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(54) Electronic device providing pay phone extended functionality into vending device selling products

(57) The invention belongs to the field of telecommunication use of voice and data communication, more exactly to the field of pay phone service. Phone booth as location for pay phone is important part of infrastructure where invention is taking place enabling additional services and products to be offered.

Pay phone is integrated with vending device and according to invention pay phone-vending device integrated solution is composed of pay phone compartment that is offering standard pay phone functionality, vending compartment that is offering standard vending device functionality by using integrated equipment of pay phone, product delivery compartment where product is obtained by customer. According to the invention pay phone-vending device is using the same housing (1), the same display (4), the same keypad (5), the same card reader (6), the same coin acceptor (7), the same bank note acceptor (8) and the same telephone handset (9). With this invention telecom infrastructure is offering additional service at telephone booth location and service user besides telephone service can also buy products and have benefits from bonus programs combining telecom service and buying products. With this invention phone booth is becoming automated mini shop.

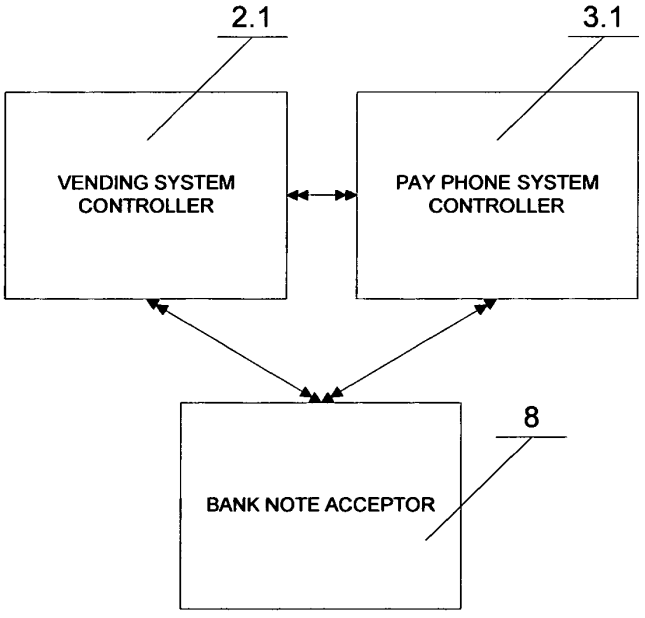

Figure 9

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Description

Field of technology

[0001] The invention belongs to the field of systems for telecommunication, more exactly invention is extended functionality of pay phone and additional technology integration. Pay phone is improved and extended into device that is offering possibility of selling additional products. Phone booth location besides telecommunication services also offers possibility of selling products. Device is connected with Control centre that is providing age verification and authorisation of selling goods to buyer. Market law regulation requires age control for specific goods to be sale.

Technical problem

[0002] Telecommunication infrastructure is one of most important public services. By telephone invention pay phone service was introduced to the marked. Once very important service become neglected one but not unnecessary! Phone booth with pay phone is today obligated by law regulations for providing and enabling accessibility of emergency calls as necessary public service to all people. Geostatic locations are usually easily accessible and very frequent by people. Mobile phone made pay phone service neglected. Pay phone must offer additional service to the market to provide answers market is demanding. Pay phone must be improved, developed and upgraded to vending device. Pay phone-vending device concept must enable necessary and by law obligated service and offer additional service. Physical position and space limitations of Phone booth are requiring limited dimensions, integrated solution and space saving construction of new device. Also, device construction, shape, dimensions and design must meet demands integrated services are requiring. All necessary equipment must be integrated as one device. Pay phone-vending device must use and meet technical and physical requirements existing location is demanding (phone booth dimensions, electrical installation standards). Pay phone-vending device must have all means of payment for offered services: credit/debit card, cash or prepaid card.

[0003] Pay phone-vending device must offer next functionality / services:

- emergency calls
- all telephone calls telecom service provider is enabling and allowing
- all payment methods
- user interface (display, keypad)
- product selection
- immediate product delivery
- place for product delivery
- product shelf compartment controller

[0004] Technical equipment that is interacting with customer using service automatically or manually interacts with vending system and pay phone system. Information display must be used according to service that is in process -if pay phone is used information for pay phone service must be displayed, if vending service is in process information relevant for vending process must be displayed. Keypad must be used according to service that is in process -if pay phone is used data entered must be used for pay phone service, if vending service is in process data entered is relevant for vending process. Card reader must be used according to service that is in process -if pay phone is used information from card reader must be used for telephone service, if vending service is in process information relevant for vending process must be used from card reader. Other means of payment (coins, banknotes) must be used according to service that is in process -if pay phone is used information from other means of payment must be used for telephone service, if vending service is in process information relevant for vending process must be used from other means of payment. Telecom service operators are seeking answer for years now: What and how does future of Phone booth and pay phone look like? Developed technology and device extension is providing answer to that question. Consumers will find services kind and needed at hand and Telecom operators will offer new service on existing infrastructure. Location will once again gain important and valued position for consumers as it was in the past. Basic service of making call will become more interesting and more times used because of additional service offered at location. Connection between pay phone and vending device is important technical improvement of new device. Both services can be aware of each other what was not possible until now. Different events during service usage can be connected and used for service improvement. For example new way of promotion is possible with bonus and loyalty programs. Now combined services can be offered -you can use phone for free if you buy specific product or you can get discount for specific product if you make longer call or long distance call. Posed technology will enable higher level of service to the customer.

State of the art

[0005] The patent document with ref. no. US 4,105,867 and title »Control circuit for pay telephones and the like « describes a control circuit for a pay phone including a coin unit where money is deposited and validated, an entry circuit having a first input connected to the coin unit for entry of amounts deposited, a second input to the entry circuit for communication thereto call price information, a control element operable in response to deposits of an amount at least equal to the call price for enabling the customer to dial his call and to enable phone communication with the dialled phone, and apparatus to control payback of excess amounts deposited. The control circuit is preferably powered by rechargeable energy

source. The present control circuit may employ optical or other forms of couplers to establish connections to communicate the dialling mechanism and telephone handset with its associated transmission controls to the telephone line.

[0006] The patent document with ref. no. US 4,706,399 and title »Apparatus for mounting an advertising display unit for use with a public telephone« describes the vandal resistant mounting method and apparatus for an advertising display. The advertising display unit mounting comprises a vertical post having, a recessed support in a front opening to secure the public telephone, and an advertising unit including a display wall having an aperture.

[0007] The patent document with ref. no. US 4,918,878 and title »Pay telephone enclosure« describes six-sided pay telephone housing constructed using vertically oriented panels. A general object is telephone enclosure that is assembled and easily repaired with emphasis on aesthetical effect and advertising function.

[0008] The patent document with ref. no. US 5,483, 583 and title:" Pay phone" describes a coin transmission mechanism for pay phone, including a plurality of projecting rods and slots below the projecting rods, a control plate connected to the projecting rods and having an actuating strip extended out of the telephone body of the pay phone through a hole for guiding a coin during a call. The general object is enabling a coin transmission mechanism for pay phone which is simple in structure and inexpensive to manufacture.

[0009] The patent document with ref. no. US 5,963,628 and title: "Reinforcement pay phone upper housing" describes a reinforced pay phone upper housing which comprises reinforcement mounted inside the pay phone housing so as to prevent any forcible removal of the reinforcement in attempting to break in any phone.

[0010] The patent document with ref. no. US 6,097,799 and title »Pay phone box structure« describes a pay phone box structure which includes a casing having a first side wall and a second side wall, a first supporting plate fixedly mounted on the first side wall of the casing and containing a plurality of first locking slots, a second supporting plate fixedly mounted on the second side wall of the casing and containing a plurality of second locking slots, a suspension bar secured to the second supporting plate and having a plurality of first locking hooks each detachably received in the second locking slots, a pivot plate pivotally mounted on the suspension bar and having an upper end portion and lower end portion, cover pivotally mounted on the casing and having a first side wall, a second side wall secured to the pivot plate, a closed wall and an open wall, a sliding plate mounted on the first side wall of the cover and having a plurality of second locking hooks each detachably received in the first locking slots, and a U-shaped pivot bar pivotally mounted on the closed wall of the cover and having a first leg pivotally connected with the sliding plate and second leg pivotally connected with the lower end portion of the pivot plate.

[0011] The proposed invention differs significantly from the patents with ref. no. US 4,105,867, US 4,706,399, US 4,918,878, US 5,483,583, US 5,963,628, and US 6,097,799 insofar as it is a general object of the present invention to provide flexible and versatile pay telephone upgraded to vending machine.

Description of the solution to the technical problem

[0012] The core of solution pay phone-vending device integrated solution according to the invention is the fact that it has become one device combining technical functionality of each device. New device is joining technology and functionality in one housing and using one user interface and user interaction. Pay phone controller module and vending device controller module are integrated to communicate with each other with two way communication. Both controllers are also integrated with all devices that are used for user interface and user interaction. By user interface and user interaction is meant information display, user data input using keypad and all means of payment (credit card/debit card, prepaid card, coin, cash), hand phone for voice interaction. With this solution phone booth location is offering new pallet of service and products to the customer. Telecom operators have answer to question what to do with existing phone booths that must be present because of obligated public service of emergency calls and fundamental service accessible to everyone.

[0013] The system according to the invention shall be described in more detail with the help of the following figures:

Figure 1 - Drawing of device modular structure and body appearance front side composition

Figure 2 - Drawing of device modular structure and body appearance front side assembly orientation 1

Figure 3 - Drawing of device modular structure and body appearance front side assembly orientation 2

Figure 4 - Block scheme of module connections vending system controller-pay phone system-display

Figure 5 - Block scheme of module connections vending system controller-pay phone system-keypad

Figure 6 - Block scheme of module connections vending system controller-pay phone system-card reader

Figure 7 - Block scheme of module connections vending system controller-pay phone system-coin acceptor

Figure 8 - Block scheme of module connections vending system controller-pay phone system- telephone handset

Figure 9 - Block scheme of module connections vending system controller-pay phone system- bank note acceptor

[0014] Pay phone-vending device integrated solution

according to the invention, shown in Figure 1, consists of housing (1) which is divided into three compartments: vending compartment (2), product delivery compartment (2.2) and pay phone compartment (3). Housing (1) is right side oriented because telephone handset (9) and pay phone compartment (3) are on the right side of the housing (1). Pay phone-vending device integrated solution according to the invention, shown in Figure 2, consists of housing (1) which is divided into three compartments: vending compartment (2), product delivery compartment (2.2) and pay phone compartment (3). Housing (1) is left side oriented because telephone handset (9) and pay phone compartment (3) are on the left side of the housing (1). Vending compartment (2) is product space for products that are for sale through vending device. Mechanism and actuators for product delivery are in vending compartment (2). Product delivery compartment (2.2) is placed at the lower part of housing (1). Vending mechanism delivers product to that compartment after customer pay and choose specific product. After that customer can obtain product from product delivery compartment (2.2). Pay phone compartment (3) is positioned as shown in Figure 1 or as shown in Figure 2. Telephone handset (9) is positioned on the outer side of pay phone compartment as shown in Figure 1 or as shown in Figure 2. Telephone handset is connected to pay phone compartment (3) with telephone handset wire (10). Pay phone compartment (3) assembly is shown in Figure 1 or as shown in Figure 2. Display (4) for customers is used for information display such as telephone number, credit status, telephone impulse number, product number and additional text messages. Keypad (5) is standard alphanumerical and is used for user data input. Keypad (5) is used for telephone numbers dialling, other telephone services or product selection. Card reader (6) is used for reading magnet strip, chip cards or contactless technology cards. It is used for reading pay phone prepaid impulse cards and payment cards. Card reader (6) is enabling product payment for vending device also. Coin acceptor (7) is accepting coins for telephone service payment and/or product payment. Bank note acceptor (8) is accepting bank notes for telephone service payment and/or product payment. Telephone handset (9) is used for voice communication interface as part of telephone service and for data transfer as voice modem coupled with other telephone handset. Pay phone-vending device integrated solution according to the invention, shown in Figure 3, vending system controller (2.1) and pay phone system controller (3.1) are connected and integrated, communication is active two way. Vending system controller (2.1) and pay phone system controller (3.1) as shown in Figure (3) are connected to display (4) the way that one display (4) can show information from both controllers. When vending process is active vending system controller (2.1) is master device for display (4) and pay phone system controller (3.1) is aware that vending process is active. When telephone service process is active pay phone system controller (3.1) is master device for display (4) and vending system controller (2.1) is aware that telephone service process is active. Vending system controller (2.1) and pay phone system controller (3.1) as shown in Figure (4) are connected to keypad (5) the way that keypad (5) is data input for both controllers. When vending process is active vending system controller (2.1) is master device for keypad (5) and pay phone system controller (3.1) is aware that vending process is active. When telephone service process is active pay phone system controller (3.1) is master device for keypad (5) and vending system controller (2.1) is aware that telephone service process is active. Vending system controller (2.1) and pay phone system controller (3.1) as shown in Figure (5) are connected to card reader (6) the way that card reader (6) is data input and output for both controllers. When vending process is active vending system controller (2.1) is master device for card reader (6) and pay phone system controller (3.1) is aware that vending process is active. When telephone service process is active pay phone system controller (3.1) is master device for card reader (6) and vending system controller (2.1) is aware that telephone service process is active. Vending system controller (2.1) and pay phone system controller (3.1) as shown in Figure (6) are connected to coin acceptor (7) the way that coin acceptor (7) is data input and output for both controllers. When vending process is active vending system controller (2.1) is master device for coin acceptor (7) and pay phone system controller (3.1) is aware that vending process is active. When telephone service process is active pay phone system controller (3.1) is master device for coin acceptor (7) and vending system controller (2.1) is aware that telephone service process is active. Vending system controller (2.1) and pay phone system controller (3.1) as shown in Figure (8) are connected to bank note acceptor (8) the way that bank note acceptor (8) is data input and output for both controllers. When vending process is active vending system controller (2.1) is master device for bank note acceptor (8) and pay phone system controller (3.1) is aware that vending process is active. When telephone service process is active pay phone system controller (3.1) is master device for bank note acceptor (8) and vending system controller (2.1) is aware that telephone service process is active. Vending system controller (2.1) and pay phone system controller (3.1) as shown in Figure (7) are connected to telephone handset (9) the way that telephone handset (9) is data input and output for both controllers. When vending process is active vending system controller (2.1) is master device for telephone handset (9) and pay phone system controller (3.1) is aware that vending process is active. When telephone service process is active pay phone system controller (3.1) is master device for telephone handset (9) and vending system controller (2.1) is aware that telephone service process is active.

Claims

1. A pay phone-vending device integrated of pay phone device and vending device consists of housing (1), vending system controller (2.1), pay phone system controller (3.1), display (4), keypad (5), card reader (6), coin acceptor (7), bank note acceptor (8) and telephone handset (9), **characterized by that** said housing (1) is divided into three compartments: pay phone compartment (3); vending compartment (2); and product delivery compartment (2.2); where said vending system controller (2.1), and said pay phone system controller (3.1) are mutually connected with active two way communication and each of them use and is connected to unique display (4), unique keypad (5), unique card reader (6), unique coin acceptor (7), unique bank note acceptor (8) and unique telephone handset (9).

2. A pay phone - vending device according to claim 1, **characterized by that** when telephone handset (9) is on the right side of pay phone compartment (3) the vending compartment (2) is placed on the left side of pay phone compartment (3) and product delivery compartment (2.2) is placed under vending compartment (2).

3. A pay phone - vending device according to claim 1, **characterized by that** when telephone handset (9) is on the left side of pay phone compartment (3) the vending compartment (2) is placed on the right side of pay phone compartment (3) and product delivery compartment (2.2) is placed under vending compartment (2).

4. A pay phone - vending device according to claim 1, **characterized by that** pay phone system controller (3.1) and vending system controller (2:1) are using the same display (4) where when vending process is active vending system controller (2.1) is master device for display (4), and respectively when telephone service process is active pay phone system controller (3.1) is master device for display (4).

5. A pay phone- vending device according to claim 1, **characterized by that** pay phone system controller (3.1) and vending system controller (2.1) are using the same keypad (5) which is data input for both controllers, where when vending process is active vending system controller (2.1) is master device for keypad (5), and respectively when telephone service process is active pay phone system controller (3.1) is master device for keypad (5).

6. A pay phone-vending device according to claim 1, **characterized by that** pay phone system controller (3.1) and vending system controller (2.1) are using the same card reader (6) which is data input and output for both controllers, where when vending process is active vending system controller (2.1) is master device for card reader (6), and respectively when telephone service process is active pay phone system controller (3.1) is master device for card reader (6).

7. A pay phone-vending device according to claim 1, **characterized by that** pay phone system controller (3.1) and vending system controller (2.1) are using the same coin acceptor (7) which is data input and output for both controllers, where when vending process is active vending system controller (2.1) is master device for coin acceptor (7), and respectively when telephone service process is active pay phone system controller (3.1) is master device for coin acceptor (7).

8. A pay phone - vending device according to claim 1, **characterized by that** pay phone system controller (3.1) and vending system controller (2.1) are using the same telephone handset (9) which is data input and output for both controllers, where when vending process is active vending system controller (2.1) is master device for telephone handset (9), and respectively when telephone service process is active pay phone system controller (3.1) is master device for telephone handset (9).

9. A pay phone - vending device according to claim 1, **characterized by that** pay phone system controller (3.1) and vending system controller (2.1) are using the same bank note acceptor (8) which is data input and output for both controllers, where when vending process is active vending system controller (2.1) is master device for bank note acceptor (8), and respectively when telephone service process is active pay phone system controller (3.1) is master device for bank note acceptor (8).

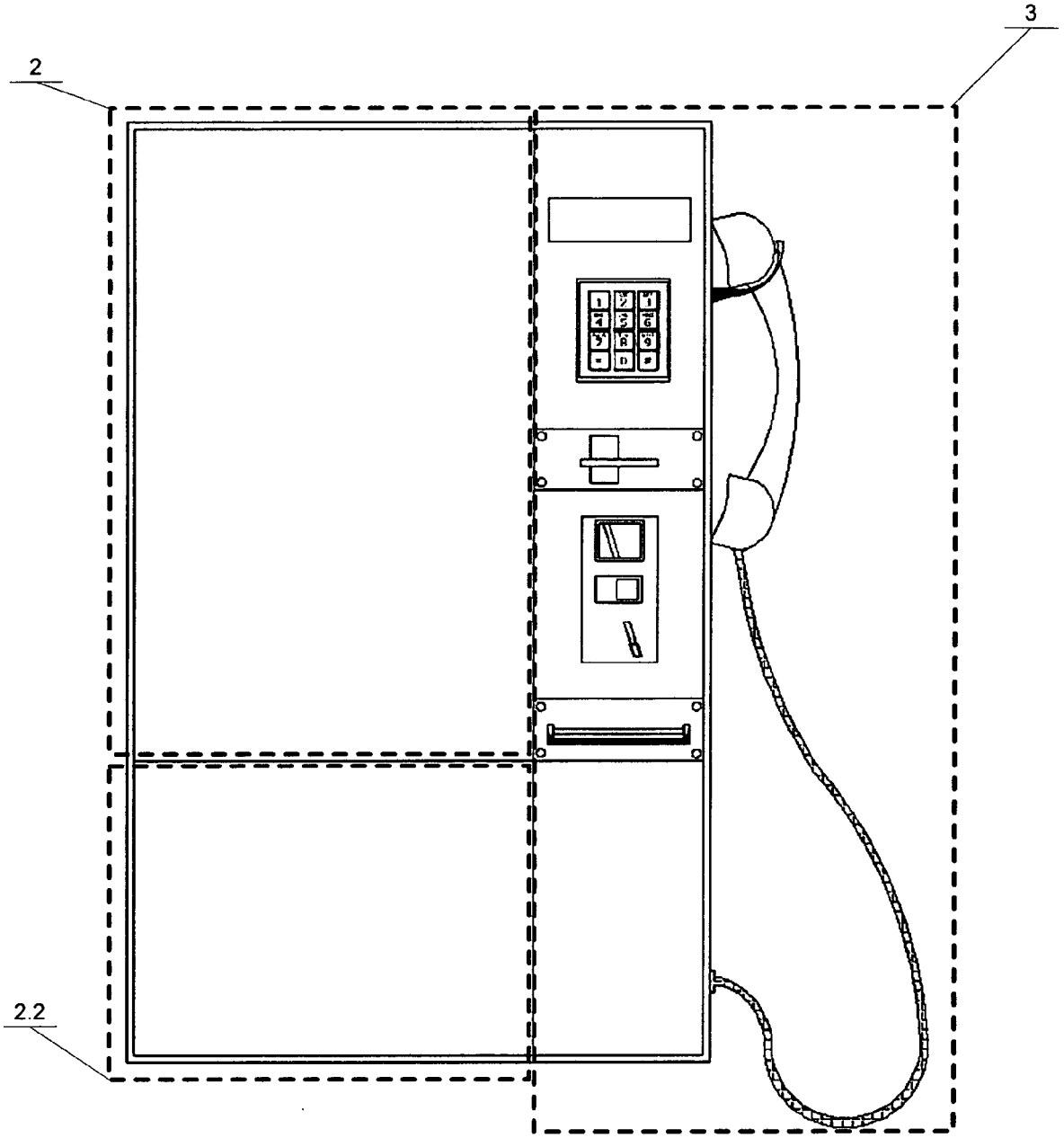

Figure 1

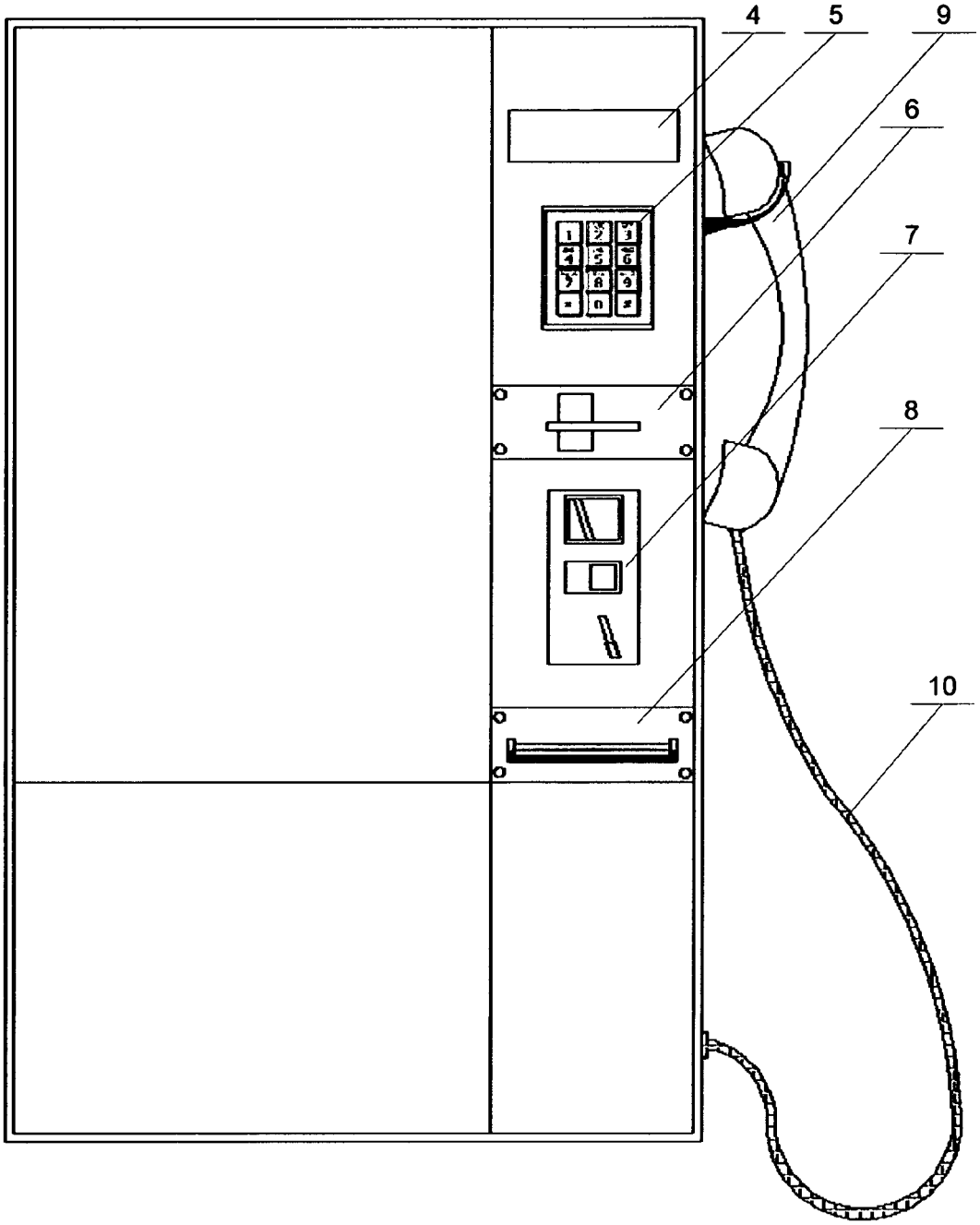

Figure 2

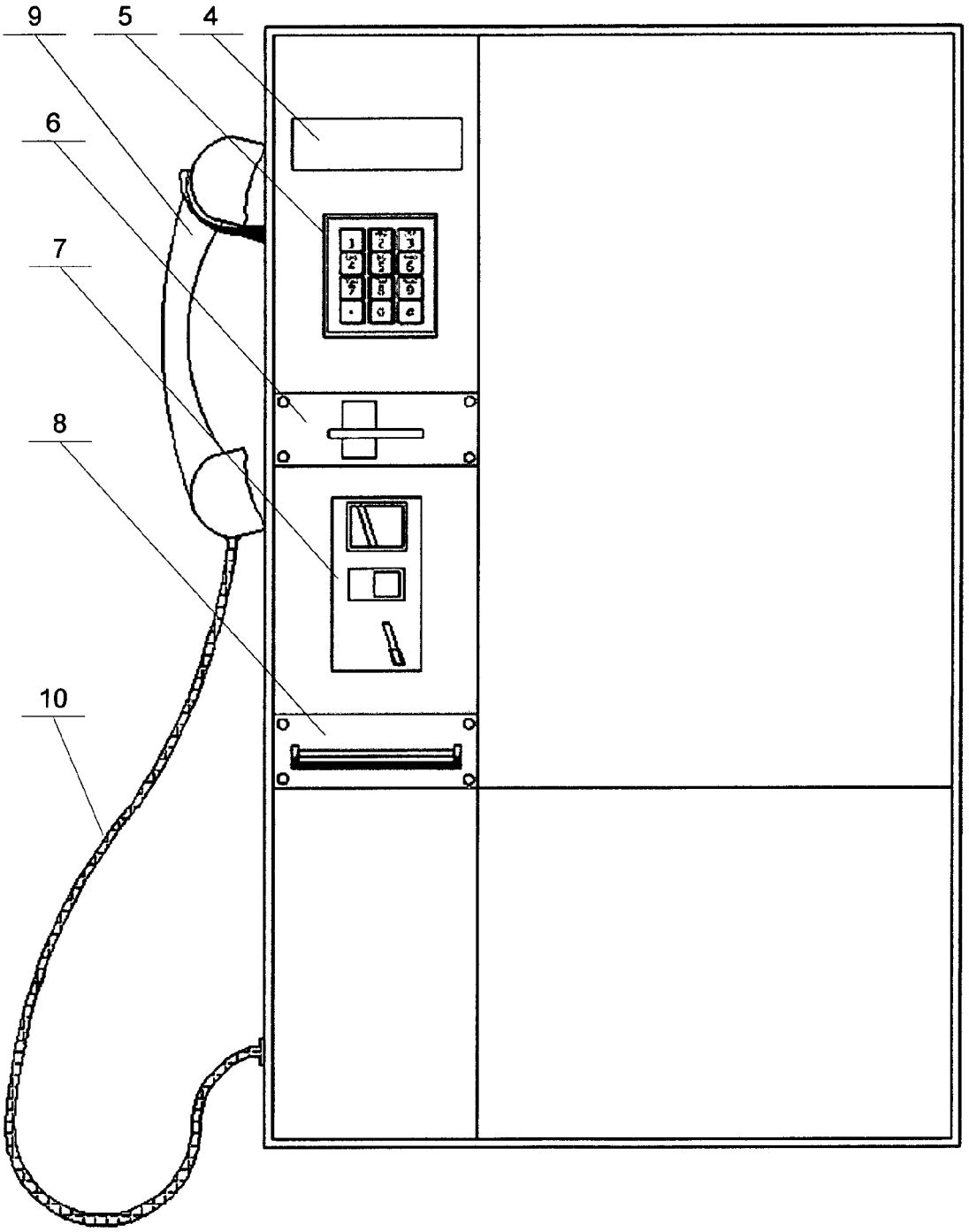

Figure 3

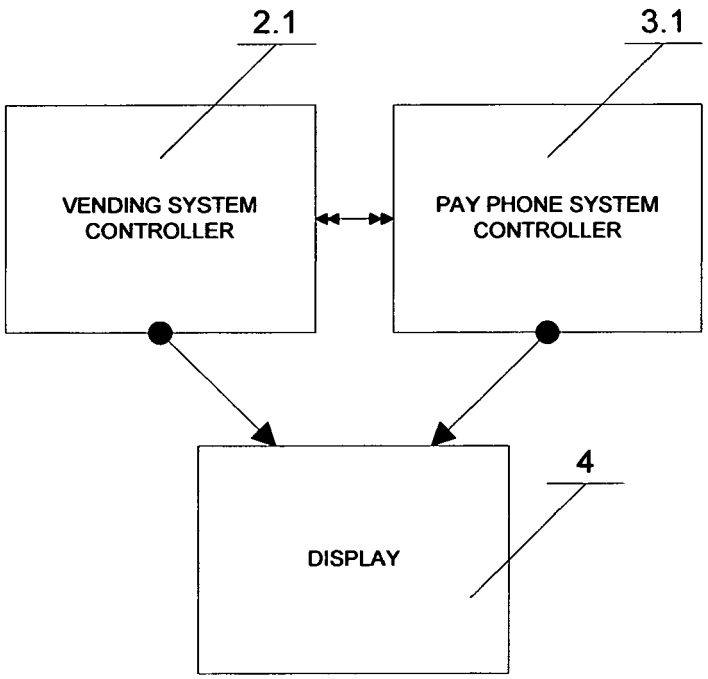

Figure 4

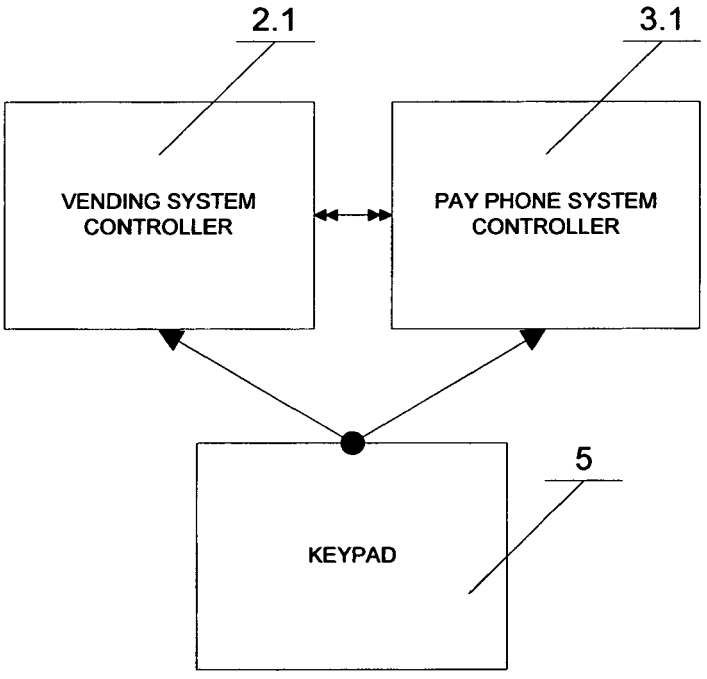

Figure 5

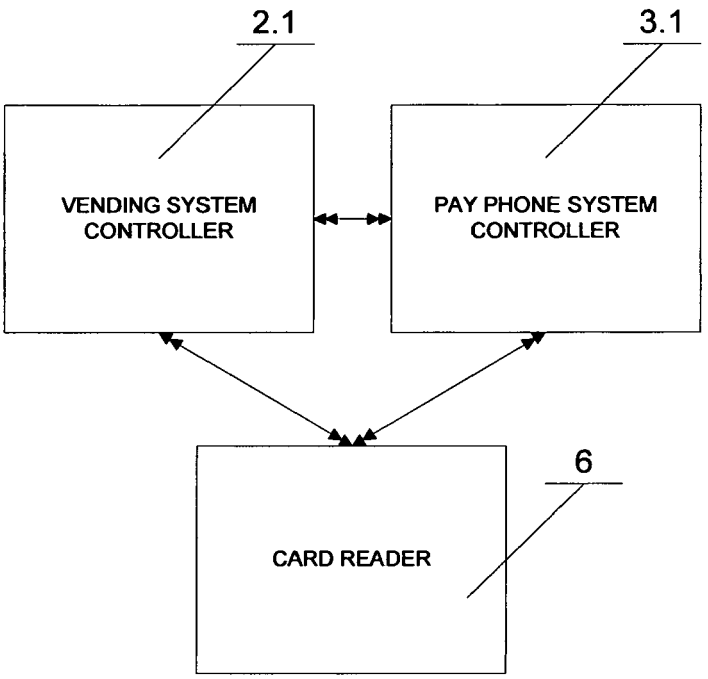

Figure 6

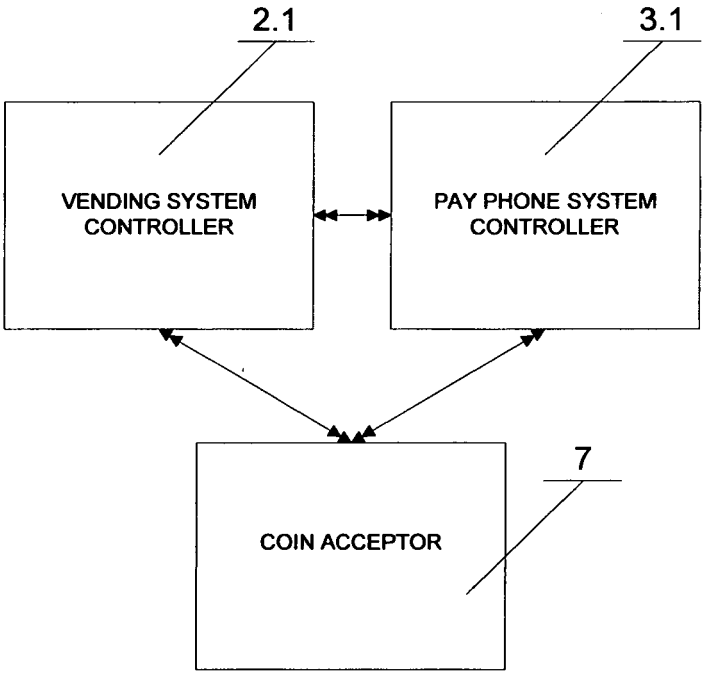

Figure 7

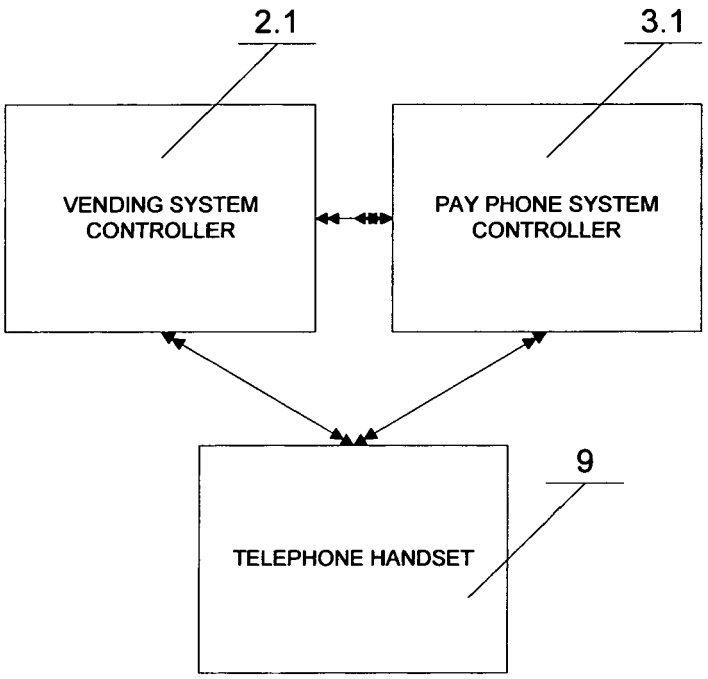

Figure 8

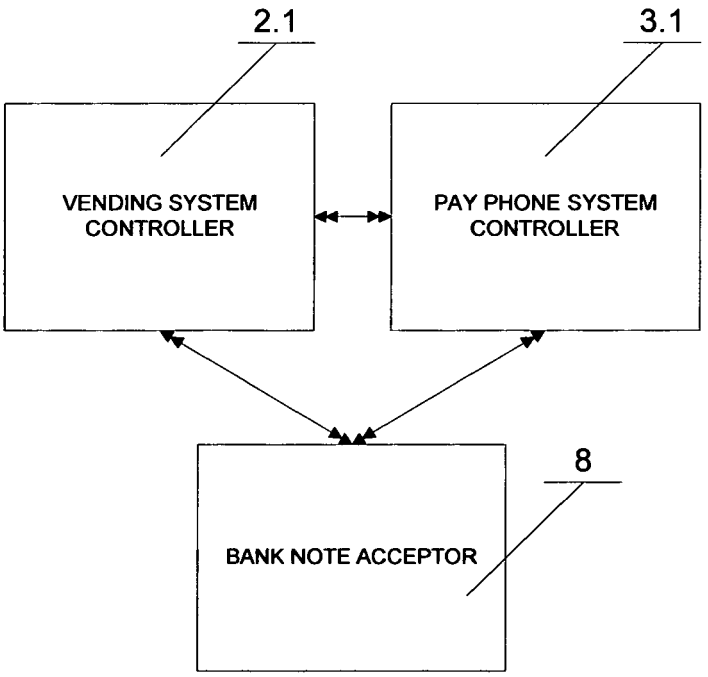

Figure 9

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EUROPEAN SEARCH REPORT

Application Number
EP 10 46 8003

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 97/10576 A1 (MARS INC [US]) 20 March 1997 (1997-03-20) * abstract * * page 3, line 16 - page 16, line 20 * * page 23, line 16 - page 27, line 23 * * figures 1-6 * -----	1-9	INV. G07F9/00 G07F7/00
X	EP 1 130 552 A1 (JOFEMAR SA [ES]) 5 September 2001 (2001-09-05) * the whole document * -----	1-9	
X	WO 99/67752 A1 (KIM HAK SOO [KR]) 29 December 1999 (1999-12-29) * abstract * * page 1, line 29 - page 3, line 6 * * page 3, line 17 - page 7, line 6 * * figures 1-3 * -----	1-9	
A	US 5 704 517 A (LANCASTER JR HAZEN G [US]) 6 January 1998 (1998-01-06) * the whole document * -----	1-9	
			TECHNICAL FIELDS SEARCHED (IPC) G07F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	24 March 2011	Diepstraten, Marc

CATEGORY OF CITED DOCUMENTS

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1

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24-03-2011

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