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IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

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AUG. 21, 2007

MICHAEL W. DOBBINS
CLERK, U.S. DISTRICT COURT

NIRO, SCAVONE, HALLER & NIRO,)
a professional corporation)
)

Plaintiff,

v.

PHILIP S. JACKSON and)
PMJ FAMILY LIMITED PARTNERSHIP,)
)
Defendants.)

07CV 4729
JUDGE ANDERSEN
MAGISTRATE JUDGE COLE

**COMPLAINT FOR DECLARATORY JUDGMENT
OF PATENT NON-INFRINGEMENT, INVALIDITY AND UNENFORCEABILITY**

Plaintiff Niro, Scavone, Haller & Niro complains of defendants Philip S. Jackson and PMJ Family Limited Partnership, as follows:

1. This is a claim for a declaratory judgment of non-infringement, invalidity and unenforceability of United States Patent No. 4,596,900 entitled "Phone-Line-Linked, Tone-Operated Control Device" ("the '900 Patent," Exhibit A). This Declaratory Judgment Complaint arises under the declaratory judgment statute, 28 U.S.C. §2201, and under the patent laws of the United States, Title 35 of the United States Code. This Court has jurisdiction over the subject matter of this Complaint under 28 U.S.C. §1338(a) and/or 28 U.S.C. §1331, along with 28 U.S.C. §2201, as set forth below.

PARTIES

2. Plaintiff Niro, Scavone, Haller & Niro is an Illinois professional corporation practicing intellectual property law, with its office at 181 West Madison Street, Chicago, Illinois 60602.

3. Defendant Philip S. Jackson ("Jackson") is an individual who resides in Cook County, Illinois. Defendant PMJ Family Limited Partnership ("PMJ Ltd.") is an Illinois limited partnership which is the owner of the '900 patent, along with Mr. Jackson.

VENUE AND PERSONAL JURISDICTION

4. Venue is proper in this judicial district under 28 U.S.C. §1391(b) and 28 U.S.C. §1400(b). Defendant Jackson is an Illinois citizen who resides in this judicial district. Defendant PMJ Ltd. is an Illinois limited partnership. Further, a substantial part of the events giving rise to this declaratory judgment claim occurred in Cook County, Illinois, in this judicial district.

SUBJECT MATTER JURISDICTION

5. This case is a consequence of a legal malpractice complaint filed by defendants Jackson and PMJ Ltd. in the Circuit Court of Cook County, Illinois, and specifically relates to Count IV of defendants Jackson and PMJ Family Limited Partnership in their Second Amended Complaint in that lawsuit (Exhibit B). In that complaint, Jackson and PMJ accuse NSHN of legal malpractice in allegedly mishandling a claim of infringement of the '900 patent.

6. In ¶ 33 of Count IV of their Illinois state malpractice Second Amended Complaint, defendants Jackson and PMJ Ltd. pleaded that various acts of NSHN "preclude[d] plaintiffs [Jackson and PMJ Ltd.] from recovery of all sums to which they were entitled **for infringement of their patent by customers of Glenayre** [a manufacturer of telephone switching equipment]" (Exhibit B, ¶ 33; emphasis added). Defendants Jackson and PMJ Ltd. further pleaded that NSHN acted negligently by pursuing a claim for patent

infringement damages against Glenayre, instead of seeking an injunction and/or a declaratory judgment of infringement against Glenayre. Id. According to the Second Amended Complaint of Jackson and PMJ Ltd., but for the acts of NSHN they would have been able to pursue patent infringement claims against Glenayre's customers, thus realizing "the true value of their claims which were primarily against the Glenayre customers." Id. ¶¶ 43-44. Defendants Jackson and PMJ Ltd. also pleaded that NSHN failed to "supervise" a patent infringement damages witness in that lawsuit, id. ¶¶ 36-37; "negligently" failed to take an interlocutory appeal of a ruling concerning patent infringement damage claims against Glenayre customers, id. ¶¶ 34-35 and "negligently" advised Jackson to accept a remittitur of patent infringement damages, id. ¶¶ 38-43. (Counts I and V of the Second Amended Complaint have been dismissed by the state court on statute of limitations grounds; the state court also has ruled that Counts II and III are subject to arbitration, which has not been completed.)

7. Count IV of the Second Amended Complaint of Jackson and PMJ Ltd. therefore depends entirely upon proof of patent infringement by Glenayre's customers and proof that the '900 patent is valid and enforceable – that is, that it was not invalidated by prior art, nor procured by inequitable conduct on the part of Jackson. That proof is essential to the "case within a case" which Jackson and PMJ Ltd. must prove in their state court malpractice lawsuit against NSHN. Therefore, Jackson's and PMJ Ltd.'s right to relief in their malpractice lawsuit necessarily depends on the resolution of one or more substantial questions of federal patent law, in that patent law is a necessary element of the "well-pleaded claim" of Count IV of the Second Amended Complaint of Jackson and PMJ Ltd.

8. The state court lawsuit of Jackson and PMJ Ltd. against NSHN established that there exists a “case or controversy” between NSHN on the one hand, and Jackson and PMJ Ltd. on the other with respect to infringement, validity and enforceability of the ‘900 patent.

9. Accordingly, there is “federal question” subject matter jurisdiction under 28 U.S.C. §1331 and/or 28 U.S.C. §1338(a) over this declaratory judgment action filed pursuant to 28 U.S.C. §2201.

FACTS COMMON TO ALL CLAIMS FOR RELIEF

Jackson Obtains His “Phone-Line-Linked Control Device” Patent

10. More than twenty years ago, while working for the Chicago-based publisher R.R. Donnelly, Jackson filed an application for a patent on what he called a “phone-line-linked, tone-operated control device” (U.S. Patent No. 4,596,900, Exhibit A). R.R. Donnelly was not interested in Jackson’s idea (Glenayre v. Jackson, Case No. 02 C 0256, N.D. Ill., Trial Tr. 124); hence, it permitted him to apply for a patent on his own. Jackson hired the Chicago patent firm of Trexler, Bushnell to prepare a patent application, and the resulting ‘900 patent is the only U.S. patent Jackson ever obtained. It expired on June 24, 2003, seventeen years after the issue date of the patent.

Jackson Admits His Patent Has Nothing To Do With Voice Mail Systems

11. The ‘900 patent disclosed a “remote control device” that could receive “‘on’ and ‘off’ control signals in response to ... selected [touch-tone] sequences” transmitted by the user over a telephone line to a decoder circuit (Exhibit A, ‘900 patent, col. 6, lines 38-

41). Jackson testified at trial the "critical" feature of his patent was an "access limiting circuit" for "break-in prevention" (Glenayre Trial Tr. pp. 110-11).

If it has the right access code, then you can do the rest of this. You can control instruments and so forth. If you don't have the right access code, you can't.

(Glenayre Trial Tr. p. 110).

Q To what extent did you feel security was important -- this break-in prevention stuff? Why was that important, if it was?

A **Well, it was critical** because, you know, once people can get into your -- you know, a place where this device is, they could do anything if they didn't have security.

(Glenayre Trial Tr. p. 138) (emphasis added). Upon recognition of the correct access code, Jackson's patent disclosed that his patented device could then be used to control "various devices in the home such as heating and air conditioning systems, lighting, appliances and the like" (Exhibit A, '900 patent, col. 1, lines 17-19).

12. Jackson admitted that his '900 patent had nothing to do with voice mail or voice processing or telephone answering machines:

Q Okay. Now, your patent doesn't say anything about voice mail, does it?

A No, it doesn't.

Q Your patent doesn't say anything about answering machines, does it?

A No, it doesn't.

(Glenayre Trial Tr. p. 177).

Q Now, did you invent the first voice mail system that's phone-line-linked?

A No.

* * * *

Q Did you invent the first voice mail system that requires touch tones to operate it?

A I don't think I invented a voice mail system.

Q Well, did you use, did you invent the first voice mail system that uses touch tones to operate it?

A No.

(Glenayre Trial Tr. pp. 174-75) (emphasis added).

13. Jackson also admitted that he did not invent the "access limiting circuit" for voice mail which reads a password and which he had described as the "critical feature" of his invention either:

Q Now, did you invent the first voice mail system that is phone-line-linked that you have to use touch tones to operate and that checks for a password?

A But that it would be a voice mail system too? No.

(Glenayre Trial Tr. p. 175) (emphasis added). Thus, by his own admission Jackson's '900 patent disclosed nothing about voice mail or telephone answering machines.

**Jackson Tries Sporadically For Ten Years
On His Own But Fails To License Or Sell The '900 Patent**

14. The '900 patent issued on June 24, 1986. During the following ten years Jackson made only two attempts on his own to interest potential customers in his patent. He showed it to "a rich uncle" while on vacation in the hope that "he'd get interested and maybe help fund a business or something like that," but the uncle's response was decidedly lukewarm: he "was just kind of quiet about it. He didn't seem mad" (Glenayre Trial Tr. p. 136). And in 1988, Jackson showed his patent to Ameritech Development

Corporation and exhibited it at the Consumer Electronics Show in Chicago (Glenayre Trial Tr. p. 137), again without any success. No one seemed interested in his "gray box" prototype device, which admittedly did not include the "access limiting circuit" that he later touted as the "critical feature" of his invention (Glenayre Trial Tr. pp. 132, 178). As of 1986, ten years after his patent issued, Jackson had gotten precisely nowhere in licensing, selling or enforcing his patent.

**Jackson Eventually Retains The Trexler Firm,
Which Carries His Patent Through Re-Examination**

15. Tiring of his inability to make anything of his only patent without professional help, in 1996, Jackson went back to the Trexler firm and retained Raiford Blackstone to try to license the '099 patent. Between 1996 and 2001, Mr. Blackstone took the '099 patent through re-examination in the PTO, obtaining additional patent claims in the process. The Trexler firm also settled lawsuits filed by Jackson against Matsushita Electric Industrial Company and Sony.

16. It was the Trexler firm that first suggested to Jackson that it might be possible to read the claims of the '900 patent onto voice mail systems and telephone answering machines, even though the patent admittedly did not even mention voice mail or telephone answering machines (Glenayre Trial Tr. pp. 174-75, 177). Jackson at first resisted this reading of his patent claims, insisting he had actually invented only a remote control for a household appliance such as a coffee pot, which is what the specification of the '900 patent disclosed. Yet, in the end, Jackson began asserting his '900 patent against voice mail and answering machines.

**Dissatisfied With The Trexler Firm's Rate Of
Progress, In 2001 Jackson Hires Niro, Scavone, Haller & Niro**

17. By early 2001, Jackson had become dissatisfied with the Trexler firm's progress and was shopping for other counsel. On February 16, 2001, NSHN agreed to represent him. In the next three years, NSHN finished the settlements left uncompleted by the Trexler firm and obtained a total of \$12.1 million in recoveries for Jackson through May 2004. Eventually, NSHN also won the Glenayre v. Jackson trial in Civil Action No. 02 C 0256 (N.D. Ill.) (the only trial ever conducted on Jackson's '099 patent), obtaining a \$12 million jury verdict which the District Court subsequently remitted to \$2.65 million.

NSHN Files Lawsuits Against Several Glenayre Customers

18. NSHN filed patent infringement lawsuits on Jackson's behalf in late 2001 against a number of defendants, but not against Glenayre. Among the defendants in the lawsuits NSHN filed in late 2001, however, were two purchasers of Glenayre voicemail systems: TDS Metrocom and Pac-West Telecomm, Inc.

**Glenayre Files A Declaratory Judgment Action And Convinces
The District Court To Enjoin All Lawsuits Against Glenayre Customers**

19. On January 10, 2002, Glenayre filed a declaratory judgment complaint in the Northern District of Illinois against Jackson. The Glenayre complaint in Case No. 02 C 0256 did not attack the validity or enforceability of Jackson's patent; instead, it sought only a declaration of non-infringement.

20. Faced with Glenayre's preemptive strike declaratory judgment lawsuit, on February 4, 2002, NSHN first sought to dismiss Glenayre's lawsuit on the ground that Glenayre had no reasonable apprehension of being sued. The District Court denied that

motion on April 2, 2002. Jackson, therefore, was faced with the choice of either filing a counterclaim for patent infringement or foregoing any prospect of relief, monetary or otherwise, from Glenayre's infringement. This was not much of a choice, and on April 15, 2002, Jackson sued Glenayre for patent infringement – specifically, for contributory infringement and for inducing its customers to infringe his patent. Jackson's counterclaim also named three additional purchasers of Glenayre voicemail systems (Metrocall, Inc.; Arch Wireless, Inc. and Primeco Personal Communications, L.P.) as patent infringement counterclaim defendants.

21. Glenayre next asked the District Court to enjoin Jackson from proceeding with any lawsuits against any Glenayre customers. The District Court entered two orders prohibiting Jackson from continuing with any lawsuits against any Glenayre customers. NSHN then noticed an interlocutory appeal from these Orders to the Federal Circuit on Jackson's behalf.

The District Court *Sua Sponte* Stays Jackson's Contributory/Induced Infringement Counterclaim Against Glenayre As Well, But Permits Jackson To File A Direct Infringement Counterclaim

22. On September 30, 2002, the District Court *sua sponte* stayed Jackson's contributory/induced infringement counterclaim against Glenayre. Jackson was then facing a trial in which Glenayre would seek to prove non-infringement, but in which if Glenayre lost and infringement was found, Jackson could expect to receive no damages, since his counterclaim had been stayed. NSHN then filed a motion for clarification of the District Court's September 30, 2002 Order, and in response the District Court permitted Jackson to file a ***direct*** infringement counterclaim against Glenayre. In this Order the District Court

also held that: "the question of the measure of damages against Glenayre as an alleged contributory infringer / inducer will not present itself until final judgment is rendered in this case."

23. Before the trial, most of Jackson's positions were rejected and the bulk of his asserted claims were found not be infringed. Specifically, the District Court held on summary judgment that claims 1, 3, 15, 59, 69 and 112 of the Jackson patent were not infringed and that only claims 5 and 79 could survive summary judgment. Claims 1, 3, 15, 59, 69 and 112 were asserted in the Glenayre lawsuit on the advice and insistence of Stuart Gimbel, Jackson's personal counsel, even though those claims had been found not infringed in litigation between Jackson and Casio (which pre-dated Jackson's representation by NSHN), and despite the fact that a sanction of almost \$3 million was imposed upon Jackson for frivolously asserting those claims in the Casio lawsuit. Claims 5 and 79 survived summary judgment in the Glenayre lawsuit on the narrowest of grounds -- a fact issue on structural equivalence of the access limiting circuit means.

24. Going into the Glenayre trial, therefore, the situation was this: Jackson was enjoined from suing **any** Glenayre customers, but he was permitted to try to establish direct infringement of the two surviving claims of his patent by Glenayre (but not contributory infringement or inducement to infringe). This gave Jackson the opportunity to try to collect at least some damages from Glenayre.

25. Because Glenayre chose not to assert any invalidity or inequitable conduct defenses, no evidence about prior art was permitted at trial (Glenayre Trial Tr. pp. 11-12). This resulted in the exclusion from the Glenayre trial of highly damaging evidence of invalidity and inequitable conduct in procurement of Jackson's patent dating back to

Jackson's activities before his retention of NSHN. The excluded evidence was so damaging to Jackson that it almost certainly would have resulted in the destruction of his patent and precluded any recovery of damages from Glenayre or from anyone else.

**The Jury Awards \$12 Million In
Compensatory Damages, Which The District Court Remits To \$2.65 Million**

26. The jury found direct infringement and awarded \$12 million in compensatory infringement damages. In view of the jury verdict, as well as the fact that Jackson's patent was due to expire in less than three months (on June 24, 2003), NSHN moved to withdraw the interlocutory appeal to the Federal Circuit on the issues of injunction and stay of Jackson's claims against Glenayre's customers. The nearness of the expiration date meant that a decision on the interlocutory appeal could not have come soon enough to permit the filing of any additional patent infringement lawsuits against Glenayre customers. Jackson's motion to withdraw the interlocutory appeal was granted on May 29, 2003. With Jackson's patent set to expire on June 24, 2003, there was no prospect of obtaining any decision on the interlocutory appeal before expiration of the patent had rendered the interlocutory appeal moot.

27. The District Court denied Glenayre's motion JMOL, but granted Glenayre's conditional motion for a new trial on damages, requiring Jackson to accept a remittitur to \$2.65 million or re-try damages. The District Court held that "the jury's \$12,000,000 damages award reflects a whopping royalty rate of 30%, a rate five times greater than the very highest rate disclosed in any license agreement offered into evidence" (Order, 7/8/03). Jackson, on the advice and with the consent of his personal counsel, Stuart Gimbel, accepted the remittitur. The Court held in entering judgment under Fed.R.Civ.P. 54(b) that

"additional claims, dependent upon the finality and affirmance of the patent infringement claim against Glenayre, remain for adjudication ... " (Order, 7/22/03).

**After The Federal Circuit Affirms
The District Court's Judgment, Jackson's New
Counsel Attempts To Revive His Contributory/Induced
Infringement Claim Against Glenayre But Does Not Try
To Revive The Enjoined Lawsuits Against Glenayre Customers**

28. Glenayre appealed the jury's infringement verdict to the Federal Circuit. On April 8, 2004, the Federal Circuit summarily affirmed the district court's judgment without issuing any opinion (Federal Circuit Order, 4/8/04). By this time, Jackson's patent had been expired for almost a year.

29. On May 5, 2004, Jackson's personal lawyer, Stuart Gimbel, confirmed that Jackson (with Gimbel's advice) had decided **not** to pursue lawsuits against customers of Glenayre, in favor of making an attempt to collect more money from Glenayre itself. Thus, Jackson himself, advised by Mr. Gimbel, decided not to pursue the customers from the Glenayre lawsuit. Pursuant to Jackson's decision, the pending counterclaims in the Glenayre lawsuit against all Glenayre customers accordingly were dismissed under Fed.R.Civ.P. 41(a)(1).

30. Jackson's new counsel, whom he hired in May 2004 to replace NSHN, immediately filed a "motion to set trial on the remaining issues," asking the District Court to "set trial on the remaining issues relating to Jackson's claims **against Glenayre** based on Glenayre's contributory infringement and inducement of infringement of Jackson's patent in suit." No request was made by Jackson or his new counsel to vacate the

standing injunctions and stays prohibiting Jackson from suing Glenayre's Named Customers and Unnamed Customers.

**The District Court Rejects Jackson's
Attempt To Recover More Money From Glenayre, Finding
That Jackson Had Already Received "Full Compensation"**

31. The Jackson/Gimbel strategy implemented by Jackson's new counsel failed.

On June 29, 2004, the District Court held:

The court agrees with Glenayre that there are no issues remaining between the parties. ***The judgment that this court entered, which was finalized after Jackson accepted a remittitur, completely compensated Jackson for direct infringement. Once this has occurred, there is nothing more that is owed.*** Contributory and inducing infringement are just other sides of the same coin. A patentee is entitled to one complete recovery for the infringement that occurs. Here the direct infringement consisted of the manufacture and sale of Glenayre's MVP products to others. In return for accepting damages awarded by the jury, Glenayre receives a *de facto* license covering the sale of the infringing goods. This legitimizes the sales of the infringing goods to Glenayre's customers, and their usage of them. ... [B]y accepting money instead of seeking an injunction, for example, [Jackson] has acquiesced in the use of the infringing goods by the infringer's customers. ... Therefore, Jackson's Motion to Set Trial on Remaining Issues is denied.

(6/29/04 Order) (emphasis added).

32. Glenayre took this ruling as a cue to seek Rule 11 sanctions. But on September 8, 2004, the District Court denied Glenayre's motion for sanctions, acknowledging that the "Court's previous orders carried some ambiguity as to the continuing viability of Jackson's counterclaims" (9/8/04 Order, p. 5).

33. Jackson then appealed the District Court's June 29, 2004 "full compensation" decision to the Federal Circuit. On April 11, 2006, the Federal Circuit affirmed the District Court's refusal to permit Jackson to try to recover damages from Glenayre for contributory

infringement or inducement to infringe (the Jackson/Gimbel/Orum & Roth strategy). Glenayre Electronics, Inc. v. Jackson, 443 F.3d 851 (Fed. Cir. 2006). It was a split decision, with the majority holding that Jackson had, in fact, received the highest possible amount of compensation for Glenayre's customers' use as well as for Glenayre's sales:

[T]he district court determined the highest possible royalty Jackson was entitled to collect for infringing use as being based solely on Glenayre's sales. *Remittitur Order*, 2003 U.S. Dist. LEXIS 14046, [slip op.] at 15. ... Although Jackson presented evidence and arguments regarding customer use to the jury and judge, the district court based the damages award on other evidence showing the value of using the '900 patent. **As discussed above, the court chose instead to rely on contemporaneous license agreements to reach its conclusion that \$ 2.65 million is the "highest possible royalty rate the jury could have properly awarded" for "broad" and "unbounded" rights "to use every aspect" of the '900 patent and other patents covering similar technology.** *Remittitur Order*, 2003 U.S. Dist. LEXIS 14046, [slip op.] at 15. **In other words, the remitted damages award reflects the district court's best judgment as to the value of using the '900 patent.** ... In this situation, Jackson is precluded from arguing here that the remittitur was improper, **or that he was not fully compensated for infringement of the '900 patent.**

443 F.3d at 860-62. The Federal Circuit, therefore, has held that Jackson received "full compensation for infringement of the '900 patent."

34. Circuit Judge Newman dissented from the majority opinion, reasoning that the District Court "changed its mind" after the Federal Circuit's affirmance of Glenayre's appeal in 2004. Specifically, Judge Newman wrote:

The remittitur limited damages to a reasonable royalty for Glenayre's direct infringement, and did not apply to the severed counterclaims relating to indirect infringement. ... This appeal relates solely to the stayed counterclaims for Glenayre's contributory and induced infringement based on direct infringement by Glenayre's customers. These counterclaims were excluded from the jury trial. The district court decided, after this court affirmed the Rule 54(b) judgment of direct infringement, to dismiss the counterclaims without further proceedings. The district court, today affirmed by the panel majority, incorrectly held that there cannot be contributory

infringement by a direct infringer. From this ruling and its flawed premises, I respectfully dissent.

443 F.3d at 873-74 (Newman, J., dissenting). Reviewing the procedural history of the Glenayre lawsuit, Judge Newman perceived a change in approach by the District Court following the Federal Circuit's affirmance of the verdict against Glenayre:

After the Federal Circuit affirmed, the district court changed its position and dismissed the counterclaims, acknowledging that its previous orders "carried some ambiguity as to the continuing viability of Jackson's counterclaims," and that the proceedings that had been conducted "contemplate the possibility of additional claims." However, the court now ruled that Jackson had been "completely compensated for direct infringement" and that "once this has occurred, there is nothing more that is owed. Contributory and inducing infringement are just other sides of the same coin."

I do not say that a court cannot change its mind; but the panel majority errs in stating that Jackson somehow waived his right to pursue the counterclaims for contributory infringement when he accepted the remittitur directed to Glenayre's direct infringement.

443 F.3d at 875 (Newman, J., dissenting).

**Dissatisfied With The "Full Compensation"
He Has Already Received, Jackson Sues NSHN In State Court**

35. On December 9, 2005, Jackson filed a legal malpractice claim against NSHN in the Circuit Court of Cook County, Illinois. As set forth in ¶¶ 5-9, above, Count IV of the pending Second Amended Complaint of Jackson and PMJ Ltd. in their state court lawsuit (Exhibit B) depends entirely upon proof of patent infringement by Glenayre's customers and proof that the '900 patent is valid and enforceable – that is, that it was not invalidated by prior art, nor procured by inequitable conduct on the part of Jackson. Accordingly, Jackson's and PMJ Ltd.'s right to relief in their state court malpractice lawsuit against NSHN necessarily depends on the resolution of the substantial questions of federal patent

law set forth in Counts I through III of this Complaint (¶¶ 37-67 below), in that patent law is a necessary element of the "well-pleaded claim" of Count IV of the Second Amended Complaint of Jackson and PMJ Ltd.

36. On December 13, 2006, the state court held that Jackson was not barred by collateral estoppel under Illinois law from pursuing a malpractice claim against NSHN for more money, despite the holdings of both the District Court (6/29/04 Order) and the Federal Circuit (443 F.3d at 871-73) that Jackson has already received "full compensation" for the infringement of his patent. The state court held:

This Court has not been asked to decide whether additional damages are available but merely whether collateral estoppel bars the claim [for malpractice against the Niro firm]. This Court finds that the Glenayre federal rulings do not stand for the proposition that the Plaintiffs could not recover more than that remitted award but hold that because Plaintiffs accepted the award they could not recover more. ... ***This Court does not decide that the Plaintiffs are entitled as a matter of law to more than the remitted award.*** Rather, this ruling is limited to the finding that they are not prevented from seeking to pursue more based on the federal rulings. ***This Court has not analyzed what the proper measure for accounting Plaintiffs' damages would have been*** but instead has merely determined that the prior holdings of the federal court did not bar the plaintiffs' suit.

(Order, 12/13/06, p. 3 & n.2) (emphasis added). Still unresolved by the state court at this juncture, therefore, is the question of whether or not Jackson was entitled to anything more than the remitted award granted by the District Court in the Glenayre case. For the reasons set forth in Counts I through III, below, Jackson is entitled to no such additional compensation.

COUNT I

DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '900 PATENT

37. NSHN repeats the allegations of ¶¶ 1 through 36, above, as though fully set forth herein.

38. Glenayre's customers (who are not bound by the District Court's holdings in Case No. 02 C 0256) did not infringe the '900 patent under any theory, either directly or indirectly, or literally or under the doctrine of equivalents.

39. Jackson's admissions quoted in ¶¶ 11-13, above, establish that the claims of his '900 patent cannot be read broadly enough to cover the voice mail systems used by Glenayre's customers.

40. The voice mail systems used by Glenayre's customers lack at least the following elements required by the '900 patent: (1) gate means coupled to detecting means; (2) control means; (3) access limiting circuit means; (4) counter means coupled to gate means. Other elements of the '900 patent claims also may be missing from the voice mail systems used by Glenayre's customers.

41. The voice mail systems used by Glenayre's customers also do not infringe because they perform "verification" by comparing all collected digits with a stored password, thus allowing users to change the length and contents of their passwords. That procedure is inconsistent with the way in which the '900 patent discloses that verification is to be performed. Jackson described verification as the "critical feature" of his '900 patent (Glenayre Trial Tr. p. 138). The voice mail systems used by Glenayre's customers,

accordingly, do not include any structure equivalent, under 35 U.S.C. §112, ¶ 6, to the “access limiting circuit means” required by the ‘900 patent claims.

42. Only valid and enforceable patent claims can be infringed. For the reasons set forth in Counts II and III, below, the claims of the ‘900 patent are invalid and unenforceable. The claims are not infringed for those additional reasons.

43. NSHN requests a declaration that the voice mail systems used by Glenayre’s customers do not infringe any claims of the ‘900 patent.

COUNT II

DECLARATORY JUDGMENT OF INVALIDITY OF THE ‘900 PATENT

44. NSHN repeats the allegations of ¶¶ 1 through 36, above, as though fully set forth herein.

45. The claims of the ‘900 patent are invalid under one or more of the grounds specified in Title 35 of the United States Code, including 35 U.S.C. §§ 101, 102, 103 and/or 112.

46. More specifically, but without limitation, the ‘900 patent is invalid under 35 U.S.C. §§ 101 and 112 because it describes and claims a device which would not work, and accordingly lacks an enabling disclosure.

47. The ‘900 patent is invalid because its claims are anticipated under 35 U.S.C. § 102 and/or invalid under 35 U.S.C. § 103 by prior art devices, including without limitation the IQ3000 answering machine; a 1983 patent issued to Gordon Matthews; the Monroe 3200R-13 answering machine and the RC-850 repeater controller.

48. NSHN requests a declaration that each claim of the ‘900 patent is invalid.

COUNT III

DECLARATORY JUDGMENT OF INEQUITABLE CONDUCT AND UNENFORCEABILITY

49. NSHN repeats the allegations of ¶¶ 1 through 36 and 45 through 48 above, as though fully set forth herein.

50. During the re-examination process in which he was represented by the Trexler firm, as set forth below, Jackson intentionally concealed from the PTO evidence material to the patentability of the claims of his patent that the PTO was re-examining.

Intentional Concealment Of Material Evidence Relating To The RC-850 Device

51. On August 18, 1994, Jackson filed a Complaint against Matsushita in the Northern District of Illinois for patent infringement. Ray Blackstone was the principal attorney representing Phil Jackson for both the Matsushita lawsuit and the reexamination.

52. On October 13, 1994, Jackson served two interrogatories on Matsushita. The first one asked Matsushita to "identify any and all prior art currently known to [Matsushita] that [Matsushita] contends is as relevant and/or more relevant to the '900 patent than Japanese Publication No. 50-3472 (Himuro '472) assigned to Sony Corporation."

53. On November 21, 1995, the Patent Office granted a third request for reexamination of the '900 patent.

54. On October 7, 1996, Matsushita responded to Jackson's October 13, 1994 interrogatories by identifying a number of alleged prior art references in response to Interrogatory No. 1. Among the 261 references in the interrogatory response: A Universal

Touch-Tone Decoder, QST Magazine, March 1980; A Computer-Controlled Talking Repeater, Ed Ingber, October 1980; A Computer-Controlled Talking Repeater, Ed Ingber, November 1980; A Computer-Controlled Talking Repeater, Ed Ingber, December 1980; RC-850 Repeater Controller Owners Manual (Firmware Vers. 1.4), July 1992 [sic: 1982]; RC-850 Repeater Controller and related advertisements, "73 Magazine," May 1982.

55. On October 17, 1996, in response to Mr. Blackstone's request, Matsushita produced to Jackson's counsel copies of the non-patent references listed in its interrogatory response, including those named in the preceding paragraph.

56. On November 15, 1996, Jackson (through Mr. Blackstone) filed with the Patent Office his Supplemental Information Disclosure Statement to Disclose References Very Recently Disclosed by Requester in the Co-Pending Litigation. Jackson stated: "Nevertheless, because Requester appears to take the position (in its Interrogatory Answer) that these newly-cited references are as relevant or more relevant than the Himuro '472 reference in the First Reexamination of the '900 patent, the Patent Owner is submitting these newly-cited references by Requester in an abundance of caution candor [sic] pursuant to 37 CFR § 1.98(a), CFR § 1.555 and § 2280 of the MPEP."

57. Among the prior art references cited in the Supplemental IDS were: A Universal Touch-Tone Decoder, QST Magazine, March 1980; A Computer-Controlled Talking Repeater, "73 Magazine," Ed Ingber, October 1980; A Computer-Controlled Talking Repeater, "73 Magazine," Ed Ingber, November 1980; A Computer-Controlled Talking Repeater, "73 Magazine," Ed Ingber, December 1980; RC-850 Repeater Controller Owners Manual (Firmware Vers. 1.4), July 1992 [sic: 1982]; RC-850 Repeater Controller and related advertisements, "73 Magazine," May 1982.

58. On June 16, 1997, Jackson's counsel Ray Blackstone attended the deposition of Bruce Martin, creator of the prior art RC-850 device, who described its operation in detail and clarified that certain limitations of the '900 patent claims 1 and 5 were indeed present in the RC-850. The presence of those limitations was not disclosed in the "73 Magazine" article. The discussion of the RC-850 Repeater Controller in the Martin deposition appears mostly between page 120 and page 183 of the transcript.

59. In the Jackson v. VTech case, no. 01 C 8801, N.D. Ill., the District Court (Judge Castillo) held that Jackson withheld material prior art from the Patent Office:

Jackson failed to submit to the PTO the deposition testimony and exhibits of the RC-850's creator, even though Jackson's counsel [from the Trexler firm] attended the deposition during the pendency of the '900 patent's third reexamination proceeding. The deposition testimony was important because it clarified that certain limitations of the '900 patent were indeed contained within the RC-850 ...

(10/23/03 Order, p. 23, Jackson v. VTech, Case no. 01 C 8001).

60. The District Court further held that Jackson's successful scheme to deceive the PTO during reexamination led to a conclusion that he intended to deceive the PTO:

[T]he MPEP makes clear that the patentee is obligated to bring to the examiner's attention any material information arising from related litigation, including "pleadings, admissions, discovery including interrogatories, depositions, and other documents, and testimony." ***[W]e find that the information contained in the deposition and its exhibits was "material" as that term is defined in the applicable regulations.*** Clearly Jackson was aware of this material information since his counsel attended the deposition and he failed to disclose the information to the examiner during his concurrent reexamination. ... ***[T]here is clear and convincing evidence that Jackson intended to deceive the PTO when he failed to disclose the Martin deposition.*** His counsel [from the Trexler firm] attended the deposition and was well aware that Martin testified regarding the operation of the RC-850, its status as prior art and that Martin gave a live demonstration of the RC-850 in operation. This is particularly material in light of Jackson's representation that the *73 Magazine* articles disclosing the

RC-850 were less relevant to the reexamination proceeding than the references currently pending before the PTO or otherwise failed to impact the patent's validity.

(10/23/03 Order, pp. 24-25, Jackson v. VTech, Case no. 01 C 8801) (emphasis added).

Jackson is now bound by these rulings by principles of issue and/or claim preclusion.

61. Having already found both materiality and intent to deceive (the two required elements of inequitable conduct), the only issue remaining for the District Court to decide was balancing of materiality and intent. Judge Castillo set a short trial date to consider that issue: "The Court has decided to reserve its final ruling on inequitable conduct with respect to the RC-850 materials until the conclusion of a bench trial, which the Court will hold on December 15, 2003" (Id. at pp. 25-26).

62. In view of Judge Castillo's ruling, an eventual holding that Jackson committed inequitable conduct, thus making his patent unenforceable, was virtually certain. Jackson accordingly settled the VTech lawsuit because that was the only way to forestall a holding of unenforceability, which would also have doomed the \$2.65 million judgment NSHN had earlier obtained for him in the Glenayre lawsuit and which was then on appeal to the Federal Circuit.

Intentional Destruction Of The Prior Art IQ3000 Device

63. During an early lawsuit against Matsushita in which Jackson was represented by the Trexler firm, Matsushita located a prior art telephone answering machine made by Casio-Phonemate called the "IQ3000" which was in the possession of an individual named Mok, whose deposition Jackson admitted having attended. As a condition for settlement of the Matsushita lawsuit, Jackson insisted on a stipulation that Matsushita return all such items to the individuals who provided them.

64. Following the settlement of his lawsuit against Matsushita, in 1997 Jackson secretly telephoned Mr. Mok and convinced him to sell the "IQ3000" for \$100. Jackson told Mok that he (Jackson) was collecting old answering machines, but Jackson subsequently admitted in his deposition that he had no such collection – not even one old answering machine. Jackson failed to produce the "IQ3000" he purchased from Mr. Mok in response to discovery requests, and did not even admit that he had ever possessed the device.

65. Jackson claimed in a deposition during later litigation that he unsuccessfully "tried to use" the "IQ3000," but he never even looked to see if it came with batteries. Ultimately, he claimed, his wife "may have placed it in the garbage" – or perhaps "it could have happened my father also could have thrown it out" – but "I doubt it was me."

66. Jackson intended to conceal the IQ3000 sample by destroying it, so it could no longer be used in any proceedings before the courts or the Patent Office.

67. NSHN requests a declaration that the '900 patent is unenforceable by reason of Jackson's inequitable conduct in concealing from the PTO the Martin deposition and associated exhibits relating to the "RC-850" prior art device and also by reason of Mr. Jackson's intentional destruction or "loss" of the "IQ3000" prior art device.

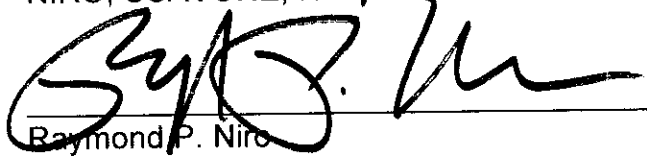
PRAYER FOR RELIEF

WHEREFORE, NSHN requests the following relief:

- A. A declaration that the '900 patent is not infringed by Glenayre's customers;
- B. A declaration that the '900 patent is invalid;
- C. A declaration that the '900 patent was procured by inequitable conduct, and is therefore unenforceable;

- D. Judgment in favor of NSHN and against Jackson and PMJ Ltd. on all claims in this lawsuit;
- E. A finding that this case is "exceptional" and an award to NSHN of its attorneys' fees and costs as provided by 35 U.S.C. §285; and
- F. Such other and further relief as this Court may deem just and proper.

NIRO, SCAVONE, HALLER & NIRO

A handwritten signature in black ink, appearing to read "Raymond P. Niro", is written over a horizontal line.

Raymond P. Niro

John C. Janka

Brady J. Fulton

NIRO, SCAVONE, HALLER & NIRO

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EXHIBIT A

United States Patent [19]

Jackson

[11] Patent Number: 4,596,900

[45] Date of Patent: Jun. 24, 1986

[54] PHONE-LINE-LINKED, TONE-OPERATED CONTROL DEVICE

[76] Inventor: Phillip S. Jackson, 5305 N. Neenah, Chicago, Ill. 60656

[21] Appl. No.: 507,702

[22] Filed: Jun. 23, 1983

[51] Int. Cl.⁴ H04M 11/00

[52] U.S. Cl. 179/2 A; 179/84 VF; 179/6.11; 179/5 R

[58] Field of Search 179/2 A, 2 AM, 5 R, 179/5 P, 6.16, 6.11, 6.13, 6.07, 6.03, 84 VF

[56] References Cited

U.S. PATENT DOCUMENTS

3,829,616 8/1974 Blouch 179/2 A
3,902,016 8/1975 Blouch 179/2 A
3,992,587 11/1976 Puckett et al. 179/2 A X
4,006,316 2/1977 Bolgiano 179/2 A

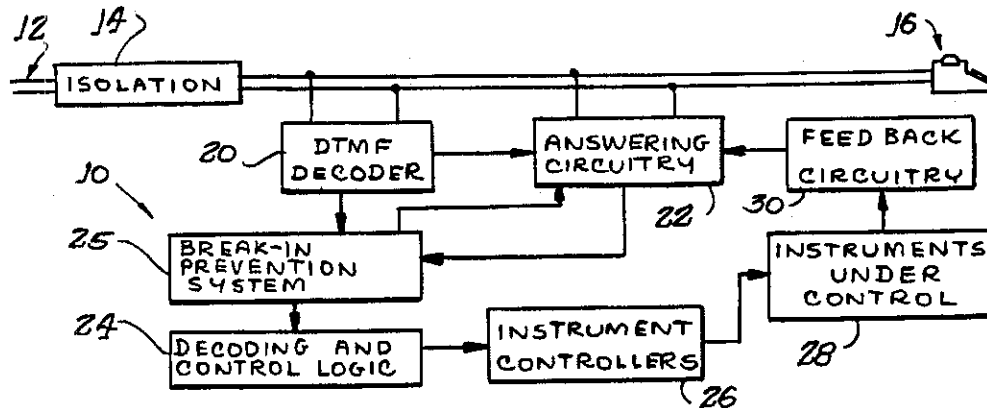
4,121,053 10/1978 Dick 179/2 A
4,491,690 1/1985 Daley 179/2 A

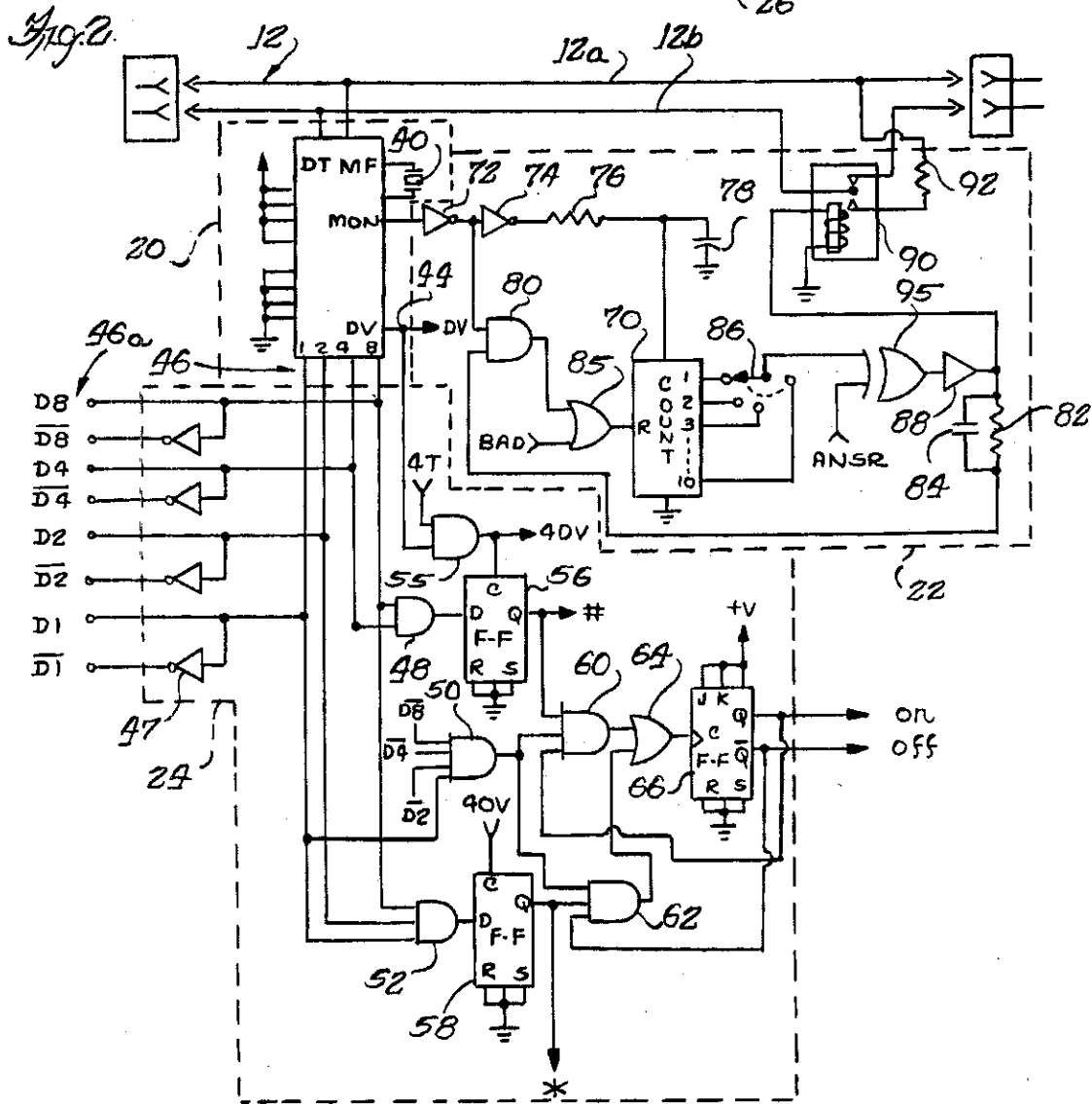
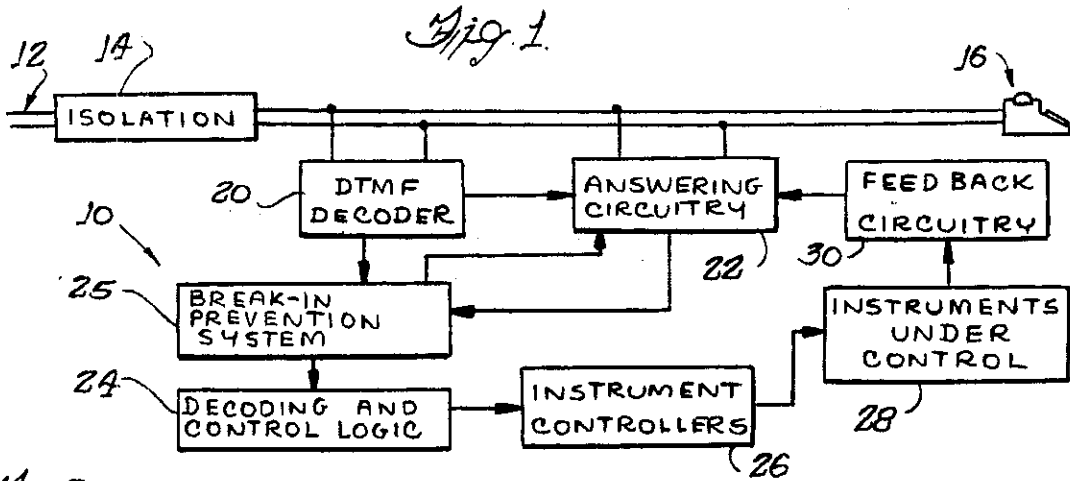
Primary Examiner—James L. Dwyer
Attorney, Agent, or Firm—Trexler, Bushnell & Wolters, Ltd.

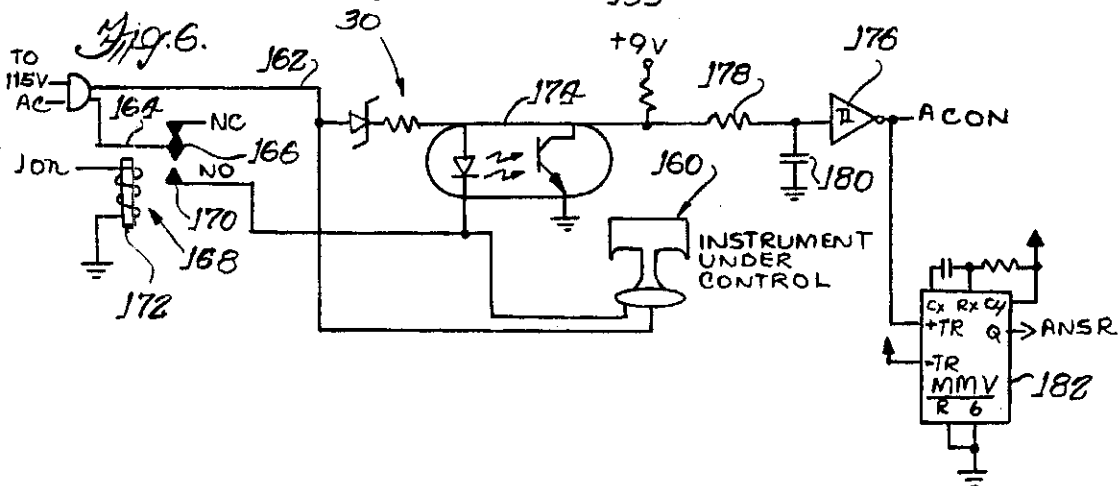
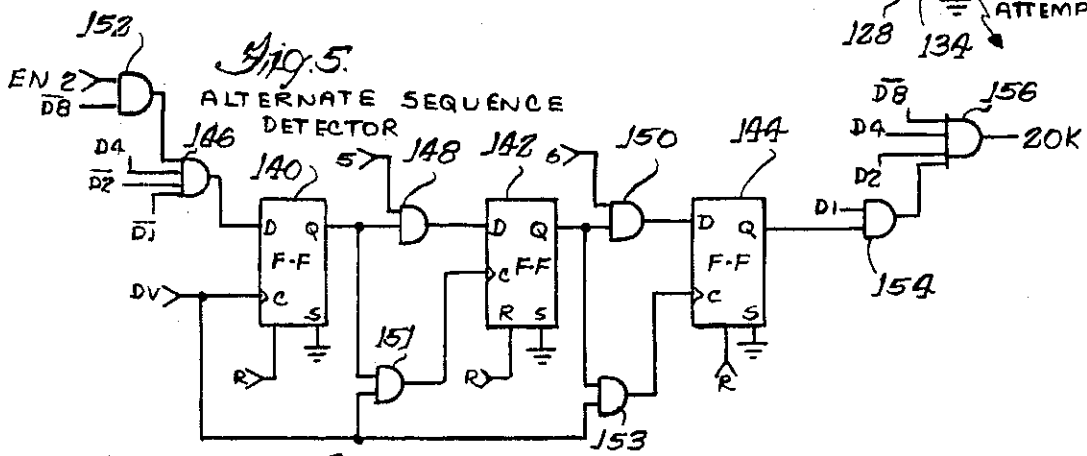
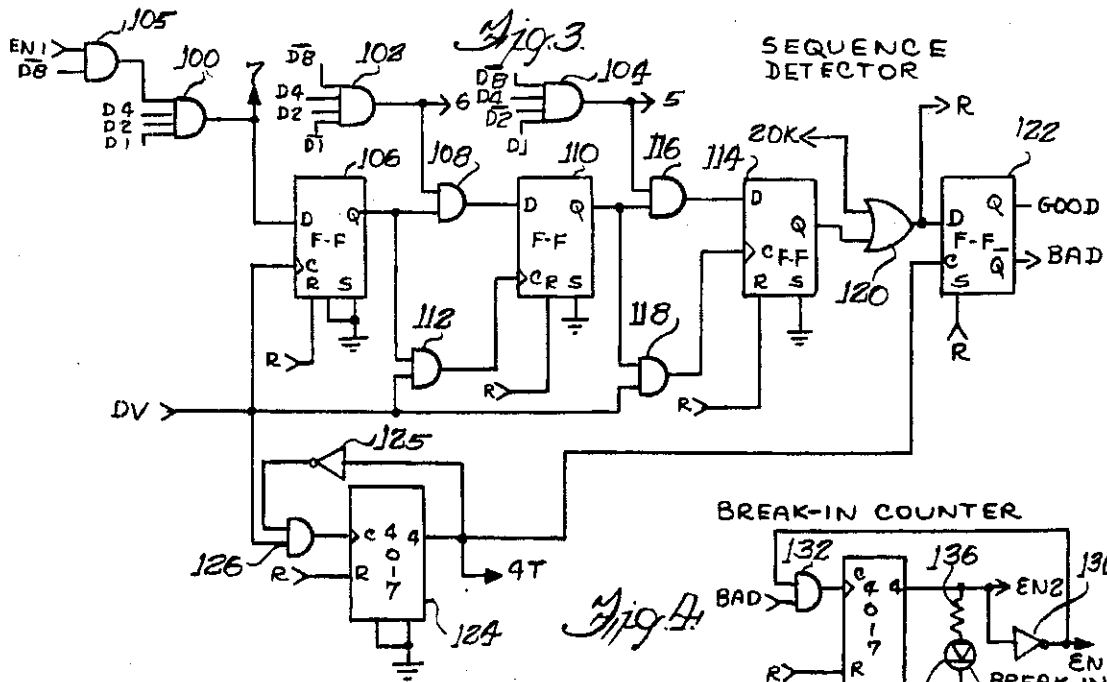
[57] ABSTRACT

A phone-line-linked, tone-operated control apparatus in accordance with the invention comprises a detecting circuit coupled to a telephone line for detecting at least one predetermined sequence of predetermined tone signals received on the telephone line and for producing a corresponding sequence detection signal. An additional control circuit is responsive to the sequence detection signal for producing a corresponding control signal. Preferably, a break-in prevention circuit prevents access to the control apparatus unless a predetermined access code is first given.

17 Claims, 6 Drawing Figures







PHONE-LINE-LINKED, TONE-OPERATED CONTROL DEVICE

BACKGROUND OF THE INVENTION

The invention is directed generally to the control arts, and more particularly to a novel apparatus for producing control signals in response to the reception of predetermined tone signals over a telephone line.

In recent years, increasing attention has been given to the field of home electronics and the like. With the advent of modern telephonic communication, as well as the availability of home computers and the like, a number of applications of such systems to home or personal use have been developed. For example, it has been suggested that home computers be utilized to control, through suitable interface devices, various devices in the home such as heating and air conditioning systems, lighting, appliances, and the like.

However, home computers and the necessary interface devices for performing such automatic control functions are still relatively expensive. Moreover, most such computers and other devices require some degree of skill or expertise in their installation and operation. Accordingly, the average consumer may not readily be able to utilize such computer control applications because of either financial considerations or lack of requisite knowledge and skills.

Advantageously, the present invention proposes a phone-line-linked, tone-operated control device for producing suitable control signals for use in home automatic or remote control applications. Moreover, the apparatus of the invention operates automatically in response to tone signals of the type produced by ordinary Touch-Tone telephones over conventional telephone lines. More specifically, any device producing tones commonly known as DTMF tones, such as Touch-Tone telephones, can be utilized to operate the apparatus of the invention. Accordingly, the consumer need only understand the operation of a conventional Touch-Tone telephone to utilize the present invention. That is, no special transmitting unit or device is required, whether permanently installed or a portable unit to be carried by the user. Rather, the invention may be operated from any available telephone transmitter.

Additionally, a preferred form of the invention contemplates prevention of unauthorized access or usage of the foregoing control system. To this end, a preferred form of the invention also provides a novel break-in prevention feature, which requires the entry of a selectable code over a Touch-Tone telephone line, to permit access to the remote control features of the invention. Again, however, no special transmitting unit or other device is required, the necessary code being in the form of the tones provided by any conventional, available Touch-Tone type telephone receiver.

OBJECTS AND SUMMARY OF THE INVENTION

Accordingly, it is a general object of the invention to provide a novel and improved remote control device which requires no special training or expertise to utilize.

A more specific object is to provide a phone-line-linked control device for performing a control function in response to conventional tone signals transmitted over a conventional telephone line.

A related object is to provide apparatus in accordance with the foregoing objects which is relatively

simple and inexpensive and yet highly reliable in operation.

Briefly, and in accordance with the foregoing objects, a phone-line-linked, tone-operated control apparatus in accordance with the invention comprises detecting means coupled to a telephone line for detecting at least one predetermined sequence of predetermined tone signals received on said telephone line and for producing a corresponding sequence detection signal; and control means responsive to said sequence detection signal for producing a corresponding control signal.

In accordance with a preferred form of the invention an access limiting apparatus is also coupled with the control apparatus and prevents operation thereof until an access code comprising a predetermined sequence of predetermined tone signals is first received.

BRIEF DESCRIPTION OF THE DRAWINGS

The features of the present invention which are believed to be novel are set forth with particularity in the appended claims. The organization and manner of operation of the invention, together with further objects and advantages thereof, may best be understood by reference to the following description taken in connection with the accompanying drawings in the several figures of which like reference numerals identify like elements, and in which:

FIG. 1 is a block diagram of a control system utilizing apparatus in accordance with the invention;

FIG. 2 is a schematic circuit diagram illustrating further details of the apparatus of the invention;

FIG. 3 is a schematic circuit diagram illustrating one portion of a novel break-in prevention circuit in accordance with a preferred form of the invention;

FIG. 4 is a schematic circuit diagram of a further portion of the break-in prevention circuit of FIG. 3;

FIG. 5 is a schematic circuit diagram of a still further portion of the break-in prevention circuit of FIGS. 3 and 4; and

FIG. 6 is a schematic circuit diagram of one form of feedback circuitry in accordance with a preferred form of the invention.

DETAILED DESCRIPTION OF THE ILLUSTRATED EMBODIMENT

Referring now to the drawings and initially to FIG. 1, apparatus in accordance with the invention is illustrated in the form of a control system, designated generally by the reference numeral 10. The control system 10 is linked to conventional telephone lines 12 by means of a suitable, conventional isolation apparatus 14, generally in parallel circuit with a conventional telephone receiver 16.

A dual-tone, multiple-frequency (DTMF) decoder 20 and a suitable automatic answering circuit 22 are generally coupled in parallel circuit with the telephone receiver 16. Briefly, the DTMF decoder 20 produces standard logic-level signals in response to the dual-tone frequencies generated by conventional push-button or "Touch-Tone" telephone apparatus. Additionally, the DTMF decoder 20 produces analog signals in response to the conventional tip/ring voltages, scaled down for use in the other circuitry, as will be described presently.

An additional decoding and control logic circuit 24 receives the signals from the DTMF decoder 20. In accordance with a feature of the invention, this decod-

ing and control logic circuit 24 is responsive to predetermined sequences of signals from the DTMF decoder 20 for producing corresponding control output signals. Generally speaking, the DTMF decoder 20 and a decoding portion of the circuit 24 together comprise a sequence detection circuit responsive to a preselected sequence of tone signals received on the phone lines 12 for producing a corresponding sequence detection signal. A control logic portion of the circuit 24 is further responsive to this sequence detection signal for producing a corresponding control output signal for an instrument controller 26. This instrument controller 26 in turn controls the operation of one or more instruments 28.

Briefly, such control may comprise turning on and off various devices, making adjustments in their operation, checking their status, and the like. Suitable feedback from the controlled instrument or instruments may be provided by way of a suitable feedback interface circuitry 30 to the answering circuitry 22, which responsively outputs a suitable signal to the telephone lines 12 to indicate the status of the controlled instrument or instruments 28.

Advantageously, then, the control system 10 of the invention is useful in parallel with the conventional telephone receiver 16. That is, the system 10 does not interfere with normal use of the receiver 16. Moreover, the system 10 may be utilized to control one or more devices 28 in the manner just described while a normal conversation is in progress over the receiver 16.

In this regard, the decoding and control logic 24 may also be coupled with the answering circuitry 22 to synchronize its operation therewith. Furthermore, circuit 24 may be arranged to cause the answering circuitry 22 to disconnect the system of FIG. 1 from the phone line 12, if an improper sequence of tones is received, as may occur for example in an attempt to gain unauthorized access or "break-in" to the system of FIG. 1.

The answering circuitry 22 may be adjusted to couple the system with the phone lines 12 at the first detection of a ring or after a desired number of ring tones received on the line 12.

Referring now to FIG. 2, a schematic circuit diagram illustrates various features of the system of FIG. 1 in greater detail. The DTMF decoder 20 comprises an integrated circuit component of the type generally designated ITT3210 DTMF receiver, and is provided with a 3.58 MHz crystal 40. Suitable DC power for the DTMF decoder 20, as well as for the other circuits of FIG. 2 may be provided by suitable DC batteries (not shown) or by any other suitable DC voltage supply.

In operation, the DTMF decoder 20 receives conventional telephonic signals over phone lines 12, which comprise conventional tip and ring lines 12a and 12b respectively. A line monitoring output (MON) 42 provides a signal which is usable as a CMOS logic 1 or high level when a ring is detected on the phone lines 12 and a logic 0 or low level when no ring is in progress. An additional DV output 44 signals detection of a valid DTMF tone of the type produced by a conventional push-button or "Touch Tone" telephone.

Accordingly, access to the system from a remote location may be achieved by use of a conventional DTMF telephone transmitter over conventional telephone lines. The system of the invention therefore operates essentially as an independent telephone receiver, whereby it may be wired independently to phone lines 12 or in parallel with a standard receiver 16 as shown in FIG. 1, as desired. As previously mentioned, when

connected in parallel with the standard receiver 16, the system of the invention does not interfere with normal operation thereof. That is, the tone signals to which the circuitry of the invention responds may be received independently of operation of the receiver 16, or even at the same time as a normal conversation is in progress, allowing "break-in prevention" and operation of instruments under control by use of the tone signals, but otherwise permitting use as a conventional telephone without any interference therebetween.

The DV signal comprises standard CMOS logic levels, and transmits a logic 1 or high level each time a valid push-button tone is decoded by decoder 20 and a logic 0 or low level at other times. The remaining outputs of the DTMF decoder 20 encode possible push-button tone signals representing digits 0 through 9, as well as * and # into a 4-bit binary encoded form on a 4-bit output 46. Although not presently in common use, push-button or Touch Tone telephones are capable of producing four additional dual-tone signals, which the DTMF decoder 20 is also capable of encoding into 4-bit digital form.

In the illustrated embodiment, two sequences of these encoded signals have been selected for producing respective "on" and "off" control signals. The decoding and control logic 24 includes circuitry responsive to the sequence of the tone signals encoded into binary form on the outputs 46 of the decoder 20 for producing these "on" and "off" control output signals. These control signals are then fed to the instrument control circuitry 26 of FIG. 1. In the illustrated embodiment, the sequence #, 1 is detected to turn the instrument off, and the sequence *, 1 is detected to turn the instrument on. In this regard, the decoder 20 encodes "#" as 1, 1, 0, 0 (in descending order, from the most significant or 8's place to the least significant or 1's place). Similarly, "*" is encoded as 1, 0, 1, 1; while "1" is encoded as 0, 0, 0, 1.

In order to provide both the logic signals from the lines 46 as well as the inverted logic content thereof, each of the lines 46 is further provided with an inverter buffer 47. In this regard, the respective binary logic contents of the outputs 46 and their inverted forms are indicated respectively D1 and D1, D2 and D2, etc. These resulting logic outputs are indicated generally by the reference numeral 46a. It will be recognized that the non-inverted outputs 46a carry a logic "1" when the corresponding output of the DTMF 20 is activated, whereas the inverted outputs 46a will carry a logic content of "0" when the corresponding output 46 of the DTMF 20 is in an active condition.

Accordingly, the decoding and control logic 24 includes three detectors in the form of logic gates 48, 50 and 52 which are coupled to suitable ones of the output lines 46a for responding to the respective binary signals corresponding to tones representing #, * and 1, respectively. In this regard, the gate 48 comprises a two-input AND gate and has its inputs coupled respectively to respond to the logic content 1, 1, 0, 0 at output 46 of decoder 20.

Similarly, the logic gate 52 comprises a three-input AND gate and is coupled to respond to the logic content 1, 0, 1, 1 at output 46 of decoder 20. Finally, the AND gate 50 comprises a four-input AND gate coupled to detect the encoded 1 signal, which corresponds to a logic content of 0, 0, 0, 1 at output 46 of decoder 20. Accordingly, the respective gates 48, 50 and 52 detect signals of predetermined logic content produced by the

decoder 20 at its output 46. Different logic contents corresponding to different code sequences may be selected without departing from the invention, by the simple expedient of selecting different ones of the outputs 46a as inputs to gates 48, 50 and 52.

In the illustrated embodiment, in order to detect the desired sequence of these encoded logic signals (#, 1 to turn the instrument off and *, 1 to turn the instrument on) the outputs of AND gates 48 and 52 are coupled with respective flip-flops 56 and 58. The output of AND gate 50 is coupled with one input of each of a pair of three-input AND gates 60 and 62.

In the illustrated embodiment, the flip-flops 56 and 58 comprise D-type flip-flops of the type generally designated 4013, and the outputs of respective AND gates 48 and 52 feed the respective data or D inputs thereof. The clock (C) inputs of the flip-flops 56 and 58 are coupled to receive the above-mentioned DV signal from the output 44 of the decoder 20. Preferably, a two-input AND gate 55 is interposed between the DV output and these clock inputs. This gate responds to a further signal "4T" from the break-in prevention circuit, to be described later, for delivering only those DV signals occurring after the fourth incoming tone and corresponding DV signal. The output of the gate is hence designated "4DV".

It will be remembered that a high or logic one signal is produced at DV output 44 upon encoding of a valid tone at the outputs 46 of decoder 20. In operation, the DV output signal is delayed slightly from the production of the encoded signal at outputs 46.

The respective set (S) and reset (R) inputs of the flip-flops 56 and 58 are coupled with circuit ground. The Q outputs of respective flip-flops 56 and 58 are coupled with respective inputs of the AND gates 60 and 62. Accordingly, the flip-flops 56 and 58 will be clocked by the 4DV signal upon each encoding of an incoming tone signal (after the fourth), thereby in effect transferring the logic state of the D inputs thereof to the Q output thereof. When the AND gate 48 produces a logic one in response to detection of the encoded # signal on lines 46, a logic one will be clocked to the 0 output of flip-flop 56. In the same fashion, the AND gate 52 will produce a logic one output to the data input of the flip-flop 58 when it detects the encoded * signal on the lines 46. This logic one will be clocked through to the Q output of the flip-flop 58 in response to the corresponding 4DV output positive transition. The Q outputs of flip-flops 56 and 58 are therefore also designated by "#" and "*" and are respectively coupled to second inputs of respective AND gates 60 and 62.

The AND gates 60 and 62 feed respective inputs of a two-input OR gate 64 which feeds the clock input of a further flip-flop 66. In the illustrated embodiment, the flip-flop 66 comprises one-half of a dual JK-type flip-flop of the type generally designated 4027. The Q and Q outputs of the flip-flop 66 are selected as the instrument "on" and instrument "off" control signal outputs, respectively. Moreover, the Q or "on" output feeds the remaining input of AND gate 60 while the Q or "off" output feeds the remaining input of the AND gate 62. The J and K inputs of flip-flop 66 are tied to a suitable positive potential, while the set and reset inputs thereof are tied to circuit ground.

In operation, the respective flip-flops 56 and 58 and associated gates 60 and 62 act as sequence detectors such that the gate 60 will produce a logic one or high output signal only in response to logic one or high sig-

nals at all three of its inputs simultaneously. The OR gate 64 will toggle the flip-flop 66 in response to a logic one signal at either input thereof. It will be remembered that a logic one is produced by the AND gate 50 upon detection of the encoded 1 signal on the output 46. However, the encoded # signal must immediately precede the encoded 1 signal in order to hold the Q output of flip-flop 56 at logic one as previously described. Due to the slight delay in the action of the DV output 44 of decoder 20, this logic one at the Q output of flip-flop 56 will momentarily co-exist with the logic one at the output of AND gate 50. In effect, then, gates 48 and 50, flip-flop 56 and gate 60 respond to or detect the encoded sequence #, 1 and produce a corresponding detection signal. Gate 64 and flip flop 66 respond by producing a corresponding "off" control signal.

In the illustrated embodiment an additional control from the Q output of flip-flop 66 assures that repetition of the #, 1 ("off") sequence will not result in turning the instrument on. This is done by requiring a logic one state from the instrument "on" or Q output flip-flop 66 as the third input to AND gate 60.

From the foregoing it will be recognized that operation with respect to the instrument "on" sequence (*, 1) at AND gates 50 and 52, flip-flop 58 and AND gate 62 is substantially identical. In this regard, gates 50 and 52, flip-flop 58 and gate 62 detect the sequence *, 1 and produce a responsive detection signal. Gate 64 and flip flop 66 respond to this detection signal by producing a corresponding "instrument on" control signal. Additionally, a feedback signal from the Q or instrument off output of flip-flop 66 to gate 62 prevents production of the "on" signals unless the instrument is in the "off" state. Hence, repetition of the sequence *, 1 will not turn the instrument "off", if it is already in the "on" state.

It will be recognized from the foregoing that additional instruments or apparatus may be similarly provided with "on" and "off" control signals in response to additional, different selected sequences from the DTMF 20. For example, since the # and * decoded outputs are already available as the first in a two-signal sequence at the Q outputs of flip-flops 56 and 58, these may be utilized with other decoded digit tone signals to control further instruments or devices. That is, further gates such as AND gate 50 may be used to detect or decode binary signals corresponding to other digits. Additionally, similar gates such as the gate 60 may then be connected to receive the # and * outputs as well as the further decoded digit outputs so as to drive further flip-flops such as the flip-flop 66 in exactly the same fashion as described above so as to provide on and off control signals for additional instruments. For example, *, 2 and #, 2 might be used to control a second instrument and so forth by the simple expedient of a repetition of only a small part of the circuitry of FIG. 2. Other codes may of course be utilized by duplicating more of the decoding and control logic circuit 24 of FIG. 2, if entirely different on and off codes are desired.

Referring now to the answering circuitry 22, an integrated circuit counter component 70 is utilized to count the rings received on the phone line 12. In the illustrated embodiment, this counter comprises an integrated circuit component of the type generally designated 4017. The rings are detected by the decoder 20 and the count input (C) of the counter 70 is fed from the MON output 42 by way of a pair of inverter buffers 72, 74 and an RC filter comprising resistor 76 and capacitor 78.