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(19) **United States**(12) **Patent Application Publication** (10) **Pub. No.: US 2004/0262386 A1**
Abrams et al. (43) **Pub. Date: Dec. 30, 2004**(54) **INSTORE AND REMOTE-HOSTED
SOLUTION FOR RETAIL PROMOTION
OPTIMIZATION USING MOVEABLE
"DEVICES" HAVING COMPONENTS SUCH
AS PRICE CHECKERS, PRINTERS, AND
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THORNHILL, ON L4J 7G9 (CA)**(21) Appl. No.: **10/827,459**(22) Filed: **Apr. 19, 2004****Related U.S. Application Data**(60) Provisional application No. 60/463,438, filed on Apr.
17, 2003. Provisional application No. 60/534,991,
filed on Jan. 9, 2004.**Publication Classification**(51) **Int. Cl.⁷ G06K 15/00**
(52) **U.S. Cl. 235/383**(57) **ABSTRACT**

An instore and remote-hosted solution for Retail Promotion Optimization using moveable "devices", said "devices" having components such as price checkers, printers, displays and controllers. In a Retail store, the solution processes the scan of a barcode, or a button push, then outputs targeted text, graphics, messages and/or coupons. The system includes algorithms and logic associated with evaluating in real-time, from external and internal databases, multiple factors and conditions such as location, time, inventory, demand, elasticity, product life cycle and shelf life, profit margins, inventory turns, cost of goods sold, as well as identifying customers, shoppers or users, with or without collecting descriptive information, followed by the subsequent issuance of customized text, graphics, messages and/or coupons for a current or future purchase. The moveable "device"s are positioned at various locations within a Retail store commonly called the Point of Decision, namely the point where Shoppers make the final decision on what to buy, for those familiar in this business; these locations being for example, the door entry, the end of a merchandise aisle, commonly called an "end-cap" for those familiar in this business, merchandise shelves, outside displays and customer service desks. The solution maintains real-time 2 way communications, between a remote host, remote database, an instore system and the moveable "devices".

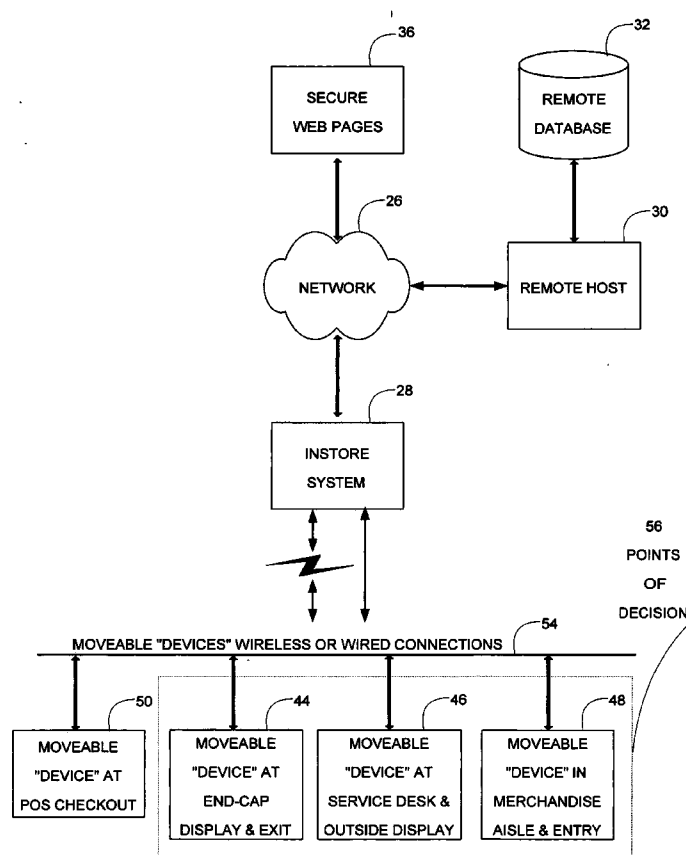


Fig. 1

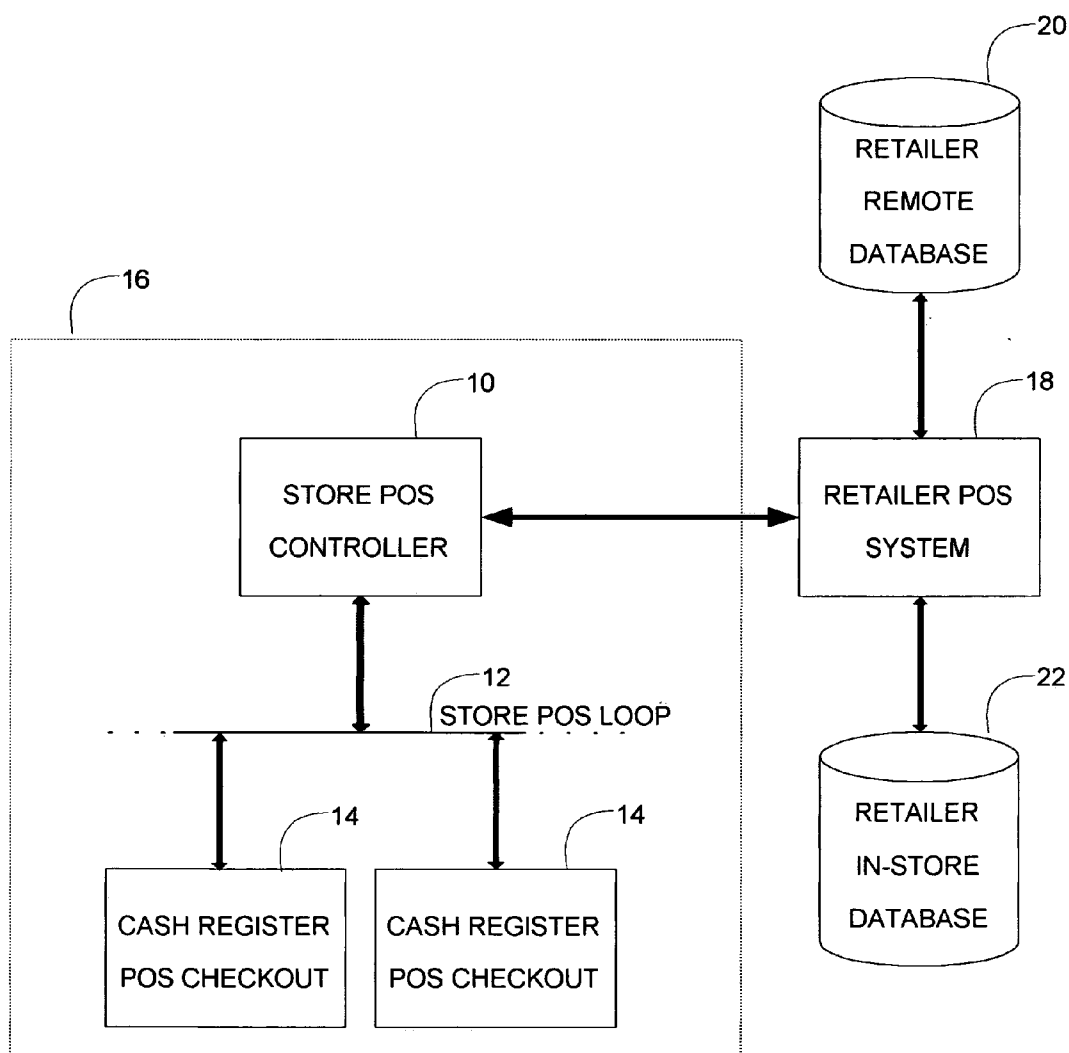
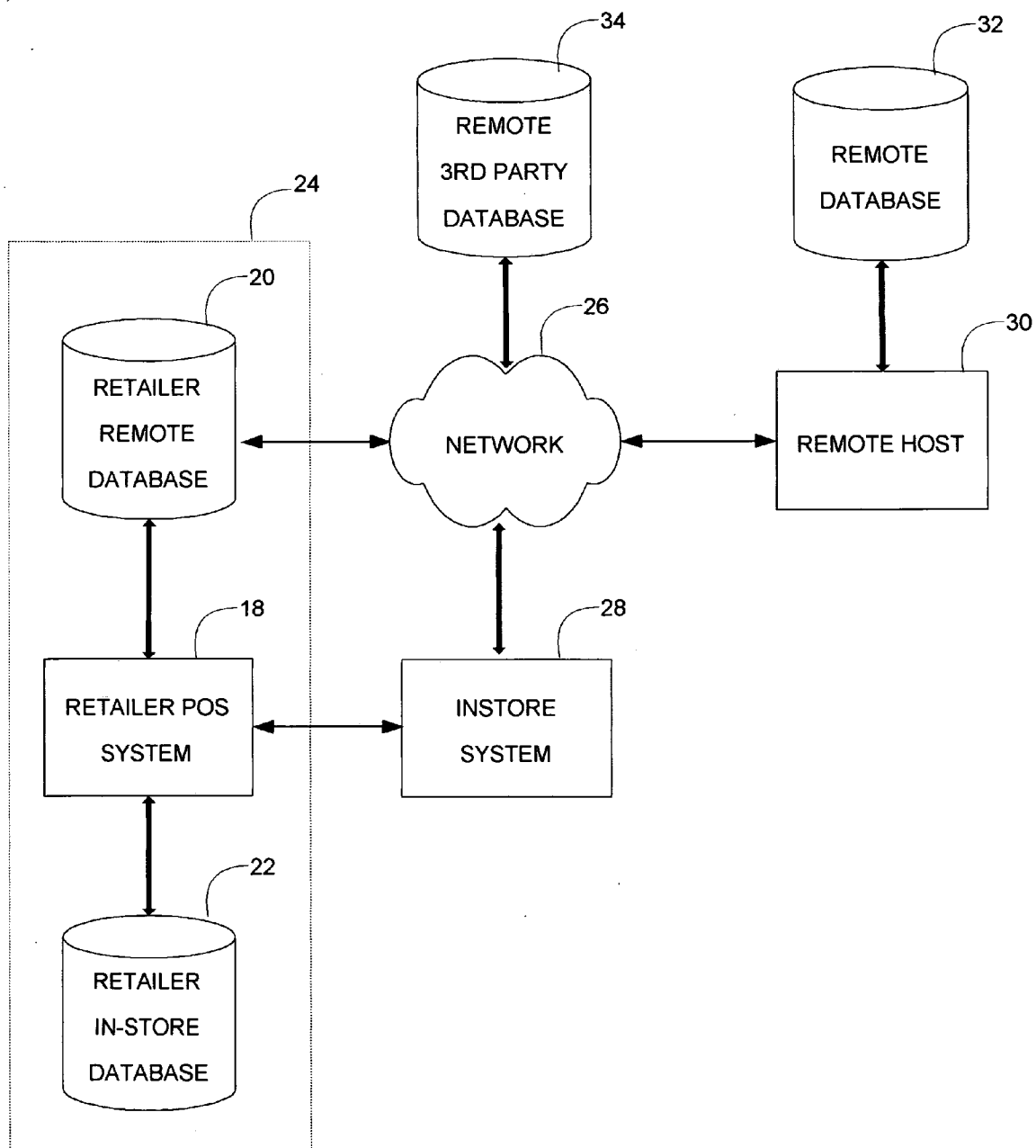


Fig. 2



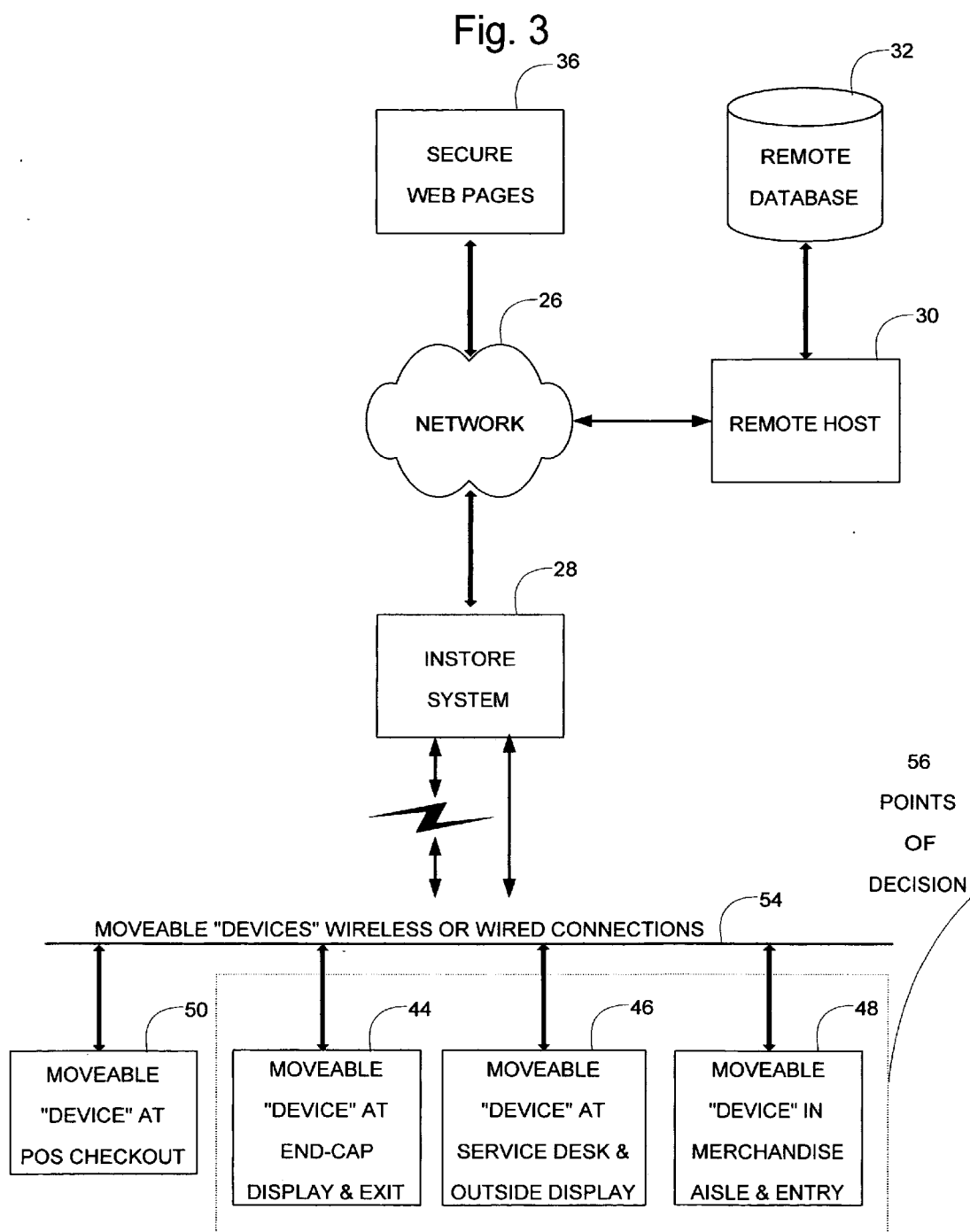


Fig. 4

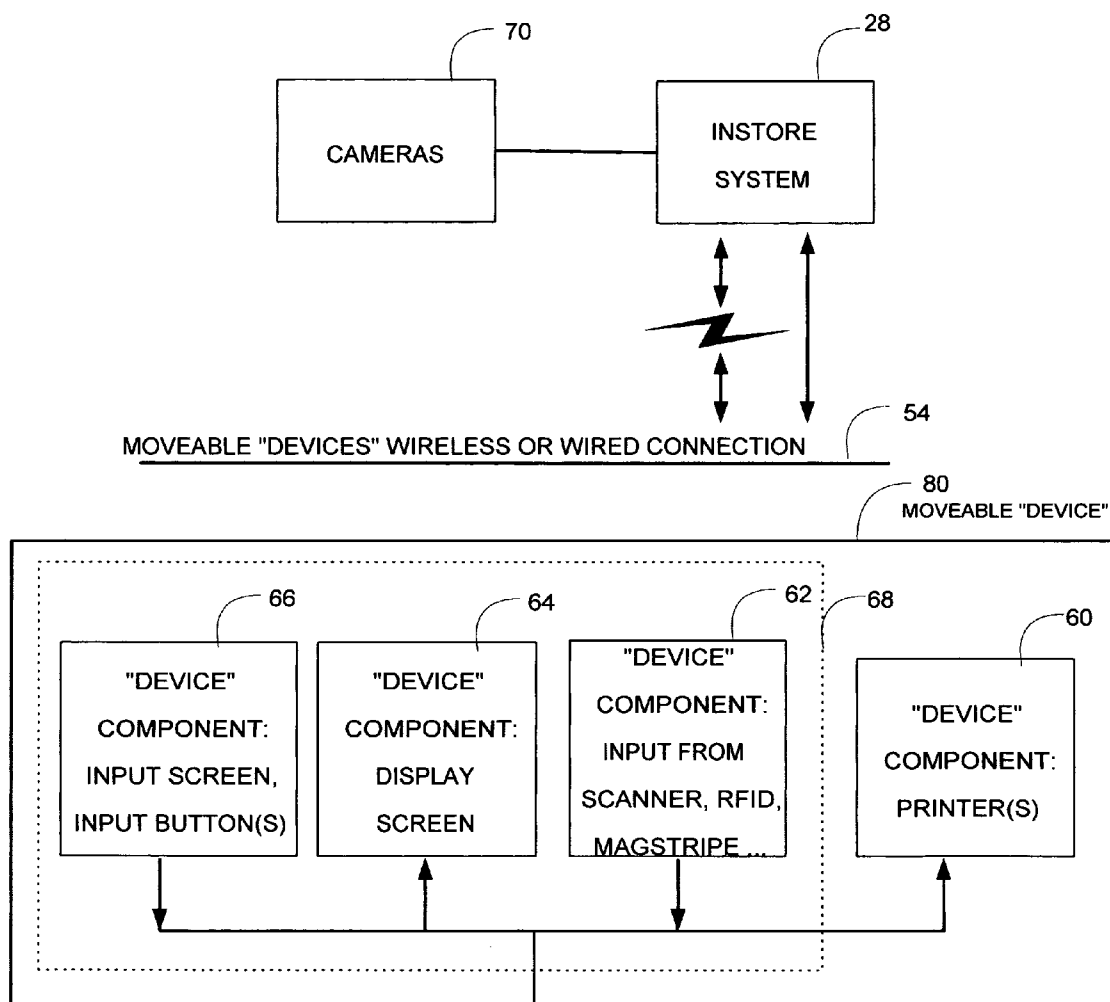


Fig. 5

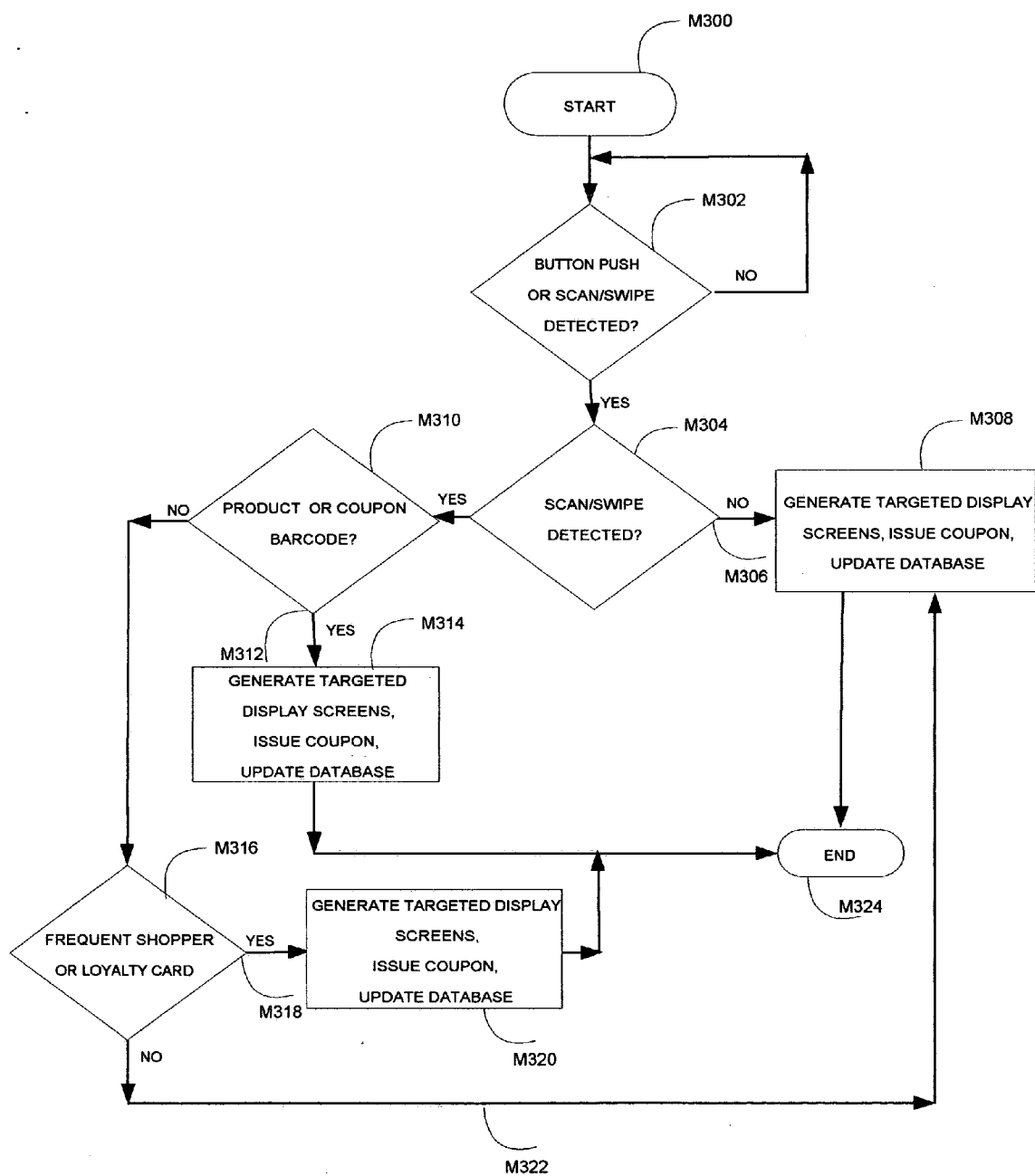


Fig. 6

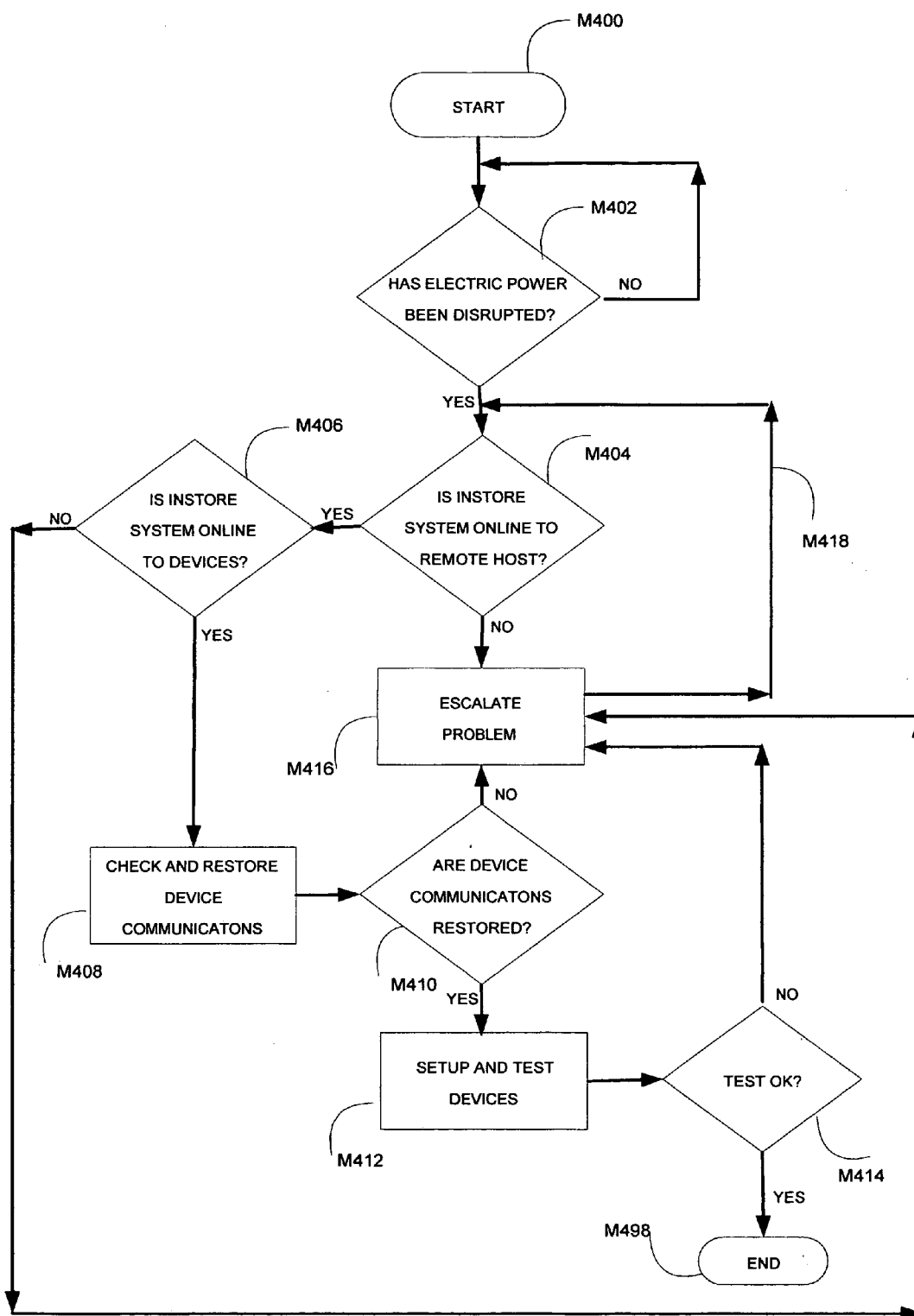
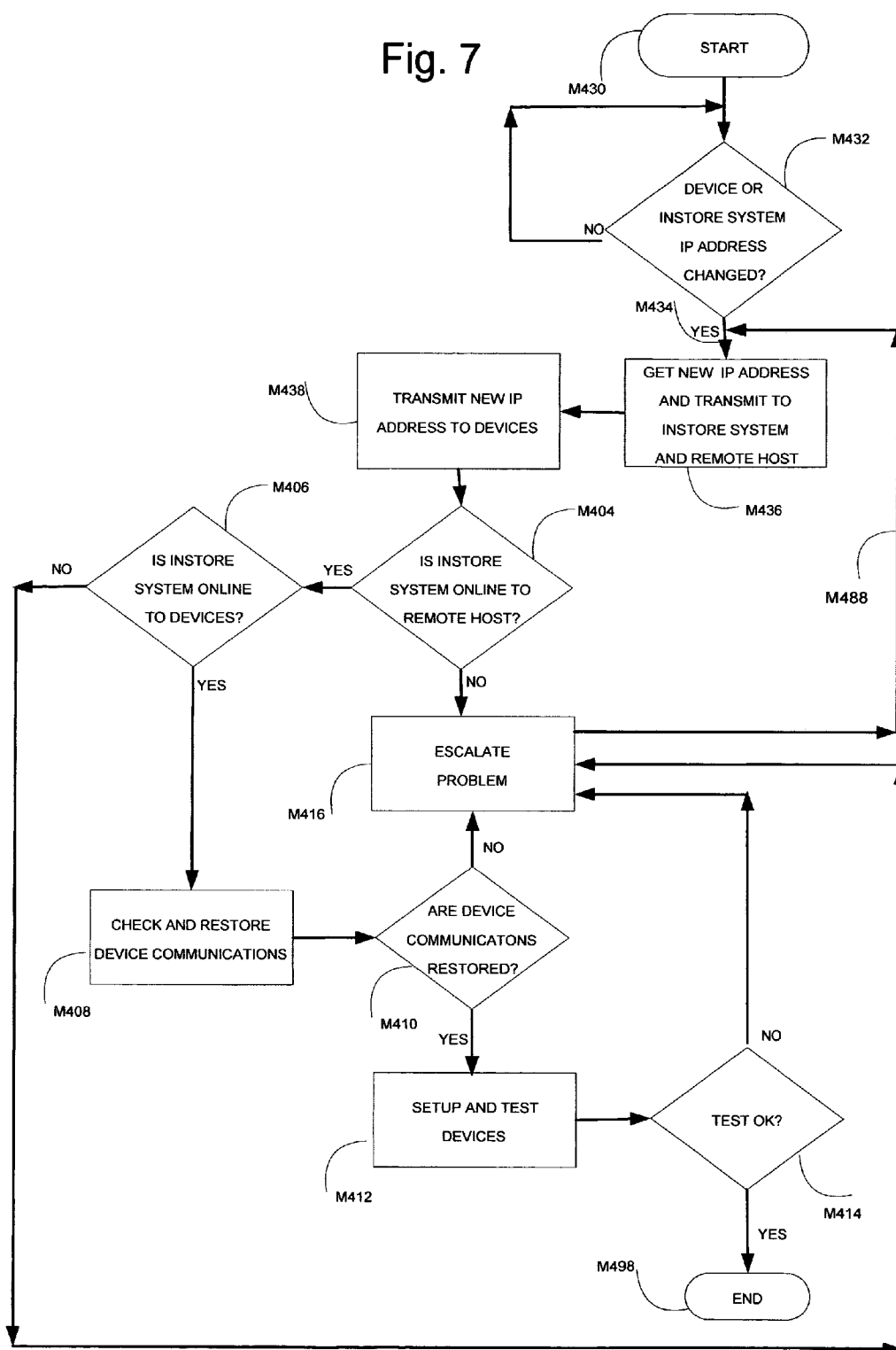


Fig. 7



**INSTORE AND REMOTE-HOSTED SOLUTION
FOR RETAIL PROMOTION OPTIMIZATION
USING MOVEABLE "DEVICES" HAVING
COMPONENTS SUCH AS PRICE CHECKERS,
PRINTERS, AND CONTROLLERS**

[0001] I hereby incorporate by reference (1) Provisional Application Title: Scansave 60/463,438 filed on Apr. 17th 2003, and (2) Provisional Application Title: mopods 60/534,991 filed on Jan. 9th 2004.

[0002] The following Patents are listed as reference:

"Microsoft" 6,061,692	"Catalina" 6,424,949
"Copient" 20040064368	"Catalina" 6,584,448
"Catalina" 6,282,516	"Catalina" 6,684,195
"Retail Multimedia Corp" 5,918,211	"NCR" 6,502,076
"Specialty Equipment Co. Inc." 4,738,042	"Catalina" 6,484,146
"Ad Response MicroMarketing Corp" 6,076,068	"NCR" 6,334,110
"Catalina" 5,173,851	"Micro Enhancement Int" 5,857,175
"Catalina" 5,832,457	"IBM" 6,505,773
"Catalina" 6,307,958	"Catalina" 6,377,935
"Catalina" 6,321,210	"SoftCard Systems Inc." 6,354,492
"Catalina" 6,334,108	"Matthias; John T." 6,151,587
"Catalina" 6,377,935	"OneClip.com Inc." 6,076,069
"OneClip.com" 6,041,309	Chumbley; Gregory R. 5,535,118
"Digital Broadband Applications Corp." 5,946,646	"Totom Enterprises, Inc." 5,097,981
"Smolen; Daniel T." 5,915,243	"Gempsey France" D486,827
"Gregory; Edward M." 5,909,673	"NCR Corp" D480,397
"Catalina" 5,612,868	"NCR Corp" 6,621,407
"The Standard Registry Co." 6,691,915	"NCR Corp" 6,430,704
"Symbol Technologies Inc." 6,616,049	"NCR Corp" 6,415,263
"InfoSpace, Inc." 6,237,145	"NCR Corp" 5,710,416
"Intel Corp." 6,075,971	"NCR Corp" 6,043,751
"SoftCard Systems, Inc." 6,012,038	"Lin, Ching-Fang;" 20020131405
"Ad Response MicroMarketing Corp" 5,882,735	"Alexander, Bruce; Bahneman, Liem" 20020075307
"Environmental Products Corp" 5,557,721	

**STATEMENT REGARDING FED SPONSORED
R&D**

[0003] The Applicant has not received any Federal sponsored R&D funding

**REFERENCE TO SEQUENCE LISTING, A
TABLE OR A COMPUTER PROGRAM LISTING
APPENDIX**

[0004] 7 Drawings included

BRIEF SUMMARY OF THE INVENTION

[0005] The present invention is a Retail Promotion Optimization solution that uses hardware such as price checkers and printers to deliver targeted text, graphics, messages and/or coupons, based on a scanned input or a button push

[0006] The solution is non-interactive in so far as it does not include a menuing system, nor is it content-rich; rather it is a system to deliver targeted offers, slide shows, information, and coupons to Shoppers where they make their decision to buy.

[0007] Specifically, in its primary embodiment, moveable "device"s are positioned at various locations within a Retail store commonly called a Point of Decision **FIG. 3 (56)**, these locations being for example, the door entry, the end of a merchandise aisle, commonly called an "end-cap" for

those familiar in this business, merchandise shelves, outside displays and customer service desks. Then, the present invention takes the scan of a barcode as a data input, or a button push, then outputs text, graphics, messages and/or coupons for use on the Shopper's current visit.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] A more complete appreciation of the invention and many of the attendant advantages thereof will readily be obtained as the same becomes better understood by refer-

ence to the following detailed descriptions when considered in connection with the accompanying drawings, wherein:

[0009] **FIG. 1** is a block diagram of a retail store computer device architecture, composed of checkout devices and information system, along with a remote retailer database

[0010] **FIG. 2** is a block diagram of an information system architecture in a retail store information system, supplemented with a remote database, a remote 3rd party database, a network, and components of the present invention namely; instore system, remote host and remote database

[0011] **FIG. 3** is a block diagram of a network, secure web pages and components of the present invention namely; instore system, remote host, remote database, and an array of moveable "devices" situated at locations referred elsewhere as the point of decision, said locations being merchandise aisles, entry doors, service desks, outside displays, end-cap displays and exit doors. In addition, moveable "devices" are indicated at POS checkout as represented in **FIG. 1**

[0012] **FIG. 4** is a block diagram of components of the present invention namely; cameras, instore system, as well as the components of moveable "devices", said components of moveable "devices" being input screen, input button(s), display screen, input scanner, input RFID, input magstripe, as well as printer(s).

[0013] FIG. 5 is a flowchart representing the operation of a preferred embodiment of present invention

[0014] FIG. 6 is a flowchart representing the recovery operation of present invention in the event of a disruption of electric power,

[0015] FIG. 7 is a flowchart representing the operation of present invention in the event of a change in the network address of the instore system or moveable "device".

DETAILED DESCRIPTION OF THE DRAWINGS

[0016]

Detailed Description of the Drawings			
Figure	Label #	Label	Description
1	10	STORE POS CONTROLLER	PART OF THE SYSTEM THAT CONTROLS THE CASH REGISTER POS CHECKOUTS 14 IN A STORE
1	12	STORE POS LOOP	THE INSTORE NETWORK THAT CONNECTS ALL THE CHECKOUTS 14 TO THE STORE POS CONTROLLER 10
1	14	CASH REGISTER POS CHECKOUT	PRODUCTS ARE SCANNED AND TOTALED AT THE CASH REGISTER POS CHECKOUT
1	16	STORE POS SYSTEM	THE CHECKOUT FUNCTION PART OF THE RETAIL POS SYSTEM 18
1, 2	18	RETAILER POS SYSTEM	THE STORE SYSTEM THAT OPERATES THE CHECKOUT FUNCTION AND OTHER FUNCTIONS; CONNECTED TO THE INSTORE SYSTEM 28 (FIG. 2) THE PRESENT INVENTION'S INSTORE SYSTEM OBTAINS DATA, MEANING TRANSACTION AND SHOPPER INFORMATION, DIRECTLY FROM THE RETAILER POS SYSTEM BY MEANS OF A 3 RD PARTY NETWORK POS CARD, OR BY MEANS OF A WEB-SERVICE OR NETWORK REQUEST TO RETAILER REMOTE DATABASE 20, OR RETAILER IN-STORE DATABASE 22.
1, 2	20	RETAILER REMOTE DATABASE	REMOTE RETAILER DATABASE THAT IS NOT LOCATED IN-STORE, STORES DATA FROM RETAILER POS SYSTEM 18; CONNECTED TO THE NETWORK 26 (FIG. 2)
1, 2	22	RETAILER IN-STORE DATABASE	RETAILER DATABASE THAT IS LOCATED IN-STORE, STORES DATA FROM RETAILER POS SYSTEM 18
2	24	RETAILER INFORMATION SYSTEMS	THE AGGREGATED OF THE RETAILER POS SYSTEM AND RETAILER REMOTE DATABASE
2, 3	26	NETWORK	NETWORK OF ANY TYPE AND DESCRIPTION INC. INTERNET, PRIVATE NETWORKS, FRAME SATELLITE, WIRELESS ETC.
2, 3, 4	28	INSTORE SYSTEM	INSTORE SYSTEM COMPRISED OF DEVICES SUCH AS COMPUTERS, CONTROLLERS, 3 RD PARTY NETWORK POS CARDS, WIRELESS BASE STATIONS AND OTHER EQUIPMENT TO SUPPORT THE OPERATION OF THE SOLUTION
2, 3	30	REMOTE HOST	THE SYSTEM HOSTED THAT ENCOMPASSES A CLIENT CAMPAIGN PORTAL SERVER TO SETUP MARKETING, PROMOTION OPTIMIZATION AND COUPON DELIVERY, AS WELL AS A DEVICE MANAGER SERVER TO OPERATE MARKETING, PROMOTION OPTIMIZATION, AND COUPON DELIVERY, AS WELL AS A DIRECT CONNECTION TO A PRIVATE REMOTE DATABASE SERVER, ALL IN A SECURE AND MISSION-CRITICAL ENVIRONMENT
2, 3	32	REMOTE DATABASE	A DATABASE
2	34	REMOTE 3RD PARTY DATABASE	A DATABASE
3	36	SECURE WEB PAGES	SECURE WEB PAGES THAT CLIENTS USE TO ACCESS THE CLIENT CAMPAIGN PORTAL SERVER TO SETUP MARKETING, PROMOTION OPTIMIZATION AND COUPON DELIVERY ON THE REMOTE HOST
3	44	MOVEABLE "DEVICE" AT END-CAP DISPLAY AND EXIT	A COMBINATION OF COMPONENTS INCLUDING INDUSTRY STANDARD PRICE CHECKERS AND PRINTER(S), FORMING A MOVEABLE "DEVICE", WHICH IS LOCATED AT AN END-CAP DISPLAY AT THE END OF A MERCHANDISE AISLE, OR LOCATED AT THE EXIT DOOR
3	46	MOVEABLE "DEVICE" AT SERVICE DESK & OUTSIDE DISPLAY	A COMBINATION OF COMPONENTS INCLUDING INDUSTRY STANDARD PRICE CHECKERS AND PRINTER(S), FORMING A MOVEABLE "DEVICE", WHICH IS LOCATED AT AN END-CAP DISPLAY AT A SERVICE DESK, OR LOCATED AT AN OUTSIDE DISPLAY

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<u>Detailed Description of the Drawings</u>			
Figure	Label #	Label	Description
3	48	MOVEABLE "DEVICE" AT MERCHANDISE AISLE & ENTRY	A COMBINATION OF COMPONENTS INCLUDING INDUSTRY STANDARD PRICE CHECKERS AND PRINTER(S), FORMING A MOVEABLE "DEVICE", WHICH IS LOCATED IN A MERCHANDISE DISPLAY, OR LOCATED AT AN ENTRY DOOR
3	50	MOVEABLE "DEVICE" AT POS CHECKOUT	A COMBINATION OF COMPONENTS INCLUDING INDUSTRY STANDARD PRICE CHECKERS AND PRINTER(S), FORMING A MOVEABLE "DEVICE", WHICH IS LOCATED AT A CHECKOUT AT THE POS
3, 4	54	MOVABLE "DEVICES" WIRELESS OR WIRED CONNECTIONS	THE CONNECTION S USED TO CONNECT THE MOVABLE "DEVICES" TO THE INSTORE SYSTEM
3	56	LOCATION DESCRIPTION: ANY MOVEABLE "DEVICES" LOCATED AT A POINT OF PURCHASE DECISION NOT AT POS CHECKOUT	A DISTINCT LOCATION FOR MOVEABLE "DEVICE" SPECIFICALLY WHERE SHOPPERS DECIDE WHAT TO BUY, AS OPPOSED TO THE POS CHECKOUT WHERE SHOPPERS PAY FOR PURCHASES THEY HAVE ALREADY DECIDED TO BUY
4	60	"DEVICE" COMPONENT: PRINTER(S)	PRINTER COMPONENT WHICH IS ADDED TO INDUSTRY STANDARD PRICE CHECKERS, TO MAKE A MOVEABLE "DEVICE".
4	62	"DEVICE" COMPONENT: INPUT FROM SCANNER, RFID, MAGSTRIPE	INPUT COMPONENT SUCH AS A SCANNER, RFID OR MAGSTRIPE READER, THAT MAKES UP PART OF AN INDUSTRY STANDARD PRICE CHECKER, WHICH WHEN COMBINED WITH A PRINTER MAKES A MOVEABLE "DEVICE".
4	64	"DEVICE" COMPONENT: DISPLAY SCREEN	DISPLAY COMPONENT SUCH AS A SCREEN OR TOUCHSCREEN, THAT MAKES UP PART OF AN INDUSTRY STANDARD PRICE CHECKER, WHICH WHEN COMBINED WITH A PRINTER MAKES A MOVEABLE "DEVICE".
4	66	"DEVICE" COMPONENT: INPUT SCREEN, INPUT BUTTON(S)	DISPLAY COMPONENT SUCH AS AN INPUT BUTTON, OR TOUCHSCREEN BUTTON IMAGE, THAT MAKES UP PART OF AN INDUSTRY STANDARD PRICE CHECKER, WHICH WHEN COMBINED WITH A PRINTER MAKES A MOVEABLE "DEVICE".
4	68	COMPONENTS THAT TOGETHER MAKE UP INDUSTRY STANDARD PRICE CHECKERS, SPECIFICALLY LACKING AN INTEGRATED PRINTER	COMPONENTS THAT TOGETHER MAKE UP INDUSTRY STANDARD PRICE CHECKERS, SPECIFICALLY LACKING AN INTEGRATED PRINTER
4	80	COMPONENTS THAT TOGETHER MAKE UP MOVEABLE "DEVICE" AS DESCRIBED IN PRESENT INVENTION	COMPONENTS THAT TOGETHER MAKE UP MOVEABLE "DEVICE" AS DESCRIBED IN PRESENT INVENTION, COMPRISED OF INDUSTRY STANDARD PRICE CHECKER AND A PRINTER COMPONENT
5	M300	START	
5	M302	BUTTON PUSH OR SCAN/SWIPE DETECTED?	YES - THE READY STATE OF THE PRESENT INVENTION HAS BEEN INTERRUPTED AND THERE HAS BEEN AN INPUT; NO - THE PRESENT INVENTION REMAINS IN A READY STATE
5	M304	SCAN/SWIPE DETECTED?	YES - THE PRESENT INVENTION DETERMINES THAT THE MOVEABLE "DEVICE" HAS A SCAN OR A SWIPE INPUT; NO - BY DEFAULT IT IS A BUTTON PUSH
5	M306	PROCESSING OF BUTTON PUSH INPUT	
5	M308	GENERATE TARGETED DISPLAY SCREENS, ISSUE COUPON, UPDATE DATABASE	THE MOVEABLE "DEVICES" ISSUES A COUPON AND DISPLAYS SCREENS AS DETERMINED BY THE PRESENT INVENTION
5	310	PRODUCT OR COUPON BARCODE?	YES - THE PRESENT INVENTION DETERMINES THAT THE MOVEABLE "DEVICE" HAS A SCAN OR A SWIPE INPUT THAT IS A PRODUCT OR COUPON BARCODE; NO - BY DEFAULT IT IS A FREQUENT SHOPPER OR LOYALTY CARD, OR AN UNKNOWN SCAN/SWIPE
5	M312	PROCESSING OF PRODUCT OR COUPON BARCODE SCAN/SWIPE	

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<u>Detailed Description of the Drawings</u>			
Figure	Label #	Label	Description
5	M314	GENERATE TARGETED DISPLAY SCREENS, ISSUE COUPON, UPDATE DATABASE	THE MOVEABLE "DEVICES" ISSUES A COUPON AND DISPLAYS SCREENS AS DETERMINED BY THE PRESENT INVENTION
5	M316	FREQUENT SHOPPER OR LOYALTY CARD, OR UNKNOWN	YES - THE PRESENT INVENTION DETERMINES THAT THE MOVEABLE "DEVICE" HAS A FREQUENT SHOPPER OR LOYALTY CARD INPUT;
5	M318	SCAN/SWIPE?	NO - BY DEFAULT IT IS AN UNKNOWN SCAN/SWIPE
5	M320	PROCESSING OF SHOPPER OR LOYALTY CARD SCAN/SWIPE	
5	M322	GENERATE TARGETED DISPLAY SCREENS, ISSUE COUPON, UPDATE DATABASE	THE MOVEABLE "DEVICES" ISSUES A COUPON AND DISPLAYS SCREENS AS DETERMINED BY THE PRESENT INVENTION
5	M324	PROCESSING OF UNKNOWN SCAN/SWIPE	
5	M400	END	
6	M400	START	
6	M402	HAS ELECTRIC POWER BEEN DISRUPTED?	YES - THE READY STATE OF THE PRESENT INVENTION HAS BEEN INTERRUPTED AND THERE HAS BEEN A POWER DISRUPTION; NO - THE PRESENT INVENTION REMAINS IN A READY STATE
6	M404	IS INSTORE SYSTEM ONLINE TO REMOTE HOST?	YES - PROCEED TO NEXT LEVEL OF RECOVERY; NO - ESCALATE PROBLEM
6	M406	IS INSTORE SYSTEM ONLINE TO DEVICES?	YES - PROCEED TO NEXT LEVEL OF RECOVERY CHECK AND RESTORE DEVICE COMMUNICATIONS; NO - ESCALATE PROBLEM
6	M408	CHECK AND RESTORE DEVICE COMMUNICATIONS	
6	M410	ARE DEVICE COMMUNICATIONS RESTORED?	YES - PROCEED TO NEXT LEVEL OF RECOVERY SETUP AND TEST DEVICES; NO - ESCALATE PROBLEM
6	M412	SETUP AND TEST DEVICES	
6	M414	TEST OK?	YES - END; NO - ESCALATE PROBLEM
6	M416	ESCALATE PROBLEM	WHEN PROBLEM ESCALATED, CYCLE THROUGH AGAIN
6	M418	IF POWER DISRUPTED OR PROBLEM ESCALATED, CYCLE THROUGH AGAIN	
6	M498	END	
7	M430	START	
7	M432	DEVICE OR INSTORE SYSTEM IP ADDRESS CHANGED?	YES - THE READY STATE OF THE PRESENT INVENTION HAS BEEN INTERRUPTED AND THERE HAS BEEN A CHANGE IN THE IP ADDRESS OF DEVICES OR THE INSTORE SYSTEM; NO - THE PRESENT INVENTION REMAINS IN A READY STATE
7	M434	IF THERE HAS BEEN A CHANGE IN THE IP ADDRESS OF DEVICES OR THE INSTORE SYSTEM PROCEED TO GET IP ADDRESS	
7	M436	GET NEW IP ADDRESS AND TRANSMIT TO INSTORE SYSTEM AND REMOTE HOST	
7	M438	TRANSMIT NEW IP ADDRESS TO DEVICES	
6, 7	M404	IS INSTORE SYSTEM ONLINE TO REMOTE HOST?	YES - PROCEED TO NEXT LEVEL OF RECOVERY; NO - ESCALATE PROBLEM
6, 7	M406	IS INSTORE SYSTEM ONLINE TO DEVICES?	YES - PROCEED TO NEXT LEVEL OF RECOVERY CHECK AND RESTORE DEVICE COMMUNICATIONS; NO - ESCALATE PROBLEM

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<u>Detailed Description of the Drawings</u>			
Figure	Label #	Label	Description
6, 7	M408	CHECK AND RESTORE DEVICE	
6, 7	M410	ARE DEVICE COMMUNICATIONS RESTORED?	YES - PROCEED TO NEXT LEVEL OF RECOVERY SETUP AND TEST DEVICES; NO - ESCALATE PROBLEM
6, 7	M412	SETUP AND TEST DEVICES	
6, 7	M414	TEST OK?	YES - END; NO - ESCALATE PROBLEM
6, 7	M416	ESCALATE PROBLEM IF POWER DISRUPTED OR PROBLEM ESCALATED, CYCLE THROUGH AGAIN	WHEN PROBLEM ESCALATED, CYCLE THROUGH AGAIN
6, 7	M498	END	

DESCRIPTION OF THE INVENTION

[0017] The present invention in its primary embodiment, in a Retail store, processes the scan of a barcode as a data input, then conducts a query of a database, then selectively outputs text, graphics, messages and/or coupons.

[0018] Specifically, in its primary embodiment, moveable “device”s are positioned at various locations within a Retail store commonly called a Point of Decision **FIG. 3 (56)**, namely the point where Shoppers make the final decision on what to buy, for those familiar in this business; these locations being for example, the door entry, the end of a merchandise aisle, commonly called an “end-cap” for those familiar in this business, merchandise shelves, outside displays and customer service desks. Then, the present invention takes the scan of a barcode as a data input, then conducts a query of a database, then selectively outputs text, graphics, messages and/or coupons for the Shopper’s current visit. The present invention references existing solutions, components and systems commonly used for other applications, specifically, devices commonly called “Price Checkers” or “Price Verifiers” which are used by Retailers to give Shoppers a display of a product’s price, when the product barcode is scanned at the device.

[0019] These devices when combined with printers and controllers, and configured for wireless communications, form a moveable “device” as described in the present invention. The present invention thus extends the original use of said existing solutions, components and systems by adding a printer to obtain coupon printing capability, this capability specifically enabled by the present invention’s addition of hardware controllers, being a component of the moveable “device”. The present invention further extends the original use of said existing solutions, components and systems by conducting 2 way communications, by assigning a network address, commonly called an IP address for those familiar in this business in order to identify the “device” on the network, this capability specifically enabled by the present invention’s use of network addressing to establish and maintain 2 way remote wireless communications with the moveable “device”. **FIG. 7**

[0020] The present invention further extends the original use of said existing solutions, components and systems by

detecting interruptions in power supply in order to maintain live communications, this capability specifically enabled by the present invention’s use of network communications to establish and maintain 2 way remote wireless communications with the moveable “device”. **FIG. 6** The present invention, in these and other ways is a non-obvious system for delivering targeted coupons and incentives, advertising messages, text displays of product and other information, based on existing solutions, components and systems.

[0021] The present invention is also unique in that most prior claims refer to marketing activities at the POS checkout **FIG. 3 (50)**, but not at a Point of Decision **FIG. 3 (56)**, namely the point where Shoppers make the final decision on what to buy, for those familiar in this business; these locations being for example, the door entry, the end of a merchandise aisle, commonly called an “end-cap” for those familiar in this business, merchandise shelves, outside displays and customer service desks, and in those cases where reference is made to the Point of Decision, the marketing activities are inextricably linked to the Shopper passing through the checkout to complete the marketing activity, such as checking a database of the Shopper’s information to deliver an electronic promotional offer which in the present invention is not the case. In the present invention the coupon is issued and the Shopper redeems it as any other coupon. The present invention is also unique in that prior claims that do refer to marketing activities at a Point of Decision **FIG. 3 (56)**, are generally interactive kiosks with menu screens so Shopper’s can actively select menu items to obtain information or offers of some type, which in the present invention is not the case. In the present invention, the coupon is issued based on the solution’s decision system and the Shopper does not have any opportunity to use a menu to make a coupon selection, with the exception of pushing a button to activate the generation of a coupon, in lieu of scanning a product barcode or scanning a frequent shopper or loyalty card.

[0022] In addition, the present invention in a different embodiment is positioned just in front of the POS checkout lane **FIG. 3 (50)**, to take the scan of a barcode as a data input, then conducts a query of a database, that database specifically NOT being the transaction POS checkout system, then selectively outputs text, graphics, messages and/or

coupons. This embodiment is different from prior claims in that offers generated by the present invention, are independent of the actual basket of goods to be paid for at the POS checkout, and the present invention is not integrated with the POS checkout system. Notwithstanding this uniqueness from prior claims, this embodiment is different from the present invention's operations at the Point of Decision, because in this embodiment the shopper has most likely made their purchase decision already, and is checking out, and any promotional coupon issued would be for the Shopper's future visit.

What is claimed as new and desired to be secured by Letters Patent of the United States is:

1. a system comprising embedded and remote software, databases, and remote hosts, instore systems, and devices; such as price checkers, barcode scanners, display screens and printers that accept a scan as an input, queries internal and external databases using proprietary algorithms and logic, then, outputs targeted text, graphics, messages, and/or coupons to said devices in Retail stores, specifically a remotely-hosted system **FIG. 2 (30)** system that includes algorithms and logic associated with evaluating in real-time, from external and internal databases, multiple factors and conditions such as location, time, inventory, demand, elasticity, product life cycle and shelf life, profit margins, inventory turns, cost of goods sold, as well as identifying customers, shoppers or users, with or without collecting descriptive information, followed by the subsequent issuance of customized text, graphics, messages and/or coupons for a current or future purchase, along with the management and restart of multiple moveable "devices, from failures or power outages **FIG. 6**, and changes in network addresses **FIG. 7**

2. The system of claim 1. above in one embodiment where, moveable "device"s are positioned at various locations **FIG. 3 (44,46,48)** within a Retail store commonly called a Point of Decision **FIG. 3 (56)**, namely the point where Shoppers make the final decision on what to buy, for those familiar in this business; these locations being for example, the door entry, the end of a merchandise aisle, commonly called an "end-cap" for those familiar in this business, merchandise shelves, outside displays and customer service desks.

3. The system of claim 1. in another embodiment where multiple internal and external data sources are sourced in real-time.

4. The system of claim 1. in another embodiment where the targeted text, graphics, messages, and/or coupons are specifically for a purchase on the Shopper's current visit.

5. The system of claim 1. in another embodiment where the targeted text, graphics, messages, and/or coupons are specifically for a purchase on the Shopper's future visit.

6. The system of claim 1. in another embodiment where Retailer data on product sales velocity before, during and after a sales promotion, and product profit margins before, during and after a sales promotion, are tracked and analyzed.

7. The system of claim 1. in another embodiment where the present invention enables in-store lookup of rewards or loyalty points balances, from a scan of a frequent shopper/loyalty card, followed by the secure instant redemption of rewards or loyalty points by printing a secure ticket or tender.

8. The system of claim 1. in another embodiment where the present invention enables the data input to be a button push instead of a scan.

9. The system of claim 1. in another embodiment where the present invention enables Shoppers to enter identification data such as a barcode over the Internet, then pre-select discount offers over the Internet and then when at a store location, scan or enter identification data such as a barcode, smart card or pin number, then print the pre-selected coupons.

10. The system of claim 1. in another embodiment where the present invention enables Shoppers to enter identification data such as a barcode over the Internet, then pre-select discount offers over the Internet and then when at a store location, scan or enter identification data such as a barcode, smart card or pin number at the POS checkout to claim the pre-selected discount offers.

11. The system of claim 1. in another embodiment where the present invention enables users to manage and change text and graphics displays both for manual operations and schedule-based automated operations. These operations can be transactional (meaning both the database(s) and the device will be successfully updated simultaneously), or non-transactional.

12. The system of claim 1. in another embodiment where the present invention enables a paperless electronic coupon to be redeemed at the POS checkout.

13. Claim 2 A second claim that the present invention, in the following ways is a non-obvious system for delivering targeted coupons and incentives, advertising messages, text displays of product and other information, based on existing solutions, components and systems used for other applications, specifically, devices commonly called "Price Checkers" or "Price Verifiers" which are used by Retailers to give Shoppers a display of a product's price, when the product barcode is scanned at the device. The present invention thus claims an extension beyond the original use of said existing solutions, components and systems by adding a printer to obtain coupon printing capability, this capability specifically enabled by the present invention's addition of hardware controllers, being a component of the moveable "device", and extends the original use of said existing solutions, components and systems by conducting 2 way communications, by assigning a network address, commonly called an IP address for those familiar in this business in order to identify the "device" on the network, this capability specifically enabled by the present invention's use of network addressing establish and maintain 2 way remote wireless communications with the moveable "device" **FIG. 7**, and extends the original use of said existing solutions, components and systems by detecting interruptions in power supply in order to maintain live communications, this capability specifically enabled by the present invention's use of network communications to establish and maintain 2 way remote wireless communications with the moveable "device" **FIG. 6**, and extends the original use of said existing solutions, components and systems by adding a camera to allow remote visual confirmation of the moveable "device" status **FIG. 4 (70)**.

14. Claim 3 A third claim that the present invention is unique, useful and non-obvious in that most prior claims referenced, refer to marketing activities at the POS checkout **FIG. 3 (50)**, but not at a Point of Decision **FIG. 3 (56)**, namely the point where Shoppers make the final decision on

what to buy, for those familiar in this business; these locations being for example, the door entry, the end of a merchandise aisle, commonly called an “end-cap” for those familiar in this business, merchandise shelves, outside displays and customer service desks, and in those cases where reference is made to the Point of Decision, the marketing activities are inextricably linked to the Shopper passing through the checkout to complete the marketing activity, such as checking a database of the Shopper’s information to deliver an electronic promotional offer which in the present invention is not the case. In the present invention the coupon is issued and the Shopper redeems it as any other coupon, and that prior claims that do refer to marketing activities at a Point of Decision **FIG. 3 (56)**, are generally interactive kiosks with menu screens so Shopper’s can actively select menu items to obtain information or offers of some type, which in the present invention is not the case. In the present invention, the coupon is issued based on the solution’s decision system and the Shopper does not have any opportunity to use a menu to make a coupon selection, with the exception of pushing a button to activate the generation of a coupon, in lieu of scanning a product barcode or scanning a frequent shopper or loyalty card.

15. The system of claim 3, in another embodiment, that notwithstanding referenced prior claims related to marketing at the POS, the moveable “devices” described in the present invention is positioned just in front of the POS checkout lane **FIG. 3 (50)**, to take the scan of a barcode as a data input, then conducts a query of a database, that database specifically NOT being the transaction POS checkout system, then selectively outputs text, graphics, messages and/or coupons. This embodiment is different from prior claims in that offers generated by the present invention, are independent of the actual basket of goods to be paid for at the POS checkout, and the present invention is not integrated with the POS checkout system. Notwithstanding this uniqueness from prior claims, this embodiment is different from the present invention’s operations at the Point of Decision, because in this embodiment the shopper has most likely made their purchase decision already, and is checking out, and any promotional coupon issued would be for the Shopper’s future visit.

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