

ECLA EUROPEAN CLASSIFICATION

D21F PAPER-MAKING MACHINES; METHODS OF PRODUCING PAPER THEREON

D21F1/00 Wet end of machines for making continuous webs of paper

- D21F1/00C . [N: Regulating the freeness of the pulp]
- D21F1/00D . [N: Devices for dispensing fibres in a fluid]
- D21F1/00E . [N: Screen-cloths]
- D21F1/00E2 . . [N: Multi-layer screen-cloths]
- D21F1/00E2B . . . [N: Triple layer fabrics] [N1106]
- D21F1/00E3 . . [N: Seams thereof]
- D21F1/00E4 . . [N: Perforated sheets]
- D21F1/00E5 . . [N: Link belts]
- D21F1/00E6 . . [N: with single endless strands travelling in generally parallel convolutions]
- D21F1/00F . [N: Fibre-rearranging devices]
- D21F1/02 . Head boxes of Fourdrinier machines
- D21F1/02B . . [N: Means for injecting material into flow within the headbox] [N1106]
- D21F1/02D . . [N: Details of the feed chamber] [N1106]
- D21F1/02E . . [N: Details of the turbulence section] [N1106]
- D21F1/02G . . [N: Details of the nozzle section] [N1106]
- D21F1/04 . Head boxes of cylinder machines
- D21F1/04B . . [N: with immersed cylinders]
- D21F1/04C . . [N: with non-immersed cylinder]
- D21F1/06 . Regulating pulp flow
- D21F1/06B . . [N: Shock-absorbing devices]
- D21F1/08 . Regulating consistency
- D21F1/10 . Wire-cloths (production of wire-cloths [B21F](#))
- D21F1/10B . . [N: Multi-layer wire-cloths]
- D21F1/12 . . Seams thereof
- D21F1/14 . . . welded
- D21F1/16 . . . sewn
- D21F1/18 . Shaking apparatus for wire-cloths and associated parts
- D21F1/20 . . in fourdrinier machines
- D21F1/22 . . in cylinder machines

- D21F1/24 . Tilting, raising, or lowering mechanisms for wire-cloths
- D21F1/26 . . in Fourdrinier machines
- D21F1/28 . . in cylinder machines

- D21F1/30 . Protecting wire-cloths from mechanical damage

- D21F1/32 . Washing wire-cloths or felts
- D21F1/32B . . [N: with reciprocating devices]

- D21F1/34 . Construction or arrangement of spraying pipes
- D21F1/34B . . [N: Spraying-pipe cleaners]

- D21F1/36 . Guiding mechanisms (suction rolls [D21F3/10](#))
- D21F1/36B . . [N: for controlling the lateral position of the screen]
- D21F1/38 . . Pads
- D21F1/40 . . Rolls
- D21F1/42 . . Jets

- D21F1/44 . Watermarking devices
- D21F1/46 . . Dandy rolls

- D21F1/48 . Suction apparatus (suction rolls [D21F3/10](#))
- D21F1/48B . . [N: Drainage foils and bars]
- D21F1/48B2 . . . [N: adjustable]
- D21F1/50 . . Suction boxes with rolls
- D21F1/52 . . Suction boxes without rolls
- D21F1/52B . . . [N: Covers thereof]
- D21F1/52B2 [N: consisting of endless moving belts]

- D21F1/54 . Skimming devices, e.g. froth ledges

- D21F1/56 . Deckle frame arrangements

- D21F1/58 . Deckle straps

- D21F1/60 . Cylinder moulds

- D21F1/62 . Sand traps

- D21F1/64 . Magnetic separators

- D21F1/66 . Pulp catching, de-watering, or recovering; Re-use of pulp-water
- D21F1/68 . . using hydrocyclones (hydrocyclones [B04C](#))
- D21F1/70 . . by flotation
- D21F1/72 . . using funnels
- D21F1/74 . . using cylinders

- D21F1/76 . . . with suction
- D21F1/78 . . . with pressure
- D21F1/80 . . . using endless screening belts
- D21F1/82 . . . adding fibre agglomeration compositions

D21F2/00 **Transferring webs from wet ends to press sections** [N: (handling webs in general [B65H](#))]

D21F3/00 **Press section of machines for making continuous webs of paper**

- D21F3/02 . Wet presses
- D21F3/02B . . [N: with extended press nip]
- D21F3/02B2 . . . [N: Shoe presses] [N0711]
- D21F3/02B2B [N: Belts or sleeves therefor] [N0711]
- D21F3/02B2B1 [N: manufacturing methods] [N0711]
- D21F3/02B2B2 [N: Means for fixing the sleeve to the roller end] [N0711]
- D21F3/02B4 . . . [N: Cluster presses, i.e. presses comprising a press chamber defined by at least three rollers] [N0711]
- D21F3/02B4B [N: Sealing arrangements therefor] [N0711]
- D21F3/02C . . [N: in combination with suction or blowing devices]
- D21F3/02D . . [N: in combination with a dryer roll]
- D21F3/02E . . [N: using special water-receiving belts]
- D21F3/04 . . Arrangements thereof
- D21F3/04B . . . [N: including at least one extended press nip] [N0712]
- D21F3/06 . . Means for regulating the pressure
- D21F3/08 . . Pressure rolls
- D21F3/08B . . . [N: perforated]
- D21F3/08C . . . [N: having a grooved surface]
- D21F3/10 . . Suction rolls, e.g. couch rolls
- D21F3/10B . . . [N: Covers thereof]

D21F5/00 **Dryer section of machines for making continuous webs of paper**

- D21F5/00B . [N: Drying webs by radiant heating]
- D21F5/00B2 . . [N: from infra-red-emitting elements]
- D21F5/00B3 . . [N: Shutter means]
- D21F5/00C . [N: Drying webs by contact with heated surfaces or materials]
- D21F5/00C2 . . [N: in a fluid bed]
- D21F5/00D . [N: Drying webs by using sonic vibrations]
- D21F5/00E . [N: Drying webs by contact with sorbent bodies]
- D21F5/00G . [N: Drying webs by direct contact with gas flames]

- D21F5/00H . [N: Drying webs by centrifugal treatment]
- D21F5/02 . Drying on cylinders
- D21F5/02B . . [N: Construction of the cylinders]
- D21F5/02C . . [N: Heating the cylinders]
- D21F5/02C2 . . . [N: using electrical means]
- D21F5/02C3 . . . [N: using combustion gases]
- D21F5/02C4 . . . [N: using a heat-transfer fluid between the heating means and the cylinder shell]
- D21F5/02C5 . . . [N: using steam]
- D21F5/04 . . on two or more drying cylinders
- D21F5/04B . . . [N: in combination with suction or blowing devices]
- D21F5/04B2 [N: using air hoods over the cylinders]
- D21F5/04B3 [N: using pocket ventilation systems]
- D21F5/04C . . . [N: in combination with other heating means]
- D21F5/06 . . Regulating temperature
- D21F5/08 . . Arrangement of steam points in the cylinders
- D21F5/10 . . Removing condensate from the interior of the cylinders
- D21F5/12 . Festoon drying
- D21F5/14 . Drying webs by applying vacuum
- D21F5/14B . . [N: through perforated cylinders]
- D21F5/14C . . [N: Vacuum seals]
- D21F5/16 . Drying webs by electrical heating
- D21F5/16B . . [N: Resistance heating]
- D21F5/16C . . [N: Inductive heating; Capacitive heating]
- D21F5/16D . . [N: Microwave heating]
- D21F5/18 . Drying webs by hot air
- D21F5/18A . . [N: on Yankee cylinder] [N1106]
- D21F5/18B . . [N: through perforated cylinders]
- D21F5/18B2 . . . [N: Surfaces thereof]
- D21F5/18C . . [N: Supporting webs in hot air dryers]
- D21F5/18C2 . . . [N: by air jets]
- D21F5/18C2B [N: Blowing devices]
- D21F5/20 . Waste heat recovery
- D21F7/00** . **Other details of machines for making continuous webs of paper**
- D21F7/00B . [N: Wire-changing arrangements]
- D21F7/00C . [N: Indicating or regulating the moisture content of the layer]

- D21F7/00D . [N: Wire-tensioning devices]
- D21F7/00E . [N: Cutting the edges of the paper-web]
- D21F7/00F . [N: Steam showers]
- D21F7/02 . Mechanical driving arrangements
- D21F7/04 . Paper-break control devices
- D21F7/06 . Indicating or regulating the thickness of the layer; Signal devices
- D21F7/08 . Felts
- D21F7/08B . . [N: Multi-layer felts]
- D21F7/08T . . [N: Substantially impermeable for transferring fibrous webs] [N1106]
- D21F7/10 . . Seams thereof
- D21F7/12 . . Drying

D21F9/00 Complete machines for making continuous webs of paper

- D21F9/00B . [N: of the twin-wire type]
- D21F9/00B2 . . [N: paper or board consisting of two or more layers]
- D21F9/02 . of the Fourdrinier type
- D21F9/04 . of the cylinder type
- D21F9/04B . . [N: with immersed cylinder]
- D21F9/04C . . [N: with non-immersed cylinder]

D21F11/00 Processes for making continuous lengths of paper, or of cardboard, or of wet web for fibre board production, on paper-making machines

- D21F11/00B . [N: by using a foamed suspension]
- D21F11/00C . [N: by modification of the viscosity of the suspension]
- D21F11/00E . [N: Making patterned paper]
- D21F11/00G . [N: Making apertured paper]
- D21F11/02 . of the Fourdrinier type
- D21F11/04 . . paper or board consisting on two or more layers
- D21F11/06 . of the cylinder type
- D21F11/08 . . paper or board consisting of two or more layers
- D21F11/10 . Making imitation mould-made paper

- D21F11/12
 - . Making corrugated paper or board
- D21F11/14
 - . Making cellulose wadding, filter or blotting paper
- D21F11/14B
 - . . [N: including a through-drying process] [N1106]
- D21F11/16
 - . Making paper strips for spinning or twisting
- D21F13/00**
 - Making discontinuous sheets of paper, pulpboard or cardboard, or of wet web, for fibreboard production** (making discontinuous sheets of board in moulds [D21J](#); drying paper, pulpboard, or cardboard, in discontinuous sheet form [F26B](#))
- D21F13/02
 - . Making hand-made paper
- D21F13/04
 - . on cylinder board machines
- D21F13/06
 - . . Format rolls
- D21F13/08
 - . . . Automatic cut-off rolls
- D21F13/10
 - . using board presses
- D21F13/12
 - . . Platen presses