DETECTING CORRESPONDING PATENTS FROM DIFFERENT COUNTRIES

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Keeping up with world-wide technical information by abstracting patents involves the problem of how to avoid abstracting identical patents that issue in different countries.

It is common knowledge that many companies file patent applications on the same invention in several countries — sometimes in ten or more. According to international agreement, these applications must be filed in all countries within one year from the date on which the first application describing the invention is filed anywhere ("convention date") if the benefit of this earliest date is to be obtained in all countries.

The speed with which patents are granted or opened to public inspection varies widely among countries. These can be divided roughly into "fast-issuing countries," for example Australia and Belgium, and "slow-issuing countries," such as the United States and Canada. On this basis, a patent on the same invention might be disclosed in a different country every six months or year for several years. Assuming that the patent issued in ten countries over this period, Esso Research experience shows that it would take about 4.0 hours to prepare or adapt abstracts for these ten issues. Yet in reality they would describe only one invention.

In addition to wasted abstracting time, two other factors should not be overlooked: (1) readers of the abstracts should not be annoyed by repetition of information they have read before; and (2) for patent-searching purposes it is often valuable to know all the "corresponding" patents on a given invention, something that is difficult when all patents are treated as "new," and separate abstracts of each are prepared. It is evident, then, that an efficient system for detecting corresponding patents and connecting them is highly desirable in terms of abstracting time and reader satisfaction.

We have devised such a system, one which is essentially a "convention-date file." In it, a set of abstract cards is filed by convention country and subfiled by the convention date of each patent abstracted. In other words, a British patent bearing a United States convention date is filed under "U.S." in proper order by convention date.

This file could have been built up during the normal course of abstracting and filing. However, since we estimated (based on the average interval between the first appearance of a patent and the majority of its corresponding cases) that the abstracts of patents issued during the last 18 months were all that was needed to make the file immediately effective, we photocopied approximately 4,500 abstract cards from existing "country" files of Australian, Belgian, British, French, and Portuguese patents. These countries were chosen as being relatively "fast-issuing" ones, so that the time interval plus the countries chosen could be expected to give us a usable file.

These 4,500 photocopies, plus about 1,500 other abstract cards (mainly of U.S. patents) accumulated during our normal abstracting operations, in anticipation of this file, were sorted by convention country, and the convention date written in the upper left-hand corner of each card. The cards were placed in a 50,000-card filing cabinet, deemed ample for expansion.

A person checking patents for corresponding cases thus uses a single filing cabinet, and has only to pull out the drawer containing cards filed under the convention country in question, flip to the date wanted, and consider at most 10 cards. When an abstract of a patent bearing the same convention date is found, the rest of the reference data (similar second or third inventors, company name) is compared, plus the text of the abstract, to determine whether a connection is in order.

Since the abstracts of all patents selected as possibly corresponding have to be compared for subject content with the patent being checked, a task often complicated by foreign languages and by the apparent similarities (similar process and conditions but slightly different catalysts), Esso Research found that a technically-trained person was needed to do this checking.

When an abstract is positively identified as corresponding, the reference data are exchanged, as shown in Fig. 1. The country and patent number of the "new" patent are written

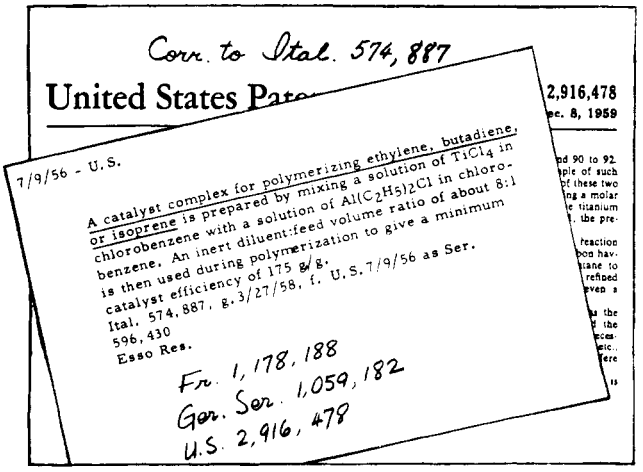

Figure 1.

on the abstract card in the file. The country and number of the previously-abstracted, corresponding patent are entered on the copy of this patent, or in the patent journal.

The newly-connected patent copy, with the corresponding patent number on its face, is then given to a typist to prepare a set of file cards (Fig. 2). These cards inform a searcher of the

Fig. 2

CONNECTION CARD

Fr. 1,211,774

Fr. 1,211,744, del. 10/12/59, f. U.S. 10/9/57
(Appears to corr. to U.S. 2,908,671)
Esso Res. (N.N. Hochgraf, L.C. Kenyon, Jr., and A.W. Langer, Jr.)
Process for suppressing fouling in polymerization reactors.
Bull. Off. 76:9819 (11/12/59)

existence of a previous, corresponding patent and are used in lieu of abstract cards. Each card gives the following information: the number, issue date, and convention date of the unabstracted, connected patent; the number of the abstracted patent to which it corresponds; company and inventor(s); complete title of the patent; and, if applicable, the reference to the patent journal in which the new patent appeared. These "connection cards" are filed under the number of the unabstracted patent, company, and inventor(s).

All corresponding patent numbers are now conveniently available on one card — the convention-date card. This is a great benefit to a patent searcher seeking all corresponding patents pertaining to a certain invention.

Until several months ago, patents on the same invention were "connected" at Esso Research by checking them against previously-prepared abstract cards in the "author file" in our Technical Library. This author file contains upwards of 1,000,000 abstract cards, of which approximately 275,000 deal with patents; the rest are for literature abstracts. Cards are filed alphabetically by company and inventor; subfiling places the cards in order by country in which the patent has issued and then by issue date.

In checking a patent against these files, all patent-abstract cards under the name of the first inventor were scanned to find (if possible) an abstract of a previous patent that had the same convention date as the patent being checked. In checking a patent for which no assignors were given, the cards under the company's name were scanned.

This system, although workable, posed several problems. One problem, inherent in an author file, was that of locating the one card wanted in all those filed under the name of an individual or company. Some companies are so prolific that we have several file drawers filled with cards on their patents. The cards under a given name all had to be checked until a corresponding patent was located (or not). As was sometimes the case, a whole drawer was searched without any connection being made. This was not usually the fault of the checker; there often just was no corresponding case.

When checking patent-office bulletins, such as those of Canada or Germany, the inability to alphabetize the patents to be checked forced the checker to use the file in random order — the order of the inventors in these bulletins. On the other hand, working with alphabetized sets of British patents, German serial copies, Dutch applications, etc., made this author-file checking system somewhat more bearable; the file could be checked in alphabetical order, minimizing the amount of walking back and forth required by the person doing the checking.

A minor problem also was presented by the format of our patent reference on the file card. The convention country and date — often split between two lines — is located among several other dates and is relatively difficult to spot (Fig. 3).

Fig. 3

PATENT REFERENCE FORMAT

Esso Res.

b)Fines are removed from gases by passing the solids-laden gases through several cyclone separators in series, and increasing the inlet velocity of the last cyclone separator at least 50% over that of the first cyclone separator. This may be achieved by making the last stage separator smaller, resulting in increased recovery of fines in the last separator. The method is particularly applicable to fluidized hydrocarbon conversion processes.

Belg. 569,961, g. 8/15/58, open 2nd half Jan. 1959, f. U.S. 8/15/57 as Ser. 678,346
Esso Res.
Derwent Rep. 50A:C28 (2/28/59)

Over a period of time, we established that eleven separate patents could be checked and an average of 3.4 connections made per hour by the author-file method (when connecting the patents of Britain, Canada, France, Germany, and Holland — slow-enough issuing countries to ensure a sizable percentage of connections). Referring to the abstracting-editing times assumed previously (4.0 hours to prepare ten abstracts

and, therefore, about 3.6 hours to prepare nine duplicates of an abstract), this checking procedure had some slight economic advantage as regards abstracting and editing time alone. In addition, advantages of reduced typing, printing, proofreading, and technical reading-time were realized, just as they are for the present method.

Recent statistics accumulated by four technical people while checking a total of 2,200 patents in the convention-date file showed that 45 patents can now be checked per hour and that an average of 15 patents per hour are being successfully connected (Fig. 4). As compared to the author-file method, therefore, this new system allows better than four times as many patents to be checked per hour, with a similar increase in the number successfully connected.

Fig. 4
CHECKING AND CONNECTING RATES FOR VARIOUS COUNTRIES

Country	Number checked	Number connected	Time to check (hr.)	Number checked per hour	Number connected per hour
Britain	439	210	7.3	60	29
Canada	684	158	14.9	46	11
France	734	290	17.7	42	16
Germany	341	67	8.8	39	8
Holland	62	9	1.1	56	8
Totals	2260	734	49.8	45	15

The costs involved in setting up this file were relatively small. The existing 4,500 abstract cards were microfilmed and Copyflow-reprinted for $225. The 1,500 duplicate cards were sorted, then all cards were marked and filed in less than 100 clerical man-hours. An additional expenditure of 1-2 clerical man-hours per week is needed to maintain the file, i.e., paste-up, sort, mark, and file the current cards destined for the file each week.

One of the authors of this paper developed the idea for this convention-date system, and proposed its application, without knowing that Chemical Abstracts was using a similar method; no description of it apparently has been published. Existence of this practice, when brought to his attention, to a large extent validated the approach, since Chemical Abstracts reports [1] "catching around 10% duplication during the course of a calendar year."

The Esso Research system seems to have certain advantages, however, since its checking file contains abstract-bearing cards which make it unnecessary to refer to the originals for subject content, the technique presently used by Chemical Abstracts. Chemical Abstracts could develop a similar method if it chose to put a set of its patent abstracts on cards, something which it has no doubt considered.

A system of "convention-date" files thus has been evolved which eliminates waste of technical manpower in abstracting, editing, and searching, lessens clerical and printing expenses, gives readers shorter abstract bulletins which contain only new material, and creates a file which is a valuable tool for quick patent searches.

REFERENCE

[1] Letter of June 20, 1958, from Dr. E. J. Crane, Chemical Abstracts Service, to Mr. B. H. Weil, Esso Research and Engineering Company.