| F | Sektion | SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING |
|------------|---------------------|---|
| F17 | Klasse | STORING OR DISTRIBUTING GASES OR LIQUIDS (water supply E03B) |
| F17D | Unterklasse | PIPE-LINE SYSTEMS; PIPE-LINES (pumps or compressors F04; fluid dynamics F15D; valves or the like F16K; pipes, laying pipes, supports, joints, branches, repairing, work on the entire line, accessories F16L; steam traps or the like F16T; fluid-pressure electric cables H01B 9/06) |
| F17D 1/00 | Hauptgruppe | Pipe-line systems (conveying articles or materials through a pipe-line by means of a fluid carrier B65G 51/00, B65G 53/00; dispensing, delivering or transferring liquids B67D; special devices for |
| | | transferring liquids from bulk storage containers into vehicles or boats or <u>vice versa</u> , e.g. loading |
| | | or unloading vehicles or portable containers B67D 5/00; conveying material which has been excavated by a dredger or soil shifter through a pipe-line E02F 7/10; sewer pipe-line systems E03F 3/00; thermal insulation of pipe-lines F16L 59/00; central heating systems F24D) [2] |
| F17D 1/02 | 1-Punkt Untergruppe | . for gases or vapours |
| F17D 1/04 | 2-Punkt Untergruppe | for distribution of gas |
| F17D 1/05 | 3-Punkt Untergruppe | Preventing freezing (by heating F16L 53/00) |
| F17D 1/06 | 2-Punkt Untergruppe | for steam |
| F17D 1/065 | 2-Punkt Untergruppe | Arrangements for producing propulsion of gases or vapours [2] |
| F17D 1/07 | 3-Punkt Untergruppe | by compression [2] |
| F17D 1/075 | 3-Punkt Untergruppe | by mere expansion from an initial pressure level, e.g. by arrangement of a flow-control valve [2] |
| F17D 1/08 | 1-Punkt Untergruppe | . for liquids or viscous products (water-main or service pipe systems E03B 7/04; domestic hot-water supply systems F24D 17/00) [2] |
| F17D 1/12 | 2-Punkt Untergruppe | Conveying liquids or viscous products by pressure of another fluid [2] |
| F17D 1/13 | 2-Punkt Untergruppe | Conveying liquids or viscous products by gravity [2] |
| F17D 1/14 | 2-Punkt Untergruppe | Conveying liquids or viscous products by pumping [2] |
| F17D 1/16 | 2-Punkt Untergruppe | Facilitating the conveyance of liquids or effecting the conveyance of viscous products by modification of their viscosity [2] |
| F17D 1/17 | 3-Punkt Untergruppe | by mixing with another liquid [2] |
| F17D 1/18 | 3-Punkt Untergruppe | by heating [2] |
| F17D 1/20 | 1-Punkt Untergruppe | . Arrangements or systems of devices for influencing or altering dynamic characteristics of the systems, e.g. for damping pulsations caused by opening or closing of valves (fluid dynamics F15D; damping pulsations in fluids in pipes in general F16L 55/04) [2] |
| F17D 3/00 | Hauptgruppe | Arrangements for supervising or controlling working operations |
| F17D 3/01 | 1-Punkt Untergruppe | . for controlling, signalling, or supervising the conveyance of a product [2] |
| F17D 3/03 | 1-Punkt Untergruppe | . for controlling, signalling, or supervising the conveyance of several different products following one another in the same conduit, e.g. for switching from one receiving tank to another [2] |
| F17D 3/05 | 2-Punkt Untergruppe | the different products not being separated (separation of contaminants by distillation B01D 3/00) [2] |
| F17D 3/08 | 2-Punkt Untergruppe | the different products being separated by "go-devils", e.g. spheres (cleaning devices moved along the inside of pipe-lines by a fluid B08B 9/053) [2] |

F17D 1/06

| Symbol | Тур | Titel |
|-----------|---------------------|--|
| F17D 3/10 | 1-Punkt Untergruppe | . for taking out the product in the line (investigating or analysing materials by determinating their chemical or physical properties G01N) [2] |
| F17D 3/12 | 1-Punkt Untergruppe | . for injecting a composition into the line [2] |
| F17D 3/14 | 1-Punkt Untergruppe | . for eliminating water (separation of liquids B01D, e.g. B01D 17/00; separation of gases or vapours B01D 53/00) [2] |
| F17D 3/16 | 1-Punkt Untergruppe | . for eliminating particles in suspension (from liquids by sedimentation B01D 21/00; separation by filtration or otherwise B01D 24/00-B01D 51/00; centrifugal apparatus B04) [2] |
| F17D 3/18 | 1-Punkt Untergruppe | . for measuring the quantity of conveyed product (measuring volume or volume flow, in general G01F) [2] |
| F17D 5/00 | Hauptgruppe | Protection or supervision of installations (arrangements for protecting foundations E02D 31/00; protecting pipes from damage or internal or external wear F16L 57/00, against corrosion or scale F16L 58/00; investigation of the fluid-tightness of structures G01M 3/00) [2] |
| F17D 5/02 | 1-Punkt Untergruppe | . Preventing, monitoring, or locating loss [2] |
| F17D 5/04 | 2-Punkt Untergruppe | by means of a signalling fluid enclosed in a double wall [2] |
| F17D 5/06 | 2-Punkt Untergruppe | using electric or acoustic means [2] |
| F17D 5/08 | 1-Punkt Untergruppe | . Protection of installations or persons from the effects of high voltage induced in the pipe-line (emergency protective circuit arrangements H02H) [2] |