

forming electrical signals to fiber optic signals. Port 18 thus provides a capability for two-way communication between high speed data bus 34 and a fiber optic signal line. The incorporation of fiber optic port 18 in the VCR-ET provides a capability for receiving audio/video signals from or delivering audio/video signals to the fiber optic line such as a fiber optic telephone line. The fiber optic line carries digital signals in the form of light waves over great distances with a high degree of accuracy and reliability and at a high speed (e.g., about 200 megabytes/second). The VCR-ET can receive a video program at an accelerated rate via fiber optic port 18, e.g., from a variety of sources. For example a video program may be communicated at an accelerated rate from the first VCR-ET to a second VCR-ET in less time than it would take to view the program. Thus, it is not necessary to access the optical fiber for long periods of time to transmit a long video program.

It is also envisioned that in the future, a video library may be established which downloads video programs at an accelerated rate via optical fibers to a subscriber's VCR-ET.

Switch 37 is provided to select connection to the fiber optic input/output port 18. An OFF or open position is provided. The selected signal is delivered to or supplied from high speed data bus 34.

Analog output signals from AVRU 11 are delivered to the common terminal 38 of a selector switch 39. When set to position A, switch 39 delivers the output signal of AVRU 11

directly to a video output line 41 as a standard STCS composite signal; when set to position B switch 39 delivers the output of VRU 11 to the input of RF modulator 19. Modulator 19 converts the video signal to an RF-modulated composite signal for delivery to such devices as televisions and conventional VCR's. These types of devices play back the video program on a particular frequency channel (such as channel 4) on the television. Delivery to the television or VCR is via RF output line 42.

Digital output signals from VCR-ET 10 may be dispatched from high speed data bus 34 via line 43 to input leads of RGB converter 21 and audio-video transmitter/receiver 22.

RGB converter 21 converts the STCS signal into an RGB signal as required by computer monitors and similar display devices. The converted signal is received by a display device connected to RGB converter output line 44.

VCR-ET 10 includes audio/video transmitter/receiver 22 which is typically a modem. Advantageously, the modem may be used to communicate an audio/video program over conventional phone lines in a manner similar to that described above with respect to optical fibers. The term modem is derived directly from its functionality as a modulator-demodulator which allows transfer of the audio/video signal over the standard telephone line. Modems are commonly available for computers and are currently available in the form of a single integrated circuit. As an example, Sierra Semiconductor offers a 2400 baud single chip modem under its part number SC111006. Representative manufacturers of these single modem IC's can be found in the April 14, 1988 issue of Engineering Design News (EDN), pages 124-125. Some of these single modem IC's have the

added capability of generating the tones for dialing a phone number. The destination phone number may be entered by means of an optional keyboard/keypad 45 incorporated in the video recorder 10 of the invention. Output port 46 of transmitter/receiver 22 connects directly to the telephone line. (It is noted that the band width of a conventional phone line is at present much ^{narrower} ~~smaller~~ than the signal band width of an optical fiber, and thus the data transmission rate on telephone lines is much ^{slower} ~~smaller~~ than the transmission rate for an optical fiber. Accordingly, the time required to communicate a video program over a conventional phone line may exceed the time it takes to view the program.)

The application and utilization of the VCR-ET may include a number of forms or operating modes.

In its first and simplest operating mode, AVRU 11 may be operated in the manner of a conventional VCR with signals from an antenna being received by tuner 16 and recorded directly on media 23 in analog form. At the same time the received program may be viewed on the television screen with the television connected at video output terminal 41. An optional signal source for this type of operation is the video line or camera input line 15 selectable by switch 35.

In a second operating mode a program stored ^{on} ~~in~~ media 23 of AVRU 11 may be played back and viewed on the connected television set.

When it is desired to copy a program from one recording media to another, the recording media holding the desired program is installed in the AVRU. The recording media is then played back with optional viewing on a connected television set or other TV monitor or listening through

speakers (as appropriate). As the recording media is played back, the analog signals from the recording media (video and/or audio) are dispatched to VCU 12 via connection 47. The analog signals are converted to digital signals by ADC 24, compressed by compressor/decompressor 26 and the compressed digital signals are stored in memory 13. The foregoing operations are accomplished under the control of controller 27 and CPU 28. RAM 29 is used for interim data storage during this process. Once the complete video/audio program has been stored in memory 13, the recording media from which the stored program has just been read is replaced by blank recording media upon which the stored program is to be copied. CPU 28 in cooperation with controller 27 and RAM 29 then executes the decompression and digital to analog conversion of the program stored in memory 13, decompression taking place in compressor/decompressor 26, and digital to analog conversion being accomplished by DAC 25. The resulting analog program is stored on the blank recording media which constitutes media 23 of AVRU 11.

During the foregoing copying procedures, DCU 14 may be utilized for editing operations. As the program is being read from the first or original recording media, it is simultaneously viewed on the TV screen, or listened to by means of an audio monitor, converted to digital signals, compressed and stored in memory 13. Once the digital audio/video program is stored in memory 13, editing is accomplished by the user through control of DCU 14, by means of a control panel (not shown) coupled to DCU 14. If desired, additional

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audio/video signals may be simultaneously entered into memory 13 and added to those received from VCU 12. The additional signals may be introduced from auxiliary digital input port 17 or from fiber optic input/output port 18 and may comprise video captions for ~~super imposed~~ ^{superimposed} position upon the stored video images, or they may be audio commentaries to be added to silent video presentations. In addition, as mentioned above, the order in which various segments appear in the video programs may be altered. Certain undesired segments, such as TV commercials, may be removed. This editing operation is accomplished under the control of DCU 14.

In still another operating mode a program stored in media 23 of AVRU 11 or being received by AVRU 11 from input line 15 (as from a video camera) may be digitized and compressed by VCU 12 and routed via bus 34, to memory 13. The data from memory 13 is then routed to line 43, transmitter/receiver 22 and to a telephone line. At the other end of the telephone line the signals received are processed by another VCR-ET. As indicated above, conventional nonoptical telephone lines do not typically support high data transmission rates at the present time. Accordingly, even compressed data may require more time to transmit over conventional phone lines than it would take to view the actual video program.

Once received in the second VCR-ET's memory 13, the digitized program can then either be viewed directly from memory or transferred to storage medium 23, either in its entirety or in random segments, based on user preference.

In the case of video camera input at input 15 the transmitted signals may comprise a live transmission. Alter-

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natively the transmitted program may be derived from a program stored ^{on} ~~in~~ media 23 of AVRU 11. In this case the stored analog program is again decoded, digitized, compressed and transmitted via bus 34 to memory 13. The data in memory 13 is then communicated via line 43 and transmitter/receiver 22 to telephone lines.

It follows, of course, that digitized video and audio signals from the remote VCR-ET at the far end of the telephone line may be received at line 46, entered into memory 13 via transmitter/receiver 22, converted to analog signals by VCU 12, and recorded on media 23 and then viewed, if desired, on a television set connected at output 41.

As mentioned earlier, when any of the foregoing operations entail the processing of unmodulated video signals, such signals must first be processed by RF modulator 19 before they can be accepted by devices such as a conventional VCR or television set; when the monitoring means is a computer monitor or a similar display device the signals are processed by RGB converter 21.

All of the foregoing operations are performed with enhanced quality and efficiency by virtue of the digital, rather than analog, storage and transmission modes and the compressed data storage mechanism, with additional advantages of improved cost and reliability afforded in the case of tape to tape (or other media to media) program transfers by virtue of the requirement for only a single tape deck or other storage device.

All of the foregoing operations, to the extent they

relate to the editing, playback, reception and/or transmission of video signals are also analogous to the VCR-ET's capabilities with regard to analog or digital signals containing only audio material.

An improved audio/video recorder with significantly expanded functional capabilities is thus provided in accordance with the stated objects of the invention and although but a single embodiment of the invention has been illustrated and described, it will be apparent to those skilled in the art that various changes and modifications may be made therein without departing from the spirit of the invention or from the scope of the appended claim. For example, the VCR-ET can be constructed so as to be portable. Thus, it could be carried to a location along with a video camera where it is desired to record a program, and then taken to another location where it is used to edit the program. Other modifications will be apparent to those skilled in the art in light of the present specification.

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What is claimed is:

1. An apparatus comprising:
a first means for converting analog video signals received to first digital data signals,
an output port; and
a second means for transmitting said first digital data signals to said output port at a speed greater than the speed of the analog video signals received by said first means.
2. The apparatus set forth in claim 1 in further combination with:
means for coupling said output port to an optical fiber.
3. The apparatus set forth in claim 1 in further combination with:
means for coupling said output port to a telephone line.
4. The apparatus set forth in claim 1 wherein:
said first means sequentially compresses said first digital data signal into a second digital data signal,
and
said second means transmits said second digital data signal to said output port.
5. The apparatus set forth in claim 1 in further combination with:

a transmission medium coupled to said output port; and

decompression means coupled to said transmission medium for receiving and decompressing said second digital data signal.

6. The apparatus set forth in claim 5 in further combination with:

a memory device coupled to said transmission medium for receiving and storing said second digital data signal; and

means for editing the data stored in said memory device.

7. The apparatus set forth in claim 5 in further combination with:

means coupled to said decompression means for displaying video images corresponding to said second digital data signal.

8. An apparatus comprising:

a data port for receiving digital signals corresponding to video information, and

means connected to said data port for receiving program information in compressed digital signals and converting the compressed digital signals to decompressed analog signals.

9. The apparatus set forth in claim 8 in further combination with:

data decompression means, and
said data decompression means decompresses compressed digital signals received by said data port.

10. The apparatus set forth in claim 8 wherein:
said means receives compressed digital signals from a video library.

11. An apparatus comprising:
a first means for receiving analog video signals from an analog video signal storage device,
a digital memory,
a second means for receiving and digitizing said analog video signals and generating digitized data,
said second means transmitting said digitized data to said memory, and
a third means for receiving said digitized data from said digital memory and reconstructing analog video signals in response thereto.

12. The apparatus set forth in claim 11 wherein:
said second means digitizes and compresses said analog video signals.

13. The apparatus set forth in claim 11 wherein:
said first means receives said analog video signals from a video cassette, and

said third means transmits said reconstructed analog video signal to another cassette.

14. An apparatus comprising:

a first means for receiving digital data corresponding to first video signals,

a second means for editing said digital data, and

a third means for displaying second video signals on a monitor corresponding to said edited data,

said second means permitting a user to alter the sequence of said first video signals.

15. The apparatus set forth in claim 14 wherein:

said digital data comprises compressed digital data.

16. An apparatus comprising:

a first means for receiving analog video/audio signals,

a second means for generating digital data corresponding to said video/audio signals, and

a third means for communicating said digital data over a telephone line.

17. The apparatus set forth in claim 16 wherein:

said digital data comprises compressed digital data.

18. A self contained analog video recorder comprising:
an analog video cassette recorder employing a
data storage medium,
an analog video control unit connected to said
storage medium for receiving audio video signals from said
medium at a first speed and then digitizing said signals, and
a first means for transmitting the digitized
signals to an output port at a second speed.

19. The self contained audio video recorder set
forth in claim 18 wherein:
said second speed is greater than said first
speed.

20. The self contained audio video recorder set
forth in claim 1 wherein:
said control unit digitizing and modifies said
signals.

21. The self contained audio video recorder set
forth in claim 18 wherein:
said output port comprises a receiver.

22. A self contained audio video recorder comprising:
an audio video cassette recorder employing a
data storage medium,
an audio video control unit connected to said
storage medium for receiving audio video signals from said
medium and digitizing and modifying said signals,

a memory,
a first means for transmitting the digitized
and modified signals to said memory,
a second means for editing said signals in said
memory, and
a third means for transmitting the edited signals
to said medium.

23. The self contained audio video recorder set forth
in claim 22 wherein:

said audio video signals are received from said
medium at a first speed, and

said third means transmits said edited signals
to said medium at a second speed.

24. The self contained audio video recorder set
forth in claim 23 wherein:

said second speed is higher than said first
speed.

25. A digital editing audio video recorder trans-
mitter comprising:

an audio video recorder comprising a data storage
medium,

an audio video control unit connected to said
storage medium for receiving audio video signals from said
medium and digitizing said signals.

a memory,
a first means for transmitting the digitized signals to said memory,
a second means for editing the digitized signals in said memory, and
a third means for transmitting the edited digitized signals to a receiver.

26. The digital editing audio video recorder/transmitter, set forth in claim 25 wherein:

said audio video control unit digitizes and modifies the audio video signals received from said storage medium.

27. The digital editing audio video recorder/transmitter set forth in claim 25 wherein:

said audio video recorder comprises a video cassette recorder having a single deck for receiving a cassette.

28. The digital editing audio video recorder/transmitter set forth in claim 25 wherein:

said audio video control unit digitizes and compresses said audio video signals.

29. The digital editing audio video recorder/transmitter set forth in claim 28 in further combination with:

a fourth means for selectively transmitting the edited digitized signals to said audio video control unit,

said audio video control unit expanding said edited digitized signals, and

a fifth means for transmitting the expanded edited digitized signals to said medium.

30. A digital editing audio video recorder/transmitter comprising:

an audio video recorder employing a data storage medium,

an audio/video control unit,

said audio video control unit comprising an analog to digital converter, a digital to analog converter, a compressor/decompressor, a controller, a central processor unit, and a random access memory,

means for transmitting audio video signals from said storage medium to said analog to digital converter for conversion to signals of a digital form,

said controller, central processor unit and random access memory modifying said signals in said digital form in said compressor/decompressor,

a memory,

means for transmitting the modified digital signals from said compressor/decompressor to said memory,

a digital control unit,

said digital control unit editing said compressed digital signals, and

means for transmitting the edited compressed digital signals to a receiver.

31. The digital editing video recorder/transmitter set forth in claim 30 wherein:

said controller of said audio video control unit comprises the digital form of said signals.

32. The digital editing video recorder/transmitter set forth in claim 30 in further combination with:

means for transmitting said modified signals to said medium.

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ABSTRACT OF THE DISCLOSURE

An improved video recorder/transmitter with expanded functionality including a capability for editing and/or copying from one video tape to another using only a single tape deck. The increased functionality is realized through the use of analog to digital conversion, signal compression and intermediate storage in an integrated circuit, random access memory. The recorder/transmitter has capabilities to transmit and receive program information in either a compressed or decompressed format over fiber optic lines.

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9100—Patent application: sole or joint: declarant

GR S. PATENTS DIV., EXCELSIOR-LEGAL CO., INC., 62 WHITE ST., NYC 10013

Declaration, Power of Attorney, and Petition

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled VIDEO RECORDER/TRANSMITTER

_____ the specification of which
(check one) is attached hereto. was filed on _____ as
Application Serial No. _____ and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

(Number) _____	(Country) _____	Day/month/year filed _____	Priority claimed <input type="checkbox"/> Yes <input type="checkbox"/> No
(Number) _____	(Country) _____	Day/month/year filed _____	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
(Number) _____	(Country) _____	Day/month/year filed _____	<input type="checkbox"/> Yes <input type="checkbox"/> No

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.) _____	(Filing date) _____	(Status) _____ (patented, pending, abandoned)
(Application Serial No.) _____	(Filing date) _____	(Status) _____ (patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

And I hereby appoint

601
1007
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Reg. No. 301 16,141

my attorney with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

Wherefore I pray that Letters Patent be granted to me for the invention or discovery described and claimed in the foregoing specification and claims, and I hereby subscribe my name to the foregoing specification and claims, declaration, power of attorney, and this petition.

Full name of sole or first inventor *90100* RICHARD A. LANG
Inventor's signature *[Signature]* Date *12-22-88*
Residence *Cave Creek, Arizona AZ*
Citizenship *USA*
Post Office Address *HC 04, Box 10560, Cave Creek, Arizona 85331*

Full name of second joint inventor, if any _____
Second Inventor's signature _____ Date _____
Residence _____
Citizenship _____
Post Office Address _____

(Supply similar information and signature for third and subsequent joint inventors.)



Applicant or Patentee: Richard A. Lang Attorney's
 Serial or Patent No.: _____ Docket No.: 1352L
 Filed/Date Issued: _____
 For: VIDEO RECORDER/TRANSMITTER

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
 STATUS (37 CFR 1.9(f) and 1.27(b)) - INDEPENDENT INVENTOR

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled VIDEO RECORDER/TRANSMITTER described in

- the specification filed herewith
- application serial no. _____, filed _____
- patent no. _____, issued _____

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- no such person, concern, or organization
- persons, concerns or organizations listed below*

*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

FULL NAME _____
 ADDRESS _____
 INDIVIDUAL SMALL BUSINESS CONCERN NONPROFIT ORGANIZATION

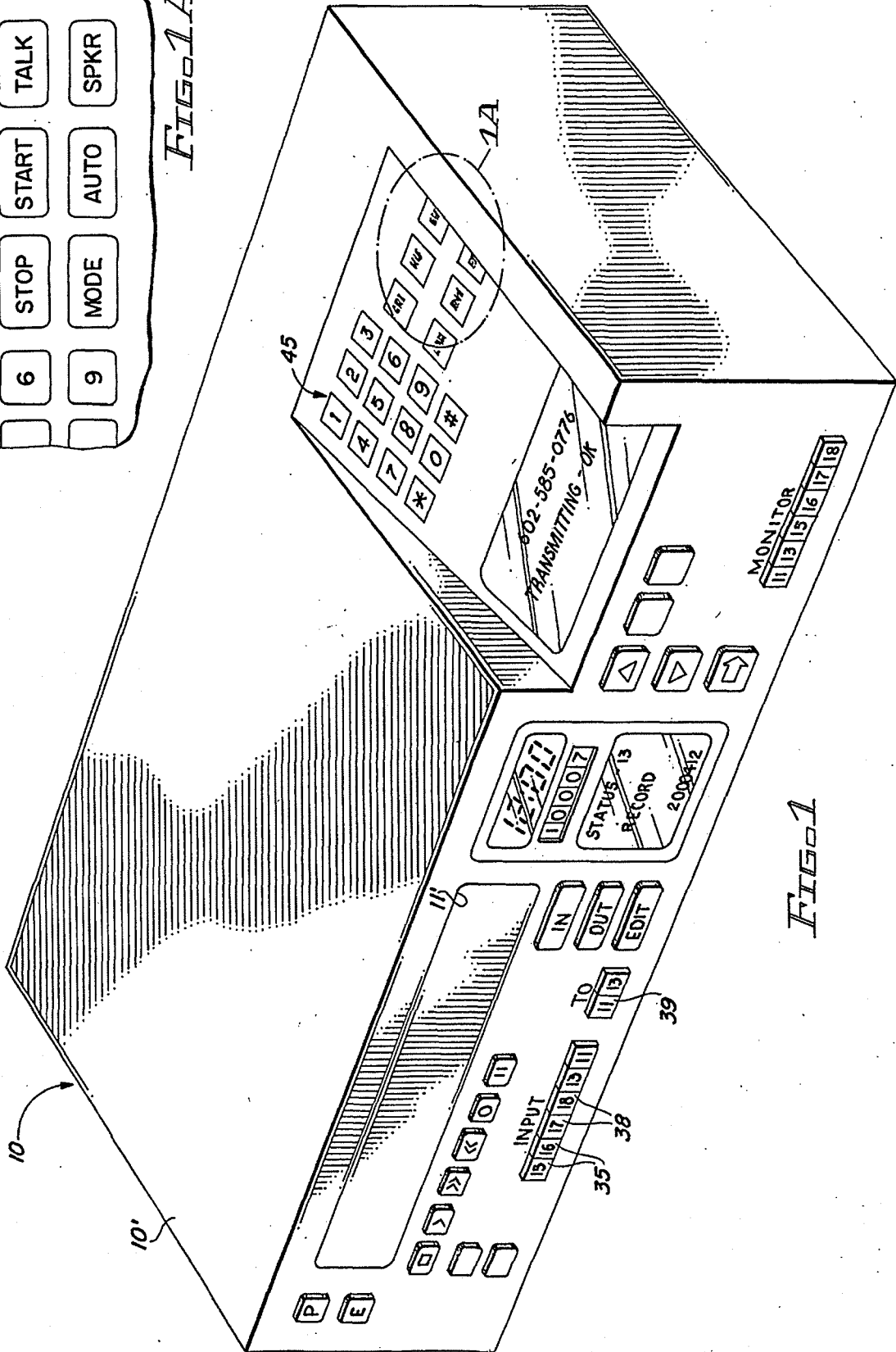
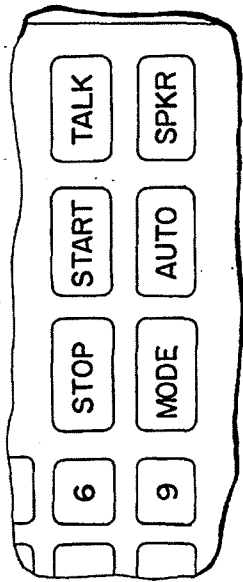
FULL NAME _____
 ADDRESS _____
 INDIVIDUAL SMALL BUSINESS CONCERN NONPROFIT ORGANIZATION

FULL NAME _____
 ADDRESS _____
 INDIVIDUAL SMALL BUSINESS CONCERN NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

RICHARD A. LANG		
NAME OF INVENTOR	NAME OF INVENTOR	NAME OF INVENTOR
Signature of Inventor	Signature of Inventor	Signature of Inventor
<u>12-22-84</u>		
Date	Date	Date



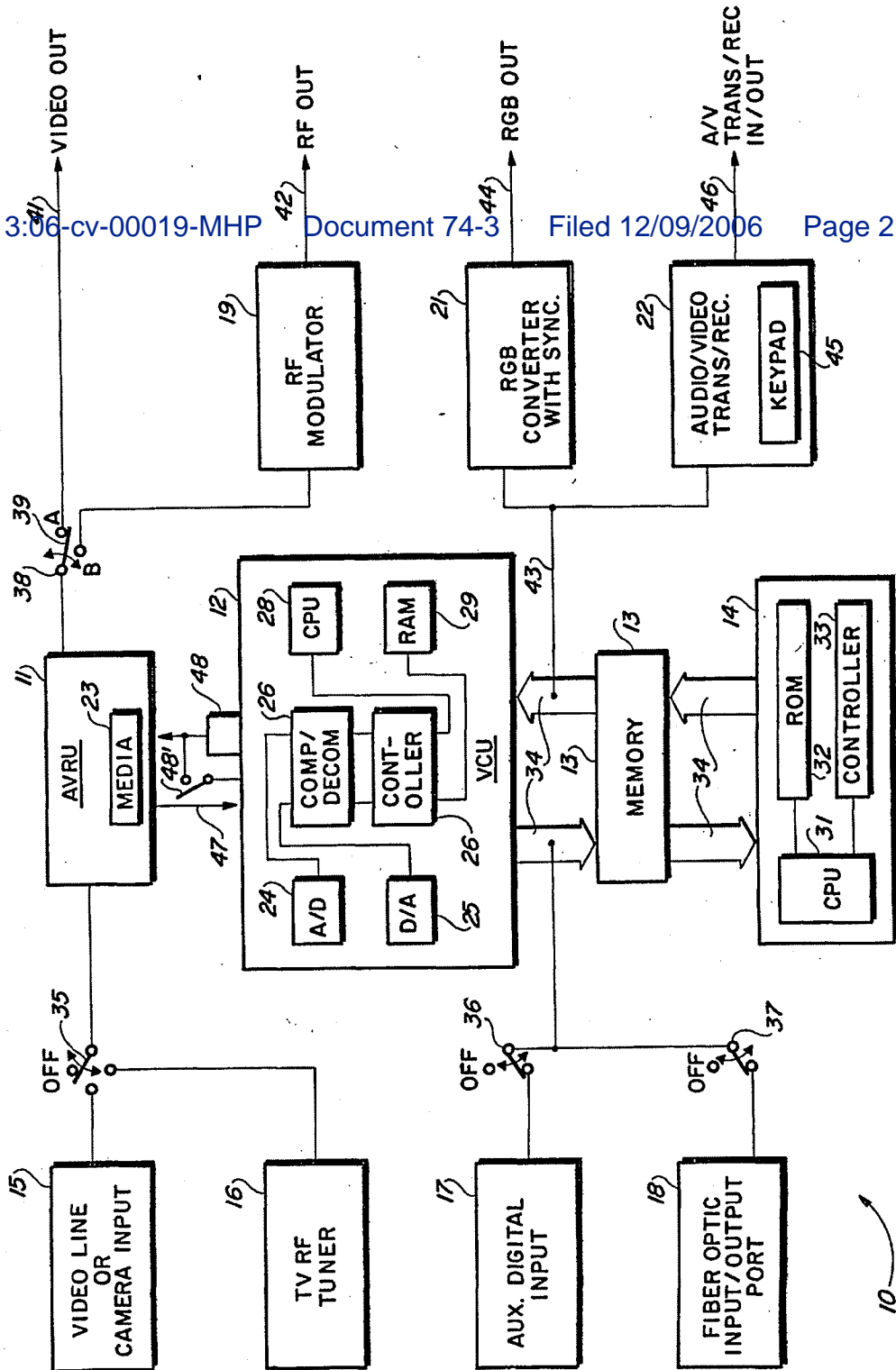
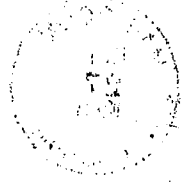


FIG. 2

print of Drawing
As Original File

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07/289776

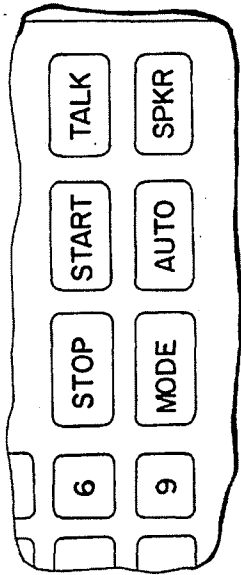


FIG 1A

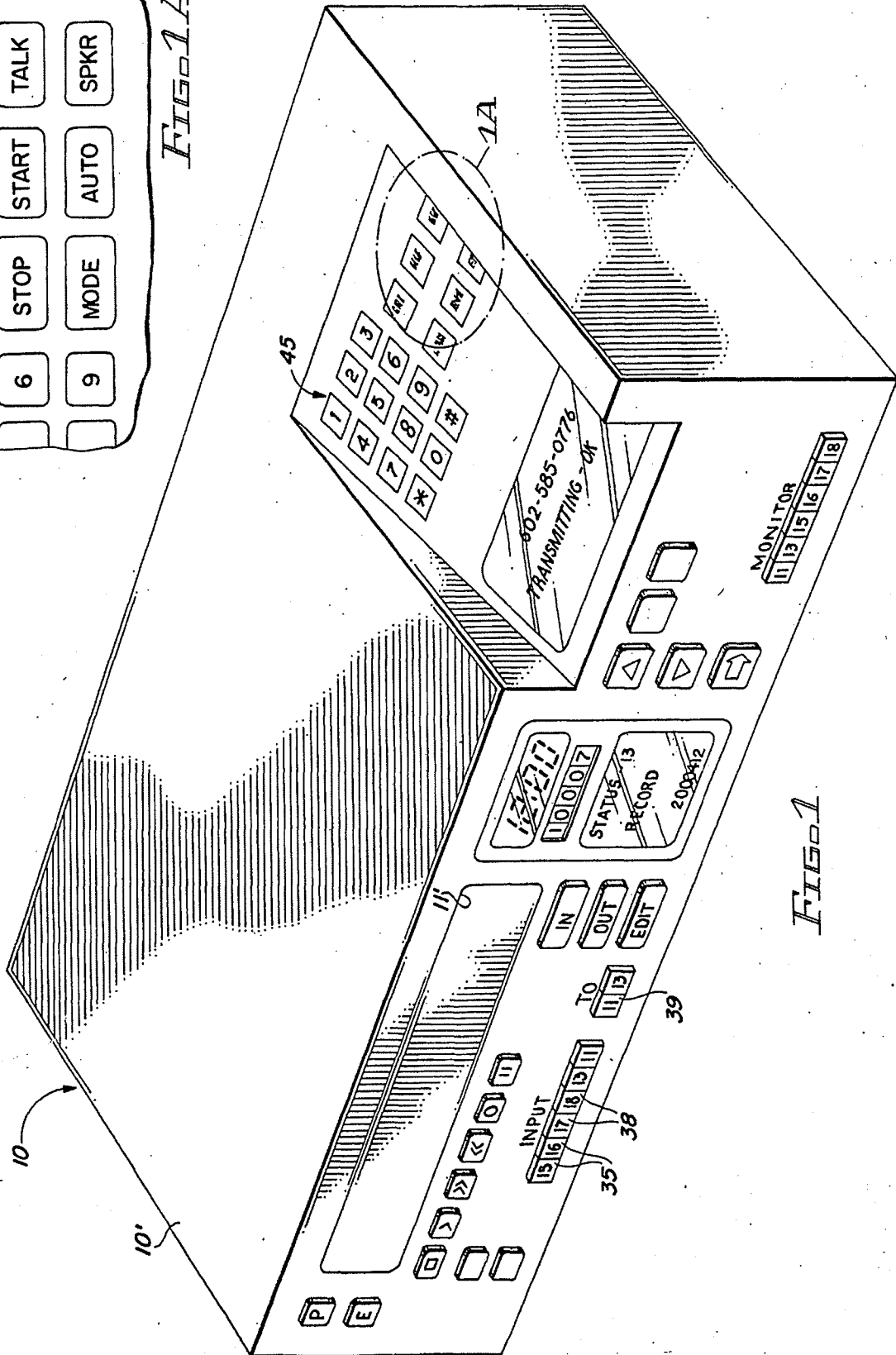


FIG 1

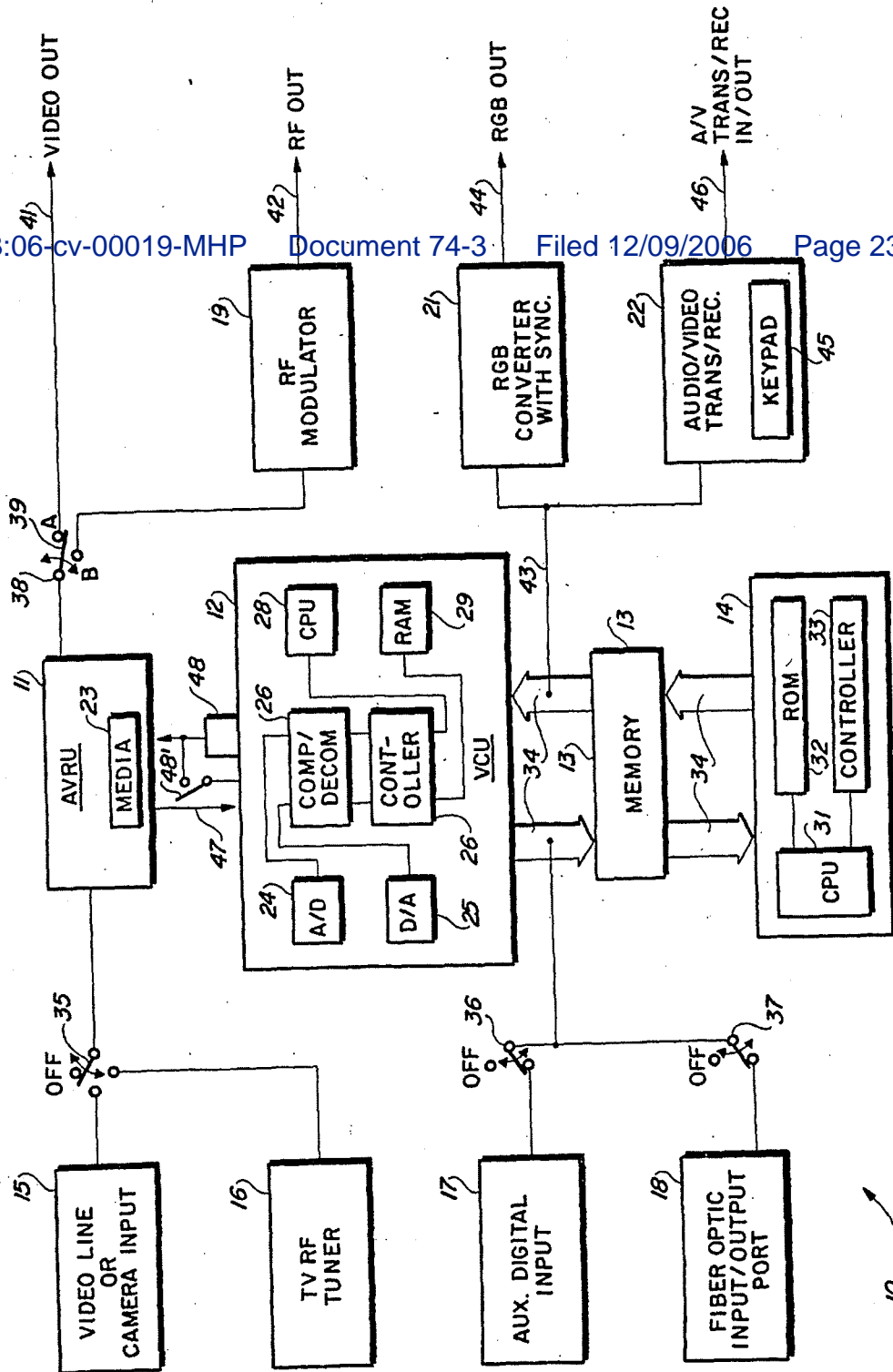


FIG. 2



17/289776

Case Docket No. 1352L

WARREN F. B. LINDSLEY
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THE COMMISSIONER OF PATENTS
 Washington, D.C. 20231

Sir:

Transmitted herewith for filing is the patent application of

Inventor: RICHARD A. LANG

For: VIDEO RECORDER/TRANSMITTER

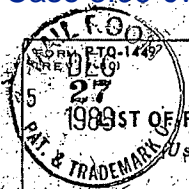
Enclosed are:

- 2 sheets of drawing. (three copies each)
- An assignment of the invention to _____
- A certified copy of a _____ application.
- Associate power of attorney.

CLAIMS AS FILED				
(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) BASIC FEE \$170.00
TOTAL CLAIMS	32 - 20 =	12	X \$6.00	72.00
INDEPENDENT CLAIMS	9 - 3 =	6	X \$17.00	102.00
			TOTAL FILING FEE	\$ 344.00

- Please charge my Deposit Account No. _____ in the amount of \$ _____. A duplicate copy of this sheet is enclosed.
- The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Account No. _____ . A duplicate copy of this sheet is enclosed.
- A check in the amount of \$ 7.00 to cover recording fee enclosed.
- A check in the amount of \$344.00 to cover the filing fee is enclosed.
- Verified Statement Claiming Small Entity Status enclosed.
- Prior Art Form PTO-1449 and copies of cited patents are enclosed.

Warren F. B. Lindsley
 Attorney of Record
 Warren F. B. Lindsley



U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO.
1352L

SERIAL NO.
289776

APPLICANT
RICHARD A. LANG

FILING DATE

GROUP

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
WPS	AA 4 76 8 11 0	8/30/88	DUNLAP ET AL.	360	33.1	
	AB					
	AC					
	AD					
	AE					
	AF					
	AG					
	AH					
	AI					
	AJ					
	AK					

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO
	AL						
	AM						
	AN						
	AQ						
	AP						

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

	AR						
	AS						
	AT						

EXAMINER *WPS* DATE CONSIDERED *9-28-89*

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



PATENT APPLICATION SERIAL NO. 07/289776

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

140 01/04/89 289776

1 201 344.00 CK

PTO-1556
(5/87)



**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 APPLICANT	ATTORNEY DOCKET NO.
07/289,774	12/27/88	LANG	R 1352L

WARREN F. B. LINDSLEY
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EXAMINER	
SWAYZE, W	
ART UNIT	PAPER NUMBER
235	3

DATE MAILED: 10/11/89

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 12-27-88 This action is made final.

A shortened statutory period for response to this action is set to expire _____ 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. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948. |
| 3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449 | 4. <input type="checkbox"/> Notice of informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474 | 6. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. Claims 1-32 are pending in the application.
Of the above, claims _____ are withdrawn from consideration.
2. Claims _____ have been cancelled.
3. Claims _____ are allowed.
4. Claims 1-32 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 which are acceptable for examination purposes until such time as allowable subject matter is indicated.
8. Allowable subject matter having been indicated, formal drawings are required in response to this Office action.
9. The corrected or substitute drawings have been received on _____. These drawings are acceptable; not acceptable (see explanation).
10. The proposed drawing correction and/or 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 _____, has been approved; disapproved (see explanation). However, the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections **MUST** be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.
12. Acknowledgment is made of the claim for priority under 35 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

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The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The Examiner requires a copy of the references (The Electronic System Design and Infoworld) on page 7 lines 3-11 of the specification.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,4-10, 18-24 are rejected under 35 U.S.C. § 102(b) as being anticipated by Baldwin.

Baldwin inherently includes the first means because Baldwin discloses a digital signal, the signal must have originally been converted from analog to digital. Baldwin in fig 5 discloses the output port(60) and the second means(col 2 lines 33-38) of claim 1.

Baldwin in fig 5 discloses the sequential compression of the first means(col 2 lines 33-37) and the transmittal of the second digital signal(58 and 59) of claim 4.

Baldwin in fig 5 discloses the transmission medium(60) and the decompression means col 2 lines 33-37) of claim 5.

Baldwin in fig 5 discloses the memory device(53 and 54) and

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the editing means(fig 4) of claim 6.

Baldwin discloses the display means (col 1 lines 8-13) of claim 7.

Baldwin in fig 5 discloses the data port(input to 51 and 52) and the connecting means (col 2 lines 33-37) of claim 8.

Baldwin in fig 5 discloses the data decompression means(col 2 lines 33-40) of claim 9

Baldwin inherently includes the receiving means from a video library of claim 10 because a tape is disclosed (fig 1)having many video images. These images are the equivalent of a video library.

Baldwin discloses the analog video cassette recorder(col 2 lines 27-30)of claim 18. Baldwin in fig 5 discloses the analog video control unit (51 and 52) of claim 18.

Baldwin inherently includes the digitizing of the analog video control unit of claim 18 because the digital signals must originally have been converted from analog to digital. Baldwin in fig 5 discloses the first means (55 & 56) and the medium claim 18. The Baldwin system is inherently self contained absent a teaching to the contrary. Baldwin discloses the second speed (col 3 lines 50-58) of claim 19.

Baldwin inherently includes the control unit of claim 20 because analog to digital is a form of signal modification. Baldwin discloses the receiver(60) of claim 21 because the

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Baldwin receiver receives data from other circuits. Baldwin discloses the audio video cassette recorder (col 1 lines 8-13) the audio video control unit (see the reasons in claim 18) of claim 22. Baldwin in fig 5 discloses the memory (53 and 54), the first means (51 and 52), the second means (fig 4). Baldwin inherently includes the third transmitting means because the Baldwin system is for recording.

Baldwin discloses the first and second speeds (col 3 lines 40-49) of claim 23.

Baldwin discloses the second speed (col 3 lines 40-49) of claim 24.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 11-15 and 25 -32 are rejected under 35 U.S.C.

§ 102(e) as being anticipated by Nichols.

Nichols in fig 4 discloses the first means (90), the digital memory (98, 120 and 124), the second means (96, 118 and 122) and the third means (142, 144 and 146) of claim 11.