

Patent Office Statistics.

THOSE who are interested in the industrial applications of science will find much that is worthy of their attention in the recently published report of the Comptroller-General of the Patent Office for the year 1925. The report consists entirely of statistics, so that, in the absence of any official commentary, an attempt to analyse some of the figures and to compare them with those given elsewhere may perhaps be of value, for the relation between invention and industrial prosperity is an intimate one. Further, it is of interest to assess the quality of the services rendered to the State by the Patent Office, not only because this is essentially a scientific department, but also because it has been felt for some time past that the Patents Acts cannot be left where they are: and the question whether the desired improvements are practicable is one which depends in great measure on the degree of efficiency with which the existing system is being administered.

The number of applications for British patents filed during 1925, namely, 33,003, exceeded the numbers filed during 1923 and 1924 by 1.1 per cent. and 5.2 per cent. respectively, the corresponding excesses in the case of the United States being 4.3 per cent. and 4.2 per cent. respectively. Too much importance should not be attached to these figures, however, for fairly wide fluctuations are common even in normal times. In fact, when averaged over several years, the annual input of patent applications appears to depend, for countries having comparable patent and industrial systems, mainly on the population of the countries considered: thus, the number of applications per 10,000 of the population is, under normal conditions, roughly 7.5 in Great Britain, 7.3 in the United States, 7.2 in Germany, and 8.7 in Switzerland. In France, however, which is more extensively agricultural and has a backward patent system, the corresponding figure is only 4.8. It is contended by the United States Commissioner of Patents that fluctuations in the input of patent applications are in some sort an index of fluctuations in national prosperity: and though his contention would require considerable qualification before it could be generally accepted, the upward trend of inventive enterprise in Great Britain is satisfactory so far as it goes. The number of patents actually sealed in 1925 was about 52 per cent. of the number of applications filed, and 88 per cent. of the number of complete specifications filed. These figures indicate the extent to which worthless patents are weeded out by the official examination and various other causes, but no figures are given which would enable us to judge the effect of the official examination on the drafting of the specifications finally issued; nor is any information given as to what the United States Commissioner calls the 'gain in dates.' In the United States, the average time which an applicant had to wait for the first official action was reduced in the course of the year from 4.5 to 2.6 months, and the delay in dealing with amendments from 3 or 4 to 2.3 months. Promptness in the issue of patents is of such importance that it would be of interest to the public to know how far the British office has been able to make good the ground lost during the War. It is to be noted that the examining staff has been reduced in strength from 260 in 1913 to 241 in 1925: such economies are desirable in themselves, but the 'gain in dates' is of greater importance, and the public might with advantage be allowed to know how this matter stands.

As regards the nationality of applicants for British patents, it is to be noted that the percentage of these residing in Great Britain fell from 75 per cent. in

1923 to 69.8 per cent. in 1924 and 68.1 per cent. in 1925: at the same time the percentage residing in the United States rose from 8.2 per cent. to 8.9 per cent. and then to 9.6 per cent. Further, it must be remembered that only the best of the foreign inventions will be considered worth patenting outside their country of origin, and consequently the great majority of applications coming from abroad lead to the actual grant of patents. Thus in 1923 (the latest year for which complete data are available) 16 per cent. of the patents actually granted (as distinct from mere applications) were granted to persons residing in the United States, and only 57 per cent. to persons residing in Great Britain: for the previous year the corresponding figures were 15.5 per cent. and 59 per cent. respectively. Of the patents issued by Germany in 1923, 80 per cent. were granted to Germans, 2.1 per cent. to Britons, and 2.8 per cent. to Americans, while Germans took 6.5 per cent. of the British patents and 2 per cent. of the United States patents. These figures are not likely to change greatly, in the absence of unforeseen causes, for they must be ascribed mainly to differences in population between the countries concerned: thus, in the year 1923, while 3 out of every 100,000 Britons took United States patents and 2.3 took German patents, 2.5 out of every 100,000 Americans took British patents and 1.2 took German patents, and 1.6 out of every 100,000 Germans took British patents and 2.4 took United States patents. Out of every 100,000 Frenchmen, 2.5 took British patents.

For the year in question, 6615 or 43 per cent. of the British patents were taken by foreigners, while the corresponding figures for the United States were 4465 or 12 per cent., and for Germany 9127 or 20 per cent. The German patent is thus the most popular among foreigners, as judged by the absolute figures, and its popularity is not due to abnormal economic causes. In 1912, for example, when Germany issued fewer patents than now, 4251 or 32 per cent. of these were granted to foreigners. (The German '*gebrauchsmuster*' are excluded from the preceding figures.) But when we consider *percentages* we find that not much less than half of the monopolies which Great Britain grants for the manufacture and sale of goods within her borders are granted to persons residing outside the country: and we find that this state of things, depending as it does on differences of population, is likely to continue. It is to the advantage or the disadvantage of British industry according as the monopolies granted will be used for the purpose of developing new industries in Britain, or for the purpose of obstructing British manufacture in favour of imports. Examples can be cited in which each of these effects has been produced, but no general statistics are available for ascertaining the balance of good or ill which at present results from the grant of patents to foreigners. The Acts provide that where a patent is being obstructively used, an interested party may apply to the Comptroller-General for the compulsory grant of a licence to work the patent, or for its revocation: but in 1925 *only two such applications were made, and one of these was withdrawn*. It may be mentioned in passing that of the patents granted by Canada, about 70 per cent. are held by persons residing in the United States.

While the Patent Office is not empowered to make an exhaustive investigation into the validity of the patents which it grants, it does make an investigation of limited scope which is relevant to validity: and the Comptroller-General has powers which constitute

him a court of first instance for the trial of certain legal issues. It is of interest, therefore, to see with what degree of efficiency the Patent Office discharges its legal functions. The report before us shows that in 1925 the Comptroller-General, or rather three senior members of the corps of examiners who appear to have acted for him, gave decisions in over 2000 'hearings' under various sections of the Patents Acts, and in 84 'oppositions' brought by interested parties against patents provisionally granted. The quality of the work done in these cases can best be gauged by reference to the decisions of the Law Officers of the Crown, to whom a cheap appeal lies from the findings of the Patent Office. It appears that 27 appeals against the 'opposition' decisions of 1924 and 1925 were disposed of during the year, the official decision being vindicated in 20 cases (including 4 cases of withdrawal), varied in 2 cases, and reversed in 5. The appeals against 'hearing' decisions which were disposed of during the year numbered 42: the official decision was vindicated in 34 cases (including 3 cases of withdrawal) and reversed in 8. Actual figures for the number of hearings held during the year are given for only three sections of the Acts: the number of hearings under these sections was 2088, of which 0.33 per cent. gave rise to successful and 0.86 per cent. to unsuccessful appeals. As regards the work of the corps of examiners as a whole, it is to be remarked that while 19,434 complete specifications were examined and 17,199 patents sealed during 1925, the official actions taken have now been accepted by all concerned except in the case of 11 successful and 5 outstanding appeals, unless any further question should arise upon them in the High Court.

In the financial section of the Comptroller-General's report the tables of receipts and expenditure are fairly complete, and take account of such items as depreciation of buildings, the estimated value of pension rights, and the upkeep of the public library; but a more precise statement of the distribution of the staff would be of interest when it is desired to estimate the cost of changes in the patent system. Of the revenue 82 per cent. is derived from Patents fees, 2.4 per cent. from Designs fees, and 9.9 per cent. from Trade Marks fees. The total of Patents fees, namely, 391,677*l.*, is made up of items which may be divided into three groups. The first group comprises items which are likely to give a fairly constant yield in future years, namely, the initial filing and sealing fees (28 per cent. of the whole), renewal fees for the 5th, 6th, and 7th years (24 per cent.), and miscellaneous fines and fees (9 per cent.). The total of these, accounting for 61 per cent. of the yield of patents fees, may be regarded as normal. Renewals for the 8th to the 11th year (of war-time patents) are affected by the War, and their total (18 per cent.), being abnormally low, will improve during the next few years. Renewals for longer periods (21 per cent.) do not yet show the effect of the War, and their yield will therefore fall off for a few years to come. On the whole, therefore, revenue is likely to be stationary, and in the absence of new expenditure the inventor will continue to pay large sums in relief of general taxation. The surplus was 75,203*l.* in 1924 and 88,540*l.* in 1925, after accounting for all imaginable charges and meeting the deficit on publications and the upkeep of the library, which represents a service to the general public. The United States Treasury, on the other hand, subsidised the American Patent Office to the extent of 81,720*l.* in 1924 and 68,150*l.* in 1925, so that the United States subsidises invention to nearly the same extent that Great Britain taxes it.

The financial section of the report is also relevant

to the degree of efficiency with which the Patent Office is administered, for under the prevailing conditions the most rigid economy is incumbent, as a patriotic duty, upon public departments. It is extremely difficult to find a standard by means of which administrative economy may be measured, but we can obtain some idea as to how far an economic spirit prevails at the Patent Office by comparing its present scale of staffing with that which obtained before the War, with that which obtains in the United States, and with that which obtains in other comparable Government Departments in Great Britain. We find that whereas the number of patent applications per annum has increased by 10 per cent. as compared with 1913, the strength of the corps of examiners has decreased by about 8 per cent., so that each member is on the average dealing with 20 per cent. more applications now than before the War. The salary bill for this section of the staff is not distinctly shown, but if we estimate the cost-of-living bonus from the average salary and then assume that (in accordance with the Ministry of Labour index) *l.* in 1925 was equivalent to 0.57*l.* in 1913, the 'real' or purchasing value of the salary bill appears to have decreased by 6 per cent. As regards the auxiliary staff, there is no sign of any increase in strength or cost disproportionate to the increase in work done, the 'real' salary bill for the whole office being 2 per cent. more than that for 1913. The staffing is roughly on the same scale as that of the United States Patent Office. In each case there are 130 to 140 patent applications per annum per member of the corps of examiners, and the duties in the two cases, though not identical, are probably comparable. Our third comparison may conveniently take the form of a table, the contents of which have been compiled from the Estimates (Class II.) for 1926-7:

Department.	Total staff.	Number of posts with salaries rising to a maximum of		Total of higher posts.	Percentage of higher posts.
		1000 <i>l.</i> to 1800 <i>l.</i>	2000 <i>l.</i> and more.		
Treasury	331	21	11	32	9.7
Foreign Office	830	25	3	28	3.3
Ministry of Transport	524	11	2	13	2.5
Board of Trade (Head Office)	667	8	5	13	1.9
Ministry of Agriculture	1197	14	3	17	1.4
Patent Office, with Trade Marks and Designs Branches	685	4	0	4	0.38

From the point of view of economy, attention may also be directed to the large amount of judicial work performed by the Hearing Officers, as set out above. For men who doubtless have other important duties to perform, the record of 2172 hearings and oppositions is a remarkable one.

The outstanding inferences to be drawn from the Comptroller-General's figures appear, then, to be that an enormous proportion of British patents is held by foreigners, while manufacturers take no advantage of the existing facilities for the grant of compulsory licences; that the legal work of the Patent Office is admirably performed; that the Office is administered in a spirit of economy which deserves particular attention; and that a large annual surplus is available for the improvement of the patent system when this step is considered desirable.