United States Patent [19]

McNeill, Jr. et al.

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[54] **SMALL COMPUTER SYSTEM EMULATOR FOR NON-LOCAL SCSI DEVICES**

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[21] Appl. No.: **263,168**

[22] Filed: **Jun. 21, 1994**

Related U.S. Application Data

[63] Continuation of Ser. No. 812,197, Dec. 20, 1991, abandoned.

[51] Int. Cl.^{6} **G06F 15/16**

[52] U.S. Cl. **395/500**; 395/800; 364/228; 364/280; 364/280.9; 364/284.2; 364/DIG. 1

[58] Field of Search .... 395/800, 500; 364/DIG. 1, 228, 280, 280.9, 284.2, DIG. 1

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,888,680	12/1989	Sander et al.	395/500
5,073,854	12/1991	Martin et al.	364/425
5,093,776	3/1992	Morss et al.	395/500
5,129,036	7/1992	Dean et al.	395/2
5,170,466	12/1992	Rogan et al.	395/145
5,175,822	12/1992	Dixon et al.	395/275
5,185,864	2/1993	Bonevento et al.	395/275
5,204,951	4/1993	Keener et al.	395/325
5,214,695	5/1993	Arnold et al.	380/4

FOREIGN PATENT DOCUMENTS

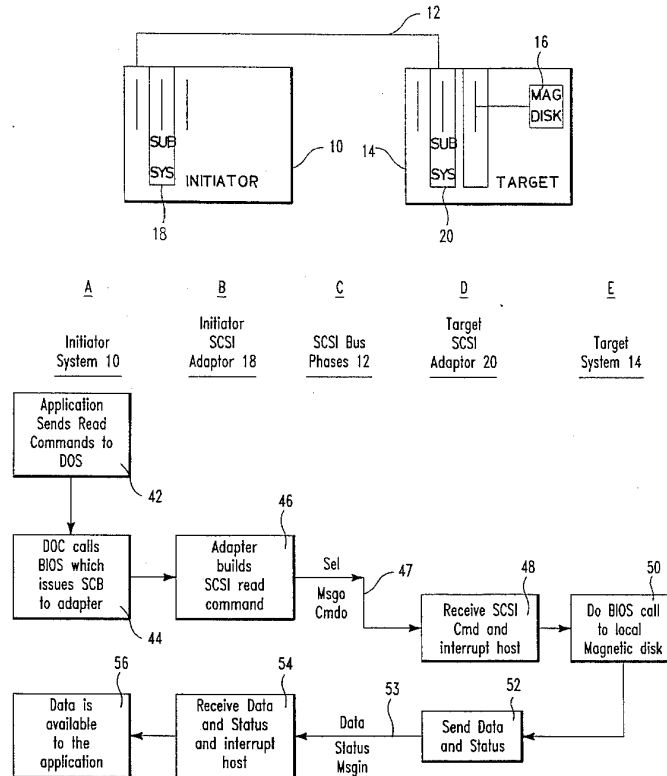|			
0395416	4/1990	European Pat. Off. .	
2220509	11/1989	United Kingdom	G06F 13/12

OTHER PUBLICATIONS

IBM TDB Vol. 30, No. 9 Feb. 1988.

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[57] **ABSTRACT**

A SCSI computer system is provided whereby a host computer gains access to a targeted but non-local peripheral device, which device or devices are individually responsive to either SCSI or non-SCSI commands, by sending SCSI commands via a SCSI bus to a connected SCSI target computer which emulates the targeted peripheral device local to the SCSI target computer, whether the targeted peripheral device is responsive to only SCSI or only non-SCSI commands, to cause the targeted peripheral device to carry out the initial SCSI commands.
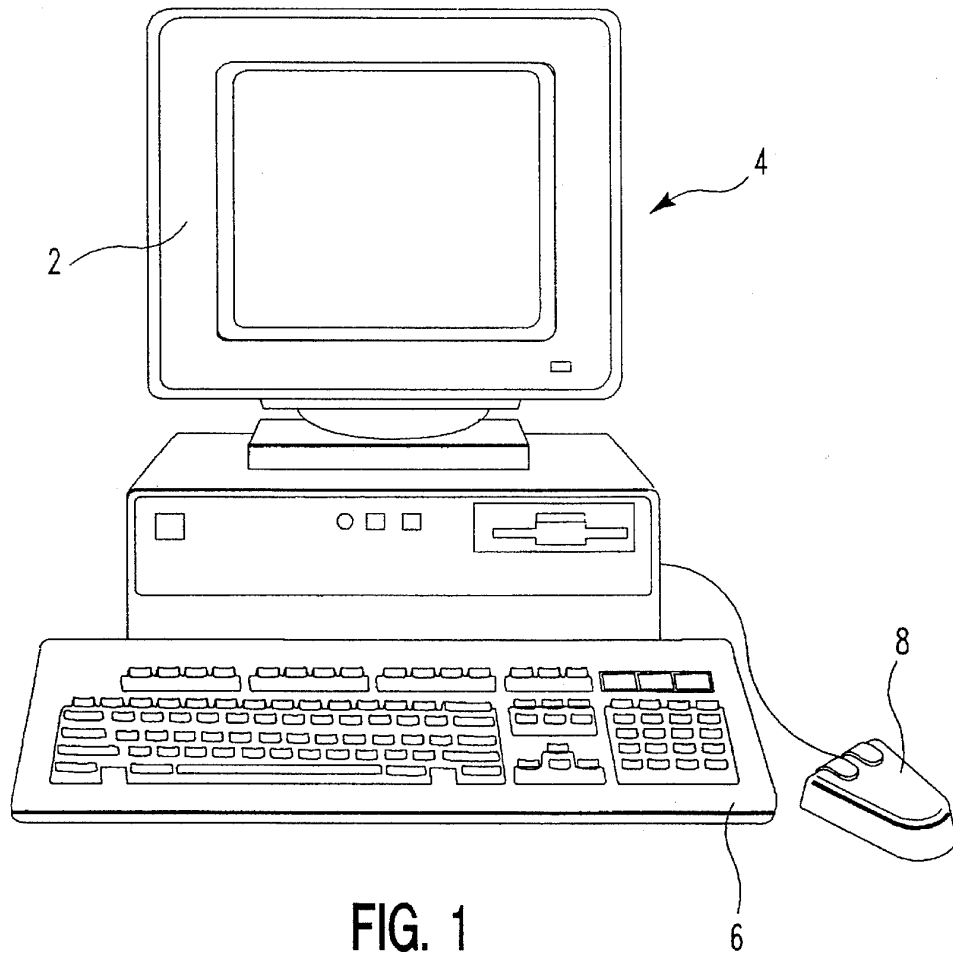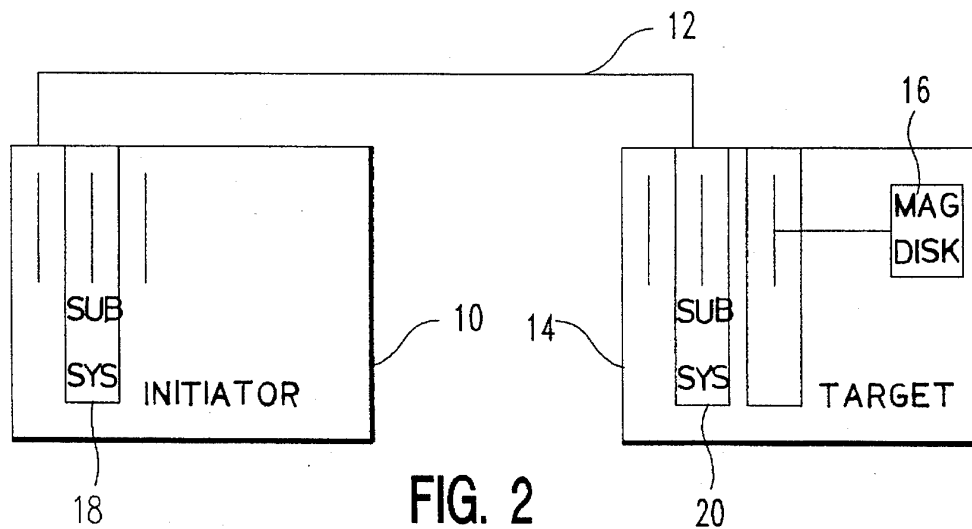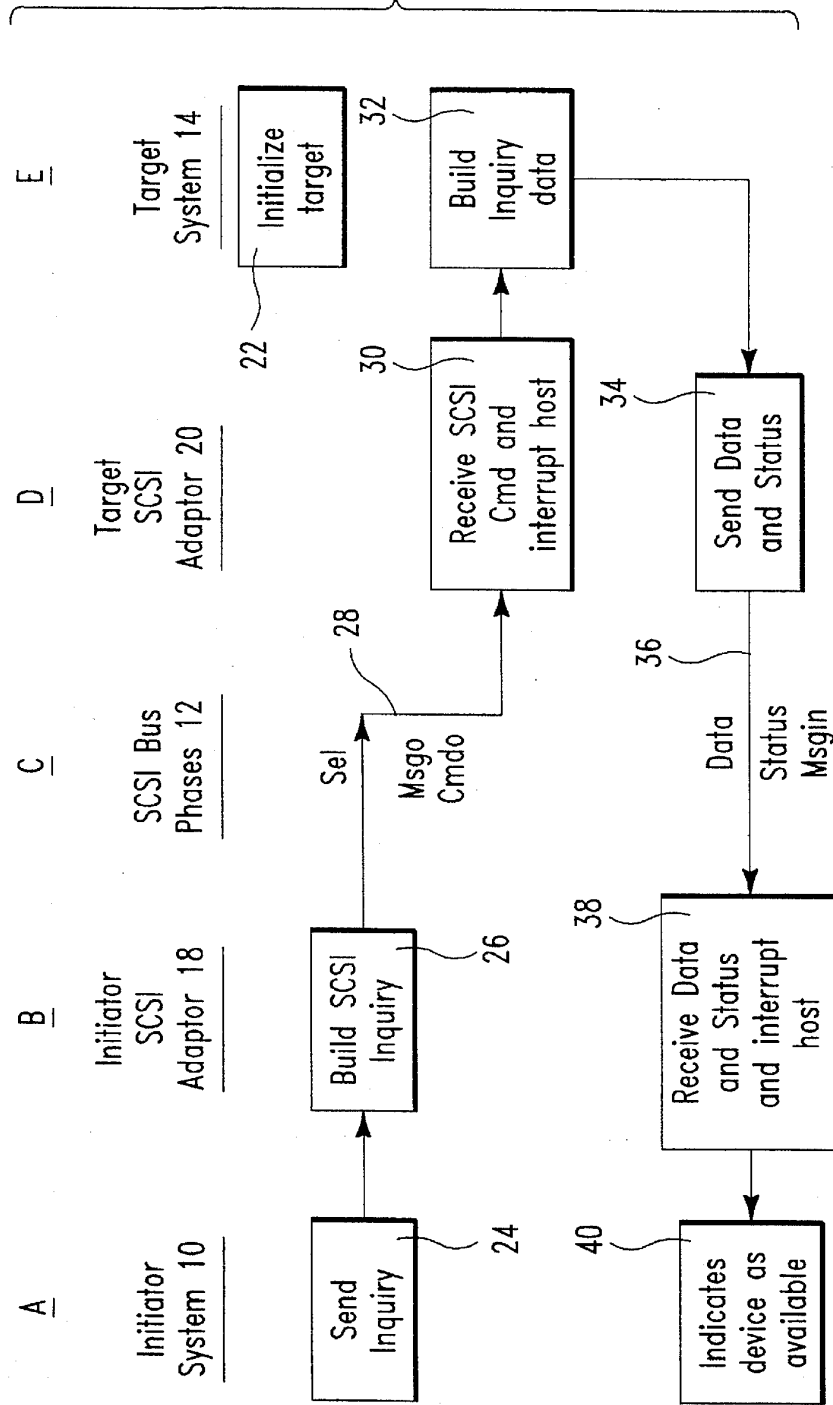
1 Claim, 9 Drawing Sheets

FIG. 1

FIG. 2

FIG. 3

A	B	C	D	E
Initiator System 10	Initiator SCSI Adaptor 18	SCSI Bus Phases 12	Target SCSI Adaptor 20	Target System 14

Initialize target — 22

Send Inquiry — 24

Build SCSI Inquiry — 26

Sel — 28

Msgo
Cmdo

Receive SCSI Cmd and interrupt host — 30

Build Inquiry data — 32

Send Data and Status — 34

Data — 36
Status
Msgin

Receive Data and Status and interrupt host — 38

Indicates device as available — 40

FIG. 4

A
Initiator
System 10

B
Initiator
SCSI
Adaptor 18

C
SCSI Bus
Phases 12

D
Target
SCSI
Adaptor 20

E
Target
System 14

42
Application
Sends Read
Commands to
DOS

44
DOC calls
BIOS which
issues SCB
to adapter

46
Adapter
builds
SCSI read
command

47
Sel
Msgo
Cmdo

48
Receive SCSI
Cmd and
interrupt host

50
Do BIOS call
to local
Magnetic disk

52
Send Data
and Status

53
Data
Status
Msgin

54
Receive Data
and Status
and interrupt
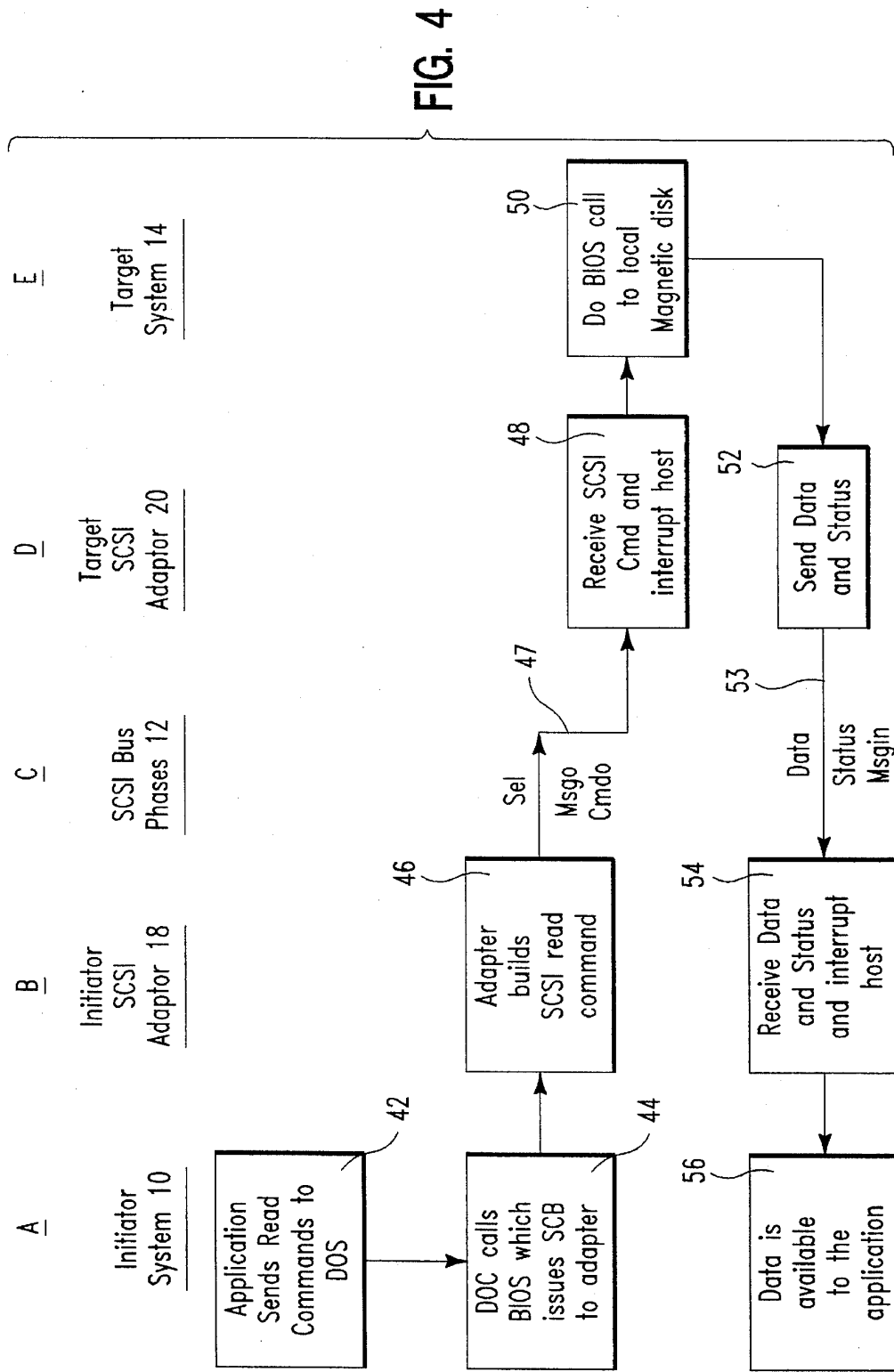host

56
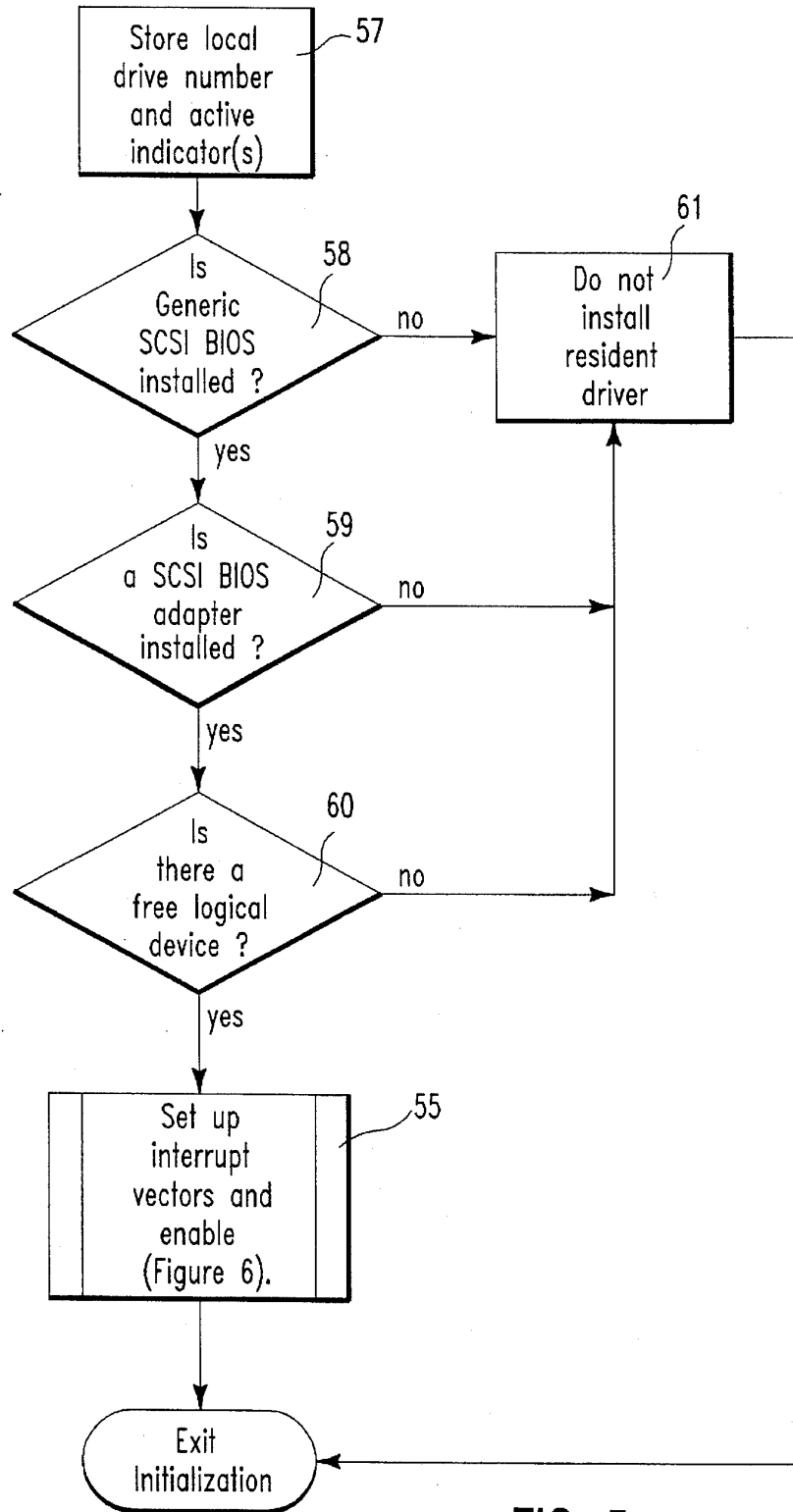Data is
available
to the
application

FIG. 5

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