UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TRANS TEXAS HOLDINGS CORP.[1]

Appeal No. 2005-2643
Reexamination Control No. 90/005,842
Patent 6,052,673[2]

HEARD: January 24, 2006

Before MARTIN, BLANKENSHIP, and MacDONALD, Administrative Patent Judges.

MARTIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. §§ 134 and 306 from the examiner's final rejection of claims 1-28, which are all of the patent claims, under 35 U.S.C. § 103(a). We affirm.

[1] Trans Texas Holdings Corp. is the owner of the patent under reexamination. The inventors named in the patent are Tomás Leon and Lewis J. Spellman.

[2] The '673 patent issued based on Application 09/184,752, filed November 2, 1998, which purports to be a continuation of 07/780,834, filed October 23, 1991 (now Patent 5,832,461, which is identified as a continuation of 07/187,054, filed April 27, 1988 (abandoned), which is identified as a continuation of 06/770,493, filed August 27, 1985 (now Patent 4,742,457).

The Final Office Action (hereinafter "Final Action") included (at 3, ¶ 5) a rejection of claims 2, 17, and 27 under the first paragraph of 35 U.S.C. § 112, which was not repeated in the Answer and is therefore treated as withdrawn. Manual of Patent Examining Procedure § 1207.02 (8th ed. rev. 4, Oct. 2005). In any case, as pointed out by appellant in the reply brief (at 5-7), the rejection was contrary to 37 CFR § 1.552(a)[3] because the rejected claims are unamended, original patent claims.

A. Related litigation

[3] 37 CFR § 1.552(a) provides: "Claims in an ex parte reexamination proceeding will be examined on the basis of patents or printed publications and, with respect to subject matter added or deleted in the reexamination proceeding, on the basis of the requirements of 35 U.S.C. 112."

The patent under reexamination in this proceeding (Patent 6,052,673) and the patent under reexamination in Reexamination Control No. 90/005,841 (Patent 5,832,461), which is the subject of pending Appeal No. 2005-2642, were both involved in Trans Texas Holdings Corp. v. Pacific Investment Management Co., Civ. Act. No. A99CA658SS in the United States District Court for the Western District of Texas (Austin). On August 26, 2000, the district court entered a Markman[4] order (Exhibit D to the brief) construing various terms of the claims of both patents. In response to a question from the Board at oral argument concerning the date of dismissal of the district court action, counsel requested permission to submit a copy of the district court's docket report, which request was granted. The docket report was faxed to the board on January 25, 2006, and shows that the order dismissing the action was filed on January 8, 2001. A copy of that order, entitled "Order of Dismissal With Prejudice" (incorrectly giving the year as 2000), accompanied the reply brief as Exhibit G.

B. Related appeal

A decision is being mailed concurrently herewith in Appeal No. 2005-2642 in the '841 reexamination proceeding.

C. The invention at issue

The claims are directed to a method of managing financial accounts wherein an institution (a) offers inflation-indexed deposit accounts and (b) at least partially offsets

[4] Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 USPQ2d 1321, 1329 (Fed. Cir. 1995), aff'd, 517 U.S. 370, 372, 38 USPQ2d 1461, 1463 (1996).

the cost of those accounts by holding one or more assets, such as loan accounts, having a rate of return indexed to inflation. '673 Patent at col. 2, ll. 55-59. Each deposit account and loan account has a principal component and an accrual component. Id. at col. 2, l. 66 to col. 3, l. 1. In the case of a loan account, either the loan principal component or the loan accrual component is adjusted in response to inflation. See claims 5 and 6.

All of the pending claims are unamended, original patent claims. There are four independent claims (1, 9, 22, and 25), of which claim 1 reads:

> 1. A method of managing financial accounts comprising:
> providing a plurality of deposit accounts with a financial institution;
> adjusting the amount in each deposit account as a function of a rate of inflation;
> providing at least one loan account with said financial institution using
> funds deposited with the financial institution;
> adjusting the amount in the loan account as a unction [sic[5]] of a rate of inflation using an account data processor,
> paying the deposit accounts; and
> receiving repayment of the loan account by said financial institution in a manner where the funds in the loan account obtain a rate of return responsive to a rate of inflation.

[5] No certificate of correction of correction has been filed to correct this or any other error in the original patent.

D. The grouping of the claims

At page 5 of the brief, appellant states that "[f]or purposes of this Appeal, all of the claims shall be considered separately and do not stand or fall together." Under 37 CFR § 1.192(c)(7) (2001), which was in effect when the brief was filed, a group of claims rejected on the same ground can be treated as standing or falling together unless the brief states that the claims of the group do not stand or fall together and explains why the claims are believed to be separately patentable. As noted below, some of the rejected claims have not been separately argued and thus will be treated as standing or falling with their parent claims.

E. The scope and meaning of the claims

"[D]uring examination proceedings, claims are given their broadest reasonable interpretation consistent with the specification." In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000) (citing In re Graves, 69 F.3d 1147, 1152, 36 USPQ2d 1697, 1701 (Fed. Cir. 1995); In re Etter, 756 F.2d 852, 858, 225 USPQ 1, 5 (Fed. Cir. 1985) (en banc)).

Thus, as explained in In re American Academy of Science Tech Center, 367 F.3d 1359, 1369, 70 USPQ2d 1827, 1834 (Fed. Cir. 2004), which was an appeal from a Board decision in a reexamination proceeding,

> the Board is required to use a different standard for construing claims than that used by district courts. We have held that it is error for the Board to "appl[y] the mode of claim interpretation that is used by courts in litigation, when interpreting the claims of issued patents in connection with determinations of infringement and validity." In re Zletz, 893 F.2d 319, 321 [13 USPQ2d 1320, 1321] (Fed. Cir. 1989); accord In re Morris, 127

> F.3d 1048, 1054 [44 USPQ2d 1023, 1028] (Fed. Cir. 1997) ("It would be inconsistent with the role assigned to the PTO in issuing a patent to require it to interpret claims in the same manner as judges who, post-issuance, operate under the assumption the patent is valid."). Instead, as we explained above, the PTO is obligated to give claims their broadest reasonable interpretation during examination.

Appellant's reliance (Brief at 9) on the claim interpretation given in the district court's Markman order is therefore misplaced.

Appellant nevertheless argues (Reply at 4-5) that we are bound by the district court's Markman order under the doctrine of issue preclusion discussed in In re Freeman, 30 F.3d 1459, 1465-69, 31 USPQ2d 1444, 1448-51 (Fed. Cir. 1994). This argument fails because the Markman order was not "necessary to the judgment rendered in the previous action," which is one of the four conditions for application of the doctrine:

> Issue preclusion is appropriate only if: (1) the issue is identical to one decided in the first action; (2) the issue was actually litigated in the first action; (3) resolution of the issue was essential to a final judgment in the first action; and (4) plaintiff had a full and fair opportunity to litigate the issue in the first action. A.B. Dick Co. v. Burroughs Corp., 713 F.2d 700, 702, 218 USPQ 965, 967 (Fed. Cir. 1983), cert. denied, 464 U.S. 1042 (1984).

Freeman, 30 F.3d at 1465, 31 USPQ2d at 1448. Regarding claim interpretation, the Freeman court further explains:

> In the context of claim interpretation, this court has held that

> judicial statements regarding the scope of patent claims are entitled to collateral estoppel effect in a subsequent infringement suit only to the extent that determination of scope was essential to a final judgment on the question of validity or infringement.
>
> A.B. Dick Co., 713 F.2d at 704, 218 USPQ at 968. This court has warned, however, that statements regarding the scope of patent claims made in a former adjudication should be narrowly construed. Id. Additionally, to apply issue preclusion to a claim interpretation issue decided in a prior infringement adjudication, "the interpretation of the claim had to be the reason for the loss [in the prior case] on the issue of infringement." Jackson Jordan, Inc. v. Plasser American Corp., 747 F.2d 1567, 1577, 224 USPQ 1, 8 (Fed. Cir. 1984).

Freeman, 30 F.3d at 1466, 31 USPQ2d at 1449. The district court action at issue here concluded with a dismissal rather than with a judgment on validity or infringement.

In giving claims their broadest reasonable construction, the PTO will "tak[e] into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification." Morris, 127 F.3d at 1054, 44 USPQ2d at 1027. However, we are not permitted to read limitations from the disclosed embodiments or examples into the claims. See American Academy, 367 F.3d at 1369, 70 USPQ2d at 1834:

> We have cautioned against reading limitations into a claim from the preferred embodiment described in the specification, even if it is the only embodiment described, absent clear disclaimer in the specification. See Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 [69 USPQ2d 1801] (Fed. Cir. 2004) ("Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using 'words or expressions of manifest exclusion or restriction.'"); Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 [63 USPQ2d 1374] (Fed. Cir. 2002).

The principal point of contention regarding the scope and meaning of the claims is the

relationship between the rate of prior actual inflation and the resulting inflation adjustments of the deposit and loan accounts. Appellant contends that the claims require a continuous (i.e., nonstepped) relationship between the inflation adjustments and the inflation rates such that different amounts of prior actual inflation will result in different inflation adjustments. For the following reasons, we do not agree.

Claim 1 recites the relationship between the rate of inflation and the resulting inflation adjustment in two different ways, the first being to describe it as a "function" in the steps of "adjusting the amount in each deposit account as a function of a rate of inflation" and "adjusting the amount in the loan account as a [f]unction of a rate of inflation." The second is to call for "receiving repayment of the loan account . . . in a manner where the funds in the loan account obtain a rate of return responsive to a rate of inflation." We will begin by addressing the meaning of the phrase "as a function of a rate of inflation." Neither this phrase nor the term "function" is defined in the specification. Appellant cites Webster's Ninth New Collegiate Dictionary 498 (1987) (Exhibit E to brief), which gives a number of definitions of "function," of which appellant relies on the following: "**5 a**: a mathematical correspondence that assigns exactly one element of one set to each element of the same or another set **b**: a variable (as a quality, trait, or measurement) that depends on and varies with another (height is a ~ of age)." Brief at 10. While the examiner correctly observed that the term "function" is

broad enough to embrace "discrete" functions, which he characterizes as being noncontinuous (Final Action at 29; Answer at 23), he did not cite any supporting authority. Nevertheless, it is evident from the term "step function" that a "function" need not be continuous. See Webster's Third New International Dictionary of the English Language – Unabridged 2237 (copy enclosed) (1971 ed.) (defining "step function" as "a function of a single real variable in mathematics that remains constant throughout each of a series of adjacent intervals with the constant value varying from interval to interval"). A graph of a "step function" appears as Figure 32 in Margaret L. Lial, E. John Hornsby, Jr., and David I. Schneider, College Algebra 236-37 (copy enclosed) (7th ed. 1997). The phrase "as a function of a rate of inflation" employed in the claim therefore does not imply a continuous function or preclude a step function.

Turning now to the step of "receiving repayment of the loan account . . . in a manner where the funds in the loan account obtain a rate of return responsive to a rate of inflation," appellant relies on the following definition of "responsive to the rate of inflation" in the specification: "Responsive to the rate of inflation, as used herein, means directly responsive to a market indicator of prior actual inflation and it is not meant to include the market's expectation of future inflation." '673 Patent at col. 3, ll. 11-14. This definition has several possible interpretations. It can be construed as defining (1) only the phrase "responsive to the rate of inflation"; (2) the phrase "the rate of inflation" (our emphasis), whether or not preceded by "responsive to"; or (3) the phrase "rate of inflation," whether preceded by "a" or "the." We conclude that interpretation (3) is the

broadest reasonable one and will so construe the phrase "rate of inflation" in all of the claims. As for the effect of the use of "directly responsive to" instead of "responsive to" in the definition, the broadest reasonable interpretation of the chosen phraseology is that it was meant to emphasize that the calculations of inflation adjustments must be based on the market indicator data which represents prior actual inflation (e.g., the CPI-U). See The American Heritage Dictionary of the English Language 373 (copy enclosed) (New College Edition, 1975) (hereinafter American Heritage Dictionary) (defining "directly" to mean: "1. In a direct line or manner; straight. . . . 2. Without anyone or anything intervening; immediately."). Nothing in the specification clearly evidences an intent to have the phrase "directly responsive to" construed as requiring a continuous relationship.

Appellant's argument that the foregoing definition from the '673 patent requires us to construe claim 1 as requiring that the inflation adjustments in the deposit and loan accounts be continuous functions of the rate of prior actual inflation is wrong on two counts. First, as explained above, the phrase "directly responsive to" in the definition does not imply a continuous relationship. Second, even assuming it does, the definition does not address the relationship between the inflation adjustments and the rate of inflation. Instead, it addresses the relationship between the inflation adjustments and "a market indicator of prior actual inflation," which need not represent the rate of prior actual inflation. In fact, appellant's disclosed market indicators of prior actual inflation represent inflated price levels, from which the inflation rates and the resulting inflation adjustments are calculated:

> Once the current inflation index (CPIc) is determined, the level of inflation since the last reporting period is estimated by consideration of a preselected inflation index which reflects prior actual inflation. A preferred embodiment of the present invention utilizes the consumer price index CPI-U, for all items. However, any number of indexes may be successfully utilized including, but not limited to CPI-W, Producer Price Index, the Implicit Price Deflator for the Gross National Product, or any component of these price level measures so long as the index reflects

> some measure of past inflation. The level [of] inflation which has occurred since the previous iteration period can be determined by the formula:
>
> $$\frac{CPIc - CPIo}{CPIo}$$
>
> Where CPIo i[s] the inflation index at the time of the last iteration, or the initial index if the present iteration is the first.

'673 Patent at col. 6, ll. 27-46 (emphasis added). "If . . . inflation has occurred during the prior iteration period, the cash outflow or disbursement attributable to the effects of inflation on the account balance is determined by applying the inflation rate to the deposit balance." Id. at col. 6, ll. 58-62. Because the "market indicator of prior actual inflation" need not represent the rate of prior actual inflation, any claim recitations of inflation adjustments "responsive to a rate of inflation" should be understood as requiring no more than that the inflation adjustments be (a) "responsive to" the rate of prior actual inflation and (b) "directly responsive to" (i.e., based on) the data of a market indicator of prior actual inflation, which may represent inflated price levels rather than inflation rates.

Appellant's reliance on the district court's Markman order (Brief at 9) for a narrower definition of the language of claim 1 and the other claims is improper for the reasons given above. Also, because it is improper to read disclosed examples into the claims, American Academy, 367 F.3d at 1369, 70 USPQ2d at 1834, we are unpersuaded by appellant's argument that:

> [i]n each of the examples in the '461 [sic; '673] specification, the inflation component is adjusted for any amount of inflation, and adjusted on a one-for one basis. '461 [sic] specification, col. 10 to col. 26. Accordingly,

> reading the definition and the examples, one of skill would understand that there must be a direct correspondence between the rate of inflation and the amount by which the variable interest component is adjusted.

Brief at 8.

The remaining claim construction issues are addressed below in the discussions of the rejections.

F. The references

The rejections rely on the following references:

4,774,663	Musmanno et al. ("Musmanno")	Sep. 27, 1988 (filed Nov. 21, 1983)

Santosh Mukherjee and Claire Orlans, Indexation in an Inflationary Economy – A Case Study of Finland, Vol. XL, Broadsheet No. 551, PEP – The Social Science Institute, April 1975, at 50-73 and 106-11 ("Mukherjee").[6]

Gloria J. Weiner, Choosing a home equity plan," 84 Restaurant Business 100 (Feb. 10, 1985) ("Weiner").

G. The grounds of rejection

Claims 1-24 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Mukherjee in view of Musmanno.

[6] A better copy of Mukherjee than is currently of record accompanies this decision.

Claims 15 and 25-28[7] stand rejected under § 103(a) as unpatentable over Mukherjee in view of Musmanno and further in view of Weiner.

H. The Mukherjee and Musmanno references

Mukherjee describes the Finnish experience from 1950-69 with inflation-indexing of bank deposit accounts (at 50-56), government- and industry-issued bonds (at 57-63), social security, pensions, and insurance (at 63-66), bank loans (at 67-69), and commercial and property contracts (at 70-73).

The Finnish banking system was divided into three groups: (a) commercial savings; (b) cooperative; and (c) Post Office. Mukherjee at 50, 1st para. "As the rapid inflation of 1950-1 was being checked by the stabilisation programme begun in October 1951, the banks took the decision, in principle, to adjust both their loans and deposits for inflation, on the basis of quarterly inspections of the cost-of-living index." Id. at 50, second para. While "[t]he initial idea had been to apply an extra charge to all loans equal to half the rise in the index, and then to use the funds to compensate all

[7] The rejected claims are incorrectly identified as "claims 15 and 25-25" in the statement of the rejection given at page 20, ¶ 32, of the Final Action and as "claims 15 and 25-27" in the statement of the rejection given at page 18, ¶ 27 of the Answer.

depositors for half their loss due to inflation," id. at 50, last para., that initial idea was not adopted. Instead,

> [w]hat was eventually decided was different and more complex. Not all deposits were index-linked, but only specifically designated accounts carrying certain restrictions on withdrawal. Full inflation proofing was given to these designated accounts. The money needed to make them keep pace with the cost of living was found by imposing an 'index surcharge' on all loans. The amount of the surcharge was usually fixed according to the proportion of the bank's deposits benefiting by index adjustment, so that the bank could just balance its commitments.

Id. at 50-51. The first index-linked bank deposit accounts went into effect in May 1955 and had the following characteristics:

(1) A lump sum of 30,000 markka was required to open the account;

(2) Withdrawals were not permitted during the first year;

(3) The fixed interest paid on the account balance was 1 to 1½ percentage points below that paid for normal deposits; and

(4) They did not share the tax exemption enjoyed by ordinary savings accounts.

Mukherjee at 51, 2d full para.

Furthermore, the indexing feature operated in a stepped, discontinuous manner rather than a continuous manner:

> Once the cost-of-living index (October 1951 = 100) had risen 2 points above 104, the capital was increased by as many as 2 full per cents as the index had risen between deposit and withdrawal. The figures used were the averages (to the nearest whole number) of the index values for the three months before deposit and withdrawal respectively. The system did not work the other way; no reduction would take place if the index fell.

Id. at 51, 3d full para. In January 1957, a choice of two kinds of index-linked accounts became available to the public: in addition to the above taxable accounts, thereafter called 'A' accounts, 'B' accounts were offered which were tax-free (like normal, nonindexed deposit accounts) but gave only 50 per cent index compensation. Id. at 52, 2d full para. The interest rates for the two types of accounts were as follows:

> `A' and 'B' accounts at first carried the same basic rate of interest of 4¾ per cent. In January 1957, when 'B' accounts started, the index clause for 'A' accounts was made more sensitive. Compensation was now to be paid for full 1 per cent changes in the cost-of-living index, instead of full 2 per cents. 'B' accounts received exactly half the index-related compensation rate paid on 'A' accounts.

Id. at 54, 4th full para. The phrase "basic rate of interest" in the foregoing passage refers to a fixed rate of interest. Appellant does not contend otherwise.

'B' accounts suffered a death blow when 'A' accounts, which provided full indexing, were freed from taxation. Mukherjee at 56, 2d para.

Under the heading "Sudden death" at page 56, Mukherjee explains that in March 1968, a stabilization agreement signed by the central trade union and employer organizations abolished the system of index linkage for wages, rents, business contracts, bonds, and bank deposits and that this agreement precluded the index clause from being applied to bank deposits after November 30, 1968. Id. at 56, 4th para.

Banks paid for the inflation-related costs of the indexed deposit accounts in several ways. In the discussion of indexed government and industry bonds (at 57-63), Mukherjee notes that "[b]anks and cooperative credit societies needed the income from index bonds to help pay compensation on indexed deposit accounts." Id. at 59, 1st full

para. In the discussion (at 67-69) of inflation-indexed loans offered by various organizations, including the National Pensions Institute, insurance companies, banks, and the government, Mukherjee explains:

> Banks started to make indexed charges on loans when their indexed deposit business became of appreciable size. In the savings and cooperative bank sector this was in 1956. Similar charging arrangements by the commercial banks did not come into operation until rather more than a year after that. This part of the banking sector had interrupted this business for a year, and initially were able to cover indexed payments to depositors with income from their holdings of government indexed bonds.

> The Post Office Bank usually tied its loans 25 per cent to the cost-of-living index. All other banks operated on the principle of calculating an index surcharge on all loans at rates just sufficient to cover indexed payments to depositors. This meant, for example, that in a year when the index rose by 10 per cent, a bank with one fifth of its deposits in fully index-linked accounts would place an index

> surcharge of 2 per
> cent on all its
> outstanding loans.
> This surcharge
> became payable
> immediately by
> borrowers as
> additional interest;
> the outstanding
> debt was not,
> however, written up.

Id. at 67-68.

Mukherjee fails to disclose the use of a data processor for servicing accounts. The examiner relies on Musmanno for this teaching. Musmanno's Figures 1A, 1B, and 2-4 depict, in flow-chart form,

> a data processing implementation for a brokerage-cash management financial system which provides for automatic investment of free credit cash balances in short term investments which include an insured savings account option; a full range of security brokerage transaction functions; which permits consumer transaction ("charge") card and check charges; and which includes safeguards against abuses., e.g., check kiting.

Musmanno, col. 1, ll. 24-33. Appellant concedes that these flow charts represent operations performed by a data processor. See Brief at 15-16 ("Musmanno . . . teaches

the use of a specific type of data processing to manage a specific type of account, the so-called Cash Management Account. Musmanno teaches specific software for carrying this function out, which is shown, for example, in Figures [1A, 1B], 2, 3 and 4.").

The examiner does not contend that Musmanno discloses using a data processor to service inflation-indexed accounts.

I. The merits of the rejection of claims 1-24 for obviousness over Mukherjee in view of Musmanno

The legal conclusion that a claim is obvious within § 103(a) depends on at least four underlying factual issues: (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the pertinent art; and (4) an evaluation of any relevant secondary considerations. See Graham v. John Deere Co. of Kansas City, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966). As explained in Princeton Biochemicals Inc. v. Beckman Coulter Inc., 411 F.3d 1337, 75 USPQ2d 1051, 1054 (Fed. Cir. 2005), it is also necessary to consider the question of motivation:

> As this court pointed out in Ruiz v. A.B. Chance Co., 357 F.3d 1270, 1275 [69 USPQ2d 1686, 1690] (Fed. Cir. 2004), in making the assessment of differences between the prior art and the claimed subject matter, section 103 specifically requires consideration of the claimed invention "as a whole." . . .
>
> . . . This "as a whole" assessment of the invention requires a showing that an artisan of ordinary skill in the art at the time of invention, confronted by the same problems as the inventor and with no knowledge of the claimed invention, would have selected the various elements from the prior art and combined them in the claimed manner. Id. In other words, section 103 requires some suggestion or motivation, before the

invention itself, to make the new combination. See In re Rouffet, 149 F.3d 1350, 1355-56 [47 USPQ2d 1453, 1456] (Fed. Cir. 1998).

Appellant has not submitted any declarations or affidavits addressing the level of ordinary skill in the art. Therefore, the level of skill in the art must be ascertained from the references themselves. See In re Oelrich, 579 F.2d 86, 91, 198 USPQ 210, 214 (CCPA 1978) ("the PTO usually must evaluate both the scope and content of the prior art and the level of ordinary skill solely on the cold words of the literature"); In re GPAC Inc., 57 F.3d 1573, 1579, 35 USPQ2d 1116, 1121 (Fed. Cir. 1995) (Board did not err in adopting the approach that the level of skill in the art was best determined by the references of record).

In the absence of any indication to the contrary by the examiner, we assume the rejected claims are entitled to the benefit under 35 U.S.C. § 120 of the August 27, 1985, filing date of Application 06/770,493, the earliest of the chain of “continuation” applications that led up to the application which issued as the patent under reexamination.

In claim 1, steps a, b, and e relate to indexed deposit accounts and the remaining steps

relate to indexed loan accounts:

> 1. A method of managing financial accounts comprising:
>
> [a] providing a plurality of deposit accounts with a financial institution;
>
> [b] adjusting the amount in each deposit account as a function of a rate of inflation;
>
> [c] providing at least one loan account with said financial institution using funds deposited with the financial institution;
>
> [d] adjusting the amount in the loan account as a [f]unction of a rate of inflation using an account data processor,

> [e] paying the deposit accounts; and
> [f] receiving repayment of the loan account by said financial institution in a manner where the funds in the loan account obtain a rate of return responsive to a rate of inflation.

For the reasons given above, the term "function," which appears in steps b and d, is broad enough to encompass a step function. As also explained above, the phrase "responsive to the rate of inflation," which appears in step f, does not require that the rate of return on the loan account be a continuous function of the rate of inflation. As will appear, even assuming the claim should be given this narrow construction, it would be satisfied by Mukherjee.

Before comparing the other language of claim 1 to Mukherjee, we will address the examiner's reliance on Musmanno as evidence that "it was notoriously well-known to employ data-processors to manage plural accounts," Final Action at 5, and the examiner's assertion that it therefore would have been obvious to "automate MUKHERERJEE [sic] et al. on a data-processor such as MUSAMANNO [sic] et al. in order to facilitate account management." Id. at 5-6 (underlining omitted). We agree that it would have been obvious in view of Mukherjee and Musmanno, prior to appellant's August 27, 1985, effective filing date, for a bank to offer inflation-indexed deposit and loan accounts and to service the accounts with a data processor in order to obtain the speed and accuracy offered by automated (as opposed to manual) processing. Appellant's argument that Musmanno's software is "totally inapplicable to the issue at hand: the management of indexed accounts," Brief at 16, is unconvincing because the

examiner is not proposing to use the same software that is represented by Musmanno's flow charts to service Mukherjee's inflation-indexed accounts. "Claims may be obvious in view of a combination of references, even if the features of one reference cannot be substituted physically into the structure of the other reference." Orthopedic Equip. Co, Inc. v. United States, 702 F.2d 1005, 1013, 217 USPQ 193, 200 (Fed. Cir. 1983) (citing In re Anderson, 391 F.2d 953, 958, 157 USPQ 277, 281 (CCPA 1968)). Instead, what matters in the § 103 nonobviousness determination is whether a person of ordinary skill in the art, having all of the teachings of the references before him, is able to produce the structure defined by the claim. Orthopedic Equip., 702 F.2d at 1013, 217 USPQ2d at 200 (citing In re Twomey, 218 F.2d 593, 596, 104 USPQ 273, 275 (CCPA 1955)). On this point, appellant argues:

> The complexity of the data processing required for carrying out the claimed invention is evident in the four examples of data processing systems described in the subject patent specification (see Figures 2-5), along with the numerous and varied permutations of these four systems that they enable and that would be evident to those of skill in light thereof, which provide those of skill with the basic understanding to . . . necessary to overcome the problems that faced the Finnish system and that apparently led to the "Sudden Death" of that system.

Brief at 17. This argument fails for several reasons, the first of which is that, as noted above, Mukherjee attributes the "[s]udden death" of the Finnish system of providing inflation-adjusted accounts to the 1968 trade agreement which abolished inflation indexing. Mukherjee at 56, 4th para. Second, appellant has not explained, and it is not apparent from an examination of appellant's Figures 2-5, why appellant believes a

programmer[8] having ordinary skill in the art just prior to appellant's effective filing date would have been unable to design suitable data processing software for implementing inflation-adjusted deposit and loan accounts of the type disclosed by Mukherjee.

Comparing claim 1 to the inflation-linked accounts thus implemented, the examiner correctly reads step a ("providing a plurality of deposit accounts with a financial institution") and step b ("adjusting the amount in each deposit account as a function of a rate of inflation") on inflation-indexed deposit accounts like Mukherjee's 'A' and 'B' bank deposit accounts, discussed at pages 51-56. Final Action at 4, ¶ 8. As explained above, the claim language is broad enough to read on these accounts even though the inflation adjustments are step functions of the rates of prior actual inflation. We note that these two steps alternatively read on the initially proposed accounts that were not adopted, which are described at page 50, last paragraph ("The initial idea had been to apply an extra charge to all loans equal to half the rise in the index, and then to

[8] Where an invention involves two technologies (here, computer programming and financial systems), the person having ordinary skill is presumed to have ordinary skill in both technologies. In re Brown, 477 F.2d 946, 950-51, 177 USPQ 691, 694 (CCPA 1973).

use the funds to compensate all depositors for half their loss due to inflation."). The fact that the initially proposed accounts were never adopted does not detract from Mukherjee's status as a publication disclosing the desirability of such accounts. See In re Sivaramakrishnan, 673 F.2d 1383, 1384-85, 213 USPQ 441, 442 (CCPA 1982):

> That Gable may not have actually reduced the specific mixture of resin and cadmium salt to practice has no bearing on whether the mixture is "described in a printed publication" under §102(b). See e.g., Mannix Co. v. Healey, 341 F.2d 1009, 1010 n.1, 144 USPQ 611, 612 n.1 (CA 5 1965); Siegel v. Watson, 267 F.2d 621, 624, 121 USPQ 119, 121 (CADC 1959); Ritter v. Rohm & Haas Co., 271 F. Supp. 313, 341, 154 USPQ 518, 542 (S.D.N.Y. 1967). Cf. In re Deters, 515 F.2d 1152, 1155, 185 USPQ 644, 647 (CCPA 1975) (that a reference is a "paper patent" is irrelevant to its value as evidence of level of skill in the art); In re Blake, 53 CCPA 720, 724, 352 F.2d 309, 312, 147 USPQ 289, 291 (1965) (patent statute does not require commercial use of subject matter of a prior-art disclosure for that disclosure to qualify as a reference).

Therefore, assuming appellant is correct to construe claim 1 as requiring a continuous relationship between inflation adjustments of the deposit accounts and the inflation rate, the claim would read on the initially proposed indexed deposit accounts.

The examiner also correctly reads step e ("paying the deposit accounts") on Mukerhjee's

indexed deposit accounts, citing Mukherjee's mention (at 51, 3d para.) of withdrawals from those accounts. Final Action at 5.

Turning now to the "loan" provisions, step c ("providing at least one loan account with said financial institution using funds deposited with the financial institution") clearly reads on Mukherjee's disclosure that the same savings banks which offered indexed deposits also offered indexed loans. Mukherjee at 50, last para. to 51, 1st para.; at 67, last para. to 68, 1st full para.

Regarding step d ("adjusting the amount in the loan account as a [f]unction of a rate of inflation using an account data processor"), the examiner is incorrect to rely on "page 51 Paragraph 2 et seq." and on "page 50, col. 2, Paragraph 3 [sic; page 51, paragraph 3]," Final Action at 4-5, ¶ 8, because those paragraphs discuss indexed deposit accounts rather than indexed loan accounts. However, that step can be read on the parts of Mukherjee on which the examiner correctly reads step f ("receiving repayment of the loan account by said financial institution in a manner where the funds in the loan account obtain a rate of return responsive to a rate of inflation"). Those parts are Mukherjee's discussion of indexed loans at (a) page 50, last paragraph ("The initial idea had been to apply an extra charge to all loans equal to half the rise in the index, and then to use the funds to compensate all depositors for half their loss due to inflation"); and (b) page 68, first full paragraph ("The Post Office Bank usually tied its

loans 25 per cent to the cost-of-living index.”). Final Action at 5. Both of these techniques satisfy steps d and step f even if the claim is construed to require that the loan amount be a continuous (i.e., nonstepped) function of the inflation rate. Appellant’s contention (Reply brief at 6) that the 25 per cent relationship employed by the Post Office Bank is not a one-to-one relationship appears to be an unsupported attempt to define “directly responsive” even more narrowly to mean “responsive in the same degree.” Claim 1, if narrowly construed to require that the loan amount be a continuous function of the inflation rate, also reads on the indexing technique employed by the banks other than the Post Office Bank:

> All other banks operated on the principle of calculating an index surcharge on all loans at rates just sufficient to cover indexed payments to depositors. This meant, for example, that in a year when the index rose by 10 per cent, a bank with one fifth of its deposits in fully index-linked accounts would place an index surcharge of 2 per cent on all its outstanding loans. This surcharge became payable immediately by borrowers as additional interest; the outstanding debt was not, however, written up.

Mukherjee at 68, 2d para. The fact that the size of the index surcharge on each loan account is determined in part by the percentage of deposits held in indexed accounts does not alter the fact that the index surcharge is a function (more particularly, a continuous function) of the inflation rate.

Appellant also faults Mukherjee for failing to disclose "a loan account and a deposit account, where both are directly responsive to a rate of inflation – this is the so-called 'fully hedged' program where the inflation-based cash flows in[to] and out of the accounts mirror one another to achieve an inflation hedge for the institution." Brief at 14. This argument is unconvincing because (1) the claim does not require that the "out" cash flow due to indexing of the deposit accounts be equal the "into" cash flow due to indexing of the loan accounts and (2) in any event, Mukherjee describes equalizing these cash flows when he explains (a) that "[t]he amount of the surcharge [on all loans] was usually fixed according to the proportion of the bank's deposits benefitting by index adjustment, so that the bank could just balance its commitments," Mukherjee at 50, last para., and (b) that "The Post Office Bank usually tied its loans 25 per cent to the cost-of-living index. All other banks operated on the principle of calculating an index surcharge on all loans at rates just sufficient to cover indexed payments to depositors." Id. at 68, 1st full para.

For the foregoing reasons, we conclude that claim 1 reads on Mukherjee as modified in view of Musmanno and are affirming the rejection of that claim.

The rejection of claims 2 and 3, which are dependent on claim 1, rejected over the same prior art as claim 1, and not separately argued, is affirmed for the same reasons as the rejection of claim 1. 37 CFR § 1.192(c) (2001).

Dependent claim 4 calls for the loan account to have a principal loan component and a loan accrual component. Claim 5, dependent on claim 4, calls for "determining

the amount in the loan accrual component as a function of the rate of inflation." While the bank loans described at pages 67 and 68 of Mukherjee are not described as having principal and accrual (i.e., interest) components, we hereby take official notice that it was common practice to divide a loan into a principal component and at least one accrual component representing the fixed interest component, which is enough to satisfy claim 4. See In re Ahlert, 424 F.2d 1088, 1091, 165 USPQ 418, 420-21 (CCPA 1970) (PTO tribunals, where it is found necessary, may take notice of facts beyond the record which, while not generally notorious, are capable of such instant and unquestionable demonstration as to defy dispute). In any event, appellant does not deny that it was common practice to divide a loan into a principal component and at least one accrual (i.e., interest) component. Instead, appellant gives two reasons why Mukherjee's loans did not have an accrual component which is a function of the rate of inflation, as required by claim 5. Brief at 18. The first reason, which is that the loan surcharges are not "directly related to the rate of inflation," fails for the reasons already addressed. The second reason is that the surcharges were not a part of the loan account because they were "payable immediately by borrowers as additional interest; the outstanding debt was not, however, written up." Mukherjee at 68, 2d para. This argument is unconvincing because the phrase "not . . . written up" does not mean that the bank failed to keep a record of the loan surcharges; we understand it to mean that the initial loan agreement was not altered, replaced, or supplemented by another written loan agreement. Moreover, we hereby take official notice under Ahlert that it was

routine bank practice for the bank to keep a record of the amounts, due dates, and payment dates of all activities affecting loan and deposit accounts. The record of loan surcharges corresponds to the inflation-determined accrual component recited in claim 5.

For the foregoing reasons, the rejection of claims 4 and 5 is affirmed.

The rejection of claim 6, which is dependent on claim 4, rejected over the same prior art as claim 4, and not separately argued, is affirmed for the same reasons as the rejection of claim 4. 37 CFR § 1.192(c) (2001).

Claim 7, which depends on claim 1, specifies that "said deposit account is payable on demand to each depositor." The examiner addresses this claim in two different ways. One is to argue that Mukherjee's 'A' and 'B' accounts were "on demand" accounts despite the one-year restriction on withdrawals. Mukherjee at 51, 2d full para. We agree with appellants (Brief at 19) that an "on demand" account can have no restrictions on withdrawals. See American Heritage Dictionary 350 (copy enclosed) (defining "demand deposit" to mean "[a] bank deposit that can be withdrawn by the depositor immediately and without advance notice."). The examiner alternatively argued that it would have been obvious to offer the indexed deposit accounts as "on demand" accounts in order to attract more deposits. Final Action at 9. Appellant has not responded to this position, which strikes us as a reasonable one. The rejection of claim 7 is therefore affirmed.

The rejection of claim 8, which is dependent on claim 1, rejected over the same prior art as claim 1, and not separately argued, is also affirmed. 37 CFR § 1.192(c) (2001).

Independent claim 9 reads as follows:

> 9. A method for an institution to manage at least part of a program to provide a depositor of finds with a rate of return on said funds variable with a rate of inflation, comprising:
> providing a deposit account by the institution for receiving said funds from said depositor;
> allocating at least a portion of said funds for obtaining an asset whose rate of return adjusts with inflation;
> using said allocated funds to obtain an asset whose return adjusts with inflation and is determined using a dataprocesssor [sic], said asset comprising a financial instrument having an obligated rate of return indexed to a rate of inflation; and
> paying said depositor a rate of return on funds relived [9] based on a rate of inflation.

This claim does not employ either of claim 1's phrases "as a function of a rate of inflation" and "responsive to a rate of inflation," which appellant has unsuccessfully argued require a continuous relationship between the inflation adjustments and the inflation rate. Appellant has not explained, nor is it apparent to us, why the language

[9] This word is "received" in claim 42 (renumbered on issuance as patent claim 9) in the "Supplemental Response" faxed to the USPTO on September 17, 1999, in Application 09/184,752.

which appears in claim 9 requires such a relationship. The sole effect on claim 9 of the above-discussed definition given at column 3, lines 11-14 is that the phrase "rate of inflation" is being construed to mean "rate of prior actual inflation."

Reading claim 9 onto inflation-adjusted accounts like those disclosed in Mukherjee as implemented in view of Musmanno on a data processor, the steps of "providing a deposit account by the institution for receiving said funds from said depositor" and "paying said depositor a rate of return on funds relived [sic] based on a rate of inflation" read on Mukherjee's 'A' and 'B' deposit accounts as well as on the initially proposed accounts.

The examiner reads the steps of "allocating at least a portion of said funds for obtaining an asset whose rate of return adjusts with inflation" and "using said allocated funds to obtain an asset . . . comprising a financial instrument having an obligated rate of return indexed to a rate of inflation" on Mukherjee's discussion (at 61-62) of bonds issued by mortgage banks and industry. Final Action at 10, ¶ 16. These bonds were tied to the wholesale price index or its subindex or the export price index. Mukherjee at 61. Mukherjee explains that "[b]anks and cooperative credit societies needed the income from index bonds to help pay compensation on indexed deposit accounts." Id. at 59, 1st full para. While Mukherjee does not state that the money used by a bank to purchase the indexed bonds came from the bank's indexed deposit accounts, such a financing arrangement would have been obvious in view of the disclosed relationship

between the indexed deposit and loan accounts. The rejection of claim 9 is therefore affirmed.

In addition, we note that rather than responding to the examiner's reading of the claimed "asset" on the indexed bonds issued by mortgage banks and industry, appellant's arguments incorrectly assume the examiner is reading the claimed "asset" on the indexed loan accounts described at pages 50, 51, and 67-69 of Mukherjee. Brief at 19-21. We have considered appellant's arguments on this question and conclude that the claimed "asset" alternatively reads on those indexed loan accounts. Appellant does not deny that a loan agreement constitutes an asset comprising a financial instrument having an obligated rate of return, as required by the claim. Instead, appellant argues the rates of return on Mukerhjee's indexed loans are not "indexed to a rate of inflation," which argument is unconvincing for the reasons given above in the discussion of claim 1's requirement that the rate of return on the loan accounts be responsive to a rate of inflation. The rejection of claim 9 is therefore additionally being affirmed on this alternative ground.

Claim 10 depends on claim 9 and recites the additional step of "periodically accounting for a portion of said rate of return of said financial instrument to said allocated funds." The examiner contends that periodic accounting would have been inherent "since all banks MUST have performed accounting to satisfy regulators." Final Action at 12; Answer at 11. Appellant contends that "any inherency argument is misplaced and must be supported by some evidence if it is to be maintained." Brief at

21. We do not agree with appellant. That U.S. banks were and are required to provide a periodic accounting of their accounts to regulators is appropriate subject matter for official notice under Ahlert. Furthermore, even apart from regulatory requirements, a bank would inherently have to employ periodic accounting in order to service its accounts and to track its own investments. Appellant asserts that it "will not concede that the Answer's position [that periodic accounting was required by regulators] is correct – it may well have been that account holders received information about their accounts 'on demand' only when they requested the information, and it may well have been that they were not periodically notified by the financial institution." Reply brief at 8. This argument incorrectly construes the claim as requiring that the results of the recited periodic accounting be reported to the account holders.

The rejection of claim 10 is therefore affirmed.

Claim 11, which depends on claim 10, specifies that the "financial instrument ha[s] a principal component and an accrual component, whereby said retiring step includes the substeps of redeeming the principal component and the accrual component." As the patentability of this claim, which is rejected over the same prior art as claim 10, is not separately argued, its rejection is affirmed for the same reasons as the rejection of claim 10. 37 CFR § 1.192(c) (2001).

Claim 12 depends on claim 11 and specifies that "the principal component is periodically adjusted based on a rate of inflation," while claim 13, which also depends on claim 11, specifies that "the accrual component is periodically adjusted based on a rate

of inflation." Regarding claim 12 (adjusting the principal component based on inflation), the examiner cites two passages in Mukherjee. Final Action at 12-13, ¶ 19. One passage is Mukherjee's statement that "capital was increased by as many as 2 full per cents as the index had risen." Because this statement refers to indexed deposit accounts rather than indexed loans or bonds, this passage is less pertinent than the other passage on which the examiner relies, which explains that principal component of Karelian indemnity bonds was adjusted in response to inflation: "The method chosen was to increase the principal by 10 per cent for every 10 per cent rise in the domestic wholesale price index." Id. at 57, 3d para. Although not relied on by the examiner, Mukherjee also describes indexed government bonds whose amortization (i.e., principal) component and interest (i.e., accrual) component are adjusted in response to inflation, thus satisfying claims 12 and 13:

> However, the 5 per cent bond of May 1955, issued for public subscription, was the only government bond (other than those associated with the Karelian indemnity issues) to carry a full index clause, in the sense that rises in the index were to cause matched rises (per cent for per cent) in amortisation and interest payments. . . . After the full index link of 1955, this form of inflation-proofing was abandoned in favour of one less attractive to the buyer but safer for the seller. The '50 per cent clause' meant that a rise of 2 per cent in the index brought only a 1 per cent rise in amortisation and interest payments.

Mukherjee at 59-60. Claim 13 (adjusting the accrual component based on inflation) additionally reads on the loan surcharges described at pages 50 and 51 of Mukherjee. In view of the above teachings, appellant is incorrect to argue that "[t]here is no evidence to address the question of whether Mukherjee teaches adjusting the principal

component or adjusting the accrual component." Brief at 22. Furthermore, appellant's '673 patent admits that it was known in the art to link either the principal component or the accrual component of an indexed bond to inflation. Specifically, under the heading "2. Description of the Prior Art," the patent describes a first indexed mortgage loan instrument in which the "mortgage balance" (i.e., principal component) is linked to inflation (col. 1, l. 63 to col. 2, l. 66) and a second indexed mortgage loan instrument in which a variable interest component is linked to inflation. Id. at col. 2, ll. 5-11. We agree with the examiner that it would have been obvious in view of Mukherjee considered in view of Musmanno for a bank to offset the costs of indexed deposit accounts either by investing in indexed bonds or by offering indexed loans, with the principal component or the interest component of the bonds or loans being linked to inflation. The rejection of claims 12 and 13 is therefore affirmed.

The rejection of claims 14-21, which are dependent on claims addressed above, rejected over the same prior art as those claims, and not separately argued, is also affirmed.

Independent claim 22, which reads as follows, differs from claim 9 by identifying the indexed asset as a mortgage loan secured by real estate:

> 22. A method of an institution to manage at least part of a program to provide a depositor of funds a rate of return on said funds variable with a rate of inflation, comprising:
>
> providing a deposit account by the institution for receiving said funds from said depositor;
>
> allocating at least a portion of said funds for obtaining an asset whose rate of return adjusts with inflation, said adjustments being determined using a data processor;

> using said allocated funds to obtain said asset whose return adjusts with inflation, said asset comprising a mortgage secured by real estate; and
> paying said depositor a rate of return on funds received based on a rate of inflation.

The term "mortgage," which is not defined in the specification, has the following meanings: "1. A temporary and conditional pledge of property to a creditor as security against a debt. 2. A contract or deed specifying the terms of such a pledge. 3. The claim that the mortgagee or creditor has upon property pledged in this manner." American Heritage Dictionary 855 (copy enclosed). The claim thus reads on a bank which uses the deposits from indexed deposit accounts to provide indexed loans to borrowers who pledge real estate as security for those loans, as evidenced by a mortgage. We agree with appellant that the examiner is incorrect to read the recited "asset" on indexed bonds issued by mortgage banks, Final Action at 17-18, ¶ 29), because the indexed bonds are not indexed mortgages. Brief at 22-23. However, in view of Mukherjee's teaching of using indexed loans to help pay for indexed deposits (e.g., Mukherjee at 5-51), it would have been obvious for a bank to offer indexed mortgage loans as one way to help pay for indexed deposit accounts.

The rejection of claim 22 is therefore affirmed.

The rejection of claims 23 and 24, which are dependent on claim 22, rejected over the same prior art as claim 22, and not separately argued, is also affirmed.

J. The merits of the rejection of claims 15 and 25-28 for obviousness over Mukherjee in view of Musmanno and further in view of Weiner

Claim 15 depends on claim 9 through claim 14. As noted above, the rejection of claims 14 and 15 based on Mukherjee in view of Musmanno was affirmed along with the rejection of claim 9 because claims 14 and 15 were not separately argued. The rejection of claim 15 based on Mukherjee in view of Musmanno and further in view of Weiner is not separately argued and is therefore also affirmed.

Independent claim 25 reads as follows:

> 25. A method for an institution to manage at least pat [sic] of a program to provide a depositor of funds a rate of return on said funds comprising:
> providing a deposit account by the institution for receiving said funds from said depositor;
> paying said depositor a rate of return on funds received based on a rate of inflation;
> allocating at least a portion of said funds for obtaining an asset whose rate of return adjusts with inflation;
> using said allocated funds to obtain said asset whose value adjusts with inflation, said asset comprising a financial instrument having a principal component periodically adjusted for inflation using a data processor and an accrual component including an interest rate fixed for a term;
> said financial instrument
> paying interest payments based on the inflation adjusted principal component; [and]
> paying the inflation-adjusted principal component at the end of the term.

This claims differs from the previously discussed claims by calling for paying the entire inflation-adjusted principal component at the end of the term, which the examiner refers to as a "balloon payment" of principal. Final Action at 20-21, ¶ 33. As evidence that balloon payments of principal were known, the examiner cites Weiner's description of various payment options for home equity loans. We assume the examiner is relying on Weiner's explanation that "[t]he most flexible plan calls for monthly interest payments,

with no minimum payment of principle [sic] required. In these plans, the principle is usually due in five to ten years." Weiner at 2d page, under the heading "Scheduling repayment." We agree with the examiner that it would have been obvious for a bank to combine Weiner's teaching of permitting a balloon repayment of principal with Mukherjee's teaching of indexing the principal loan component to inflation in order to accommodate the needs or preferences of borrowers. Final Action at 20-21, ¶ 33. Appellant's complaint that Weiner is not concerned with indexed loans, Brief at 24, is unconvincing because

nonobviousness cannot be established by attacking references individually where the rejection is based upon the combined teachings of a plurality of references. In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). We are therefore affirming the rejection of claim 25.

The rejection of claims 26-28, which are dependent on claim 25, rejected over the same prior art as claim 25, and not separately argued, is also affirmed.

K. Summary

Both of the rejections have been affirmed with respect to all of the rejected claims.

L. Extensions of time

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a). See 37 CFR §§ 41.50(f) and 41.52(b).

AFFIRMED

JOHN C. MARTIN Administrative Patent Judge	)	
HOWARD B. BLANKENSHIP Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
ALLEN R. MacDONALD Administrative Patent Judge	)	

JCM/jcm

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Enclosures:

(a) The American Heritage Dictionary of the English Language 350, 373, 855 (New College Edition, 1975).

(b) Santosh Mukherjee and Claire Orlans, Indexation in an Inflationary Economy – A Case Study of Finland, Vol. XL, Broadsheet No. 551, PEP The Social Science Institute, April 1975, at 50-73 and 106-11.

(c) Margaret L. Lial, E. John Hornsby, Jr., and David I. Schneider, College Algebra 236-37 (7th ed. 1997).

(d) Webster's Third New International Dictionary of the English Language – Unabridged 2237 (1971 ed.).