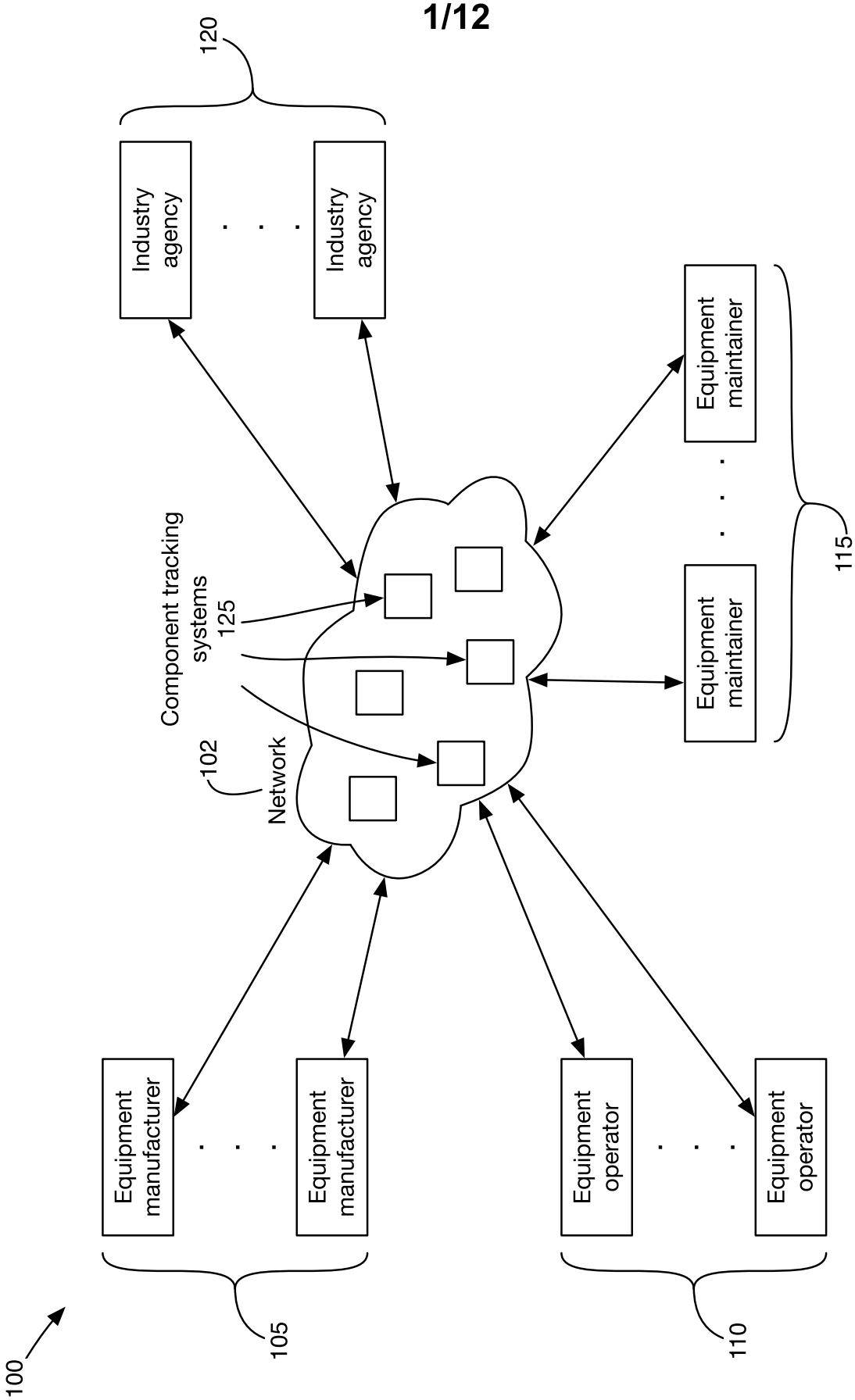

100
105
Equipment manufacturer
Equipment manufacturer
110
Equipment operator
Equipment operator
115
Equipment maintainer
Equipment maintainer
120
Industry agency
Industry agency
Component tracking systems
125
102
Network

Fig. 1A

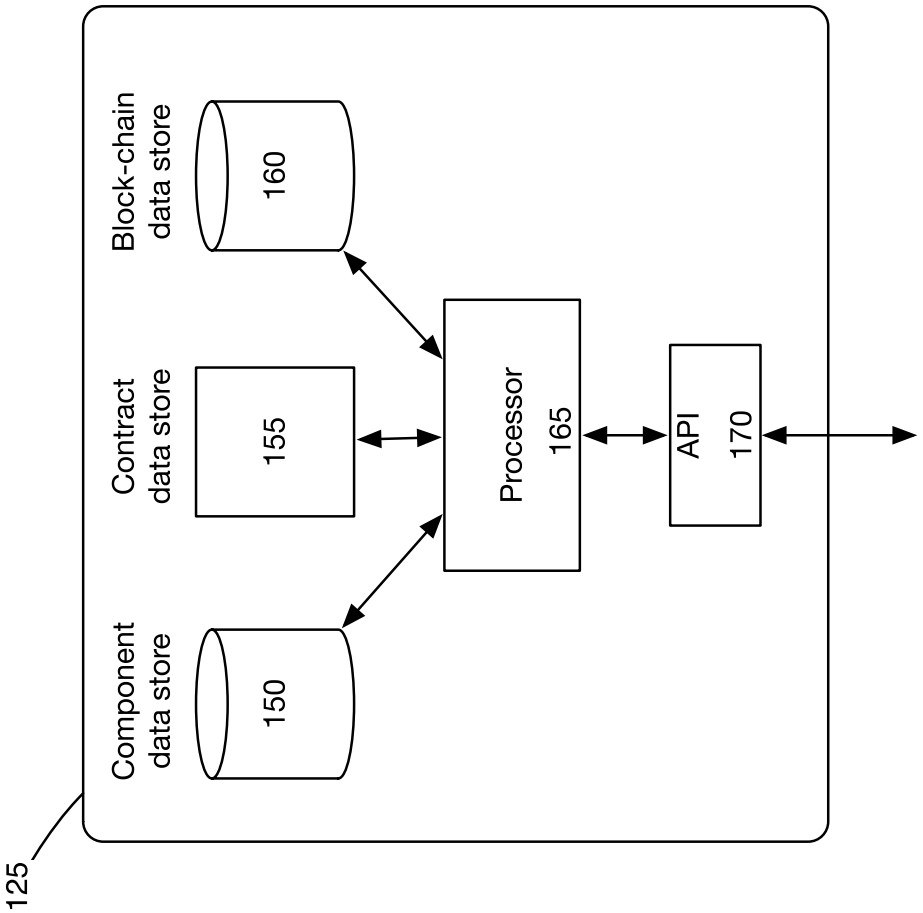
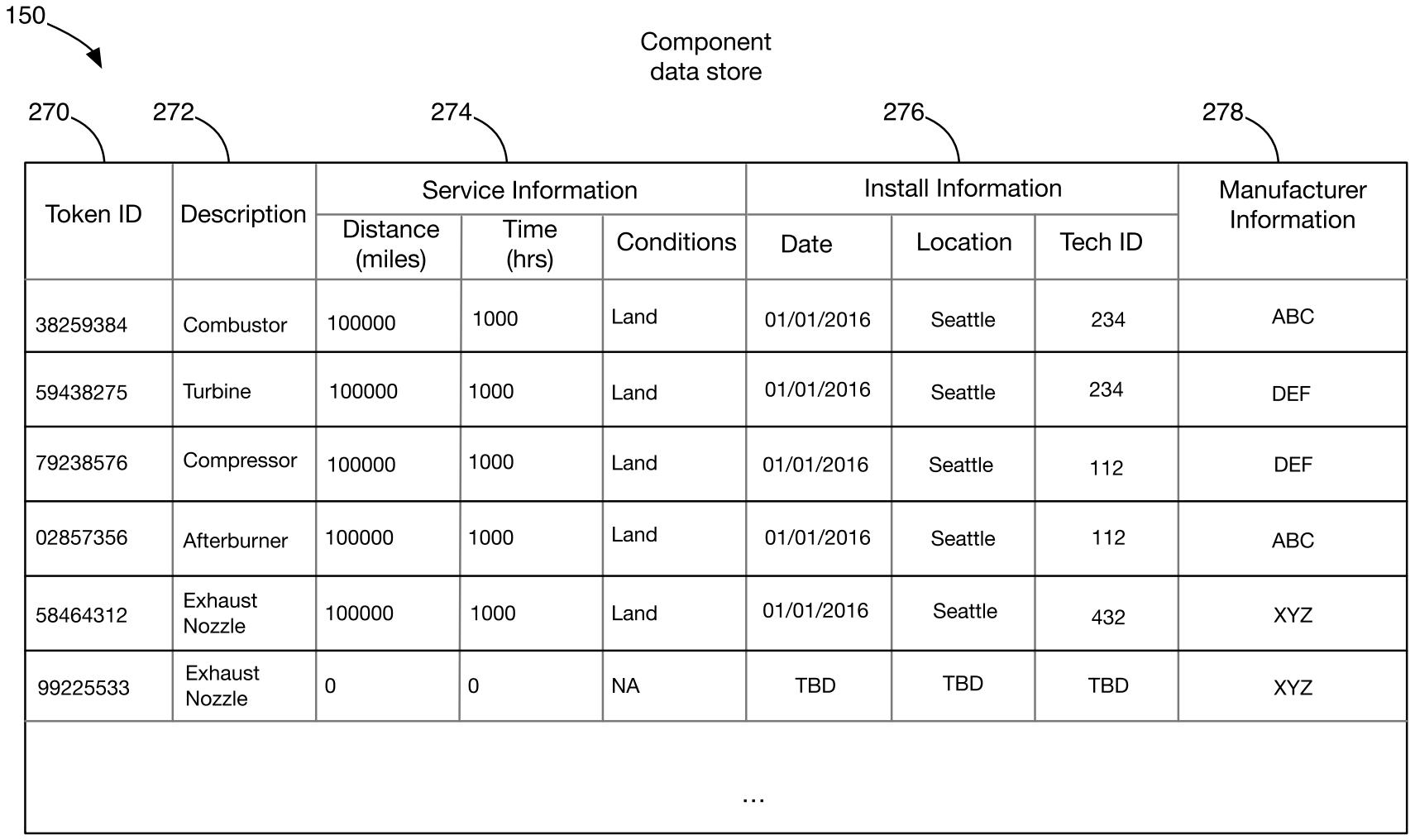

125
Component data store
150
Contract data store
155
Block-chain data store
160
Processor
165
API
170

Fig. 1B



Token ID	Description	Service Information			Install Information			Manufacturer Information
		Distance (miles)	Time (hrs)	Conditions	Date	Location	Tech ID	
38259384	Combustor	100000	1000	Land	01/01/2016	Seattle	234	ABC
59438275	Turbine	100000	1000	Land	01/01/2016	Seattle	234	DEF
79238576	Compressor	100000	1000	Land	01/01/2016	Seattle	112	DEF
02857356	Afterburner	100000	1000	Land	01/01/2016	Seattle	112	ABC
58464312	Exhaust Nozzle	100000	1000	Land	01/01/2016	Seattle	432	XYZ
99225533	Exhaust Nozzle	0	0	NA	TBD	TBD	TBD	XYZ
...								

Fig. 2A

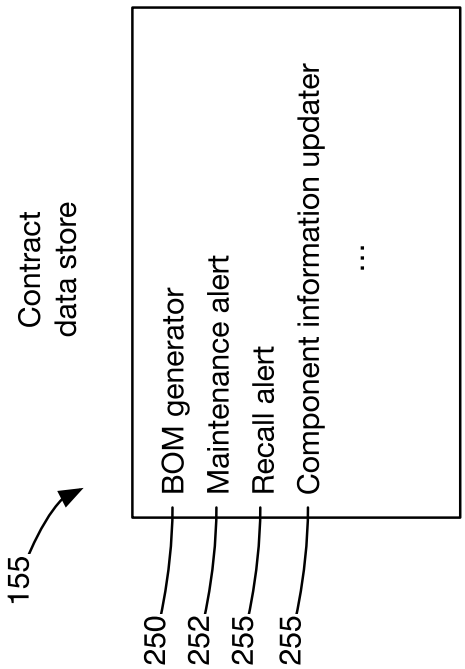

Contract
data store
155
BOM generator
Maintenance alert
Recall alert
Component information updater
...
250
252
255
255

Fig. 2B

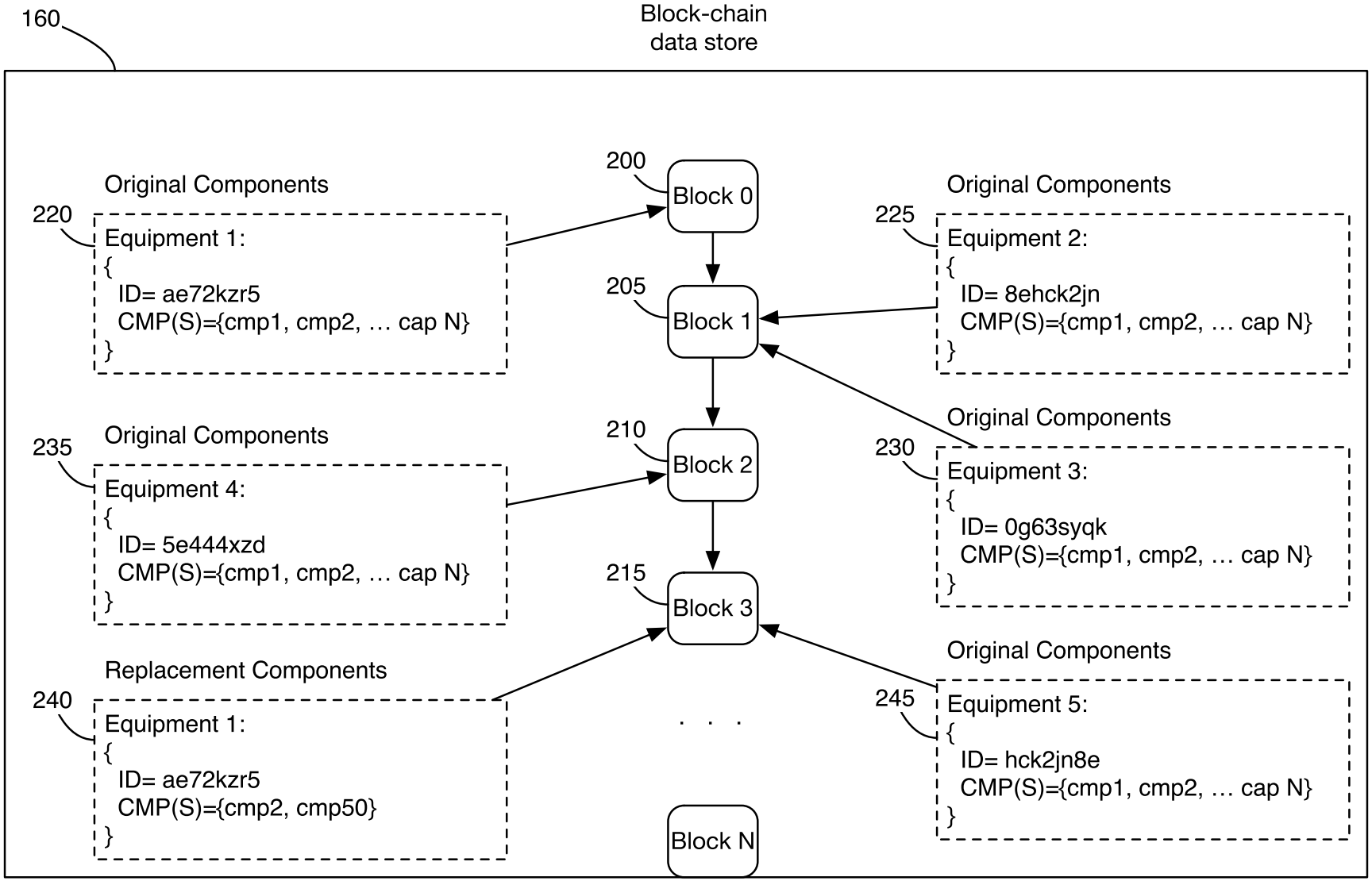

160
Block-chain
data store
200
Block 0
205
Block 1
210
Block 2
215
Block 3
Block N
Original Components
220
Equipment 1:
{
ID= ae72kzr5
CMP(S)={cmp1, cmp2, … cap N}
}
Original Components
225
Equipment 2:
{
ID= 8ehck2jn
CMP(S)={cmp1, cmp2, … cap N}
}
Original Components
235
Equipment 4:
{
ID= 5e444xzd
CMP(S)={cmp1, cmp2, … cap N}
}
Original Components
230
Equipment 3:
{
ID= 0g63syqk
CMP(S)={cmp1, cmp2, … cap N}
}
Replacement Components
240
Equipment 1:
{
ID= ae72kzr5
CMP(S)={cmp2, cmp50}
}
Original Components
245
Equipment 5:
{
ID= hck2jn8e
CMP(S)={cmp1, cmp2, … cap N}
}
. . .

Fig. 2C

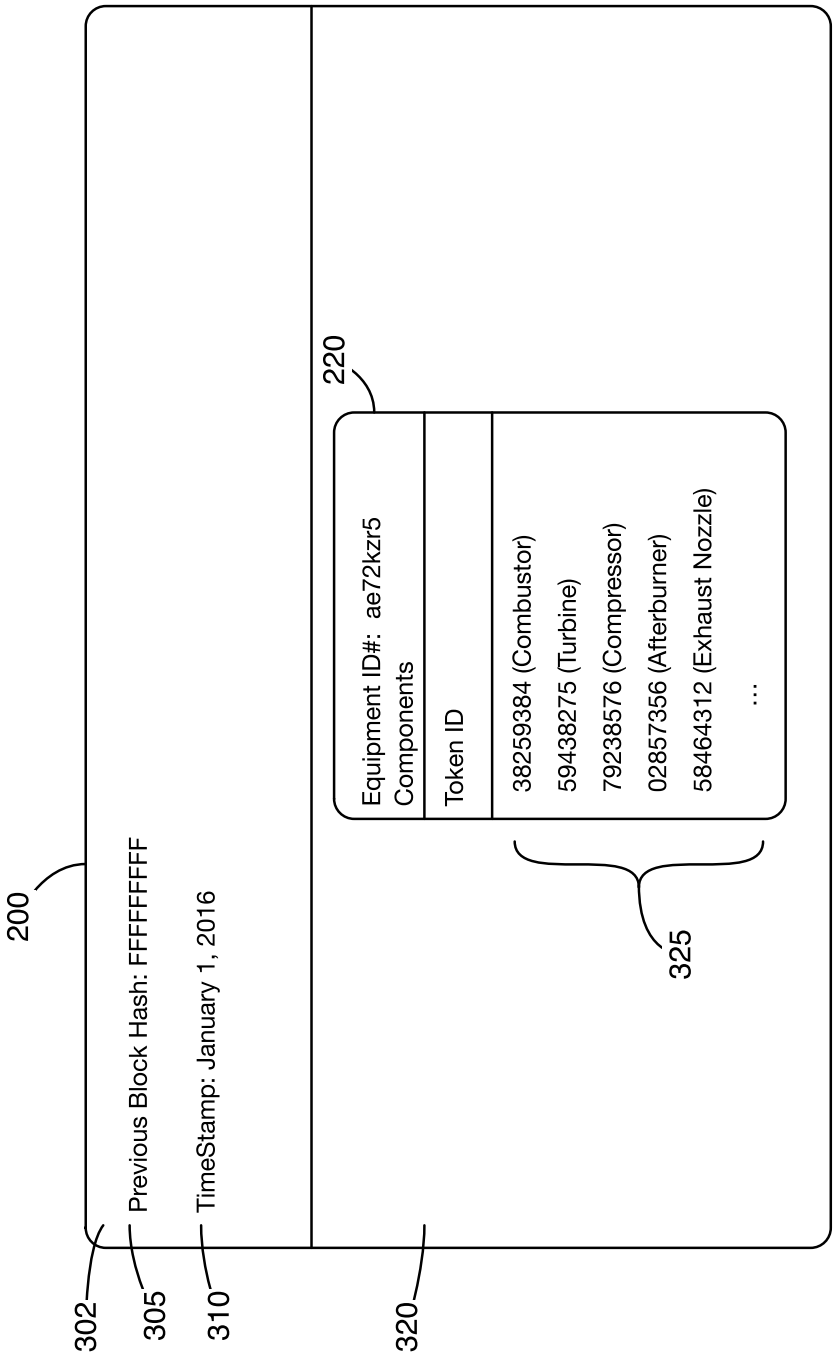

200
302
Previous Block Hash: FFFFFFFF
305
TimeStamp: January 1, 2016
310
320
220
Equipment ID#: ae72kzr5
Components
Token ID
38259384 (Combustor)
59438275 (Turbine)
79238576 (Compressor)
02857356 (Afterburner)
58464312 (Exhaust Nozzle)
...
325

Fig. 3A

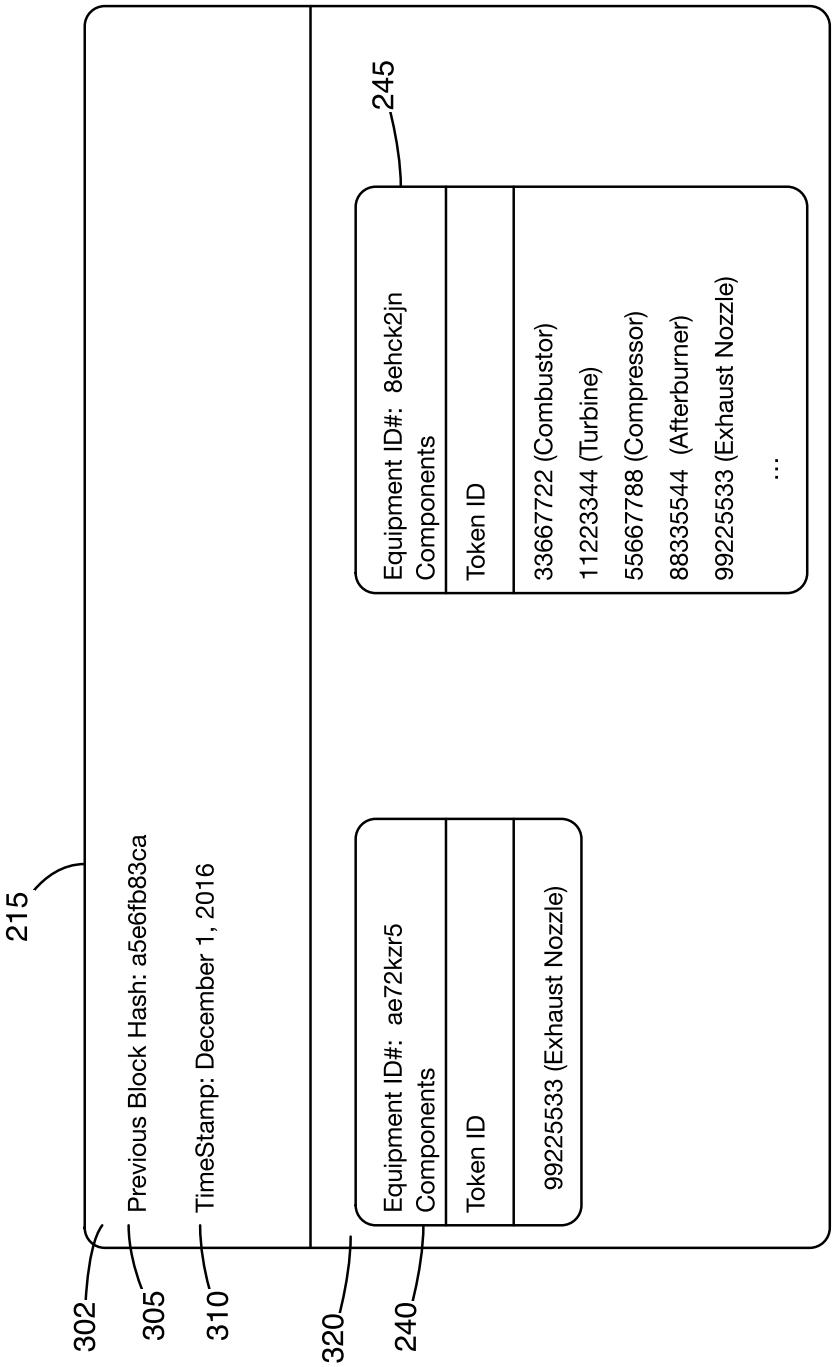

215
302
Previous Block Hash: a5e6fb83ca
305
TimeStamp: December 1, 2016
310
320
240
Equipment ID#: ae72kzr5
Components
Token ID
99225533 (Exhaust Nozzle)
245
Equipment ID#: 8ehck2jn
Components
Token ID
33667722 (Combustor)
11223344 (Turbine)
55667788 (Compressor)
88335544 (Afterburner)
99225533 (Exhaust Nozzle)
...

Fig. 3B

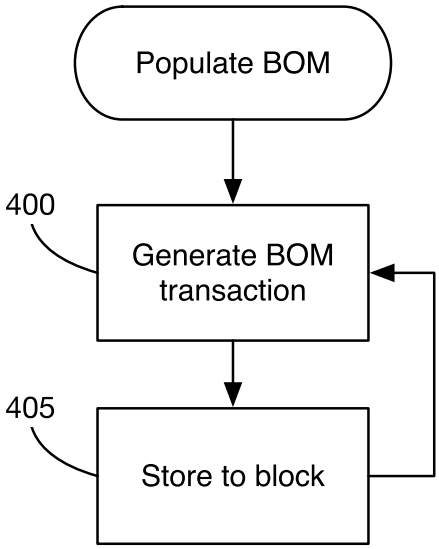

Populate BOM
400
Generate BOM transaction
405
Store to block

Fig. 4

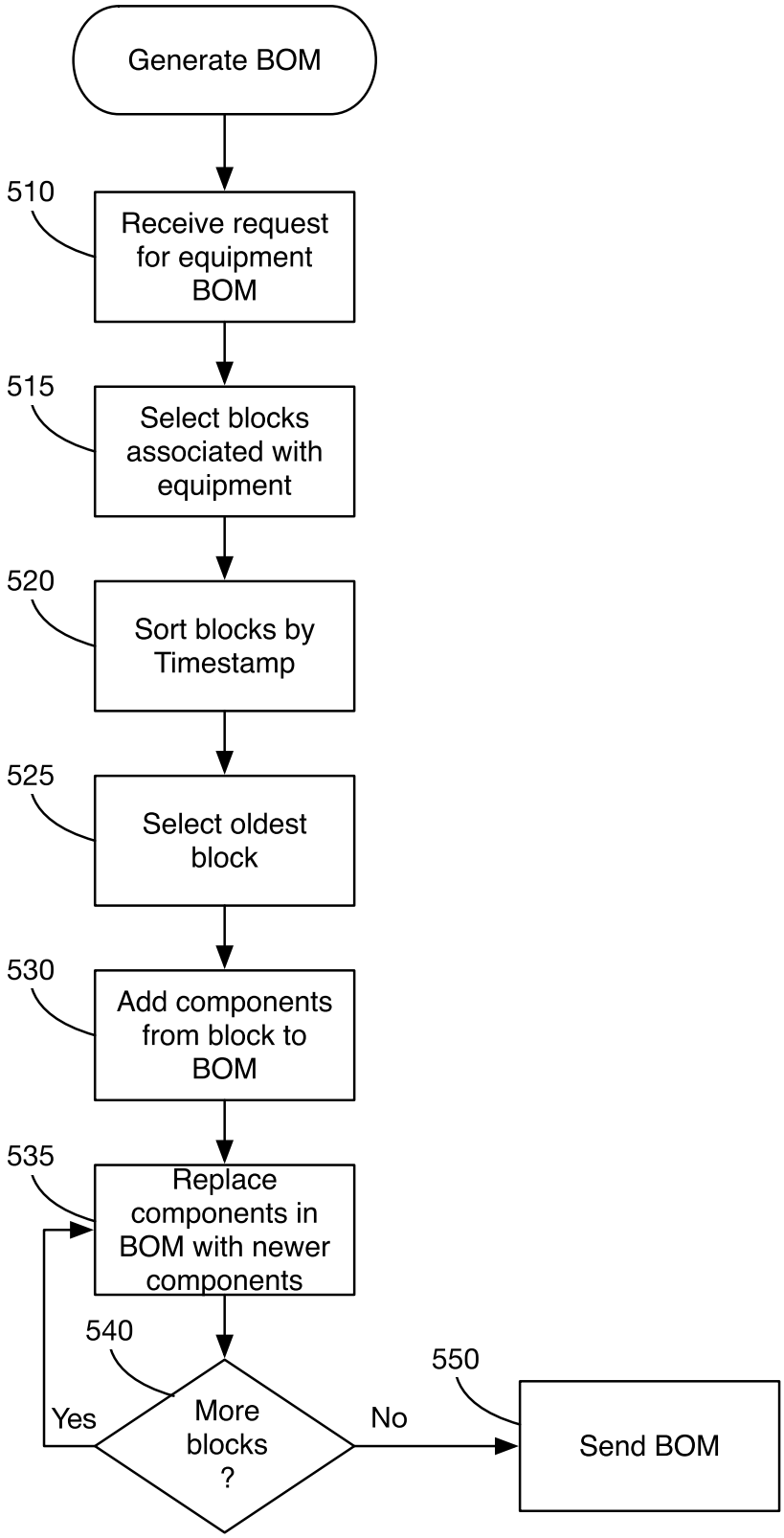

Generate BOM
510
Receive request for equipment BOM
515
Select blocks associated with equipment
520
Sort blocks by Timestamp
525
Select oldest block
530
Add components from block to BOM
535
Replace components in BOM with newer components
540
More blocks ?
Yes
No
550
Send BOM

Fig. 5

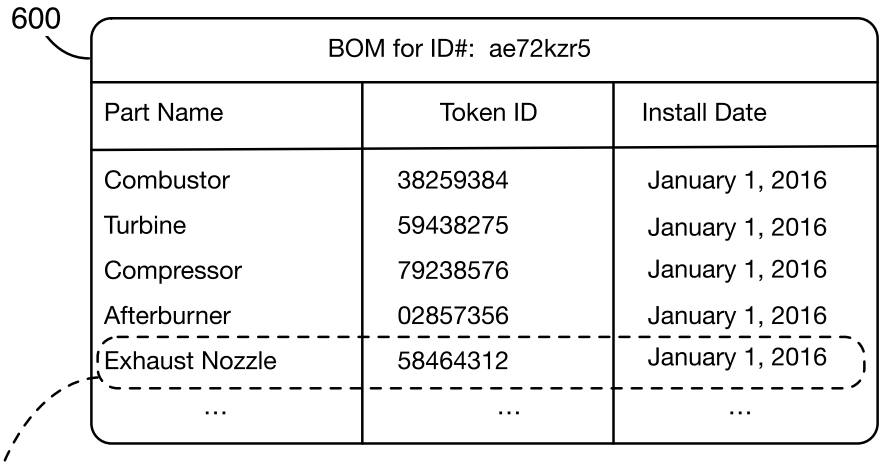

600
BOM for ID#: ae72kzr5
Part Name
Token ID
Install Date
Combustor
38259384
January 1, 2016
Turbine
59438275
January 1, 2016
Compressor
79238576
January 1, 2016
Afterburner
02857356
January 1, 2016
Exhaust Nozzle
58464312
January 1, 2016
...
...
...

Fig. 6A

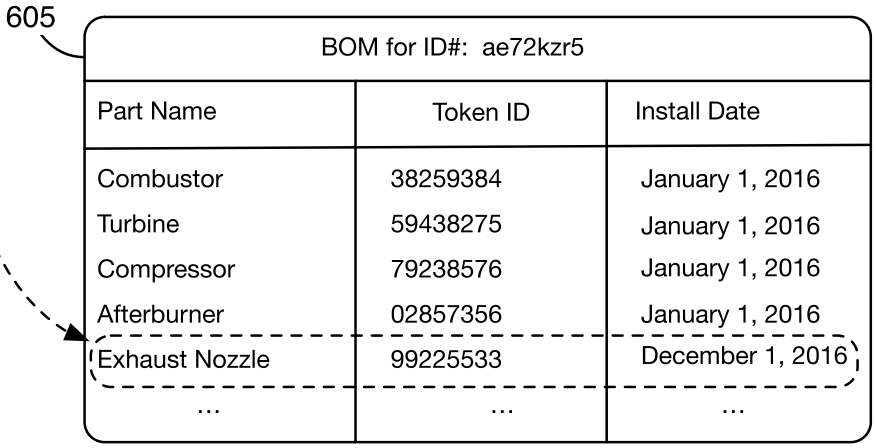

605
BOM for ID#: ae72kzr5
Part Name
Token ID
Install Date
Combustor
38259384
January 1, 2016
Turbine
59438275
January 1, 2016
Compressor
79238576
January 1, 2016
Afterburner
02857356
January 1, 2016
Exhaust Nozzle
99225533
December 1, 2016
...
...
...

Fig. 6B

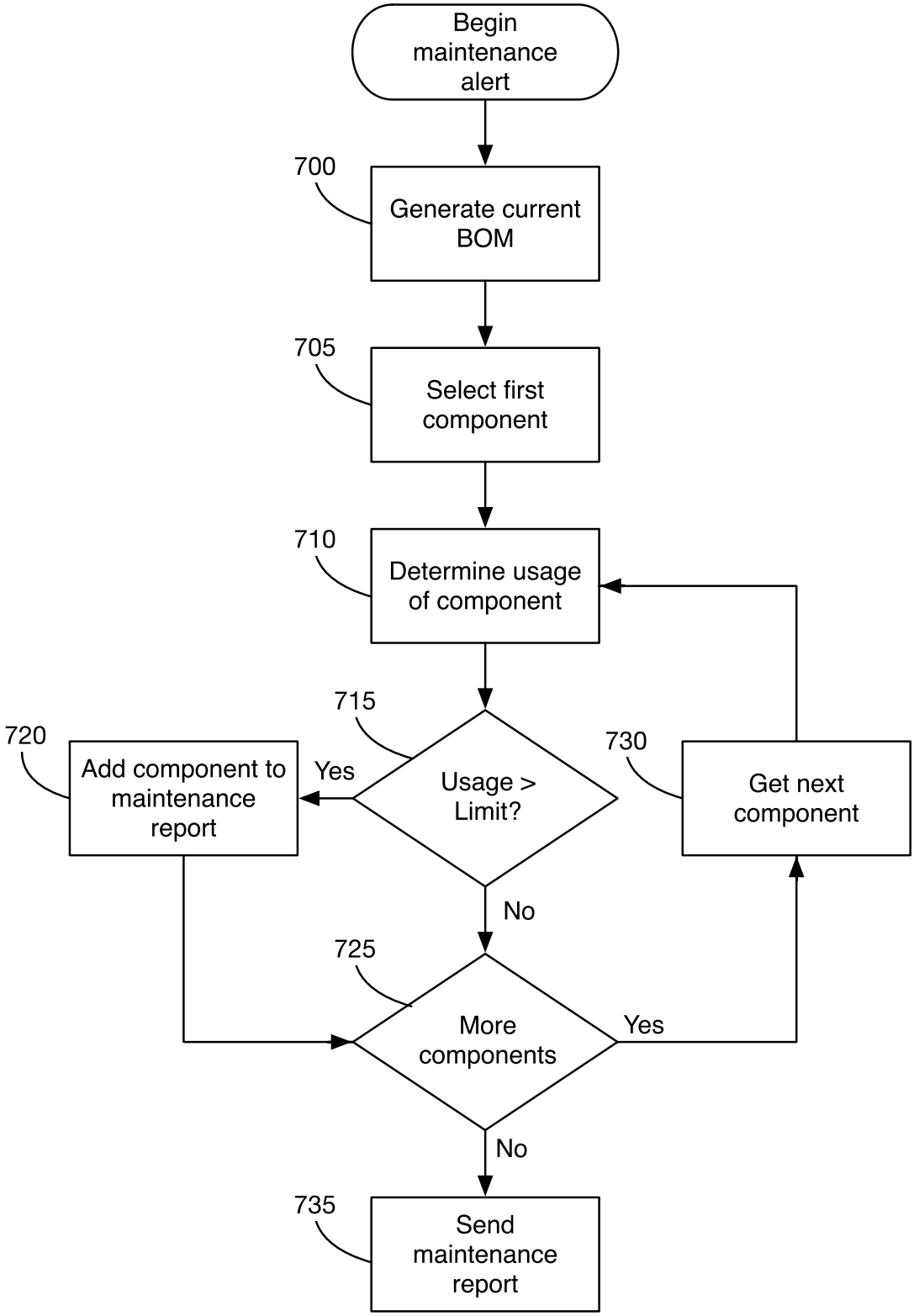

Begin maintenance alert
700
Generate current BOM
705
Select first component
710
Determine usage of component
715
Usage > Limit?
Yes
720
Add component to maintenance report
730
Get next component
No
725
More components
Yes
No
735
Send maintenance report

Fig. 7

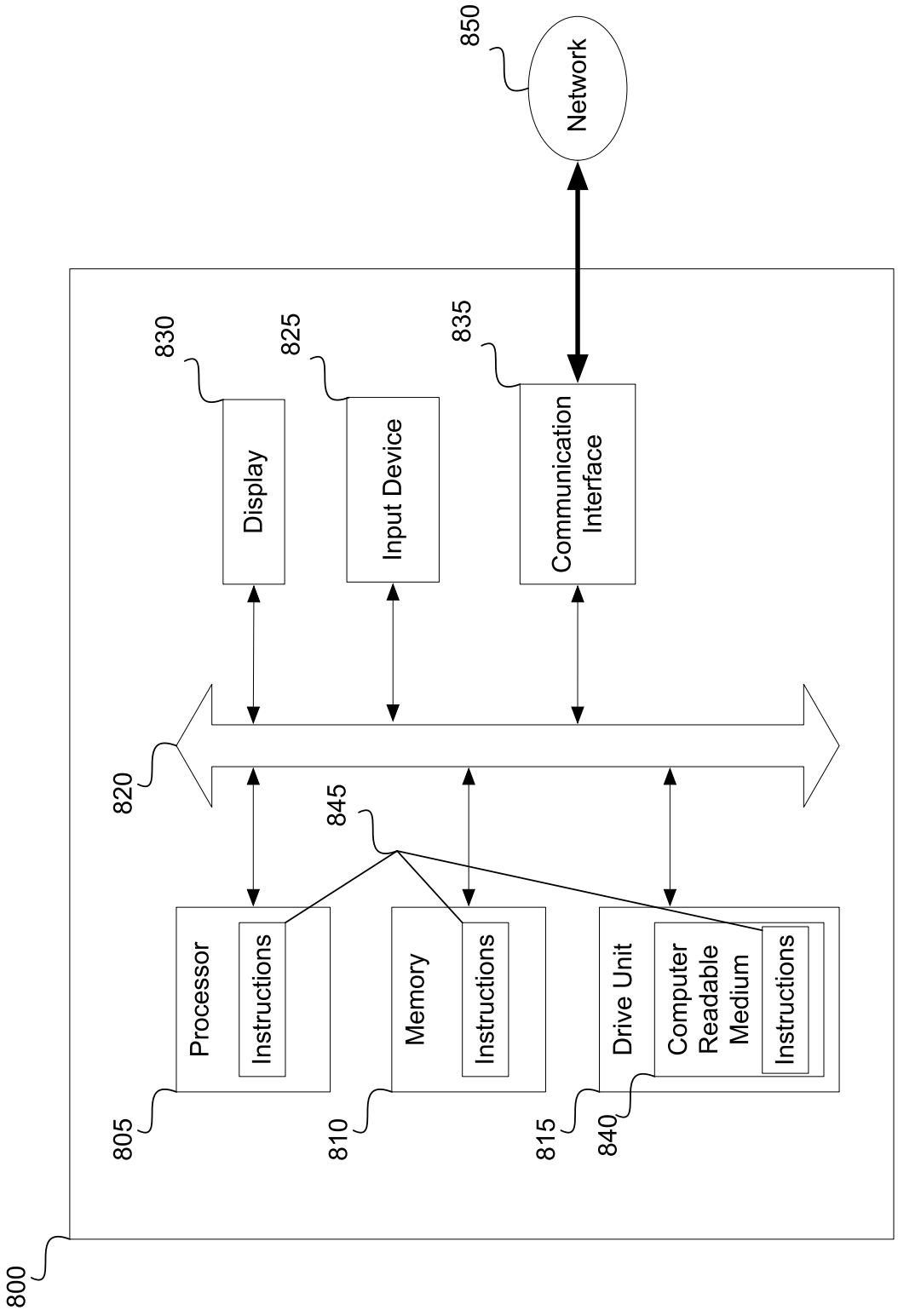

850
Network
830
825
835
Display
Input Device
Communication Interface
820
845
Processor
Instructions
Memory
Instructions
Drive Unit
Computer Readable Medium
Instructions
805
810
815
840
800

Fig. 8