See M.P.E.P. § 822.

Daly et al., Dunlap et al. and Workman further show the state of the art.

Any inquiry concerning this communication should be directed to W. Daniel Swayze at telephone number (703) 557-8002.

W Daniel Swayze

ARISTOTELIS M. PSITOS
PRIMARY EXAMINER
ART UNIT 235

TO SEPARATE, HOLD TOP AND BOTTOM EDGES, SNAP–APART AND DISCARD CARBON

RS

FORM PTO-892 (REV. 3-78)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	SERIAL NO.	GROUP ART UNIT	ATTACHMENT TO PAPER NUMBER
NOTICE OF REFERENCES CITED		07/347 629	235	5
		APPLICANT(S) LANG		

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
	A	4,851,931	7-25-89	PARKER et AL	360	15	2-24-89
	B	4,516,156	5-7-85	FABRIS et AL	379	53	
	C	4,698,664	10-6-87	NICHOLS et AL	358	311	
	D	4,774,574	9-27-88	DALY et AL	358	133	5-6-87
	E	4,179,709	12-18-79	WORKMAN	358	133	
	F	4,768,110	9-30-88	DUNLAP et AL	360	61	5-6-87
	G						
	H						
	I						
	J						
	K						

FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS	PERTINENT SHTS. DWG	PERTINENT PP. SPEC.
	L								
	M								
	N								
	O								
	P								
	Q								

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

	R	
	S	
	T	
	U	

EXAMINER	DATE
[signature]	11-16-89

* A copy of this reference is not being furnished with this office action.
(See Manual of Patent Examining Procedure, section 707.05 (a).)

PTO - 948
(Rev. 8-82)

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

ATTACHMENT TO PAPER NUMBER 5

GROUP

S.N. 347 629

NOTICE OF PATENT DRAWINGS OBJECTION

Drawing Corrections and/or new drawings may only be submitted in the manner set forth in the attached letter, "Information on How to Effect Drawing Changes" PTO-1474.

A ☐ The drawings, filed on 5-5-89, are objected to as informal for reason(s) checked below:

1. ☐ Lines Pale.
2. ☐ Paper Poor.
3. ☒ Numerals Poor, in parts (All Figs)
4. ☒ Lines Rough ~~and Blurred.~~ in parts (All Figs)
5. ☐ Shade Lines Required.
6. ☐ Figures Must be Numbered.
7. ☒ Heading Space Required. 2" at the top Fig 1A, Fig 2, 4
8. ☐ Figures Must Not be Connected.
9. ☐ Criss-Cross Hatching Objectionable.
10. ☐ Double-Line Hatching Objectionable.
11. ☐ Parts in Section Must Be Hatched.
12. ☐ Solid Black Objectionable.
13. ☐ Figure Legends Placed Incorrectly.
14. ☐ Mounted Photographs.
15. ☐ Extraneous Matter Objectionable. [37 CFR 1.84 (1)]
16. ☐ Paper Undersized; *either 8½" x 14", or 21.0 cm. x 29.7 cm. required.*
17. ☐ Proper A4 Margins Required:
    ☐ TOP 2.5 cm. ☐ RIGHT 1.5 cm.
    ☐ LEFT 2.5 cm. ☐ BOTTOM 1.0 cm.
18. ☒ Other: FIGURE LEGENDS ARE NOT CONSISTANT, SHOULD All BE the same SIZE

* NOTE: Fig 2 - ARROW POINTS THRU WORDING

B ☐ The drawings, submitted on 5-5-89, are so informal they cannot be corrected. New drawings are required. Submission of the new drawings MUST be made in accordance with the attached letter.

90.00-216 #6 90 235

IN THE

UNITED STATES PATENT AND TRADEMARK OFFICE

ART UNIT 235

Examiner W. Daniel Swayze

"Express Mail" mailing label number B91130857
Date of Deposit May 7, 1990

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

William E. Hein
(Typed or printed name of person mailing paper or fee)

(Signature of person mailing paper or fee)

Richard A. Lang

CASE 211 (M914US)

SERIAL NO. 07/347.629

FILED May 5, 1989

SUBJECT AUDIO/VIDEO RECORDER/TRANSCEIVER

THE COMMISSIONER OF PATENTS AND TRADEMARKS
WASHINGTON, D.C. 20231

SIR:

PETITION FOR EXTENSION OF TIME UNDER 37 C.F.R. 1.136

It is respectfully requested that an extension of time of two months be granted in accordance with the provisions of 37 C.F.R. 1.136 to take the action required in the application identified in caption, as reflected by the papers submitted herewith.

A check in the amount of $90.00 (small entity) is enclosed herewith in payment of the processing fee associated with this petition.

Respectfully submitted,

Richard A. Lang

By _____
William E. Hein
Patent Attorney #26,465

May 7, 1990
(303) 667-6741
Loveland, Colorado

090 TL 05/21/90 07347629 1 216 90.00 CK

#7

MAIL ROOM
MAY 7 1990
PAT. & TRADEMARK OFF.

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MAY 2 ...
GROUP 230

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE
ART UNIT 235

Examiner W. Daniel Swayze

"Express Mail" mailing label number B91130857
Date of Deposit May 7, 1990
I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.
William E. Hein
(Typed or printed name of person mailing paper or fee)
(Signature of person mailing paper or fee)

Richard A. Lang

CASE 211 (M914US)

SERIAL NO. 07/347,629

FILED May 5, 1989

SUBJECT AUDIO/VIDEO RECORDER/TRANSCEIVER

THE COMMISSIONER OF PATENTS AND TRADEMARKS
WASHINGTON, D.C. 20231

SIR:

LETTER TO THE OFFICIAL DRAFTSMAN

Subject to the approval of the Examiner, please amend Figure 2 of the drawings in the above-identified patent application to correct an error in spelling, as indicated in red on the attached copy of that drawing figure.

Respectfully submitted,

Richard A. Lang

By
William E. Hein
Patent Attorney #26,465

approved by [illegible] 4/11/91

May 7, 1990
(303) 667-6741
Loveland, Colorado

SHEET 2 OF 4

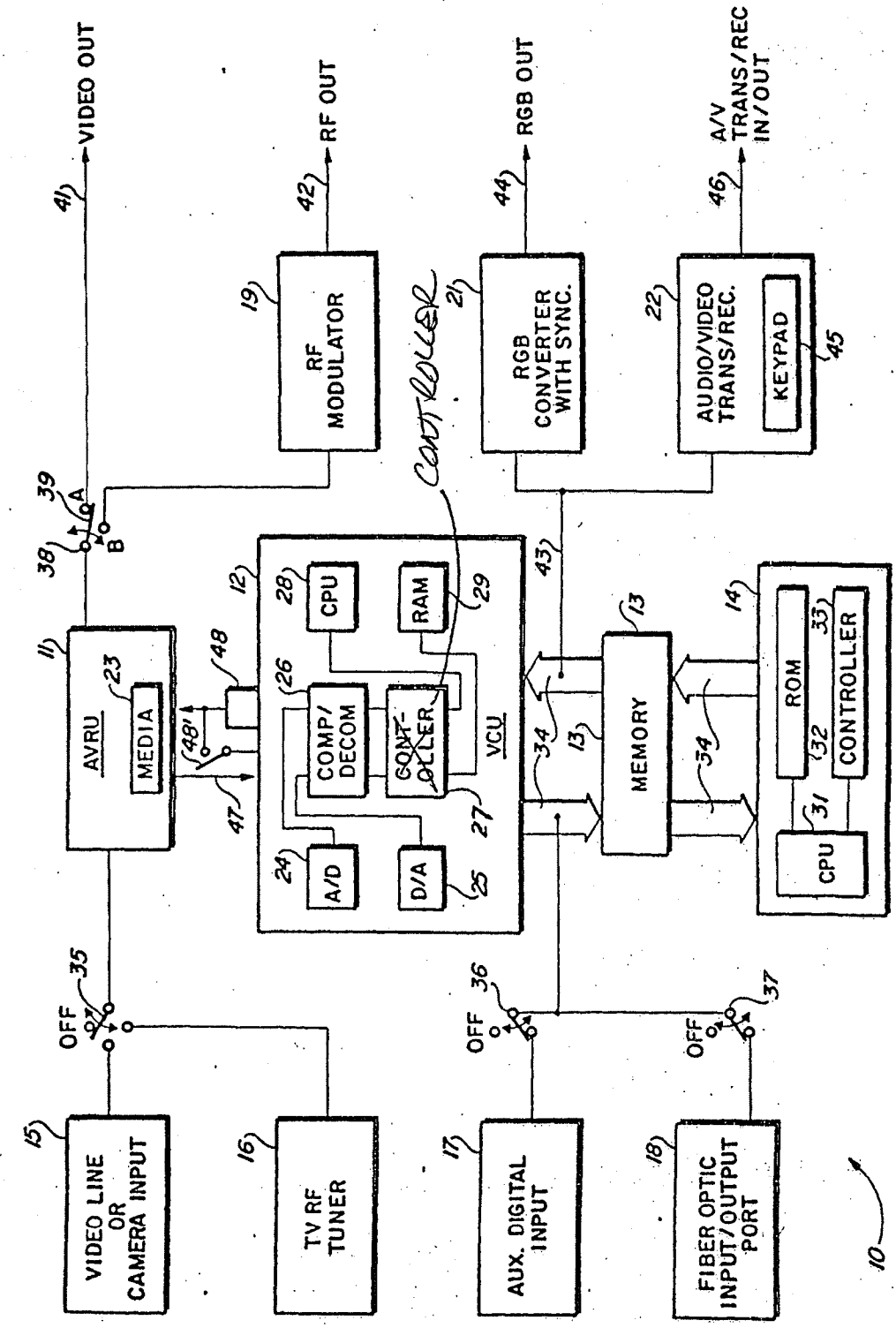

Fig. 2

8/a BH 5-30-90

IN THE

UNITED STATES PATENT AND TRADEMARK OFFICE

ART UNIT 235

Examiner W. Daniel Swayze

"Express Mail" mailing label number B91130857

Date of Deposit May 7, 1990

hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

William E. Hein

(Typed or printed name of person mailing paper or fee)

(Signature of person mailing paper or fee)

Richard A. Lang

CASE (211) M914US

SERIAL NO. 07/347,629

FILED May 5, 1989

SUBJECT AUDIO/VIDEO RECORDER/TRANSCEIVER

6/11/90

THE COMMISSIONER OF PATENTS AND TRADEMARKS
WASHINGTON, D.C. 20231

SIR:

Amendment "A"

In response to the Office Action mailed December 6, 1989, please amend the above-identified patent application as indicated by the following:

In the drawings

Please amend Figure 2 as indicated in red on the enclosed photocopy of that drawing figure to correct a typographical error in the spelling of the word "controller" on one of the blocks.

In the specification

Page 1, line 1, cancel the present title and substitute therefor the new title --AUDIO/VIDEO TRANSCEIVER APPARATUS INCLUDING COMPRESSION MEANS, RANDOM ACCESS STORAGE MEANS, AND MICROWAVE TRANSCEIVER MEANS--

a1

In the claims

Cancel claims 1-25 presently on file, and add new claims 26-30, as set forth below:

26. An audio/video transceiver apparatus comprising:

input means for receiving audio/video source information;

compression means, coupled to said input means, for compressing said audio/video source information into a time compressed representation thereof having an associated time period that is shorter than a time period associated with a real time representation of said audio/video source information;

random access storage means, coupled to said compression means, for storing the time compressed representation of said audio/video source information; and

output means, coupled to said random access storage means, for receiving the time compressed audio/video source information stored in said random access storage means for transmission away from said audio/video transceiver apparatus;

said input and output means comprising microwave transceiver means, coupled to a microwave link, for receiving said audio/video source information over said microwave link and for transmitting said time compressed audio/video source information stored in said random access storage means over said microwave link.

27. An audio/video transceiver apparatus comprising:

input means for receiving audio/video source information;

compression means, coupled to said input means, for compressing said audio/video source information into a time compressed representation thereof having an associated time period that is shorter than a time period associated with a real time representation of said audio/video source information;

random access storage means, coupled to said compression means, for storing the time compressed representation of said audio/video source information, said random access storage means comprising a bubble memory; and

output means, coupled to said random access storage means, for receiving the time compressed audio/video source information stored in said random access storage means for transmission away from said audio/video transceiver apparatus.

28. An audio/video transceiver apparatus comprising:

input means for receiving audio/video source information;

compression means, coupled to said input means, for compressing said audio/video source information into a time compressed representation thereof having an associated time period that is shorter than a time period associated with a real time representation of said audio/video source information;

random access storage means, coupled to said compression means, for storing the time compressed representation of said audio/video source information, said random access storage means comprising digital paper; and

output means, coupled to said random access storage means, for receiving the time compressed audio/video source information stored in said random access storage means for transmission away from said audio/video transceiver apparatus.

29. An audio/video transceiver apparatus comprising:

input means for receiving audio/video source information;

compression means, coupled to said input means, for compressing said audio/video source information into a time compressed representation thereof having an associated time period that is shorter than a time period associated with a real time representation of said audio/video source information;

random access storage means, coupled to said compression means, for storing the time compressed representation of said audio/video source information, said random access storage means comprising one or more magnetic disks; and

output means, coupled to said random access storage means, for receiving the time compressed audio/video source information stored in said random access storage means for transmission away from said audio/video

transceiver apparatus;

30. An audio/video transceiver apparatus comprising:

input means for receiving audio/video source information as a time compressed representation thereof, said time compressed representation of said audio/video source information being received over an associated burst time period that is shorter than a real time period associated with said audio/video source information;

random access storage means, coupled to said input means, for storing the time compressed representation of said audio/video source information received by said input means; and

output means, coupled to said random access storage means, for receiving the time compressed representation of said audio/video source information stored in said random access storage means for transmission away from said audio/video transceiver apparatus;

said input and output means comprising microwave transceiver means coupled, via a microwave link, to a video library, said video library storing a multiplicity of items of audio/video source information in said time compressed digital representation for selective retrieval, in said associated burst time period, over said microwave link, said microwave transceiver means being further operative for transmitting said time compressed representation of said audio/video information stored in said random access storage means over said microwave link.

REMARKS

Submitted herewith is a document executed by the sole inventor in the above-identified patent application revoking all previous powers of attorney and appointing the undersigned attorney as his new attorney in this application.

Also submitted herewith is a Letter to the Official Draftsman and a copy of Figure 2 of the drawings as originally filed, requesting the correction of a minor typographical error in that drawing figure. The Examiner's approval of this correction is respectfully requested.

Also submitted herewith, at the Examiner's request, are copies of the references cited at page 6, lines 15-25 of the specification. Applicant is in the process of obtaining a copy of the Electronic Engineering Times article cited at page 7, lines 20-25 of the specification and expects to transmit that copy within the next few days.

The title of the application has been objected to as not being descriptive. Accordingly, applicant has amended the title to make it descriptive of the claimed subject matter.

Claims 1-25 have been canceled, and new claims 26-30, presented herewith, have been added. New claims 26-30 are believed to present subject matter not claimed in copending parent application serial no. 07/289,776 in better form, with more specificity, particularity, and clarity than original claims 1-25.

New claims 26-29 are directed to an audio/video transceiver having the ability to receive audio/video source information over a microwave link, compress the received audio/video source information into a time compressed representation thereof, store the time compressed representation of the audio/video source information in a random access storage that may variously comprise a bubble memory, digital paper or a magnetic disk, and then transmit the time compressed representation of the audio/video source information that is stored in the random access storage to a destination device via a microwave

transceiver and an associated microwave link.

New claim 30 is similarly directed to an audio/video transceiver, including a microwave transceiver coupled, via a microwave link, to a video library in which a multiplicity of items of audio/video source information are stored in a time compressed digital format for selective retrieval, in a burst time period, over the microwave link, and in which a time compressed representation of audio/video information stored in a random access storage may be transmitted over the microwave link in a burst time period.

These features of applicant's specifically claimed invention are not shown or suggested by any of the cited references, taken alone or in any combination. For example, Workman teaches an apparatus and method for transmitting a digital image over a limited bandwidth communications channel in which a block transformation technique involving transform coefficients is employed. Nichols et al. teaches a multiple-screen editing system that permits quicker editing of recorded information. Parker et al. teaches an apparatus and method for repidly creating a custom tape of musical pieces selected from a music library. Fabris et al. is directed to a video teleconferencing system in which teleconferencing cameras are remotely controlled by participants of the teleconference.

It is respectfully submitted that applicant's new claims 26-30 all fully comply with the provisions of 35 U.S.C. 112 and are also patentable over all of the cited references, taken alone or in any combination. Favorable action is accordingly solicited.

Respectfully submitted,

Richard A. Lang

By _____

William E. Hein
Patent Attorney #26,465

May 7, 1990
(303) 667-6741
Loveland, Colorado

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

ART UNIT 235

Examiner W. Daniel Swayze

Richard A. Lang

CASE 211

SERIAL NO. 07/347,629

FILED May 5, 1989

SUBJECT AUDIO/VIDEO RECORDER/TRANSCEIVER

THE COMMISSIONER OF PATENTS AND TRADEMARKS
WASHINGTON, D.C. 20231

SIR:

REVOCATION OF POWER OF ATTORNEY AND
APPOINTMENT OF SUBSTITUTE ATTORNEY

The undersigned sole inventor named in the above-identified patent application hereby revokes all previous powers of attorney and appoints in their stead William E. Hein, Registration No. 26,465, P.O. Box 335, Loveland, Colorado 80539, as his attorney, with full power of substitution and revocation, to prosecute said application, to make alterations and amendments therein, to receive the Letters Patent, and to transact all business in the U.S. Patent and Trademark Office in connection therewith.

Please forward all future written communications to:

William E. Hein
Attorney at Law
P.O. Box 335
Loveland, Colorado 80539

Please direct telephone calls to William E. Hein at (303) 667-6741.

Respectfully submitted,

Richard A. Lang

May 3, 1990

FORM PTO-1083

Case Docket No. 211

In the application of Richard A. Lang
Serial No. 07/347,629
Filed: May 5, 1989

"Express Mail" mailing label number B91130857
Date of Deposit May 7, 1990

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

William E. Heir
(Typed or printed name of person mailing paper or fee)

(Signature of person mailing paper or fee)

For: AUDIO/VIDEO RECORDER/TRANSCEIVER

THE COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

Sir:

Transmitted herewith is an amendment in the above-identified application.

XX Small entity status of this application under 37 CFR 1.9 and 1.27 has been established by a verified statement previously submitted.

☐ A verified statement to establish small entity status under 37 CFR 1.9 and 1.27 is enclosed.

XX No additional fee is required.

The fee has been calculated as shown below:

	(Col. 1) CLAIMS REMAINING AFTER AMENDMENT		(Col. 2) HIGHEST NO. PREVIOUSLY PAID FOR	(Col. 3) PRESENT EXTRA	SMALL ENTITY RATE	SMALL ENTITY ADDIT. FEE	OR	OTHER THAN A SMALL ENTITY RATE	OTHER THAN A SMALL ENTITY ADDIT. FEE
TOTAL	* 5	MINUS	** 25	= 0	x5=	$		x10=	$
INDEP.	* 5	MINUS	*** 6	= 0	x15=	$		x30=	$
☐ FIRST PRESENTATION OF MULTIPLE DEP. CLAIM					+50=	$		+100=	$
					TOTAL ADDIT. FEE	$	OR	TOTAL	$

*If the entry in Col. 1 is less than the entry in Col. 2, write "0" in Col. 3.
**If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, write "20" in this space.
***If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, write "3" in this space.
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found from the equivalent box in Col. 1 of a prior amendment or the number of claims originally filed.

☐ Please charge my Deposit Account No. _____ in the amount of $_____. A duplicate copy of this sheet is attached.

XX A check in the amount of $ 90.00 is attached. in payment of the processing fee.

☐ The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. _____. A duplicate copy of this sheet is attached.

☐ Any filing fees under 37 CFR 1.16 for the presentation of extra claims.

☐ Any patent application processing fees under 37 CFR 1.17.

Respectfully submitted,

William E. Heir #26,465

IN THE

UNITED STATES PATENT AND TRADEMARK OFFICE

ART UNIT 235

Examiner W. Daniel Swayze

Richard A. Lang

CASE (211) M914US

SERIAL NO. 07/347,629

FILED May 5, 1989

SUBJECT AUDIO/VIDEO TRANSCEIVER APPARATUS INCLUDING COMPRESSION MEANS, RANDOM ACCESS STORAGE MEANS, AND MICROWAVE TRANSCEIVER MEANS.

THE COMMISSIONER OF PATENTS AND TRADEMARKS
WASHINGTON, D.C. 20231

SIR:

Transmittal of Prior Art Reference

Further to applicant's Amendment "A" filed on May 7, 1990, in the above-identified patent application, enclosed is a photocopy of the Electronic Engineering Times reference cited at page 7, lines 20-25 of the specification. A copy of this reference was requested by the Examiner in the Office Action mailed December 6, 1989.

Respectfully submitted,

Richard A. Lang

By _____
William E. Hein
Patent Attorney #26,465

May 17, 1990
(303) 667-6741
Loveland, Colorado

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, on May 17, 1990
Date

William E. Hein
Name of applicant, assignee, or Registered Representative

Signature

May 17, 1990
Date

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
07/347,629	05/05/89	LANG R	M914US

EXAMINER
NGUYEN, H

KENNETH E. LEEDS
SKJERVEN, MORRILL, MACPHERSON,
FRANKLIN & FRIEL
25 METRO DRIVE, STE 700
SAN JOSE, CA 95110

ART UNIT	PAPER NUMBER
235	10

DATE MAILED: 09/04/90

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☑ This application has been examined ☑ Responsive to communication filed on 5/7/90 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), _____ days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☑ Notice of References Cited by Examiner, PTO-892.
2. ☐ Notice re Patent Drawing, PTO-948.
3. ☐ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, Form PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ _____

Part II SUMMARY OF ACTION

1. ☑ Claims 26-30 are pending in the application.
   Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims 1-25 have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☑ Claims 26-30 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed on _____, has been ☐ approved. ☐ disapproved (see explanation).
12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

PTOL-326 (Rev. 6-88)

In response to the Applicant argument in paper no. 8, dated 07 May 1990, the following action is taken.

1. Claim 28 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 28 is confusing. The Examiner is uncertain the meaning of the term "Digital paper". Does it refer to a kind of punched card for storing data?

2. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
>
> Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

3. Claims 26, 30 are rejected under 35 U.S.C. § 103 as being unpatentable over Southworth et al in view of Lambert and Fox et al.

Southworth et al discloses the video input 27; the

compressor means 25 (Fig. 1); the random access storage means 50 (Fig. 2); the output means 31 (column 2, lines 44-45).

Southworth et al does not disclose microwave transceiver means; microwave link; and the video library. Lambert disclose the microwave transceiver means and the microwave link (column 2, lines 44-51). Fox et al discloses the video library (column 5, lines 47-53). It would have been obvious to one of ordinary skill in the art to modify Southworth et al with the microwave transceiver means of Lambert and the video library as disclosed by Fox et al in order to increase density of information data transmitted, and to selectively access an interested program for viewing.

4. Claims 27-29 are rejected under 35 U.S.C. § 103 as being unpatentable over Southworth et al in view of well known in the art.

Southworth et al discloses the input means; the compressor means; the random access storage means; the output means as stated in the paragraph 3 above. Southworth et al does not disclose the random access storage means comprising bubble memory of claim 27, digital paper of claim 28; magnetic disk of claim 29. The use of digital paper, bubble memory and magnetic disk for storing information data is well known in the art and Official notice is taken thereof. It would be obvious to one of ordinary skill in the art to modify Southworth et al with the

bubble memory, digital paper and magnetic disks in order to increase the data density stored and to retrieve information data when needed because selection from a plurality of equivalent memory (storage devices) is considered obvious to one of ordinary skill in the art.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huy Nguyen whose telephone number is (703) 557-1944.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 557-2878.

ANGEL M. TORRES
PRIMARY EXAMINER
ART UNIT 235

H. Nguyen/mb
August 15, 1990

TO SEPARATE, HOLD TOP AND BOTTOM EDGES, SNAP–APART AND DISCARD CARBON

E.D.

FORM PTO-892 (REV. 3-78) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	SERIAL NO.	GROUP ART UNIT	ATTACHMENT TO PAPER NUMBER
NOTICE OF REFERENCES CITED	347629	235	10
	APPLICANT(S) Richard A. Lang		

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
	A	4400717	8/23/83	Southworth et al	358	134	
	B	4709418	11/24/87	Fox et al	358	86	
	C	4724491	2/9/88	Lambert	358	310	
	D						
	E						
	F						
	G						
	H						
	I						
	J						
	K						

FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS	PERTINENT SHTS. DWG	PERTINENT PP. SPEC.
	L								
	M								
	N								
	O								
	P								
	Q								

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

R	
S	
T	
U	

EXAMINER	DATE
HUY NGUYEN	8/10/90

* A copy of this reference is not being furnished with this office action.
(See Manual of Patent Examining Procedure, section 707.05 (a).)

IN THE

UNITED STATES PATENT AND TRADEMARK OFFICE

ART UNIT 235

Examiner Huy Nguyen

"Express Mail" mailing label number RB188719091
Date of Deposit January 4, 1991

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William E. Hein
(Typed or printed name of person mailing paper or fee)

(Signature of person mailing paper or fee)

Richard A. Lang

CASE 211 (M914US)

SERIAL NO. 07/347,629

FILED May 5, 1989

SUBJECT AUDIO/VIDEO TRANSCEIVER APPARATUS INCLUDING COMRESSSION MEANS, RANDOM ACCESS STORAGE MEANS, AND MICROWAVE TRANSCEIVER MEANS

THE COMMISSIONER OF PATENTS AND TRADEMARKS
WASHINGTON, D.C. 20231

SIR:

PETITION FOR EXTENSION OF TIME UNDER 37 C.F.R. 1.136

It is respectfully requested that an extension of time of one month be granted in accordance with the provisions of 37 C.F.R. 1.136 to take the action required in the application identified in caption, as reflected by the papers submitted herewith.

A check in the amount of $50.00 (small entity) is enclosed herewith in payment of the processing fee associated with this petition.

Respectfully submitted,

Richard A. Lang

By
William E. Hein
Patent Attorney #26,465

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January 4, 1991
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ART UNIT 235

Examiner Huy Nguyen

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I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.
William E. Hein
(Typed or printed name of person mailing paper or fee)
(Signature of person mailing paper or fee)

Richard A. Lang

CASE 211 (M914US)

SERIAL NO. 07/347,629

FILED May 5, 1989

SUBJECT AUDIO/VIDEO TRANSCEIVER APPARATUS INCLUDING COMRESSSION MEANS, RANDOM ACCESS STORAGE MEANS, AND MICROWAVE TRANSCEIVER MEANS

THE COMMISSIONER OF PATENTS AND TRADEMARKS
WASHINGTON, D.C. 20231

SIR:

AMENDMENT "B"

In response to the Office Action mailed September 4, 1990, please amend the above-identified patent application as indicated by the following:

In the claims

Please amend claims 26-30 as follows:

B1

26. (amended) An audio/video transceiver apparatus comprising:

input means for receiving audio/video source information, said audio/video source information comprising a multiplicity of video frames in the form of one or more full motion video programs;

compression means, coupled to said input means, for compressing said audio/video source information into a time compressed representation thereof having an associated time period that is shorter than a time period associated with a real time representation of said audio/video source information;

random access storage means, coupled to said compression means, for

storing the time compressed representation of said audio/video source information; and

(c) output means, coupled to said random access storage means, for receiving the time compressed audio/video source information stored in said random access storage means for transmission away from said audio/video transceiver apparatus;

(d) said input and output means comprising microwave transceiver means, coupled to a microwave link, for receiving said audio/video source information over said microwave link and for transmitting said time compressed audio/video source information stored in said random access storage means over said microwave link.

27. (amended) An audio/video transceiver apparatus comprising:

(a) input means for receiving audio/video source information, said audio/video source information comprising a multiplicity of video frames in the form of one or more full motion video programs;

(b) compression means, coupled to said input means, for compressing said audio/video source information into a time compressed representation thereof having an associated time period that is shorter than a time period associated with a real time representation of said audio/video source information;

(c) random access storage means, coupled to said compression means, for storing the time compressed representation of said audio/video source information, said random access storage means comprising a bubble memory; and

(d) output means, coupled to said random access storage means, for receiving the time compressed audio/video source information stored in said random access storage means for transmission away from said audio/video transceiver apparatus.

28. (amended) An audio/video transceiver apparatus comprising:

(a) input means for receiving audio/video source information, said audio/video source information comprising a multiplicity of video frames in the form of one or more full motion video programs;

compression means, coupled to said input means, for compressing said audio/video source information into a time compressed representation thereof having an associated time period that is shorter than a time period associated with a real time representation of said audio/video source information;

random access storage means, coupled to said compression means, for storing the time compressed representation of said audio/video source information, said random access storage means comprising digital paper; and

output means, coupled to said random access storage means, for receiving the time compressed audio/video source information stored in said random access storage means for transmission away from said audio/video transceiver apparatus.

~~29.~~ (amended) An audio/video transceiver apparatus comprising:

input means for receiving audio/video source information, said audio/video source information comprising a multiplicity of video frames in the form of one or more full motion video programs;

compression means, coupled to said input means, for compressing said audio/video source information into a time compressed representation thereof having an associated time period that is shorter than a time period associated with a real time representation of said audio/video source information;

random access storage means, coupled to said compression means, for storing the time compressed representation of said audio/video source information, said random access storage means comprising one or more magnetic disks; and

output means, coupled to said random access storage means, for receiving the time compressed audio/video source information stored in said random access storage means for transmission away from said audio/video transceiver apparatus;

~~30.~~ (amended) An audio/video transceiver apparatus comprising:

input means for receiving audio/video source information as a time compressed digital representation thereof, said audio/video source information

comprising a multiplicity of video frames in the form of one or more full motion video programs, said time compressed digital representation of said audio/video source information being received over an associated burst time period that is shorter than a real time period associated with said audio/video source information;

random access storage means, coupled to said input means, for storing the time compressed digital representation of said audio/video source information received by said input means; and

output means, coupled to said random access storage means, for receiving the time compressed digital representation of said audio/video source information stored in said random access storage means for transmission away from said audio/video transceiver apparatus;

said input and output means comprising microwave transceiver means coupled, via a microwave link, to a video library, said video library storing a multiplicity of [items of audio/video source information] full motion video programs in said time compressed digital representation for selective retrieval, in said associated burst time period, over said microwave link, said microwave transceiver means being further operative for transmitting, in said burst time period, said time compressed digital representation of said audio/video source information stored in said random access storage means over said microwave link.

Remarks

Applicant notes that the outstanding Office Action in this application was directed to the previous attorney of record, whose power was revoked in a paper accompanying applicant's Amendment "A" filed on May 7, 1990. It is again respectfully requested that all future correspondence in connection with this application be directed to applicant's duly appointed, undersigned attorney.

Claims 26-30 have been amended to improve the clarity of the claim language and to direct them more specifically to the subject matter that applicant regards as his invention.

Claim 28 has been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner has stated that he is uncertain as to the meaning of the term "digital paper". Reconsideration of this rejection is respectfully requested. Enclosed for the Examiner's benefit is a copy of page 102 of the February 13, 1989, edition of the widely known publication Electronic Engineering Times. This page contains the article entitled Back to Paper Tape-Digital Paper, which explains the concept of digital paper as being a form of data storage using optical media. It is respectfully submitted that this term is well understood by those person having ordinary skill in the art and that its use by applicant in his specification and claims is therefore permitted under 35 U.S.C. 112.

Claims 26 and 30 have been rejected as being unpatentable under 35 U.S.C. 103 over Southworth et al. in view of Lambert and Fox et al. Claims 27-29 have been rejected as being unpatentable under 35 U.S.C. 103 over Southworth et al. in view of unspecified art. These rejections are respectfully traversed, particularly with respect to claims 26-30, as presently amended. Claim 26, as amended, specifically calls for "An audio/video transceiver apparatus comprising: input means for receiving

audio/video source information...comprising a multiplicity of video frames in the form of one or more full motion video programs; compression means...for compressing said audio/video source information into a time compressed representation thereof having an associated time period that is shorter than a time period associated with a real time representation of said audio/video source information; random access storage means...for storing the time compressed representation...; and output means...; said input and output means comprising microwave transceiver means...." Claims 27-29, as amended, call for substantially the same structure recited above and further specifically recite that the random access storage means comprises a bubble memory, digital paper, and one or more magnetic disks, respectively. Claim 30, as amended, specifically calls for "An audio/video transceiver apparatus comprising: input means for receiving audio/video source information as a time compressed digital representation thereof, said audio/video source information comprising a multiplicity of video frames in the form of one or more full motion video programs, said time compressed digital representation of said audio/video source information being received over an associated burst time period that is shorter than a real time period associated with said audio/video source information; random access storage means...for storing the time compressed digital representation of said audio/video source information received by said input means; and output means...; said input and output means comprising microwave transceiver means coupled, via a microwave link, to a video library, said video library storing a multiplicity of full motion video programs in said time compressed digital representation for selective retrieval, in said associated burst time period...." The above-recited important structural features of applicant's invention set forth in amended claim 26 provide an audio/video transceiver having the capability of receiving audio/video source information in the form of a one or more full motion video programs over a microwave link, compressing the one or more full motion video programs into a time compressed representation thereof having an associated time period that

is shorter than a time period associated with a real time representation of the one or more full motion video programs, storing the time compressed representation of the one or more full motion video programs in a random access storage, and then transmitting the time compressed representation of the one or more full motion video programs stored in the random access storage to a destination device via a microwave link. Similarly, the important structural features set forth in claims 27-29, as amended, provide an audio/video transceiver having the capability of receiving audio/video source information in the form of a one or more full motion video programs, compressing the one or more full motion video programs into a time compressed representation thereof having an associated time period that is shorter than a time period associated with a real time representation of the one or more full motion video programs, storing the time compressed representation of the one or more full motion video programs in a random access storage, and then transmitting the time compressed representation of the one or more full motion video programs stored in the random access storage to a destination device. In accordance with the above-recited important structural features of applicant's invention set forth in amended claim 30, the audio/video source information is provided by a video library that stores a multiplicity of full motion video programs as time compressed digital representations thereof for selective retrieval by the claimed transceiver, in a burst time period, over a microwave link. The time compressed representation of each retrieved full motion video program is stored in a random access storage and may then be transmitted to a destination device over a microwave link in the same burst time period. These specifically claimed features of applicant's invenion are simply not shown or suggested by any of the cited references, taken alone or in any combination.

Southworth et al. teaches a slow-scan television system for freezing a single frame of a television signal and then transmitting that single frame or still picture using communication mediums of limited bandwidth, such as

telephone lines, radio waves, etc. As set forth at column 2, lines 59-65 of Southworth et al., transmission of a typical single frame (still picture) of video information requires from 8.25 to 74 seconds, depending upon the bandwidth of the chosen communications medium. This is totally unlike applicant's claimed transceiver apparatus which receives and/or transmits an entire full motion video program, comprising tens of thousands of video frames, in a burst time period that is shorter than the time periods taught by Southworth et al. for transmission of a single frame of video information. In fact, slow-scan television systems, as typified by the teachings of Southworth et al., are simply incapable of transmitting full motion video programs. This inherent limitation may be understood with reference to page 16-6 of The ARRL Operating Manual and to pages 14-34 and 14-35 of the 1984 edition of The Radio Amateur's Handbook, both of which are publications of the American Radio Relay League. A copy of the cited pages of each of these publications is enclosed for the Examiner's benefit.

Further, the video compressor 25 of Southworth et al. operates to receive a composite video signal indicative of a single frame of video information corresponding to a frozen television picture and to provide a slow-scan output signal indicative thereof. This function is accomplished within video compressor 25 by digitizing the single frame of video information, writing the single frame digitized information into a digital memory, and then reading out the single frame digitized information stored in the memory through a digital-to-analog converter at a slow-scan rate. No time compression whatsoever takes place in video compressor 25 or in any other portion of the apparatus of Southworth et al. This is totally unlike applicant's claimed invention in which his compression means is operative for providing a time compressed representation of a multiplicity of video frames in the form of one or more full motion video programs and in which his random access storage means is operative for storing that time compressed representation of a multiplicity of video frames. In short, Southworth et al.

contains absolutely no recognition of the need for transmitting and/or receiving full motion video programs at an accelerated rate as the result of time compression of those full motion video programs, let alone of applicant's specifically claimed structure for accomplishing that result.

Neither Lambert nor Fox et al. adds anything to the teachings of Southworth et al. so as to in any way render applicant's specifically claimed invention obvious over that combination of references. Lambert is directed to an apparatus for automatically inserting advertising spots at desired points in ordinary television programming. The apparatus of Lambert cannot be combined in an operative way with that of Southworth et al. since Lambert relates to ordinary fast-scan, full motion television transmission while Southworth et al. relates to slow-scan transmission of a single television frame or still picture, a totally different area of the art, as discussed in detail above. Fox et al. is directed to an interactive cable television network in which a wider range of television and/or video channels than was previously possible is provided for real time access by the cable television subscriber. Like Lambert, and for the same reason as set forth above, the apparatus of Fox et al. cannot be operatively combined with that of Southworth et al.

For the reasons set forth in detail above, it is applicant's position that the references applied by the Examiner cannot be combined in an operative way and, even if they could be so combined, would still fail to yield applicant's specifically claimed invention. It is therefore respectfully submitted that claims 26-30, as amended, are patentable over all of the cited references, taken alone or in any combination, and that this application is now in condition for allowance. Favorable action is accordingly solicited.

Respectfully submitted,

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January 4, 1991
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