

Definition statement

This subclass/group covers:

Subject-matter that fits within the scope of the subclass but is not covered by any of the other groups, such as for example fractioning methods, methods dividing the total suspension stream in portions, not for cleaning purposes, but for obtaining fibre fractions of different properties, e.g. separating longer from shorter fibres, finer from coarser fibres; and treating at least one of these portions differently from remaining portion(s) in subsequent process steps.