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Patents, Designs and Trade Marks 1976

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number of applications for restoration of patents unintentionally allowed to lapse.

The recruitment of technical staff competent in the electrical and computer fields foreshadowed in my last report proved disappointing and only four were appointed. As a result it was not possible to equalise the different arrears in different technologies which were then reported. This recruitment did not replace losses due to staff wastage and during 1976 the number available for the technical examination fell by 21. However the productivity of the staff was well-maintained and during the year the number of complete specifications awaiting examination was reduced by approximately 4,000, the average delay in issuing the examiner's first report being marginally reduced to just over 12 months. The unit cost of dealing with each complete specification was £250. At the end of the year the number of technical staff available was barely sufficient to keep abreast of the current rate of input.

Manpower ceilings preclude further recruitment in 1977, a year in which wastage of older technical staff will be heavy and in which substantial effort will have to be devoted to further language and other training for staff transferring to the European Patent Office and for implementation of the new United Kingdom law in 1978. An increase in the arrear of cases awaiting examination and in the delay before first examination is therefore inevitable in 1977 unless the input drops in that year.

In 1976, 3,333 days were devoted to training (mainly in languages) technical staff likely to transfer to the European Patent Office and 6,545 days to modernising the examiners' search files and other important classification duties.

The non-technical areas of work in patents were maintained up-to-date throughout the year.

In my last report, I mentioned the staff inspection of both technical and non-technical staff. The inspectors' recommendations in respect of the former have been put into effect during the year and the recommendations in respect of the latter are at present being discussed with representatives of the staff. The existing Automatic Data Processing system for search and publication purposes has been reorganised to increase efficiency and to provide a basis for wider use of ADP in the future. The joint Official Side/Staff Side working party referred to in previous reports continued to meet.

* *Trend of inventions in published specifications*

Patent specifications published during 1976 reveal a fairly quiet year in respect of major new departures.

One rapidly developing area of interest is in protein chemistry and concerns the technique of immobilising enzymes (the catalysts of living cells) on insoluble carriers, generally polymers, to facilitate in various ways the use of the enzymes in such fields as immunology, diagnostic medicine and carbohydrate chemistry.

Also in the chemical field, fire retardant additives for polymer compositions have received much attention and ecological considerations continue to stimulate considerable activity in semi-conductor gas detectors for atmospheric pollution and in methods for converting noxious waste gases, exhausts and the like into less harmful products. Interest in therapeutically active compounds has been

maintained with particular attention to anti-microbial cephalosporins and vasodilatory prostaglandins.

The engineering industry has, as is customary, produced a sustained output of specifications covering many and varied specialisations including a topical new departure relating to methods of assembling and installing off-shore platforms for North Sea oil recovery. The search for longer term forms of energy has initiated much interest in solar and geothermal sources. Means of heating swimming pools using solar heat absorption units have proved popular and one particular type of absorption device for the sun's energy comprises heliostat arrays of spherical concave mirrors which track the angle of the sun. The use of solar energy to augment or replace a hydro-electric power system during sunlight hours is also envisaged.

There has been continuing activity in the field of rotary internal combustion engines and to a lesser degree in the use of such engines as gas compressors or pumps and a further field receiving attention concerns the application of computer programming to the control of machine tools. Advances are also evident in heat exchanger and boiler technology with the use of liquid sodium metal as the heat transfer medium.

The pitfalls inherent in the credit card systems at present in use have engendered a search for credit and identity cards secured against forgery. One such card has a portion comprising a hologram or an array of prisms which produces, on being illuminated, a unique pattern of light beams according to a predetermined code. Another type of secured card comprises a pair of synthetic resin base plates with an electrical conductor forming the 'meat' of the sandwich. One of the base plates has a magnetisable coating on its outer surface and the conductor has a pair of exposed terminals which make contact with parts of a verifying machine.

The printing art is well represented with advances in dry offset lithography where a curable silicone gum coating is used in preparing the printing plate and in ink-jet printers wherein, as the name suggests, a jet of ink broken up into an electrically charged stream of droplets is directed at the paper and is deflected in an electric field to the desired position on the paper to form the required character.

Development continues in the electrical field with arc control in vacuum switch contact assemblies and quadraphonic sound systems being the subjects of special activity. Interest has also been shown in the design of super-conductive coils and electromagnets and in a process for making a magnetically soft laminated core material for transformer cores, electromagnets and recording heads. In the information storage and retrieval field, there has been a marked increase in the number of specifications relating to video disc technology and in data storage in rotating stacks of flexible magnetic devices. Other significant advances are concerned with design and fabrication of charge transfer devices and with charge storage memory devices utilising metal nitride oxide semi-conductors and floating gate structures.

The number of specifications accepted in 1976, divided according to subject-matter, and the headings in which the above activity is classified, are given in Appendix 7.

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