

**A62 LIFE-SAVING; FIRE-FIGHTING** (ladders E06C)

**A62B DEVICES, APPARATUS, OR METHODS FOR LIFE-SAVING** (valves specially adapted for medical use A61M 39/00; life-saving devices, apparatus or methods specially adapted for use in water B63C 9/00; divers' equipment B63C 11/00; specially adapted for use with aircraft, e.g. parachutes, ejector seats, B64D; rescue devices peculiar to mining E21F 11/00)

**Subclass Index****RESCUING, e.g. IN CASE OF FIRE**

Means for escape or protection ..... 1/00, 3/00,  
5/00

Breathing containers ..... 31/00

Safety means for seemingly-dead  
persons ..... 33/00

**INDIVIDUAL BREATHING MASKS OR  
APPARATUS**

Types ..... 7/00, 18/00

Details ..... 9/00, 18/00

Cartridges, oxygen generators,  
filters ..... 19/00, 21/00,  
23/00

Storing, testing ..... 25/00, 27/00

**PROTECTIVE CLOTHING, SAFETY BELTS** ..... 17/00, 35/00

**COLLECTIVE DEVICES FOR BREATHING  
PROTECTION OR FOR PROTECTION  
AGAINST CHEMICAL AGENTS**

Air conditioning or ventilation in  
sealed rooms ..... 11/00, 13/00

Other protection ..... 15/00, 29/00

**OTHER LIFE SAVING** ..... 37/00

**Rescuing from fire; Rescuing from buildings or the like** (from mountains or trees A63B 27/00, A63B 29/00; from ships B63C)

**1/00 Devices for lowering persons from buildings or the like**

1/02 . by making use of rescue cages, bags, or the like  
(elevators, escalators or moving walkways B66B)

1/04 . . Single parts, e.g. fastening devices

1/06 . by making use of rope-lowering devices (capstans,  
winches B66D)

1/08 . . with brake mechanisms for the winches or pulleys

1/10 . . . mechanically operated

1/12 . . . hydraulically operated

1/14 . . with brakes sliding on the rope

1/16 . . Life-saving ropes or belts (safety belts  
A62B 35/00; mountain guy-ropes A63B 29/02;  
life-saving belts for use at sea B63C)

1/18 . . Other single parts for rope lowering-devices,  
e.g. take-up rollers for ropes, devices for shooting  
ropes

1/20 . by making use of sliding-ropes, sliding-poles or  
chutes, e.g. hoses, pipes, sliding-grooves, sliding  
sheets

1/22 . by making use of jumping devices, e.g. jumping-  
sheet, jumping-mattresses

**3/00 Devices or single parts for facilitating escape from  
buildings or the like, e.g. protection shields,  
protection screens; Portable devices for preventing  
smoke penetrating into distinct parts of buildings**  
(A62B 1/00 takes precedence)

**5/00 Other devices for rescuing from fire** (ladders E06C)

**Respirators; Gas-masks, including breathing apparatus, e.g. for  
high altitude, or masks therefor; Devices affording protection  
against harmful chemical agents** (composition of materials for  
coverings against harmful chemical agents A62D 5/00, for  
transparent parts of breathing apparatus A62D 7/00; composition of  
chemical substances for use in breathing apparatus A62D 9/00)

**7/00 Respiratory apparatus** (for medical purposes  
A61M 16/00)

7/02 . with compressed oxygen or air

7/04 . . and lung-controlled oxygen or air valves

7/06 . with liquid oxygen

7/08 . containing chemicals producing oxygen

7/10 . with filter elements

7/12 . with fresh-air hose

7/14 . for high-altitude aircraft

**9/00 Component parts for respiratory or breathing  
apparatus** (A62B 19/00, A62B 21/00, A62B 23/00 take  
precedence) [4]

9/02 . Valves

9/04 . Couplings; Supporting frames

9/06 . Mouthpieces; Nose-clips (for medical purposes  
A61M 15/00)

**11/00 Devices for reconditioning breathing air in sealed  
rooms** (chemical purification, disinfection, or  
sterilisation of air A61L; in aircraft or submarines,  
insofar as they influence the construction of the vehicle  
or are influenced by its construction B63B, B64D,  
respectively; air-conditioning in general F24F)

**13/00 Special devices for ventilating gasproof shelters**  
(ventilating in general F24F)

**15/00 Installations affording protection against poisonous  
or injurious substances, e.g. with separate breathing  
apparatus** (building aspects E04H 9/00)

**17/00 Protective clothing affording protection against heat  
or harmful chemical agents or for use at high  
altitudes** (protective clothing or garments for work or  
sport A41D 13/00; protecting eyes or ears A61F 9/00;  
composition of materials for protective clothing  
A62D 5/00; life-saving garments for use at sea B63C;  
diving suits B63C 11/02; flying suits B64D 10/00; space  
suits B64G 6/00; bullet-proof clothing F41H 1/02) [2]

17/04 . Hoods

17/08 . Protective coverings for animals

**18/00 Breathing masks or helmets, e.g. affording protection  
against chemical agents or for use at high altitudes**  
(A62B 17/00 takes precedence; anaesthetic masks  
A61M 16/06)

18/02 . Masks (gas-masks for animals A62B 18/06; masks  
for welders A61F 9/06)

18/04 . Gas helmets

18/06	• Gas masks for animals	29/00	<b>Devices for rendering harmless or for keeping off harmful chemical agents</b> (respiratory apparatus A62B 7/00; gasproof doors, windows, shutters E06B)
18/08	• Component parts for gas-masks or gas-helmets, e.g. windows, straps, speech transmitters, signal-devices (eye-pieces for protective goggles A61F 9/02; composition of materials for the windows or other transparent parts A62D 7/00)	31/00	<b>Containers or portable cabins for affording breathing protection with devices for reconditioning the breathing air or for ventilating</b> (ventilation of gasproof shelters A62B 13/00; protective clothes or coverings A62B 17/00; treatment rooms for medical purposes A61G 10/00) [4]
18/10	• • Valves	33/00	<b>Devices for allowing seemingly-dead persons to escape or draw attention; Breathing apparatus for accidentally buried person</b>
19/00	<b>Cartridges with absorbing substances for respiratory apparatus</b>		
19/02	• with oxidising agents	35/00	<b>Safety belts or body harnesses; Similar equipment for limiting displacement of the human body, especially in case of sudden changes of motion</b> (buckles A44B 11/00; accessories for children's furniture A47D 15/00; children's seats B60N 2/24; safety belts or body harnesses for land vehicles B60R 22/00; harnesses for parachutes B64D 17/30; harnessing in aircraft B64D 25/06; releasable fastenings F16B) [4]
21/00	<b>Devices for producing oxygen from chemical substances for respiratory apparatus</b>	35/04	• incorporating energy absorbing means [4]
23/00	<b>Filters for breathing-protection purposes</b> (gas-filters in general B01D)	37/00	<b>Devices, apparatus, or methods for life-saving not covered by the other groups of this subclass</b>
23/02	• for respirators		
23/04	• for gasproof shelters		
23/06	• Nose filters		
25/00	<b>Devices for storing respiratory or breathing apparatus</b> [4]		
27/00	<b>Methods or devices for testing respiratory or breathing apparatus</b> (apparatus for testing gastightness in general G01M) [4]		

**A62C FIRE-FIGHTING** (fire-extinguishing compositions, use of chemical substances in extinguishing fires A62D 1/00; spraying, applying liquids or other fluent materials to surfaces in general B05; alarm arrangements G08B, e.g. fire alarms actuated by smoke or gases G08B 17/10)

#### Subclass Index

#### FIRE PREVENTION OR CONTAINMENT; FIRE-EXTINGUISHING FOR PARTICULAR OBJECTS OR PLACES

Prevention or containment .....	2/00
Flame traps .....	4/00
For particular objects or places .....	3/00

#### MAKING FIRE-EXTINGUISHING MATERIALS BEFORE USE .....

5/00

#### HAND TOOLS OR ACCESSORIES .....

8/00

#### PORTABLE EXTINGUISHERS

According to operating principle .....	11/00, 13/00, 19/00, 25/00
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Knapsack type ..... 15/00

Pistol or rifle type ..... 17/00

#### FIRE-FIGHTING VEHICLES

Land vehicles ..... 27/00

Boats..... 29/00

#### DELIVERY OF FIRE-EXTINGUISHING

MATERIALS..... 31/00

HOSE ACCESSORIES ..... 33/00

STATIONARILY-INSTALLED EQUIPMENT..... 35/00

CONTROL OF FIRE-FIGHTING

EQUIPMENT ..... 37/00

OTHER METHODS, EQUIPMENT OR

ACCESSORIES ..... 39/00

**2/00 Fire prevention or containment** (A62C 3/00 takes precedence; flame traps A62C 4/00) [5]

**2/04** • Removing or cutting-off the supply of inflammable material [5]

**2/06** • Physical fire-barriers [5]

**2/08** • • Water curtains (nozzles A62C 31/02) [5]

**2/10** • • Fire-proof curtains [5]

**2/12** • • Hinged dampers [5]

**2/14** • • • with two or more blades [5]

**2/16** • • • multi-vane roll or fold-up type [5]

**2/18** • • Sliding dampers [5]

**2/20** • • • at 90 degrees to the plane of the opening [5]

**2/22** • • Fire-dampers with provision for the removal of an obstacle, e.g. rails, conveyers, before closing the opening [5]

**2/24** • • Operating or controlling mechanisms [5]

**3/00 Fire prevention, containment or extinguishing specially adapted for particular objects or places** (for nuclear reactors G21C 9/04) [5]

**3/02** • for area conflagrations, e.g. forest fires, subterranean fires [5]

**3/04** • for dust or loosely-baled or loosely-piled materials, e.g. in silos, in chimneys (flame traps A62C 4/00) [5]

**3/06** • of highly inflammable material, e.g. light metals, petroleum products [5]

**3/07** • in vehicles, e.g. in road vehicles [5]

**3/08** • • in aircraft [5]

- 3/10 . . . in ships [5]
- 3/16 . . . in electrical installations, e.g. cableways [5]
- 4/00 Flame traps allowing passage of gas but not of flame or explosion wave [2]**
- 4/02 . . . in gas-pipes (safety valves F16K 17/00) [2]
- 4/04 . . . in flues or chimneys [2]
- 5/00 Making of fire-extinguishing materials immediately before use (nozzles A62C 31/02) [5]**
- 5/02 . . . of foam [5]
- 5/027 . . . Heavy foam [5]
- 5/033 . . . of gel [5]

#### **Hand fire-extinguishers [5]**

- 8/00 Hand tools or accessories specially adapted for fire-fighting, e.g. tool boxes [5]**
- 8/02 . . . Buckets or pails [5]
- 8/04 . . . Rakes or beaters [5]
- 8/06 . . . Fire-blankets [5]
- 8/08 . . . Shields [5]
- 11/00 Portable extinguishers with manually-operated pumps [5]**
- 13/00 Portable extinguishers which are permanently pressurised or pressurised immediately before use (A62C 11/00 takes precedence) [5]**
- 13/02 . . . with pressure gas produced by chemicals
- 13/04 . . . . . with separate acid container
- 13/06 . . . . . with acid container without closure device
- 13/08 . . . . . with acid container with closure device
- 13/10 . . . . . with loose-lid closure device (loosely-engaging lids or covers for containers for liquids without means for effecting sealing of container in general B65D 51/02)
- 13/12 . . . . . with valve closure device
- 13/14 . . . . . with acid container the shell of which is ruptured by pin, screw-pin, or similar device
- 13/16 . . . . . with movable acid container ruptured by falling when operated
- 13/18 . . . . . with acid container ruptured by a striking weight, e.g. by a falling weight
- 13/20 . . . . . with the chemicals in a single case, e.g. in a cartridge
- 13/22 . . . . . with incendiary substances producing pressure gas
- 13/62 . . . . . with a single permanently pressurised container [5]
- 13/64 . . . . . the extinguishing material being released by means of a valve [5]
- 13/66 . . . . . with extinguishing material and pressure gas being stored in separate containers [5]
- 13/68 . . . . . characterised by means for releasing the extinguishing material [5]
- 13/70 . . . . . characterised by means for releasing the pressure gas [5]
- 13/72 . . . . . characterised by releasing means operating essentially simultaneously on both containers [5]
- 13/74 . . . . . the pressure gas container being pierced or broken [5]
- 13/76 . . . . . Details or accessories [5]
- 13/78 . . . . . Suspending or supporting devices [5]
- 15/00 Extinguishers essentially of the knapsack type (knapsacks, carrying-frames, pack-frames carried on the body A45F 3/00)**
- 17/00 Hand fire-extinguishers essentially in the form of pistols or rifles**

- 19/00 Hand fire-extinguishers in which the extinguishing substance is expelled by an explosion; Exploding containers thrown into the fire**
- 25/00 Portable extinguishers with power-driven pumps [5]**

**Fire-fighting vehicles** (A62C 31/00, A62C 33/00, A62C 37/00 take precedence; vehicle aspects, see the appropriate subclasses of B60 to B64, e.g. fire-fighting aircraft B64D 1/16) [5]

- 27/00 Fire-fighting land vehicles**
- 29/00 Fire-fighting vessels or like floating structures [5]**
- 31/00 Delivery of fire-extinguishing material (pumps F04; hoses F16L)**
- 31/02 . . . Nozzles specially adapted for fire-extinguishing [5]
- 31/03 . . . . . adjustable, e.g. from spray to jet or vice-versa [5]
- 31/05 . . . . . with two or more outlets [5]
- 31/07 . . . . . for different media [5]
- 31/12 . . . . . for delivering foam or atomized foam
- 31/22 . . . . . specially adapted for piercing walls, heaped materials, or the like
- 31/24 . . . . . attached to ladders, poles, towers, or other structures with or without rotary heads
- 31/28 . . . . . Accessories for delivery devices, e.g. supports
- 33/00 Hose accessories [5]**
- 33/02 . . . Apparatus for cleaning or drying hoses (drying shelves F26B)
- 33/04 . . . Supports or clamps for fire hoses
- 33/06 . . . Hose or pipe bridges

**Permanently-installed equipment** (A62C 31/00, A62C 33/00, A62C 37/00 take precedence) [5]

- 35/00 Permanently-installed equipment (for forming water curtains A62C 2/08)**
- 35/02 . . . with containers for delivering the extinguishing substance (for forming water curtains A62C 2/08)
- 35/04 . . . . . Swingable or tiltable containers
- 35/06 . . . . . Containers destroyed or opened by falling [5]
- 35/08 . . . . . Containers destroyed or opened by bursting charge [5]
- 35/10 . . . . . Containers destroyed or opened by flames or heat [5]
- 35/11 . . . . . controlled by a signal from the danger zone [5]
- 35/13 . . . . . with a finite supply of extinguishing material [5]
- 35/15 . . . . . with a system for topping-up the supply of extinguishing material automatically [5]
- 35/20 . . . Hydrants, e.g. wall-hoses, wall units, plug-in cabinets (hydrants in streets E03B 9/02) [5]
- 35/58 . . . Pipe-line systems [5]
- 35/60 . . . . . wet, i.e. containing extinguishing material even when not in use [5]
- 35/62 . . . . . dry, i.e. empty of extinguishing material when not in use [5]
- 35/64 . . . . . pressurised [5]
- 35/66 . . . . . Accelerators [5]
- 35/68 . . . . . Details, e.g. of pipes or valve systems (valves in general F16K) [5]
- 37/00 Control of fire-fighting equipment (heat-sensitive devices G01K) [5]**
- 37/08 . . . comprising an outlet device containing a sensor, or itself being the sensor, i.e. self-contained sprinklers [5]
- 37/09 . . . . . telescopic or adjustable [5]

37/10	. . . Releasing means, e.g. electrically released [5]	37/40	. . . with electric connection between sensor and actuator [5]
37/11	. . . heat-sensitive [5]	37/42	. . . with mechanical connection between sensor and actuator, e.g. rods, levers [5]
37/12	. . . with fusible links [5]	37/44	. . . only the sensor being in the danger zone [5]
37/14	. . . with frangible vessels [5]	37/46	. . . Construction of the actuator [5]
37/16	. . . with thermally-expansible links [5]	37/48	. . . Thermally sensitive initiators [5]
37/20	. . . Resetting after use; Tools therefor [5]	37/50	. . . Testing or indicating devices for determining the state of readiness of the equipment [5]
37/21	. . . automatic [5]		
37/36	. . . an actuating signal being generated by a sensor separate from an outlet device [5]		
37/38	. . . by both sensor and actuator, e.g. valve, being in the danger zone [5]	39/00	<b>Fire-fighting methods, equipment or accessories, not provided for in groups A62C 2/00 to A62C 37/00</b>

**A62D CHEMICAL MEANS FOR EXTINGUISHING FIRES; PROCESSES FOR MAKING HARMFUL CHEMICAL SUBSTANCES HARMLESS, OR LESS HARMFUL, BY EFFECTING A CHEMICAL CHANGE; COMPOSITION OF MATERIALS FOR COVERINGS OR CLOTHING FOR PROTECTING AGAINST HARMFUL CHEMICAL AGENTS; COMPOSITION OF MATERIALS FOR TRANSPARENT PARTS OF GAS-MASKS, RESPIRATORS, BREATHING BAGS OR HELMETS; COMPOSITION OF CHEMICAL MATERIALS FOR USE IN BREATHING APPARATUS**

**Note**

Processes using enzymes or micro-organisms in order to:

- (i) liberate, separate or purify a pre-existing compound or composition, or to
  - (ii) treat textiles or clean solid surfaces of materials
- are further classified in subclass C12S. [5]

<b>1/00</b>	<b>Fire-extinguishing compositions; Use of chemical substances in extinguishing fires</b> (fireproof paints C09D 5/18; fireproofing materials C09K 21/00)	(4)	In this group, it is desirable to add the indexing code(s) of group A62D 101/00 relating to the nature of the harmful chemical substance. [2007.01]
1/02	. . . containing or yielding a gas phase, e.g. foams (A62D 1/06, A62D 1/08 take precedence) [3]	3/02	. . . by biological methods, i.e. processes using enzymes or micro-organisms [2007.01]
1/04	. . . characterised by the foam stabiliser [3]	3/10	. . . by subjecting to electric or wave energy or particle or ionizing radiation [2007.01]
1/06	. . . containing gas-producing, chemically-reactive components [3]	3/11	. . . Electrochemical processes, e.g. electrodialysis [2007.01]
1/08	. . . containing volatile or gas-charged liquids [3]	3/115	. . . Electrolytic degradation or conversion [2007.01]
<b>3/00</b>	<b>Processes for making harmful chemical substances harmless, or less harmful, by effecting a chemical change in the substances</b> (consuming noxious gases by combustion F23G 7/06) [1,2007.01]	3/13	. . . to sonic energy [2007.01]
		3/15	. . . to particle radiation, e.g. electron beam radiation [2007.01]
		3/17	. . . to electromagnetic radiation, e.g. emitted by a laser [2007.01]
		3/172	. . . Gamma rays, i.e. radiation having a wavelength of about 0.003 to 0.03 nm [2007.01]
		3/174	. . . X-rays, i.e. radiation having a wavelength of about 0.03 to 3 nm [2007.01]
		3/176	. . . Ultraviolet radiation, i.e. radiation having a wavelength of about 3 to 400 nm [2007.01]
		3/178	. . . Microwave radiation, i.e. radiation having a wavelength of about 0.3 to 30 cm [2007.01]
		3/19	. . . to plasma [2007.01]
		3/20	. . . by hydrolysis or destructive steam gasification, e.g. using water and heat to effect chemical change [2007.01]
		3/30	. . . by reacting with chemical agents [2007.01]
		3/32	. . . by treatment in molten chemical reagent, e.g. salts or metals [2007.01]
		3/33	. . . by chemically fixing the harmful substance, e.g. by chelation or complexation [2007.01]
		3/34	. . . Dehalogenation using reactive chemical agents able to degrade [2007.01]
		3/35	. . . by hydrolysis [2007.01]

**Notes**

- (1) This group does not cover:
  - chemical or physico-chemical type processes where eradicating or diminishing the dangerousness of harmful chemical substances produces useful products (e.g. cement). These types of processes are covered by the appropriate subclass for making the specific product. However, in situations where processes for making products include a subset of process steps with eradicating or diminishing the dangerousness of a harmful chemical substance as its fundamental goal, and this subset is in itself novel and unobvious, this subset is covered by group A62D 3/00. [2007.01]
- (2) In this group the following term is used with the meaning indicated:
  - “harmful chemical substances” are chemical waste substances which are too hazardous or toxic to be discarded in an ordinary municipal landfill. [2007.01]
- (3) In this group, at each hierarchical level, in the absence of an indication to the contrary, classification is made in the first appropriate place. [2007.01]

3/36	. . Detoxification by using acid or alkaline reagents [2007.01]
3/37	. . by reduction, e.g. hydrogenation [2007.01]
3/38	. . by oxidation; by combustion [2007.01]
3/40	. by heating to effect chemical change, e.g. by pyrolysis [2007.01]
5/00	<b>Composition of materials for coverings or clothing affording protection against harmful chemical agents</b>
7/00	<b>Composition of materials for transparent parts of gas-masks, respirators, breathing bags, or helmets</b>
7/02	. Clear-view sheets which prevent the formation of water drops or ice (materials for minimising adherence of ice or water to surfaces C09K 3/18)
9/00	<b>Composition of chemical substances for use in breathing apparatus</b> (production of oxygen-generating compounds in general, processes for the production of oxygen from chemicals in general C01B 13/00, C25B 1/02)

**Indexing scheme associated with group A62D 3/00 relating to the nature of the harmful chemical substances**

101/00	<b>Harmful chemical substances made harmless, or less harmful, by effecting chemical change [2007.01]</b>
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**Note**

When indexing a substance in groups A62D 101/02 - A62D 101/08, indexing according to its chemical structure may also be made in one or more of groups A62D 101/20 - A62D 101/40. [2007.01]

101/02	. Chemical warfare substances, e.g. cholinesterase inhibitors [2007.01]
101/04	. Pesticides, e.g. insecticides, herbicides, fungicides or nematocides [2007.01]
101/06	. Explosives, propellants or pyrotechnics, e.g. rocket fuel or napalm [2007.01]
101/08	. Toxic combustion residues, e.g. toxic substances contained in fly ash from waste incineration [2007.01]
101/20	. Organic substances [2007.01]
101/22	. . containing halogen [2007.01]
101/24	. . containing heavy metals [2007.01]
101/26	. . containing nitrogen or phosphorus [2007.01]
101/28	. . containing oxygen, sulfur, selenium or tellurium, i.e. chalcogen [2007.01]
101/40	. Inorganic substances [2007.01]
101/41	. . Inorganic fibers, e.g. asbestos [2007.01]
101/43	. . containing heavy metals, in the bonded or free state [2007.01]
101/45	. . containing nitrogen or phosphorus [2007.01]
101/47	. . containing oxygen, sulfur, selenium or tellurium, i.e. chalcogen [2007.01]
101/49	. . containing halogen [2007.01]