

CPC**COOPERATIVE PATENT CLASSIFICATION****D21F****PAPER-MAKING MACHINES; METHODS OF PRODUCING PAPER THEREON****D21F 1/00****Wet end of machines for making continuous webs of paper**

D21F 1/0009

- . { Regulating the freeness of the pulp }

D21F 1/0018

- . { Devices for dispensing fibres in a fluid }

D21F 1/0027

- . { Screen-cloths }

D21F 1/0036

- .. { Multi-layer screen-cloths }

D21F 1/0045

- ... { Triple layer fabrics }

D21F 1/0054

- .. { Seams thereof }

D21F 1/0063

- .. { Perforated sheets }

D21F 1/0072

- .. { Link belts }

D21F 1/0081

- .. { with single endless strands travelling in generally parallel convolutions }

D21F 1/009

- . { Fibre-rearranging devices }

D21F 1/02

- . Head boxes of Fourdrinier machines

D21F 1/022

- .. { Means for injecting material into flow within the headbox }

D21F 1/024

- .. { Details of the feed chamber }

D21F 1/026

- .. { Details of the turbulence section }

D21F 1/028

- .. { Details of the nozzle section }

D21F 1/04

- . Head boxes of cylinder machines

D21F 1/043

- .. { with immersed cylinders }

D21F 1/046

- .. { with non-immersed cylinder }

D21F 1/06

- . Regulating pulp flow

D21F 1/065

- .. { Shock-absorbing devices }

D21F 1/08

- . Regulating consistency

D21F 1/10

- . Wire-cloths ([production of wire-cloths B21F](#))

D21F 1/105

- .. { Multi-layer wire-cloths }

D21F 1/12

- .. Seams thereof

D21F 1/14

- ... welded

D21F 1/16

- ... sewn

D21F 1/18

- . Shaking apparatus for wire-cloths and associated parts

- D21F 1/20 . . in fourdrinier machines
- D21F 1/22 . . in cylinder machines
- D21F 1/24 . Tilting, raising, or lowering mechanisms for wire-cloths
- D21F 1/26 . . in Fourdrinier machines
- D21F 1/28 . . in cylinder machines
- D21F 1/30 . Protecting wire-cloths from mechanical damage
- D21F 1/32 . Washing wire-cloths or felts
- D21F 1/325 . . { with reciprocating devices }
- D21F 1/34 . Construction or arrangement of spraying pipes
- D21F 1/345 . . { Spraying-pipe cleaners }
- D21F 1/36 . Guiding mechanisms (suction rolls [D21F 3/10](#))
- D21F 1/365 . . { for controlling the lateral position of the screen }
- D21F 1/38 . . Pads
- D21F 1/40 . . Rolls
- D21F 1/42 . . Jets
- D21F 1/44 . Watermarking devices
- D21F 1/46 . . Dandy rolls
- D21F 1/48 . Suction apparatus (suction rolls [D21F 3/10](#))
- D21F 1/483 . . { Drainage foils and bars }
- D21F 1/486 . . . { adjustable }
- D21F 1/50 . . Suction boxes with rolls
- D21F 1/52 . . Suction boxes without rolls
- D21F 1/523 . . . { Covers thereof }
- D21F 1/526 { consisting of endless moving belts }
- D21F 1/54 . Skimming devices, e.g. froth ledges
- D21F 1/56 . Deckle frame arrangements
- D21F 1/58 . Deckle straps
- D21F 1/60 . Cylinder moulds
- D21F 1/62 . Sand traps
- D21F 1/64 . Magnetic separators
- D21F 1/66 . Pulp catching, de-watering, or recovering; Re-use of pulp-water
- D21F 1/68 . . using hydrocyclones ([hydrocyclones B04C](#))

- D21F 1/70 . . . by flotation
- D21F 1/72 . . . using funnels
- D21F 1/74 . . . using cylinders
- D21F 1/76 with suction
- D21F 1/78 with pressure
- D21F 1/80 . . . using endless screening belts
- D21F 1/82 . . . adding fibre agglomeration compositions

D21F 2/00 **Transferring webs from wet ends to press sections** {{handling webs in general [B65H](#)}}

D21F 3/00 **Press section of machines for making continuous webs of paper**

- D21F 3/02 . . . Wet presses
- D21F 3/0209 { with extended press nip }
- D21F 3/0218 { Shoe presses }
- D21F 3/0227 { Belts or sleeves therefor }
- D21F 3/0236 { manufacturing methods }
- D21F 3/0245 { Means for fixing the sleeve to the roller end }
- D21F 3/0254 { Cluster presses, i.e. presses comprising a press chamber defined by at least three rollers }
- D21F 3/0263 { Sealing arrangements therefor }
- D21F 3/0272 { in combination with suction or blowing devices }
- D21F 3/0281 { in combination with a dryer roll }
- D21F 3/029 { using special water-receiving belts }
- D21F 3/04 Arrangements thereof
- D21F 3/045 { including at least one extended press nip }
- D21F 3/06 Means for regulating the pressure
- D21F 3/08 Pressure rolls
- D21F 3/083 { perforated }
- D21F 3/086 { having a grooved surface }
- D21F 3/10 Suction rolls, e.g. couch rolls
- D21F 3/105 { Covers thereof }

D21F 5/00 **Dryer section of machines for making continuous webs of paper**

- D21F 5/001 . . . { Drying webs by radiant heating }
- D21F 5/002 { from infra-red-emitting elements }
- D21F 5/003 { Shutter means }
- D21F 5/004 . . . { Drying webs by contact with heated surfaces or materials }

- D21F 5/005 .. { in a fluid bed }
- D21F 5/006 . { Drying webs by using sonic vibrations }
- D21F 5/007 . { Drying webs by contact with sorbent bodies }
- D21F 5/008 . { Drying webs by direct contact with gas flames }
- D21F 5/009 . { Drying webs by centrifugal treatment }
- D21F 5/02 . Drying on cylinders
 - D21F 5/021 .. { Construction of the cylinders }
 - D21F 5/022 .. { Heating the cylinders }
 - D21F 5/024 ... { using electrical means }
 - D21F 5/025 ... { using combustion gases }
 - D21F 5/027 ... { using a heat-transfer fluid between the heating means and the cylinder shell }
 - D21F 5/028 ... { using steam }
 - D21F 5/04 .. on two or more drying cylinders
 - D21F 5/042 ... { in combination with suction or blowing devices }
 - D21F 5/044 { using air hoods over the cylinders }
 - D21F 5/046 { using pocket ventilation systems }
 - D21F 5/048 ... { in combination with other heating means }
 - D21F 5/06 .. Regulating temperature
 - D21F 5/08 .. Arrangement of steam points in the cylinders
 - D21F 5/10 .. Removing condensate from the interior of the cylinders
- D21F 5/12 . Festoon drying
- D21F 5/14 . Drying webs by applying vacuum
 - D21F 5/143 .. { through perforated cylinders }
 - D21F 5/146 .. { Vacuum seals }
- D21F 5/16 . Drying webs by electrical heating
 - D21F 5/162 .. { Resistance heating }
 - D21F 5/165 .. { Inductive heating; Capacitive heating }
 - D21F 5/167 .. { Microwave heating }
- D21F 5/18 . Drying webs by hot air
 - D21F 5/181 .. { on Yankee cylinder }
 - D21F 5/182 .. { through perforated cylinders }
 - D21F 5/184 ... { Surfaces thereof }
 - D21F 5/185 .. { Supporting webs in hot air dryers }
 - D21F 5/187 ... { by air jets }
 - D21F 5/188 { Blowing devices }

D21F 5/20 . Waste heat recovery

D21F 7/00 Other details of machines for making continuous webs of paper

D21F 7/001 . { Wire-changing arrangements }

D21F 7/003 . { Indicating or regulating the moisture content of the layer }

D21F 7/005 . { Wire-tensioning devices }

D21F 7/006 . { Cutting the edges of the paper-web }

D21F 7/008 . { Steam showers }

D21F 7/02 . Mechanical driving arrangements

D21F 7/04 . Paper-break control devices

D21F 7/06 . Indicating or regulating the thickness of the layer; Signal devices

D21F 7/08 . Felts

D21F 7/083 . . { Multi-layer felts }

D21F 7/086 . . { Substantially impermeable for transferring fibrous webs }

D21F 7/10 . . Seams thereof

D21F 7/12 . . Drying

D21F 9/00 Complete machines for making continuous webs of paper

D21F 9/003 . { of the twin-wire type }

D21F 9/006 . . { paper or board consisting of two or more layers }

D21F 9/02 . of the Fourdrinier type

D21F 9/04 . of the cylinder type

D21F 9/043 . . { with immersed cylinder }

D21F 9/046 . . { with non-immersed cylinder }

D21F 11/00 Processes for making continuous lengths of paper, or of cardboard, or of wet web for fibre board production, on paper-making machines

D21F 11/002 . { by using a foamed suspension }

D21F 11/004 . { by modification of the viscosity of the suspension }

D21F 11/006 . { Making patterned paper }

- D21F 11/008 . { Making apertured paper }
- D21F 11/02 . of the Fourdrinier type
- D21F 11/04 . . paper or board consisting on two or more layers
- D21F 11/06 . of the cylinder type
- D21F 11/08 . . paper or board consisting of two or more layers
- D21F 11/10 . Making imitation mould-made paper
- D21F 11/12 . Making corrugated paper or board
- D21F 11/14 . Making cellulose wadding, filter or blotting paper
- D21F 11/145 . . { including a through-drying process }
- D21F 11/16 . Making paper strips for spinning or twisting
- D21F 13/00** **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](#))
- D21F 13/02 . Making hand-made paper
- D21F 13/04 . on cylinder board machines
- D21F 13/06 . . Format rolls
- D21F 13/08 . . . Automatic cut-off rolls
- D21F 13/10 . using board presses
- D21F 13/12 . . Platen presses