

No. 2953

**BELGIUM, DENMARK, FRANCE,
FEDERAL REPUBLIC OF GERMANY,
GREECE, etc.**

**European Convention on the international classification of
patents for invention (with annex). Signed at Paris, on
19 December 1954**

Official texts: English and French.

*Registered on 29 September 1955 by the Council of Europe acting on behalf of the
Contracting Parties, in accordance with Resolution (54) 6 of the Committee
of Ministers of the Council of Europe adopted on 3 April 1954.*

**BELGIQUE, DANEMARK, FRANCE,
RÉPUBLIQUE FÉDÉRALE D'ALLEMAGNE,
GRÈCE, etc.**

**Convention européenne sur la classification internationale
des brevets d'invention (avec annexe). Signée à Paris, le
19 décembre 1954**

Textes officiels anglais et français.

*Enregistrée le 29 septembre 1955 par le Conseil de l'Europe agissant au nom des
Parties contractantes, conformément à la résolution (54) 6 du Comité des Ministres
du Conseil de l'Europe adoptée le 3 avril 1954.*

No. 2953. EUROPEAN CONVENTION¹ ON THE INTERNATIONAL CLASSIFICATION OF PATENTS FOR INVENTION. SIGNED AT PARIS, ON 19 DECEMBER 1954

The Governments signatory hereto, being Members of the Council of Europe,

Considering that the aim of the Council of Europe is to achieve a greater unity between its Members for the purpose, among others, of facilitating their economic and social progress by agreements and common action in economic, social, cultural, scientific, legal and administrative matters ;

Considering that the adoption of a uniform system of classification of patents for inventions is in the common interest and likely to contribute to the harmonisation of national legislation ;

Having regard to the Resolution of the Committee of Ministers of the Council of Europe of 12th September, 1952, relating to the generalisation of the practice of examination of patent applications for novelty ;

Having regard to Article 15 of the Convention for the Protection of Industrial Property signed at Paris on 20th March, 1883, revised at Brussels on 14th December, 1900, at Washington on 2nd June, 1911, at The Hague on 6th November, 1925, and at London on 2nd June, 1934,²

Have agreed as follows :

¹ In accordance with article 4, the Convention came into force on 1 August 1955, the first day of the month following the deposit of the fourth instrument of ratification, in respect of the following signatories on behalf of which the instruments of ratification were deposited on the dates indicated :

Ireland	11 March 1955
Norway	11 March 1955
Belgium (with declaration*)	16 May 1955
France	1 July 1955

* DECLARATION

[TRANSLATION — TRADUCTION]

In depositing the instruments of ratification of Belgium relating to the European Convention on the International Classification of Patents for Invention and the annex thereto, signed in Paris on 19 December 1954, I hereby declare :

(1) that the said Convention and its annex shall apply only in the metropolitan territory of Belgium, to the exclusion of the Belgian Congo and the Trust Territory of Ruanda-Urundi ;

(2) that I exercise the option for which provision is made in article 3, paragraph 2. Consequently, the Belgian Government does not undertake to mark the printed patent specifications, extracts or similar documents with the symbols relating to the elaborations of the classification system referred to in articles 1 and 2 ; the annex to this Convention and any modification thereof, in so far as it does not constitute an elaboration, is excluded from this reservation.

DONE at Brussels, 11 May 1955.

[L.S.]

(Signed) P. H. SPAAK
Minister of Foreign Affairs

² See footnote 2, p. 28 of this volume.

Article 1

1. Subject to the provisions of this Convention, each Contracting Party shall adopt the system of classification of patents for inventions set out in the Annex hereto, together with any elaborations or modifications which shall have entered into force in accordance with paragraph 2 of Article 2. This system, including the said elaborations and modifications, is hereinafter referred to as the "International Classification".

2. Each Contracting Party shall be at liberty to apply the International Classification either as a principal or as a subsidiary system.

Article 2

1. The Committee of Experts on Patents of the Council of Europe shall be responsible for the further elaboration of the International Classification and shall give its opinion to the Contracting Parties on any modification thereof which may be proposed by any of them.

2. Any elaboration or modification approved by that Committee shall enter into force six months after all the Contracting Parties have been notified of such approval, unless two at least of the Parties have informed the Secretary-General of the Council of their objection to the proposed elaboration or modification not less than one month before the expiry of the said period of six months.

Article 3

1. The printed patent specifications issued by the Contracting Parties or, in their absence, any extract or similar document which may be issued by a Contracting Party as a substitute for such a printed specification shall, after the expiry of a period of six months from the date on which this Convention enters into force, be marked by the national authorities with the complete symbols of the International Classification.

2. Any signatory or acceding Government which does not classify patents for the purpose of examining the novelty of inventions may, when signing this Convention or when depositing its instrument of ratification, or when notifying its accession, declare that it does not undertake to mark the printed patent specifications, extracts or similar documents with all or some of the symbols relating to the elaborations of the classification system referred to in Articles 1 and 2. No such reservation may be made in connection with the Annex to this Convention or any modification thereof which does not constitute an elaboration.

3. The symbols of the International Classification, preceded by the words: "International Classification" or an abbreviation thereof, shall be printed in heavy type in the heading of the document.

4. The provisions of the preceding paragraphs shall not prejudice the right of any Contracting Party to require that the printed documents issued by their national authorities shall bear other symbols.

Article 4

1. This Convention shall be open for signature by the Members of the Council of Europe. It shall be ratified. Instruments of ratification shall be deposited with the Secretary-General of the Council of Europe.

2. Subject to the provisions of Article 6, this Convention shall enter into force on the first day of the month following the date of deposit of the fourth instrument of ratification.

3. Subject to the provisions of Article 6, this Convention shall enter into force, for any signatory Government which subsequently ratifies it, on the first day of the month following the date of the deposit of its instrument of ratification.

Article 5

1. After its entry into force, this Convention shall be open to accession by any Member of the International Union for the Protection of Industrial Property which is not a Member of the Council of Europe.

2. Accession shall be effected by notifying the Government of the Swiss Confederation through the diplomatic channel, in accordance with the corresponding Article of the Convention for the Protection of Industrial Property. That Government shall notify such accessions to all other Members of the International Union for the Protection of Industrial Property and to the Secretary-General of the Council of Europe. Accession shall take effect one month after the date of the notification by the Government of the Swiss Confederation.

Article 6

Any signatory or acceding Government may, when signing this Convention or when depositing its instrument of ratification, or when notifying its accession, declare that this Convention shall not come into force, so far as the said Government is concerned, until it has been ratified by the Governments of the Federal Republic of Germany, the Kingdom of the Netherlands and the United Kingdom of Great Britain and Northern Ireland.

Article 7

1. The Secretary-General of the Council of Europe shall notify the Members of the Council and the Director of the International Bureau for the Protection of Industrial Property at Berne :

(a) of the date of entry into force of this Convention and the names of any Members of the Council which ratify it ;

(b) of the approval of any elaborations or modifications of the kind referred to in paragraph 2 of Article 2, of any objections thereto, and of the entry into force of any such elaborations or modifications ;

(c) of any notification received in accordance with paragraph 2 of Article 8.

2. He shall inform the Members of the Council of Europe who are not Members of the International Union for the Protection of Industrial Property of each accession notified pursuant to Article 5, and of any notice of denunciation given in accordance with paragraph 3 of Article 8.

Article 8

1. This Convention shall remain in force indefinitely.

2. Any Member of the Council of Europe which has signed and ratified this Convention may denounce it by giving one year's notice to this effect to the Secretary-General of the Council.

3. Any acceding Government may denounce this Convention by giving one year's notice to this effect to the Government of the Swiss Confederation through the diplomatic channel, in accordance with the corresponding Article of the Convention for the Protection of Industrial Property. That Government shall notify such denunciations to all other Members of the International Union for the Protection of Industrial Property and to the Secretary-General of the Council of Europe.

IN WITNESS WHEREOF the undersigned, being duly authorised thereto, have signed this Convention.

DONE at Paris this 19th day of December, 1954, in the English and French languages, both texts being equally authoritative, in a single copy which shall remain deposited in the archives of the Council of Europe and of which the Secretary-General shall send certified copies to each of the signatory and acceding Governments and to the Director of the International Bureau for the Protection of Industrial Property at Berne.

EN FOI DE QUOI, les soussignés, dûment autorisés à cet effet, ont signé la présente Convention.

FAIT à Paris, le 19 décembre 1954, en français et en anglais, les deux textes faisant également foi, en un seul exemplaire qui sera déposé dans les archives du Conseil de l'Europe. Le Secrétaire Général en communiquera des copies certifiées conformes à tous les Gouvernements signataires ou adhérents ainsi qu'au Directeur du Bureau International de Berne pour la Protection de la Propriété Industrielle.

For the Government
of the Kingdom of Belgium :

Pour le Gouvernement
du Royaume de Belgique :

P. H. SPAAK

For the Government
of the Kingdom of Denmark :

Pour le Gouvernement
du Royaume de Danemark :

H. C. HANSEN

For the Government
of the French Republic :

Pour le Gouvernement
de la République française :

MENDÈS-FRANCE

*At the time of signing this Convention,
I declare that the French Government
intends to avail itself of the option
provided for under the terms of Article 3,
paragraph 2, of the Convention.*

*Au moment de signer la présente
Convention, je déclare que le Gouverne-
ment français entend se prévaloir de la
faculté offerte par les dispositions de
l'article 3, paragraphe 2, de la Convention.*

For the Government of the
Federal Republic of Germany :

Pour le Gouvernement de la
République Fédérale d'Allemagne :

BLÜCHER

For the Government
of the Kingdom of Greece :

Pour le Gouvernement
du Royaume de Grèce :

STEPHANOPOULOS

For the Government
of the Icelandic Republic :

Pour le Gouvernement
de la République islandaise :

For the Government
of Ireland :

Pour le Gouvernement
d'Irlande :

Liam COSGRAVE

For the Government
of the Italian Republic :

Pour le Gouvernement
de la République italienne :

G. MARTINO

For the Government of the Grand
Duchy of Luxembourg :

Pour le Gouvernement du Grand
Duché de Luxembourg :

For the Government of the
Kingdom of the Netherlands :

Pour le Gouvernement
du Royaume des Pays-Bas :

J. W. BEYEN

For the Government
of the Kingdom of Norway :

Pour le Gouvernement
du Royaume de Norvège :

Halvard LANGE

For the Government
of the Saar :

Pour le Gouvernement
de la Sarre :

*(in application of Resolution (54) 18 of
the Committee of Ministers)*

*(par application de la Résolution (54)
18 du Comité des Ministres)*

STEPHANOPOULOS

For the Government
of the Kingdom of Sweden :

Pour le Gouvernement
du Royaume de Suède :

K. I. WESTMAN

For the Government
of the Turkish Republic :

Pour le Gouvernement
de la République turque :

F. KÖPRÜLÜ

For the Government
of the United Kingdom of Great Britain
and Northern Ireland:

Pour le Gouvernement
du Royaume-Uni de Grande-
Bretagne et d'Irlande du Nord :

Anthony EDEN

*At the time of signing the present
Convention, I declare that my signature
is in respect of the United Kingdom
of Great Britain and Northern Ireland
(including the Isle of Man), and is
not in respect of any other territory
or territories for whose international
relations the Government of the United
Kingdom are responsible.*

*Au moment de signer la présente
Convention, je déclare que ma signature
vaut uniquement pour le Royaume-Uni
de Grande-Bretagne et d'Irlande du Nord
(Ile de Man comprise), à l'exclusion
de tout territoire dont le Gouvernement
du Royaume-Uni assure les relations
internationales.*

ANNEX

SYSTEM OF CLASSIFICATION OF PATENTS FOR INVENTIONS

NOTE

In using the present system of classification the guiding principles should be that :

1. *Sub-classes relating to products include not only such products, but also the methods, processes and apparatus peculiar to the making of such products, unless there is another sub-class describing such method, process and apparatus in general.*

Example: Pencils and their manufacture are proper to B 43 b.

Vests are to be found in A 41 b, while the knitting of vests is appropriate to D 04 b, and the weaving of vests to D 03 d.

2. *Sub-classes relating to operations or modes of working (e.g. milling, spraying) include both the methods associated with and the machines or apparatus used in such operations but not the products obtained thereby.*

3. *Classes relating to apparatus (e.g. electric switches) or machines (e.g. turbines) include only such apparatus or machines. They do not include any means for making nor methods of using the apparatus or machines.*

4. *Classes relating to structures (e.g. weirs) include the structures themselves and the particular methods used in making them but do not include any apparatus used in making them.*

SYSTEM OF CLASSIFICATION OF SUBJECT-MATTER FOR PATENTS OF INVENTION

SECTIONS AND SUB-SECTIONS

A — HUMAN NECESSITIES

Sub-sections : *Agriculture*
Foodstuffs
Apparel
Medicine and hygiene

B — PERFORMING OPERATIONS

Sub-sections : *Separating and mixing*
Shaping
Printing
Transporting

C — CHEMISTRY AND METALLURGY

Sub-sections : *Chemistry*
Metallurgy

D — TEXTILES AND PAPER

Sub-sections : *Textiles*
Paper

E — FIXED CONSTRUCTIONS

Sub-sections : *Building*
Mining

F — MECHANICS, LIGHTING AND HEATING

Sub-sections : *Engines*
Lighting and heating

G — PHYSICS

Sub-sections : *Instruments*
Nucleonics

H — ELECTRICITY

Sub-section : *Electricity*

SYSTEM OF CLASSIFICATION OF SUBJECT-MATTER FOR PATENTS OF INVENTION

CLASS HEADINGS

Section A. — HUMAN NECESSITIES

CLASSES

Agriculture

A 01 — Agriculture, including forestry ; animal husbandry ; hunting and trapping ; fishing.

Foodstuffs

A 21 — Baking and edible doughs

A 22 — Butchering and meat treatment.

A 23 — Foodstuffs and their treatment not included in other classes.

A 24 — Tobacco, cigars, cigarettes ; smokers' requisites.

Apparel

A 41 — Wearing apparel.

A 42 — Headwear.

A 43 — Footwear.

A 44 — Haberdashery and jewellery.

A 45 — Hand and travelling articles.

A 46 — Brushware.

A 47 — Furniture, household articles and appliances.

Medicine and Hygiene

- A 61 — Medical and veterinary science ; hygiene.
- A 62 — Life-saving and fire-fighting.
- A 63 — Sports, games and amusements.

Section B. — PERFORMING OPERATIONS

CLASSES

Separating and Mixing

- B 01 — Physical and chemical processes and apparatus (general).
- B 02 — Milling, including preparatory treatment for milling ; crushing, grinding, dry-mixing and sifting devices of general use for technical purposes.
- B 03 — Washing and separating of ores, fuels, garbage, ashes and slag.
- B 04 — Centrifuges.
- B 05 — Spraying and atomising in general ; spreading liquids on surfaces in general.

Shaping

- B 21 — Sheet metal, metal tubes and wire.
- B 22 — Metal casting.
- B 23 — Mechanical working of metal.
- B 24 — Grinding and polishing.
- B 25 — Hand tools, including pneumatic tools.
- B 26 — Hand cutting tools and thrusting weapons.
- B 27 — Woodworking and preserving wood.
- B 28 — Working cement, clay and stone ; clay and briquette presses.
- B 29 — Working (mechanical part) plastic materials, rubber and horn-like substances, not otherwise provided for.
- B 30 — Presses.
- B 31 — Making paper articles ; working paper.

Printing

- B 41 — Printing ; lining machines ; typewriters ; stamps.
- B 42 — Bookbinding ; albums ; files and special printed matter.
- B 43 — Writing and drawing appliances.
- B 44 — Sculpture, painting and decorative art.

Transporting

- B 61 — Railways.
- B 62 — Rail-less vehicles.
- B 63 — Ships, shipbuilding and shipping.
- B 64 — Aircraft and aviation.
- B 65 — Conveying, packing and storing.
- B 66 — Hoisting (lifting devices).
- B 67 — Liquid handling.
- B 68 — Saddlery and upholstery.

Section C. — CHEMISTRY AND METALLURGY

CLASSES

Chemistry

- C 01 — Inorganic chemistry.
- C 02 — Water ; treating water, waste water and sewage (distilling, filtering, separating — B 01).
- C 03 — Glass ; mineral and slag wool.
- C 04 — Cements, mortars, ceramics, artificial stone and treatment of stone (chemical part) ; kilns.
- C 05 — Manufacture of fertilisers.
- C 06 — Explosives and matches.
- C 07 — Organic chemistry.
- C 08 — Macromolecular compounds, including their preparation and chemical working-up, and organic plastic compositions (production of artificial threads, fibres, bristles and ribbons — D 01).
- C 09 — Dyes ; paints ; polishes ; natural resins ; adhesives ; miscellaneous substances and compositions.
- C 10 — Fuels ; lubricants ; bitumen.
- C 11 — Animal and vegetable oils, fats, fatty substances and waxes, and fatty acids therefrom ; detergents ; candles.
- C 12 — Fermentation industry ; beer ; spirits ; wine ; vinegar ; yeast.
- C 13 — Sugars, starches and like carbohydrates.
- C 14 — Skins, hides, pelts and leather.

Metallurgy

- C 21 — Metallurgy of iron.
- C 22 — Metallurgy (non-ferrous) and alloys including ferrous alloys.
- C 23 — Working and treatment of metals, other than by mechanical means.

Section D. — TEXTILES AND PAPER

CLASSES

Textiles

- D 01 — Threads and fibres (natural and artificial) of organic materials.
- D 02 — Spinning.
- D 03 — Weaving.
- D 04 — Braiding ; lace-making ; machine knitting ; trimmings ; non-woven fabrics.
- D 05 — Sewing and embroidery.
- D 06 — Bleaching, washing, dyeing, finishing and printing of textiles ; dyeing and bleaching of leather ; bed feathers ; wallpaper and floor coverings.
- D 07 — Ropes, including cables (non-electric).

Paper

- D 21 — Paper making ; production of cellulose.

Section E. — FIXED CONSTRUCTIONS

CLASSES

Building

- E 01 — Construction of roads, railways and bridges.
- E 02 — Hydraulic engineering and foundations.
- E 03 — Water supply and sewerage.
- E 04 — Building.
- E 05 — Locks, keys, window and door fittings and safes.

Mining

- E 21 — Mining.

Section F. — MECHANICS, LIGHTING AND HEATING

CLASSES

Engines

- F 01 — Steam engines and steam accumulators.
- F 02 — Internal combustion engines ; air and special vapour engines ; spring and weight motors.
- F 03 — Wind and water motors.
- F 04 — Compressors, blowers and air pumps.
- F 05 — Pumps and other apparatus for lifting liquids.
- F 06 — Machine elements.
- F 07 — Arms and ammunition.

Lighting and Heating

- F 21 — Lighting ; distribution and utilisation of gas.
- F 22 — Steam generation.
- F 23 — Furnaces and related features.
- F 24 — Heating and ventilating plants in buildings.
- F 25 — Refrigeration ; manufacture and storage of ice ; heat exchange ; liquefying gases not readily condensed by mechanical means.
- F 26 — Drying, including drying plants ; kilns ; coffee roasters.

Section G. — PHYSICS

CLASSES

Instruments

- G 01 — Measuring.
- G 02 — Optics.
- G 03 — Photography and cinematography.
- G 04 — Horology.
- G 05 — Regulating and controlling.

- G 06 — Calculating and accounting.
- G 07 — Checking devices.
- G 08 — Signalling.
- G 09 — Education and advertising.
- G 10 — Musical instruments and acoustics.

Nucleonics

- G 21 — Nucleonics.

Section H. — ELECTRICITY

CLASSES

Electricity

- H 01 — Electrotechnical elements.
- H 02 — Generation, conversion and distribution of electric power.
- H 03 — Electric oscillation and pulse technique.
- H 04 — Electric communication technique.
- H 05 — Special electrical techniques.

DIVISION OF THE CLASSES

- A 01 — *Agriculture, including forestry ; animal husbandry ; hunting and trapping ; fishing*
 - b Soil working.
 - c Planting, sowing and fertilising.
 - d Harvesting.
 - f Processing of harvested produce ; hay and straw presses ; devices for storing fruit ; machines for peeling and cutting vegetables and fruit in bulk.
 - g Culture of vegetables, flowers and fruit ; vine and hops culture ; forestry ; watering and spraying.
 - h New plants.
 - j Manufacture of dairy products (mechanical part).
 - k Breeding animals ; aquariums and installations for transporting live fish ; fishing.
 - l Shoeing of animals.
 - m Catching and trapping of animals ; apparatus for the destruction of noxious animals and noxious plants.
 - n Preservation of, and preserved, animals and plants ; chemical treatment of soil ; destruction of noxious animals and noxious plants (chemical).

A 21 — *Baking and edible doughs*

- b Ovens ; machines and equipment for baking.
- c Machines and equipment for baking and processing doughs.
- d Processes for preparing dough and for baking ; baking powders ; baking aids ; biscuits and pastry.

A 22 — *Butchering and meat treatment*

- b Slaughtering.
- c Processing of meat (preserving — A 23 b) ; meat products.

A 23 — Foodstuffs and their treatment, not included in other classes

- b Preserving (and canning) of, and preserved (and canned) meat, fish, eggs, fruit, vegetables, flour and bread.
- c Milk and milk products ; manufacturing, pasteurising, sterilising and preserving (chemical part).
- d Artificial butter ; edible oils and fats (obtaining, refining and preserving — C 11).
- f Coffee and tea and their substitutes, and the manufacture, preparation and infusion thereof.
- g Cocoa ; chocolate ; confectionery ; ice cream.
- h Other non-alcoholic beverages.
- j Proteins and concentrated foods.
- k Fodder and apparatus for preparing same.
- l Preparation and preservation of foodstuffs, and prepared and preserved foodstuffs not otherwise included (cutting and peeling — A 47 j ; A 01 f).
- m Vessels for cooking and preserving foodstuffs (domestic apparatus — A 47 j).

A 24 — Tobacco, cigars, cigarettes ; smokers requisites

- b Manufacture and preparation of tobacco for smoking and chewing (including tobacco and snuff).
- c Machines for making cigars and cigarettes.
- d Cigars and cigarettes.
- f Smokers' requisites, including lighters.

A 41 — Wearing apparel

- b Underwear.
- c Corsets.
- d Outerwear, including accessories.
- f Garment fastenings and suspenders.
- g Artificial flowers and feathers ; wigs and masks.
- h Appliances for the tailoring trade (sewing machines — D 05 b).

A 42 — Headwear

- b Hats and head coverings.
- c Manufacturing and trimming hats and other head coverings.

A 43 — Footwear

- b Footwear.
- c Fastenings ; laces ; attachments ; spurs, *etc.*
- d Machines, tools and equipment ; methods.

A 44 — Haberdashery and jewellery

- b Buttons, pins, buckles, slide fasteners, *etc.*
- c Jewellery, bracelets, *etc.*

A 45 — *Hand and travelling articles*

- b Walking sticks, umbrellas and sunshades ; fans.
- c Purses ; travelling bags and baskets ; suitcases.
- d Toilet requisites.
- f Travelling and camp equipment.

A 46 — *Brushware*

- b Brushes.
- c Handles and their attachments.
- d Manufacture of brushes.

A 47 — *Furniture, household articles and appliances*

- b Tables, desks, wardrobes and cabinets (including drawers).
- c Chairs, sofas and beds.
- d Furniture specially adapted for children.
- f Special furniture and fittings for shops, stores, offices, bars, *etc.*, including devices for drawing off and cutting paper from a roll.
- g Household and table equipment (knives — B 26 b).
- h Furnishing for windows and doors (fittings — E 05).
- j Kitchen and other domestic appliances not included in g.
- k Household toilets and toilet fittings (connected to water supply or sewer — E 03).
- l Washing and cleaning the house or household articles (brushes — A 46 b ; laundry D 06 f).

A 61 — *Medical and veterinary science ; hygiene*

- b Instruments, implements and processes for diagnostic and surgical purposes, including obstetrics and instruments for cutting corns and vaccination instruments.
- c Dentistry, artificial teeth, cleaning of teeth (toothbrushes — A 46 b), toothpicks, apparatus for rinsing the mouth ; instruments for oral and dental hygiene.
- d Veterinary instruments, implements and tools.
- f Prostheses (artificial teeth — c), splints, bandages, fomentation, protection of the eyes and ears.
- g Transport and accommodation for patients (including bedpans) ; operating tables and chairs and chairs for dentistry ; burial devices.
- h Medical and respiratory gymnastics, artificial respiration, massage, bath and washing devices for special purposes and specific parts of the body.
- j Pharmaceutical appliances and implements ; devices for administering medicines ; feeding bottles and teats ; sputum flasks.
- k Medicinal methods (non-surgical), medicines ; dentistry (chemical part) ; beauty preparations.
- l Disinfection and sterilisation methods and apparatus ; material for dressings ; preservation of corpses.
- m Suction, pumping, spraying and atomising devices for medical use (cups, breast relievers, irrigators, sprays, powder insufflators, atomisers, inhalers) ; apparatus for local and general anaesthetics ; catheters ; dilators ; apparatus for introducing medicines into cavities of the body.

A 62 — *Lifesaving and firefighting*

- b Devices, apparatus and methods for lifesaving (at sea — B 63 c).
- c Fire-fighting equipment.
- d Fire-extinguishing preparations and methods of fighting fire or poisonous gases by chemical means.

A 63 — *Sports, games and amusements*

- b Apparatus for physical training, gymnastics, swimming, climbing, fencing; ball games; training equipment.
- c Skates, skis, and water shoes, roller skates and physical training wheels, courts and rinks.
- d Bowling-alleys, bagatelle, billiards.
- f Card games, dice, roulette, patience, horseracing and similar games.
- g Merry-go-rounds, swings, rocking-horses, chutes, switchbacks and similar devices for public amusement.
- h Toys, *e.g.* tops, dolls, hoops, building blocks.
- j Devices for theatres, circuses, *etc.*..., conjuring appliances and the like.
- k Race-tracks and equipment and accessories therefor.

B 01 — *Physical and chemical processes and apparatus (general)*

- b Boiling and boiling apparatus.
- c Calcining, fusing; muffle furnaces for chemical purposes.
- d separation *e.g.* evaporation, distillation, crystallisation, filtration, absorption, adsorption; separating apparatus (sifting — B 02 f; centrifuges — B 04).
- f Mixing *e.g.* dissolving, emulsifying, dispersing (mixing dry substances — B 02 g).
- g Solidifying.
- h Siphons; receptacles for acids; feed devices; feed and outlet regulating devices.
- j Chemical and/or physical processes and their relevant apparatus (catalysis, colloid chemistry).
- k Electro-chemical processes and apparatus.

B 02 — *Milling, including preparatory treatment for milling; crushing, grinding, dry-mixing and sifting devices of general use for technical purposes*

- b Machines which prepare for the milling process by washing, steaming, brushing, peeling, unhusking or removing the awns, machines which refine granular fruit to commercial products by working the surface (polishing machines and barley mills).
- c Grinding methods and grinding mills (including machines for dressing millstones), disc mills, mills with friction plates, pulverising mills, coffee grinders, spice mills; machines for cutting and splitting granules; roller mills for grain, including machines for detaching the ground product from the grinding surfaces (detachers).
- d Methods for breaking and breaking devices (crushing, grinding) in so far as they are of the general purpose type, except those referred to under b and c.

- f Sifting and sorting machines ; purifiers for grit.
- g Mixing machines for dry substances.
- h Dust separators for mills.

B 03 — *Washing and separating of ores, fuels, garbage, ashes and slag*

- b Washing and separating other than magnetic and electric separation and flotation.
- c Magnetic and electric separation.
- d Flotation and differential sedimentation.

B 04 — *Centrifuges*

- b Centrifuges.
- c Cyclones.

B 05 — *Spraying and atomising in general ; spreading liquids on surfaces in general*

B 21 — *Sheet metal, metal tubes and wire*

- b Rolling of metal.
- c Manufacture other than by rolling.
- d Working and processing of sheet metal and tubes ; blanking off and cutting of tubes.
- f Working and processing of wire.
- g Manufacture of pins, needles and nails.
- h Manufacture of special objects by rolling, *e.g.* screws, wheels, rings, barrels, balls.

B 22 — *Metal casting*

- b Smelting and other furnaces.
- c Moulding machines for moulds and cores.
- d Casting and moulding in general.

B 23 — *Mechanical working of metal*

- b Turning and boring.
- c Milling.
- d Planing ; slotting and shearing ; punching ; broaching ; sawing ; filing ; scraping ; sorting and feeding.
- f Manufacture of gears and toothed racks.
- g Thread cutting and working of screws, bolt heads and nuts.
- h Making files and rasps.
- j Hammers ; forging presses ; rivetting machines.
- k Forging, pressing, bending, soldering, welding, flame-cutting and the furnaces relating thereto.
- l Manufacture of forged and pressed products, *e.g.* horseshoes, rivets, bolts, wheels and the like.

- m Manufacture of chains.
- n Metallic powder and articles made therefrom.
- p Other working of metal ; combined operations ; universal machine tools.

B 24 — *Grinding and polishing*

- b Machines, devices and methods for grinding and polishing different articles, surfaces and substances ; truing of grinding stones ; safety devices for grinding and polishing machines and the feeding of grinding agents.
- c Sandblasting devices.
- d Grinding tools, *e.g.* grinding and polishing discs and knife sharpeners ; manufacture of grinding agents.

B 25 — *Hand tools, including pneumatic tools*

- b Tools for fastening or connecting, disengaging and holding ; vices.
- c Nailing and stapling tools.
- d Hammers and picks.
- f Combined or universal tools.
- g Handles for tools ; tool boxes.
- h Work benches.

B 26 — *Hand cutting tools and thrusting weapons*

- b Cutting tools.
- c Thrusting weapons.

B 27 — *Woodworking and preserving wood*

- b Saws.
- c Planing, drilling, milling, turning and universal machines.
- d Working of veneer ; grinding and polishing ; manufacture of frames and mitres.
- f Dovetailed work and tenons ; slotting machines ; nailing and stapling machines (hand nailing and stapling tools — B 25 c) ; manufacture of cases, trunks and boxes.
- g Accessory machines and apparatus ; tools ; safety devices including those for saws.
- h Bending, including cooperage and wheel making.
- j Mechanical working of cane, cork and similar materials.
- k Methods and apparatus for impregnating (with or without drying) including preserving, fireproofing, staining and dyeing.
- l Removing bark ; manufacture of veneer, wood shavings and wood fibre.
- m Methods and machines for special purposes, *e.g.* manufacture of shingles, compressed wood, dowels.
- n Compressed wood fibres (so-called artificial wood).

B 28 — *Working cement, clay and stone ; clay and briquette presses*

- b Pressing briquettes, clay and similar materials.
- c Working cement and clay.
- d Working stone.

B 29 — *Working (mechanical part) plastic materials, rubber and horn-like substances not otherwise provided for*

- b Preparation and pre-treatment of the material to be shaped.
- c Shaping in general, *e.g.* moulding, bending, cutting and joining.
- d Processes and apparatus to produce special articles.
- f Processes and apparatus specially adapted for thermoplastic substances.
- g Processes and apparatus specially adapted for thermosetting substances.
- h Processes and apparatus specially adapted for natural and synthetic rubbers.
- j Processes and apparatus specially adapted for materials not provided for above, *e.g.* horn, ivory, sulphur.

B 30 — *Presses*

- b Fluid operated presses.
- c Mechanical presses.

B 31 — *Making paper articles; working paper*

- b Making boxes, cartons, envelopes and bags.
- c Making wound articles, *e.g.* tubes.
- d Making other paper articles.
- f Auxiliary equipment including cutting and trimming.

B 41 — *Printing; lining machines; typewriters; stamps*

- b Machines and accessories for making, setting and distributing type; type.
- c Processes for the manufacture and reproduction of printing surfaces (except photo-mechanical).
- d Apparatus for reproducing printing surfaces (except galvano-plastic).
- f High-speed cylinder presses; rotary machines; office printing machines and platen presses; printing methods in so far as they relate to the use of special machines.
- g Auxiliary equipment and apparatus for folding, perforating, bronzing and edging.
- h Lining machines.
- j Typewriters and accessories.
- k Stamps, stamping and numbering devices.
- l Manifold devices.
- m Printing and duplicating methods; colour printing.
- n Printing plates and materials therefor; composition for printing rollers; wetting agents and detergents and the like (printing).

B 42 — *Bookbinding, albums, files and special printed matter*

- b Stitching methods, tools and equipment (hand stapling tools — B 25 c).
- c Bookbinding methods, tools and equipment including tools with cutting elements.
- d Books, book covers, loose leaves, postcards and forms.
- f Apparatus and devices for filing and classifying, *e.g.* card indexes.

B 43 — *Writing and drawing appliances*

- b Pencils, pencil holders and combinations of pencils and penholders.
- c Writing pens, nibs and nib holders; reservoir and fountain pens; fillers; devices for removing and cleaning nibs.
- d Inkwells, ink bottles and inkstands.
- f Blotters; moistening devices for copying; seals and the like; sealing appliances; devices for affixing labels; hand and arm supports.
- g Slates; blackboards; erasers; drawing pins; pen and pencil boxes; sharpeners.
- h Drawing appliances, instruments and equipment; rulers; compasses; drawing pens; hatching devices; pantographs; devices for drawing in perspective.

B 44 — *Sculpture, painting and decorative art*

- b Machines, apparatus and tools for sculpturing, modelling, copying, engraving, guilloching, carving and embossing.
- c Processes for the production of decorations including mosaics and tarsia work.
- d Painting and decorating; paint sprayers.
- f Special designs and pictures.

B 61 — *Railways*

- b Various railways systems (atmospheric, pneumatic, sliding, platform, rack, elevated, aerial, rope and transport railways, underground railways and town tramways), including equipment in so far as this equipment does not come under c to f.
- c Locomotives and motors railcars (non-electric devices thereof, also non-electric devices of electric locomotives).
- d Cars, lorries, trolleys, velocipede trolleys (railroad velocipedes) and railway furniture, also buffer cars as a safety device in case of collisions.
- f Underframe (understructure), axles, devices for the adjustment of axles, journal bearings, wheels, supporting axles, safety devices.
- g Couplings, draught and buffing appliances.
- h Brakes, in so far as they are fitted in the cars, also electrically operated air brakes.
- j Traversers, turn-tables, water cranes (columns), buffer stops, shunting devices, cars for transporting cars, means for transferring passengers to and from trains, shifting devices and the like.
- k Auxiliary equipment for railways (devices to indicate the overheating of components, devices on locomotives and cars to indicate bad sections in the track, measuring devices for wheel rims, car moving devices, energy storing brakes, track brakes, stop blocks, apparatus for placing cars on the track and taking them off the track, car haulage apparatus, devices for washing cars, mailbag catchers, etc.).
- l Points (switches except trolley wire switches); gates for railway crossings; signals (including station indicators) and all types of safety measures for railway traffic.

- m Electric railways (in so far as they do not come under the construction of railways in general), devices on rails and rail joints for carrying current and for insulation, overhead and underground trolley wires or contact lines, section line systems, safety devices against earth currents, erecting and scaffold cars.
- n Electrical equipment for railways, electric or mixed electric (with other sources of energy) systems of rail transport, power pick-up devices, motors, including the control of the motors for individual cars or entire train units, dynamic braking and electric or mixed electric brakes.

B 62 — *Rail-less vehicles*

- b Hand carts, perambulators, sledges.
- c Vehicles drawn by animals.
- d Motor vehicles (undercarriages, driving mechanisms, attachment of the engine, steering devices, *etc.*); trucks; trailers.
- f Wheels, axles and axle bearings for vehicles and bicycles.
- g Tyres, air pumps and valves for motor cars, bicycles and other vehicles.
- h Bicycle stands, devices for hanging up bicycles, bicycle locks; devices for learning to ride.
- j Bicycle saddles and other accessories (alarm and signal devices, if they form part of the construction of the bicycle, luggage carriers, chain-guards, mud-guards).
- k Bicycle frames, tube connections, handlebars, steering devices, chain-guards (as part of the frame).
- l Brakes for bicycles.
- m The propulsion of cycles (one and two wheeled) and sledges by the driver and by engines, as well as of vehicles with three or more wheels by the driver.

B 63 — *Ships, shipbuilding and shipping*

- b Shipbuilding; ships; equipment and shipping (rigging, signalling and buoys); ships furniture and closets; apparatus for observing and measuring the rolling, resistance and movement of ships; submarines; towing; diving apparatus; subduing of waves.
- c Devices on slip-ways and in dry-docks; launching and hauling out devices for building and repairing ships; floating docks; salvage vessels; life-saving at sea, including life belts and jackets.
- d Sloops and other vessels, including vessels driven by human or animal power.
- f Torpedoes and mines.
- g Armouring and armament of ships.
- h Marine propulsion (paddle wheels, propellers and other propulsion devices) and arrangement of propulsion plant.
- j Auxiliary machines.

B 64 — *Aircraft and aviation*

- b Airships and balloons.
- c Aeroplanes ; helicopters.
- d Equipment for aircraft and arrangement of propulsion plant.
- f Ground installations, *e.g.* lay-outs for airfields and beacons.

B 65 — *Conveying, packing and storing*

- b Machines, implements and methods for packing (nailing and stapling tools — B 25 c).
- c Labelling machines and apparatus.
- d Packings and containers, also accessories, *e.g.* cases, crates, barrels, bags, mail boxes, hose reels and racks, wrappers, cartons, packing material, holders for articles, loose binding means and fastening seals.
- f Removal of refuse.
- g Transport and storage devices, *e.g.* conveyors for loading and tipping (truck loaders — B 66 f), tanks, means for preventing spontaneous combustion in storage depots, shop conveyor systems, pneumatic tube conveyors, postal sorting and distributing.

B 66 — *Hoisting (lifting devices)*

- b Elevators.
- c Cranes.
- d Capstans, winches and tackles (pulley blocks and hoists).
- f Lifting devices, *e.g.* truck loaders, rack and pinion jacks, devices for lifting sacks, lifting loads, lifting and pushing by means of hydraulic or pneumatic power.

B 67 — *Liquid handling*

- b Receptacles, tins and bottles and closure and opening devices for same ; stoppers ; preserving cans ; drink registers ; mats for beer glasses ; corkscrews ; tin openers.
- c Cleaning, filling and emptying of bottles, glasses and tubes.
- d Beer pumps ; devices for drawing up for retail sales ; syphons ; valves and the like.

B 68 — *Saddlery and upholstery*

- b Harness ; devices to prevent animals from bolting, and for rapid harnessing, for training and tethering horses and other traction animals ; rein holders ; horse protectors ; whips and the like.
- c Saddles and stirrups.
- d Equipment and machines for saddlemaking.
- f Making leather, canvas and like articles.
- g Equipment and machines for filling pillows and mattresses and for use in upholstering.

C 01 — *Inorganic chemistry*

- b Non-metallic elements, metalloids and their compounds, except those mentioned under c.
- c Ammonia and cyanogen and their compounds.
- d Compounds of alkali metals (lithium, sodium, potassium, rubidium, caesium).
- f Compounds of the metals beryllium, magnesium, aluminium, calcium, strontium, barium, radium, thorium and of the rare earth.
- g Compounds of metals not provided for above.

C 02 — *Water; treating water, waste water and sewage* (distilling, filtering, separating — B 01)

- b Treatment of water, including apparatus, processes and the use of reagents; and agents for preventing and removing scale.
- c Treatment of sewage and waste water.
- d Water impregnated with carbon dioxide (soda water) or other gases.

C 03 — *Glass; mineral and slag wool*

- b Manufacture, shaping and supplementary processes.
- c Chemical composition; decoration by changing the condition of the surface; glazes; painting on glass; covering or coating with metals; mirror making; leaded lights.

C 04 — *Cements, mortars, ceramics, artificial stone and treatment of stone* (chemical part); *kilns*

- b Cements, mortars, refractories, ceramics and the glazing thereof; artificial stone; preserving, colouring, hardening and other treatment of natural and artificial stone and of the starting materials therefor.
- c Kilns for baking, glazing, annealing or burning of bricks, earthenware, porcelain and the like; for the baking of bricks, burning of cement, lime, gypsum and the like; drying kilns if they form a single unit with the baking kiln.

C 05 — *Manufacture of fertilisers*

- b Phosphatic fertilisers.
- c Nitrogenous fertilisers.
- d Other inorganic fertilisers.
- f Other organic fertilisers, including fertilisers from waste or refuse.

C 06 — *Explosives and matches*

- b Explosives and manufacture of explosive compositions and compounds of indefinite structure (pure compounds — C 01, C 07, C 08).
- c Ignition devices and compositions (including detonators, ignition pills and pneumatic igniters); percussion caps; fuses; explosive charges and methods of blasting; pyrophoric compositions.
- d Compositions for fireworks; means for generating smoke or mist; flash lights (fulminating parts).
- f Matches and manufacture of matches.

C 07 — Organic chemistry

Explanatory note :

Salts of a compound are indexed as that compound, *e.g.* aniline hydrochloride is indexed as containing C, H and N only, and sodium acetate is indexed as acetic acid.

A compound is always indexed in the last appropriate place in the classification *e.g.* a compound containing an acyclic chain and a hetero-cyclic ring is indexed only as a hetero-cyclic compound, and a sterol is indexed only as a cyclopentanophenanthrene compound.

Albumens, proteins, alkaloids of unknown structure, glucosides of unknown structure are examples of compounds to be found under g.

(Such compounds as the oxides, sulphides and oxysulphides of carbon, cyanogen, phosgene, hydrocyanic acid and salts thereof — C 01 ;

Dyes — C 09 ;

Macromolecular compounds — C 08 ;

Fermentation products — C 12).

b General methods and apparatus of organic chemistry.

c Acyclic and carbocyclic compounds.

c1. Hydrocarbons.

c2. Compounds containing carbon and halogens with or without hydrogen.

c3. Compounds containing carbon and oxygen, with or without hydrogen and halogens.

c4. Compounds containing carbon and nitrogen with or without hydrogen, halogens and oxygen.

c5. Compounds containing carbon, sulphur, selenium or tellurium, with or without hydrogen, halogens, oxygen and nitrogen.

c6. Cyclopentanophenanthrene compounds.

d Hetero-cyclic compounds.

d1. Having oxygen alone as the hetero-atom or atoms.

d2. Having nitrogen alone as the hetero-atom or atoms.

d3. Having only sulphur, selenium and/or tellurium as the hetero-atom or atoms.

d4. Having oxygen, nitrogen, sulphur, selenium, and tellurium in combinations of two or more different elements as the hetero-atoms, other than under d3.

d5. Having elements other than oxygen, nitrogen, sulphur, selenium and tellurium, as the hetero-atom or atoms.

f Acyclic, carbocyclic and hetero-cyclic compounds containing, outside any ring, elements other than hydrogen, halogens, oxygen, nitrogen, sulphur, selenium and tellurium, with or without the latter specified elements.

g Compounds of unknown constitution.

C 08 — *Macromolecular compounds, including their preparation and chemical working up, and organic plastic compositions.*

(Production of artificial threads, fibres, bristles and ribbons — D 01)

- b Polysaccharides and their derivatives (production of cellulose — D 21 ; production of starch, sugar and like carbohydrates — C 13).
 - b1. Preparation.
 - b2. Compositions.
 - b3. Working up.
- c Natural rubbers and their derivatives
 - c1. Preparation.
 - c2. Compositions.
 - c3. Working up.
- d Synthetic rubbers.
 - d1. Preparation.
 - d2. Compositions.
 - d3. Working up.
- f Polymerisation products, excluding synthetic rubbers, but including polymerised unsaturated condensation products.
 - f1. Preparation.
 - f2. Compositions.
 - f3. Working up.
- g Polycondensation and polyaddition (two groups reacting) products.
 - g1. Preparation
 - g2. Compositions.
 - g3. Working up.
- h Macromolecular compounds and organic plastic compositions not otherwise provided for.
 - h1. Preparation.
 - h2. Compositions.
 - h3. Working up.
- j General methods for preparing and working up.
- k Additives for general use.

C 09 — *Dyes ; paints ; polishes ; natural resins ; adhesives ; miscellaneous substances and compositions*

- b Organic dyes and closely related compounds for producing dyes ; mordants and lakes.
- c Pigments.
- d Inks, paints, chemical paint removers ; pastes and solids for colouring and printing.
- f Resins ; varnishes and lacquers ; french polish ; driers (siccatives).
- g Polishing compositions other than french polish ; anti-slip compositions.
- h Preparation of glue.
- j Adhesives other than glue ; adhesive processes in general.
- k Miscellaneous substances and compositions.

C 10 — *Fuels; lubricants; bitumen*

- b Dry distillation; carbonisation; production of coke together with gas, *e.g.* coal gas.
- c Tar and working tar; pyroligneous acid.
- d Briquettes; fire-lighters; solidifying fluid fuels; solid fuels and the improving thereof.
- f Cutting, drying and working up of peat.
- g Transformation, *e.g.* cracking, destructive hydrogenation, polymerizing, isomerizing, re-forming, cracking and polymerizing, of hydrocarbons, carbonaceous material and other carbon containing substances including bitumen and waxes, to give indefinite mixtures of gaseous, liquid or solid hydrocarbons, other than by b; extracting (winning) oils and fractions (mixtures only) from hydrocarbon bearing substances including natural products and the aforesaid transformation products; refining and blending of hydrocarbon fuels; mineral waxes and the blended products.
- h Production of acetylene by wet methods and its purification.
- j Production of water-gas, air-gas, producer gas and their mixtures.
- k Purifying coal gas, water-gas, air-gas and producer gas.
- l Fuels not otherwise provided for.
- m Lubricants; mineral oil dispersions.

C 11 — *Animal and vegetable oils, fats, fatty substances and waxes and fatty acids therefrom; detergents; candles*

- b Production (pressing, extraction), refining and preserving fats, fatty substances (*e.g.* lanolin) fatty oils and waxes, including extraction from waste materials; essential oils.
- c Fatty acids from fats, oils and waxes; candles; fats and oils from fatty oils and acids by chemical action, *e.g.* hydrogenation.
- d Detergents in general; soap and soap making (including resin soap for paper sizing); glycerol.

C 12 — *Fermentation industry; beer; spirits; win; vinegar; yeast*

- b Fermentation processes, apparatus, media and starting materials of general use.
- c Malt, wort and hops; ethanolic fermentation (ethanol, beer, yeast).
- d Other organic compounds by fermentation, *e.g.* other alcohols, acids, ketones.
- f Distillation and rectification of fermented solutions; recovery of by-products; denaturing of, and denatured alcohol.
- g Wine and other alcoholic beverages, (except beer) and their preparation.
- h Pasteurisation, sterilisation, preservation, purification, clarification and ageing.
- j Vinegar and its preparation.
- k Micro-organisms (except yeast) and their preparation.
- l Cleaning of casks; pitching and depitching machines; cask burners; brewing devices; cellar tools.

C 13 — *Sugars, starches and like carbohydrates*

- b Washing sugar beets, sugar cane and potatoes.
- c Cutting mills ; shredding knives ; pulp presses.
- d Production and purification of sugar juices.
- f Preparation and processing of raw sugar, sugar and syrup.
- g Evaporation apparatus ; boiling pans.
- h Combined cutting, sorting and packing machines for sugar.
- j Extraction of sugar from molasses.
- k Glucose ; invert sugar ; lactose, maltose and other sugars.
- l Starch, dextrine and similar carbohydrates.

C 14 — *Skins, hides, pelts and leather*

- b Mechanical treatment and processing of skins, hides and leather in general ; pelt shearing machines ; manufacture of driving belts ; intestine splitting machines ; devices for the manufacture of leather.
- c Chemical treatment prior to tanning ; methods, apparatus and agents for tanning ; impregnating and preserving (dyeing and bleaching of leather — D 06).

C 21 — *Metallurgy of iron*

- b Manufacture of iron and steel, including the pre-treatment of ores, production of pig-iron, direct process, blast furnaces and air heaters.
- c Processing of pig-iron (refining, manufacture of wrought iron and steel).
- d Hardening and annealing of steel and iron (also of objects such as tools and the like), making malleable by decarburisation, cementation, tempering and other treatments.

C 22 — *Metallurgy (non-ferrous) and alloys including ferrous alloys*

- b Production and refining of metals other than by d ; pre-treatment of ores and processing of slag (slagwool — C 03).
- c Alloys including ferrous alloys.
- d Electrolytic and electro-thermic production and refining of metals.
- f Changing of physical structure of metals and alloys other than of iron and steel.

C 23 — *Working and treatment of metals, other than by mechanical means*

- b Electrolytic surface treatment (electroplating) ; electroforming.
- c Apparatus and processes for covering with metals except by galvanic processes ; diffusion processes.
- d Enamelling of and applying a vitreous layer to metals.
- f Chemical surface treatment not included in b-d ; inhibiting corrosion of metals by means not otherwise provided for (painting — B 44 ; by softening and purifying water — C 02).
- g Cleaning and de-greasing of metallic objects.

D 01 — *Threads and fibres (natural and artificial) of organic materials*

- b Mechanical treatment of natural fibrous material to obtain fibres for spinning.

- c Chemical treatment of natural fibrous material to obtain fibres for spinning ; carbonising.
- d Mechanical methods and apparatus in the manufacture of artificial threads, fibres, bristles and ribbons.
- f Chemical features in the manufacture of artificial threads, fibres, bristles and ribbons.

D 02 — *Spinning*

- b Wool scouring.
- c Preliminary treatment of spinning fibres.
- d Fine spinning and twisting ; yarns.
- f Winding, making up and packing of yarns.

D 03 — *Weaving*

- b Machines for the preparatory stages.
- c Devices for forming the shed (shaft and Jacquard machines).
- d Weaving without pile ; non-pile fabrics.
- f Weaving pile fabrics ; velvet, plush and chenille.
- g Cane, straw and slat weaving.
- h Wire weaving.
- j Tools and implements.
- k Accessory machines used in weaving (crossing the warp threads, twisting in, tying on and looming warp threads, pattern and card making).

D 04 — *Braiding ; lace making ; machine knitting ; trimmings ; non-woven fabrics*

- b Knitting, including machine knitting.
- c Braiding and manufacture of lace, including bobbinet or carbonised lace, also braiding machines.
- d Trimmings.
- f Tapestry (carpet making and the like).
- g Net making (except wire netting — B 21 f).
- h Felts.
- j Other non-woven fabrics.

D 05 — *Sewing and embroidery*

- b Sewing.
- c Embroidery.

D 06 — *Bleaching, washing, dyeing, finishing and printing of textiles ; dyeing and bleaching of leather ; bed feathers ; wall-paper and floor coverings*

- b Bleaching, dyeing, mercerising, impregnating, washing of spinning fibres, yarns, fabrics and other textiles ; fulling of fabrics and the like ; dyeing and bleaching of leather (mechanical part).
- c Refining and decorating of yarns, fabrics and knitted materials (mechanical part).

- d Printing of yarns, fabrics, knitted materials, floor coverings and wall coverings (mechanical part).
- f Laundry, including finishing (mechanical part).
- g Cleaning sacks; machines for cleaning and conditioning bed feathers; preparation of bed feathers.
- h Folding, laying, doubling, measuring, winding, cutting, making up, packing of yarns, woven fabrics, *etc.* (mechanical part).
- j Pleating and ruching.
- k Floor and wall coverings (linoleum, lincrusta, oil cloth, leather cloth, wall-paper, *etc.*) (mechanical part).
- l Washing, bleaching (including optical bleaching), and dry cleaning of textiles; bleaching of leather (chemical part); treatment of textiles with substances having a wetting, foaming and emulsifying action (in general).
- m Finishing, weighting, mercerising, impregnating of textiles and laundry (chemical part).

- n Covering materials (linoleum, oil cloth, leathercloth and bituminous coverings and the like) (chemical part).
- p Dyeing and mordanting textiles and leather (chemical part).
- q Surface-decorating and printing textiles (chemical part).
- r Application of agents for proofing textiles against acid and alkaline agents.

D 07 — *Ropes, including cables (non-electric)*

D 21 — *Paper making; production of cellulose*

- b Raw materials and their mechanical treatment.
- c Production of cellulose and the regenerating of pulping liquors (chemical part) and apparatus therefor.
- d Treatment of the digested materials before passing to the paper machine.
- f Paper making machines and methods of producing paper on them.
- g Accessories for paper-making machines.
- h Cardboard and paper and their manufacture other than f.
- j Manufacture of articles from paper pulp; papier-mâché.

E 01 — *Constructions of roads, railways and bridges*

- b Permanent way; permanent way tools; machines for making railways of all kinds.
- c Construction of and surfaces for roads, sports grounds, *etc.*; machines and auxiliary tools for construction and repair.
- d Construction of bridges and viaducts and the assembly of bridges.
- f Additional work, such as equipping roads and the construction of platforms, signs, snow fences, *etc.*
- g Construction of tunnels.
- h Street cleaning and cleaning of permanent ways.

E 02 — *Hydraulic engineering and foundations*

- b Hydraulic engineering, *e.g.* correction of streams, earth anchors, weirs, locks, dykes, dams, harbour and marine engineering, canals, water gratings, reclamation.
- c Ship-lifting devices and mechanisms.
- d Foundations.
- f Dredging and soil-shifting.

E 03 — *Water supply and sewerage*

- b Installations and methods for obtaining, collecting and distributing water.
- c Domestic water installations.
- d Water-closets, urinals with flushing and disinfecting devices, including the valves of same.
- f Sewers, including ventilation and emptying of cesspools.

E 04 — *Building*

- b Construction (including insulation); walls; roofs; ceilings.
- c Structural elements and building materials.
- d Roof coverings; dormer windows; skylights; gutters; roof-working tools.
- f Finishing work on building, *e.g.* stairs, floors, windows and doors.
- g Scaffolding; ladders; forms; shuttering and other building aids.
- h Special types of buildings.

E 05 — *Locks, keys, window and door fittings and safes*

- b Locks and accessories, including keyless locks; handcuffs.
- c Bolts and fastening devices, especially for doors and windows.
- d Hinges and other suspension devices for doors and windows.
- f Door and window closers, checks, furniture, *etc.*
- g Safes and safe hinges.

E 21 — *Mining*

- b Deep-drilling.
- c Machinery for, and methods of, mining and quarrying.
- d Shafts; sinking shafts; galleries; lining galleries.
- f Ventilation; safety devices; transport; filling up; rescue.

F 01 — *Steam engines and steam accumulators*

- b Reciprocating piston engines.
- c Rotary or oscillating piston engines.
- d Steam and air turbines; details common to turbines in general.
- f Distributing and expansion slide and piston valve-gear.
- g Distributing and expansion rotary valve-gear.

- h Distributing and expansion poppet valve-gear.
- j Accessories to steam engines in so far as they affect the operation of the engine.
- k Special devices for utilising steam energy and steam accumulators.

F 02 — *Internal combustion engines ; air and special vapour engines ; spring and weight motors*

- b Internal combustion piston engines.
- c Internal combustion turbine engines.
- d Controlling and regulating.
- f Component parts.
- g Hot gas and compressed air piston engines ; combustion piston engines with external combustion ; utilisation of waste gases of combustion engines.
- h Special vapour engines.
- j Spring, weight and animal-driven motors ; solar energy engines.
- k Jet propulsion plant (reaction principle).
- l Combined engines and plants.

F 03 — *Wind and water motors*

- b Hydraulic turbines and water wheels.
- c Other water machines, *e.g.* water pressure machines, tide and wave motors.
- d Wind motors.

F 04 — *Compressors, blowers and air pumps*

- b Bellows.
- c Reciprocating piston compressors and air pumps.
- d Rotary compressors ; blowers ; air pumps.
- f Jet-type vacuum pumps and compressors.
- g Displacement compressors and vacuum pumps not included in b or c.

F 05 — *Pumps and other apparatus for lifting liquids*

- b Pumps with reciprocating pistons ; diaphragm pumps ; flexible tube pumps.
- c Centrifugal and other turbine pumps.
- d Pulsometers ; pumps operated by compressed air ; jet pumps ; hydraulic rams.
- f Scoop devices (bucket apparatus) ; scoop wheels, and other water lifting devices.
- g Pumps not included in b to f.

F 06 — *Machine elements*

- b Devices for fastening and securing machine parts together, *e.g.* nails, bolts, circlips, wedges.

- c Shafts and bearings.
- d Couplings, clutches and brakes.
- f Springs, shock absorbers and means for damping vibration.
- g Chains and belts.
- h Gearing.
- j Pistons, cylinders and packing.
- k Valves, taps and cocks.
- l Pipes and joints, and means for insulation and anticorrosion.
- m Frames and engine beds.
- n Lubricating.
- p Safety devices in general.
- q Elements used for fine mechanics.

F 07 — Arms and ammunition

- b Hand fire-arms other than those included in c and k, with accessories.
- c Air, spring-loaded and toy guns ; devices for producing reports ; bows and arrows ; devices for throwing and hurling missiles.
- d Ordnance ; guns and their mountings and carriages (flamethrowers see j).
- f Ammunition, ammunition transport and packing.
- g Targets, target stands and bullet catchers.
- h Sighting devices and mechanism including aiming guns.
- j Armour, armoured turrets, cars and cover ; means of attack and defence in general.
- k Automatic small arms ; machine guns ; automatic guns.
- l Fuses for projectiles.

F 21 — Lighting ; distribution and utilisation of gas

- b Lanterns ; torches ; miners' lamps ; lamp attachments.
- c Intensification and distribution of light ; reflectors ; searchlights ; black-out devices.
- d Combinations of dissimilar light sources.
- f Gasholders ; distribution of gas ; gas pipes and taps ; gas pressure regulators ; gasmixers and compressors.
- g Gas lighters and arrangements for lighting and extinguishing gas lamps.
- h Incandescent mantles, *etc.*
- j Wick light burners (other burners — F 23 d, f).

F 22 — Steam generation

- b Steam boilers (domestic heating — F 24 d).
- c Special methods of steam production ; firing of boilers with pre-heated substances ; closed combustion devices.
- d Pre-heating and mechanical purification of feed water ; feeding ; regulation of circulation.
- f Gauge glasses, signal devices and safety apparatus.
- g Steam lines, drying and superheating of steam ; steam traps.

- h Cleaning of steam boilers and boiler tubes.
- j Fitting and sealing tubes.

F 23 — Furnaces and related features

- b Combustion-apparatus for solid fuels.
- c Combustion-apparatus for powdered fuels.
- d Combustion-apparatus for liquid fuels.
- f Combustion-apparatus for gaseous fuels and for metallurgical furnaces.
- g Cremation and refuse consuming furnaces.
- h Grates, including cleaning and raking.
- j Flue devices ; cleaning flues and furnace tubes ; removal of ashes ; precipitation of particles from smoke.
- k Feeding fuel to furnaces.
- l Air-feed and draught devices.
- m Fire boxes and accessories.
- n Regulating and controlling combustion.
- p Special processes for generating heat.

F 24 — Heating and ventilating plants in buildings

- b Stoves and ranges for solid fuels.
- c Other stoves and ranges.
- d Central heating.
- f Air-conditioning and ventilation.
- g Heating of water (geysers) and installation of hot-water supply.

F 25 — Refrigeration ; manufacture and storage of ice ; heat exchange ; liquefying gases not readily condensed by mechanical means

- b Refrigerating machines.
- c Manufacture of ice and ice cream (refrigerating machines — b).
- d Refrigerators ; cold-rooms ; ice-boxes.
- f Steam or vapour condensers.
- g Open-heat exchange apparatus.
- h Enclosed-heat exchange apparatus.
- j Liquefying gases and separation of liquefied gas mixtures ; gas-bottles for storing gases at high pressure and their filling.

F 26 — Drying, including drying plants ; kilns ; coffee roasters

- b Drying machines, methods and apparatus ; kilns (malt kilns — C 12 c).
- c Roasters (coffee and the like).

G 01 — Measuring

- b Devices for measuring length and thickness ; dividers ; calipers ; measuring devices for the workshop ; gauges and the like.
- c Measuring instruments for geodetical, nautical, aeronautical and geo-physical purposes ; photogrammetry.

- d Indicating and recording apparatus for measuring in general.
- f Volume, flow and liquid level meters.
- g Scales and weighing machines.
- h Measurement and analysis of infrasonic, sonic or supersonic vibrations ; combined generation and measurement of supersonic vibrations.
- j Measurement and analysis of infra-red, visible or ultra-violet light, *e.g.* photometers and colorimeters.
- k Thermometers, *e.g.* bolometers and optical pyrometers ; meteorological instruments ; calorimeters ; temperature responsive elements.
- l Instruments for measuring power, *e.g.* dynamometers, pressure gauges, indicators, apparatus for measuring strength and fluid tightness.
- m Testing of machines, *e.g.* balancing parts of machines.
- n Testing chemical and/or physical properties, including laboratory apparatus.

- p Speedometers.
- q Counting mechanisms ; revolution counters ; pedometers ; taximeters.
- r Measuring electric values.

G 02 — Optics

- b Optical elements and systems *e.g.* lenses, prisms, optical mirrors.
- c Spectacles.
- d Optical apparatus.

G 03 — Photography and cinematography

- b Cameras ; cinematographic cameras, projectors and accessories.
- c Photographic processes ; light-sensitive surfaces, plates, films and papers ; colour photography ; X-ray photography and cinematography in relief ; photosculpture.

- d Photographic requisites ; dark rooms.
- f Photomechanical reproduction.

G 04 — Horology

- b Clocks and watches (non-electric) ; calendar clocks ; clockwork calendars.

- c Electric clocks.
- d Machines and tools for watchmaking.
- f Short-time interval measuring including precision systems.

G 05 — Regulating and controlling

- b Basic systems and constructional parts, *e.g.* sensitive elements and servo-motors.
- c Speed regulating and power control devices for prime movers and engines.

- d Regulators for regulating any non-electrical value not included in c.
- f Regulators for electrical values and electric machines.
- g Control devices.

G 06 — *Calculating and accounting*

- b Construction elements.
- c Mechanical digital machines (adding, subtracting, multiplying and dividing).
- d Electric digital machines (electronic -f).
- f Electronic calculating machines including machines controlled by punched sheets or by sheets provided with magnetic or other markings.
- g Mechanical and electric calculating apparatus and computing scales.
- h Cash registers.
- j Accounting and bookkeeping machines.
- k Statistical machines, devices for marking of, segregating of, and compiling from cards, sheets, *etc.*..., with statistical representations ; data records.

G 07 — *Checking devices*

- b Ticket printing and issuing apparatus ; fare-registering apparatus ; franking apparatus.
- c Time and attendance registers ; registering and indicating the working of machines ; voting and lottery apparatus.
- d Coin changers and sorters.
- f Coin-freed and such-like apparatus.

G 08 — *Signalling*

- b Domestic and hotel signalling and alarm devices ; ringing tower bells.
- c Remote indicating of conditions and measured values.
- d Order telegraphs ; fire and police telegraphs.
- f Acoustic and optical signalling ; whistles ; sirens ; fog-horns, *etc.*

G 09 — *Education and advertising*

- b Educational appliances (for music — G 10 g) ; planetaria ; globes ; maps.
- c Coding and ciphering apparatus.
- d Railway and like guides ; perpetual calendars (clockwork-driven — G 04 b).
- f Movable acoustical and optical advertising and displaying (in the nature of shop furniture — A 47 f).
- g Other advertising and displaying (in the nature of shop furniture — A 47 f).

G 10 — *Musical instruments and acoustics*

- b Organs and harmoniums.
- c Pianos.
- d Orchestral instruments, including stringed instruments, mouth organs and accordeons.
- f Mechanical instruments (automatic).
- g Teaching appliances and aids for music.

- h Electrophonic musical instruments (tones generated by electrical means).
- j Sound recording and reproducing.
- k Acoustics not otherwise included.

G 21 — *Nuclear physics*

H 01 — *Electrotechnical elements*

- b Cables, conductors and insulators.
- c Resistances, rheostats.
- d Magnets and magnet coils.
- f High frequency coils.
- g Condensers.
- h Relays.
- j Electric discharge tubes and discharge lamps.
- k Incandescent lamps.
- l Semi-conductor devices, *e.g.* dry rectifiers, electrolytic rectifiers, germanium crystal devices, selenium cells.
- m Batteries and accumulators (also thermo-electric elements).
- n Casings for electric apparatus.

H 02 — *Generation, conversion and distribution of electric power*

- b Switch-boards and distribution gear.
- c Switches.
- d Emergency protective means, *e.g.* fuses and spark-gap arresters.
- f Line connectors and current collectors.
- g Installation of electric cables and lines.
- h Protecting living beings from electric shock.
- j Relative disposition of machines and apparatus and lines.
- k Dynamo-electric machines.
- l Transformers and choke coils.
- m Apparatus for conversion between AC and AC, between AC and DC, and between DC and DC (with moving parts — n).
- n Other generators, motors and converters.
- p Controlling generators, motors and converters.

H 03 — *Electric oscillation and pulse technique*

- b Generation of oscillations.
- c Modulation and keying.
- d Demodulations and transference of modulations from one carrier to another.
- f Amplifiers.
- g Regulation of generation and amplification.
- h Impedance networks, resonance circuits, resonators.
- j Tuning of resonators.
- k Pulse technique.

H 04 — *Electric communication technique*

- b Transmission characterised by the transmitting medium and interference and noise suppression or limitation.
- c Transmission characterised by the method of modulation.
- d Aerials and feeder lines.
- f Synchronised systems of transmission.
- g Directive transmission.
- h Broadcast transmission.
- j Multiplex transmission.
- k Secret transmission and jamming of transmission.
- l Telegraphic communication.
- m Telephonic communication.
- n Pictorial communication and television.
- p Radio direction-finding, locating, distance and velocity measuring ; radio navigation systems.

H 05 — *Special electric techniques*

- b Electric heating and welding ; electric lighting not otherwise included.
 - c Electrified wire fencing.
 - d Detection of hidden masses and geological exploration.
 - f Atmospheric electricity, static electricity and earth currents.
 - g Electro-, radio-, and magneto-therapy and X-ray technique.
 - h Production of accelerated electrically-charged particles and of neutrons.
 - j Electron optics.
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