VENTILATION OF MINES OR TUNNELS

Ventilation of mines or tunnels

1/00 Ventilation of mines or tunnels; Distribution of ventilating currents (ventilating rooms or spaces in general E24F)
1/003 . . (Ventilation of traffic tunnels (during construction E21F 1/04 - E21F 3/00))
1/006 . . (Ventilation at the working face of galleries or tunnels)
1/02 . . Test models (analogue computers therefor G06G 7/50)
1/04 . . Air ducts (suspension devices E21F 17/02)
1/06 . . . Duct connections (tube connections in general F16L)
1/08 . . Ventilation arrangements in connection with air ducts, e.g. arrangements for mounting ventilators (E21F 1/003 takes precedence); ventilators in general F04D)
1/085 . . . [using compressed gas injectors]
1/10 . . Air doors (E21F 1/003 takes precedence; air locks E21F 1/145; dam doors E21F 17/12); doors in general E06B)
1/12 . . . Devices for automatically opening air doors
1/14 . . Air partitions; Air locks (E21F 1/003 takes precedence); dams E21F 17/103; air locks for foundations E02D)
1/145 . . . [Air locks (air doors E21F 1/10; dam doors E21F 17/12)]
1/16 . . Shaft covers
1/18 . . Gravity flow ventilation (E21F 1/02 - E21F 1/16 take precedence)
3/00 Cooling or drying of air (air-conditioning rooms or spaces in general E24F)

Safeguarding devices (flue-gas indicators G01N); Rescue devices

5/00 Means or methods for preventing, binding, depositing, or removing dust (in combination with mining machines E21C 35/22); Preventing explosions or fires (dams E21F 17/103; applying liquids or other fluent materials to surfaces in general B05)
5/02 . . by wetting or spraying
5/04 . . Spraying barriers (spray nipples, spraying in general B05B, B05D; picks with arrangements of fluid-spraying nozzles E21C 35/187)
5/06 . . Fluids used for spraying
5/08 . . Rock dusting of mines; Depositing other protective substances
5/10 . . Devices for rock dusting
5/12 . . Composition of rock dust
5/14 . . Fluid barriers or rock dusters made to work by, or at the same time as, shots or explosions
5/143 . . . [Fluid barriers]
5/146 . . . [Rock dusters]
5/16 . . Layers of hygroscopic or other salts deposited on floors, walls, or the like, for binding dust; Deposition of such layers (dust-absorbing materials in general C09K 3/22)
5/18 . . Impregnating walls, or the like, with liquids for binding dust (injections for improving soil or rock E21D 9/001; borehole closures, i.e. packers, for use during the injection process E21B 33/12))
5/20 . . Drawing-off or depositing dust (dust-removing while drilling E21C 7/00; while slitting E21C 35/22)
7/00 Methods or devices for drawing-off gases with or without subsequent use of the gas for any purpose
9/00 Devices preventing sparking of machines or apparatus (preventing sparking of electric machines or apparatus H01K, H02K)
11/00 Rescue devices or other safety devices, e.g. safety chambers or escape ways (breathing aids for curative purposes A61H 31/00; respiratory apparatus A62B 7/00; breathing apparatus for accidentally buried persons A62B 33/00)
13/00 Transport specially adapted to underground conditions (mine cars B61D; transport in general, loading (unless specially adapted to underground conditions) B65G)
13/002 . . . [Crushing devices specifically for conveying in mines]
13/004 . . . [Staff transport system]
13/006 . . . [Equipment transport systems]
13/008 . . . . [for mine roof support units for step-by-step movement]
13/02 . . . [Transport of mined mineral] in galleries
13/025 . . . . [Shuttle cars]
13/04 . [Transport of mined material] in gravity inclines; in staple or inclined shafts

13/042 . [Vertical hydraulic conveying of coal (conveying by water flow in general B65G 53/00)]

13/045 . [Bunkers specially adapted for mining purposes (chutes in general B65G 11/00)]

13/047 . [comprising helically running channels (chutes of helical form in general B65G 11/06)]

13/06 . [Transport of mined material] at or adjacent to the working face

13/061 . [Chutes and braking conveyors for average and steep slopes, adapted for mining purposes (chutes in general B65G 11/00)]

13/063 . [Loading devices for use in mining]

13/065 . [Scrapers (digging devices guided by cables E02F 3/54; combined with planing means E21C 27/42)]

13/066 . [Scraper chain conveyors (in general B65G 19/00)]

13/068 . [Special adaptations for use at the junction of the working face with the gallery, e.g. driving stations coupled to the driving station of the winning machine]

13/08 . Shifting conveyors or other transport devices from one location at the working face to another (guiding mining machines along conveyors for the cut mineral E21C 35/12; in combination with mine roof supports for step-by-step movement E21D 23/00)

13/083 . [Conveyor belts removing methods or devices]

13/086 . [Armoured conveyors shifting devices]

13/10 . Anchorings for conveyors

15/00 Methods or devices for placing filling-up materials in underground workings (dams E21F 17/103 [; chocks made of flexible containers filled with backfilling material E21D 15/483])

15/005 . [characterised by the kind or composition of the backfilling material]

15/02 . Supporting means, e.g. shuttering, for filling-up materials

15/04 . Stowing mats; Goaf wire netting; Partition walls

15/06 . Filling-up mechanically

15/08 . Filling-up hydraulically or pneumatically (hydraulic or pneumatic transport devices B65G; pipes, pipe couplings F16L)

15/10 . Hydraulic or pneumatic filling-up machines

16/00 Drainage (keeping dry foundation sites or other areas in the ground F02D 19/00)

16/02 . of tunnels

17/00 Methods or devices for use in mines or tunnels, not covered elsewhere (mine lighting F21, H05B)

17/02 . Suspension devices for tubes or the like, e.g. for ventilating ducts (supporting pipes, cables or protective tubing in general F16L 3/00 - F16L 7/00)

17/04 . Distributing means for power supply in mines

17/06 . Distributing electric power; Cable networks; Conduits for cables (circuit arrangements for supplying or distributing electric power in general H02J)

17/08 . Distributing hydraulic power; Pipe networks for hydraulic liquid (pipe-line systems in general F17D)

17/10 . Distributing pneumatic power; Pipe networks for compressed air (pipe-line systems in general F17D)

17/103 . Dams, e.g. for ventilation

17/107 . inflatable

17/12 . Dam doors ([air doors E21F 1/10; air locks E21F 1/145])

17/16 . Modification of mine passages or chambers for storage purposes, especially for liquids or gases (storing fluids in natural or artificial cavities or chambers in the earth B65G 5/00)

17/18 . Special adaptations of signalling or alarm devices (for mine lifts B66B; gas-sensitive devices per se G01N)

17/185 . [Rock-pressure control devices with or without alarm devices; Alarm devices in case of roof subsidence (props with load-measuring devices E21D 15/46)]