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国际专利分类表

Section F

机械工程

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国际专利分类表F—机械工程

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出版说明

1954年12月19日英、法、意、荷等15个国家在巴黎签定了“国际专利分类欧洲协定”(European Convention on the International Classification of Patent for Invention), 由此而建立了国际专利分类体系。第一版国际专利分类表于1968年9月1日生效。第二版于1974年7月1日起生效。为进一步在世界范围内推广采用国际专利分类法, 继欧洲协定之后, 1971年3月于法国斯特拉斯堡又签定了一项“关于国际专利分类法的斯特拉斯堡协定”(Strasbourg Agreement concerning the IPC)。

负责研究修订国际专利分类法的部门是由世界知识产权组织(WIPO)和欧洲理事会双方代表组成的联合专门委员会(The Joint ad hoc Committee of the Council of Europe and WIPO on the IPC)。规定每五年修订一次。

现在, 大多数实行专利制度的国家已相继采用国际专利分类法, 有些国家是与本国的分类法并用。因此, 《国际专利分类表》是检索国外专利资料的重要工具。

过去只出版过译至二级类目的中文简表。为贯彻毛主席关于“洋为中用”的指示, 根据广大读者查找国外专利资料的需要, 我们组织有关单位翻译了第二版《国际专利分类表》。此版本各国专利局于1975年1月1日起开始采用。原版是 Morgan-Grampian公司出版的法定正式文本的英文版。

全书按该分类表A到H八个部分成八个分册出版。各分册按次为: A. 农、轻、医; B. 各种作业和设备; 运输; C. 化工、冶金; D. 纺织、造纸; E. 建筑、采矿; F. 机械工程; G. 物理; H. 电学。

本书是F部, 供检索机械工程、照明、加热、武器、爆破等方面专利资料用。

由于水平所限, 在编辑工作中定会有许多错误或不妥之处, 敬请读者批评指正。

编者

1980年4月

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原 动 机 和 泵

在本分部 (F01至F04类) 中:

(1) 下列名词的含义为:

(a) “原动机”是指连续地将流体能量转变为机械动力的装置。因此这个名词包括,例如,蒸汽活塞式发动机或汽轮机本身,或活塞式内燃机,但单冲程装置除外。“原动机”也包括计量器的流体运动部分,除非这部分是特殊地用于计量器中。

(b) “泵”是指由机械或其他方法,作为连续地提升、推动、压缩或抽出流体的装置,因此这个名词包括风扇和鼓风机。

(c) “机器”是指可能等于原动机或泵的装置,但不是那些限于原动机或限于泵的装置。

(d) 在下面划线的词“和”只适用于主题包括由“和”所连接的两个词。

(e) “容积式”是指把工作流体的能量转变为机械能的方法,内容是工作流体在工作室内产生容积的变化,引起机械元件的等效位移,以传送能量,其中流体的动力作用是次要,反之亦然。

ENGINES AND PUMPS

In this sub-section (classes F 01 to F 04)

(1) The following words are used with the meanings indicated:

(a) “Engine” means a device for continuously converting fluid energy into mechanical power.

Thus the term includes, for example, steam piston engines or steam turbines, per se, or internal-combustion piston engines, but it excludes singlestroke devices. “Engine” also embraces the fluid-motive portion of a meter unless such portion is particularly adapted for use in a meter.

(b) “Pump” means a device for continuously raising, forcing, compressing, or exhausting fluid by mechanical or other means; thus the term includes fans or blowers.

(c) “Machine” means a device which could equally be an engine and a pump, and not a device which is restricted to an engine or one which is restricted to a pump.

(d) The underlined word “and” only refers to those cases where subject-matter is not restricted to one of the alternatives conjoined by the word “and”.

(e) “Positive displacement” means the way the energy of a working fluid is transformed into mechanical energy, in which variations of volume created by the working fluid in a working chamber produce equivalent displacements of the mechanical member transmitting the energy, the dynamic effect of the fluid being of minor importance; and vice versa

(f) “非容积式”是指用工作流体能量转变为动能而把工作流体能量转变为机械能的方法，反之亦然。

(g) “旋转活塞式机器”是指工作流体使传动元件围绕一固定轴旋转，或围绕沿着圆形或类似轨道移动的轴旋转的容积式机器。“摆动活塞式机器”是指上述的传动元件是摆动而不是旋转的与上述类似的机器。这些定义同样适用于原动机和泵。“旋转活塞”是指上述的传动元件，这可以是任何适当的形式，例如象齿轮一样。在旋转活塞式机器方面，“配合元件”是指旋转或摆动的活塞和其他元件，例如参与传动或抽送动作的工作室内壁。在说明关于配合元件运动，例如关于它们的“旋转轴”，则认为这些元件之一可能是固定的或两者可能是活动的，它们的相对运动是重要的。此外，“内轴”型是指内部的旋转轴，而外部的配合元件总是保持在外部元件之内。

(h) “自由活塞”是指活塞的行程长度没有被任何从动元件所限定。

(i) “汽缸”是指一般的容积式工作室，因此不限于圆形横截面的汽缸。

(f) “Non-positive displacement” means the way the energy of a working fluid is transformed into mechanical energy, by transformation of the energy of the working fluid into kinetic energy; and vice versa.

(g) “Rotary-piston machine” means a positive-displacement machine in which a fluid-engaging work-transmitting member rotates about a fixed axis or about an axis moving along a circular or similar orbit. “Oscillating-piston machine” means a similar machine in which the said member oscillates instead of rotates. These definitions also apply to engines or pumps. “Rotary piston” means the work-transmitting member referred to above; this may be of any suitable form, e. g. like a toothed gear. In the context of rotary-piston machines, “co-operating members” refers to the rotary oscillating piston and another member, e. g. working-chamber wall, which assists in the driving or pumping action. In interpreting references to movement of the cooperating members, e. g. to their “rotational axes”, it is to be understood that one of these members may be stationary or both may move; it is their relative movement that is important. Furthermore, “internal-axis” type means that the rotational axes of the inner and outer co-operating members remain at all times within the outer member.

(h) “Free-piston” means a piston of which the length of stroke is not defined by any member drives thereby.

(i) “Cylinders” means positive-displacement working chambers in general, and thus is not restricted to cylinders of circular cross-section.

(j) “主轴”是指把活塞的往复运动转变为旋转运动的轴，反之亦然。

(k) “设备”是指原动机和原动机工作时必需的那些辅助装置。例如，蒸汽机设备包括蒸汽机和蒸汽发生装置。

(1) “工作流体”适用于泵中的从动流体和原动机中的驱动流体。工作流体可以是气态，即可压缩的，或液体。前者可能是气态和液态共存。

(m) “蒸汽”包括一般的可凝结的蒸汽，当不包括水蒸汽时，采用“特殊蒸汽”一词。

(n) “反作用式”当用于非容积式机器或原动机时，是指在转子中发生全部或部分的压力和速度转换的机器或原动机，而在转子中没有或只有轻微的压力和速度转换的机器或原动机称为“冲动式”。

(2) (a) “原动机”或“泵”的小类或组，除另有其他的规定外，均包括其工作方法。

(b) 循环操作阀、润滑、气流消音器或排气装置和冷却，应分列入小类 F 01 L, M, N, P 中，不管它们所规定的适用范围，除非它们的分类特点限于特殊应用。在这种情况下它们应分列入有关的小类 F 01 至 F 04 中。至于润滑、气流消音器或排气装置和机器或原动机的冷却，它们应分列入 F 01 M, N, P 中，除为蒸汽机所特有的应分列入 F 01 B 中。

(j) “Main shaft” means the shaft which converts reciprocating piston motion into rotary motion or vice versa.

(k) “Plant” means an engine together with such additional apparatus as is necessary to run the engine. For example, a steam engine plant includes a steam engine and means for generating the steam.

(1) “Working fluid” refers to the driven fluid in a pump and the driving fluid in an engine. The working fluid may be in a gaseous state, i. e. compressible, or liquid. In the former case coexistence of two states is possible.

(m) “Steam” includes condensable vapours in general, and “special vapour” is used when steam is excluded.

(n) “Reaction type” as applied to nonpositive-displacement machines or engines means machines or engines in which pressure-velocity transformation takes place wholly or partly in the rotor; machines or engines with no, or only slight, pressure-velocity transformation in the rotor are called “impulse type”.

(2) (a) Sub-classes or groups designating “engines” or “pumps” include methods of operating the same, unless otherwise specifically provided for.

(b) Cyclically operating valves, lubricating, gas-flow silencers or exhaust apparatus, and cooling should be classified in sub-classes F 01 L, M, N, P irrespective of their stated application, unless their classifying features are peculiar to their application, in which case they should be classified only in the relevant of machines or engines, these should be classified in F 01 M, N,

(c) 本分部的应用指南 本附注的作用是帮助使用本部分的分类法; 不要把它看成是修正细节中的任何情况。

为了能充分了解如何运用此分部, 仅就构成本分部之骨架的小类 F 01 B, C, D, F 03 B, 和 F 05 B, C, D 来说, 应当记住:

- (i) 在编排本表中所采用的原则,
- (ii) 它们所需要的分类特性,
- (iii) 它们的补充性。

(i) 原则 这里基本上涉及上述的小类。其他小类, 特别是 F 02 类中的那些小类, 他们涉及到较明确规定的主题, 这里不予考虑。

每一小类基本上涉及一种设备(原动机或泵)并扩大到同类的机器。两个不同的主题, 一个比其余的一个具有较通用性, 则划入同一小类中。

小类 F 01 B, F 03 B, F 04 B, 超过它们涉及的两个主题, 它们比其他小类所涉及的各种设备具有更大的通用性。

这里的通用性也适用于涉及到两个主题, 这些主题未必是同一小类。

P 除那些 peculiar 到 steam engines which should be classified in F 01 B.

(c) Guide to use of this sub-section. This note is meant to assist in the use of this part of the classification scheme; it must not be read as modifying in any way the effect of any thing in the elaborations.

For use of this sub-section with a good understanding, it is essential to remember, so far as sub-classes F 01 B, C, D, F 03 B, and F 05 B, C, D, which form its skeleton, are concerned:

- (i) the principle which resides in their elaboration,
- (ii) the classifying characteristics which they call for,
- and (iii) their complementarity.

(i) Principle. This concerns essentially the sub-classes listed above. Other sub-classes, notably those of class F 02, which deal with better-defined matter, are not considered here.

Each Sub-class deals fundamentally with a genus of apparatus (engine or pump) and by extension deals equally with "machines" of the same kind. Two different subjects, one having a more general character than the other, are thus treated in the same sub-class.

Sub-classes F 01 B, F 03 B, F 04 B, beyond the two subjects with which they deal, have further a character of generality in relation to other sub-classes concerning the different species of apparatus in the genus concerned.

This generally applies as well for the two subjects dealt with, without these always being in relation to the same sub-classes.

因此F 03B中涉及到“机器”部分,应认为是通用类F 04 B,C,而涉及到“原动机”部分应认为是通用类F 03C。

(ii) 特性。小类的主要分类特性是这样的设备,可能有三类:

机器,原动机,泵。

如上所述,“机器”常常和其余两种中的一种相联系。

这些主类依照设备的工作的一般原理细分为:

容积式,非容积式

容积式装置依照其工作原理的实施方法再细分为各种装置:

简单的往复活塞式;旋转或摆动活塞式;其他类。

另一种分类的特点是工作流体,可分为三种装置:

液体和弹性流体;弹性流体;液体。

(iii) 补充性 根据设备的种类或工作液体的种类的特点,这存在于上述两个小类的关系中。

(iv) 涉及到各种原则,特性,和补充性的小类如下表所示。

从表中可以看到:

Thus F 03 B, in its part dealing with “machines”, should be considered as being the general class relating to F 04 B, C, and in its part dealing with “engines” as being general in relation to F 03 C.

(ii) Characteristics. The principal classifying characteristic of the sub-class is that of genera of apparatus, of which there are three possible: Machines; engines; pumps.

As stated above, “machines” are always associated with one of the other two genera.

These main genera are subdivided according to the general principles of operation of the apparatus:

Positive displacement; non-positive displacement

The positive-displacement apparatus are further subdivided according to the ways of putting into effect the principle of operation, that is, to the kind of apparatus:

Simple reciprocating piston; rotary or oscillating piston; other kinds.

Another classifying characteristic is that of the working fluid, in respect of which three kinds of apparatus are possible, for:

Liquid and elastic fluid; elastic fluid; liquid.

(iii) Complementarity. This resides in association of pairs of the sub-classes listed above, according to the characteristics under consideration in respect of kind of apparatus or working fluid.

(iv) The sub-classes concerned with the various principles, characteristics, and complementarity are shown in the following table.

It is seen from the table that: