

PAPER SHEET HANDLING APPARATUS AND SYSTEM

FIELD OF THE INVENTION

The present invention relates to a paper sheet handling
5 apparatus and the system thereof, and in particular to a paper
sheet handling apparatus that is placed at a counter of a
financial institution or the like and handles paper sheets such
as checks and bills through operations by a clerk and a system
having a teller terminal that controls the paper sheet handling
10 apparatus.

BACKGROUND OF THE INVENTION

A paper sheet handling apparatus is known which can
singly handle depositing and delivery of bills as well as checks
15 for the purpose of labor-saving in banking business. For
example, an apparatus that is intended to improve efficiency
by adding the function of check issuance to a bill recycling
unit is disclosed in Japanese Unexamined Patent Publication
No. H9-22478.

20 In the case of a conventional paper sheet handling
apparatus, when a check is rejected during the delivery of
checks, the rejected paper sheet (called a rejected bill) is
conveyed to a retrieval box and stored therein. However, in
the case of the delivery of checks that are numbered by printing
25 beforehand and must be handled in accordance with serial

numbers, every time rejection occurs, a clerk at a counter has to take out the rejected check from the retrieval box in the apparatus, check the rejected bill against the checks submitted to a delivery port, confirm that the numbers are consecutive,
5 and then give the checks to the customer.

SUMMARY OF THE INVENTION

An object of the present invention is to avoid the clerk's labor required when a rejected bill appears at the delivery
10 of checks, and improve the operating ratio of an apparatus.

A paper sheet handling apparatus according to the present invention is configured preferably as a paper sheet handling apparatus to receive or deliver paper sheets including a first depositing/withdrawal port used for receiving or delivering
15 paper sheets, a storage box to store the paper sheets received or to be delivered, a conveyance path to connect the first depositing/withdrawal port to the storage box and convey the paper sheets, an identifying unit disposed in the conveyance path to identify the types and the authenticity of the paper
20 sheets, means for notifying a clerk, and a controller to control the parts. The controller controls the apparatus so as to convey a paper sheet, which has been discharged from the storage box and has not been identified correctly (rejected) as a result of the judgment at the identifying unit, to the first
25 depositing/withdrawal port through the conveyance path and

notifies the clerk of the occurrence of the rejection at the delivery of the paper sheets by the notifying means.

Further, another preferable embodiment of a paper sheet handling apparatus according to the present invention is
5 configured as a paper sheet handling apparatus to receive or deliver paper sheets including a first depositing/withdrawal port used for receiving or delivering paper sheets, a second depositing/withdrawal port used for returning paper sheets, a storage box to store the paper sheets received or to be
10 delivered, a conveyance path to connect the first depositing/withdrawal port and the second depositing/withdrawal port to the storage box and convey the paper sheets, an identifying unit disposed in the conveyance path to identify the types and the authenticity of the paper
15 sheets, means for notifying a clerk, and a controller to control the parts. The controller controls the apparatus so as to convey the paper sheets that have been judged to be valid at the identifying unit to the first depositing/withdrawal port and so as to convey a paper sheet (a rejected bill) that has
20 been judged to be rejected at the identifying unit, together with succeeding paper sheets when there are the succeeding paper sheets, to the second depositing/withdrawal port and notifies the clerk of the occurrence of the rejection at the delivery of the paper sheets by the notifying means.

25 In a preferable embodiment, the notifying means is a lamp

that is disposed in the paper sheet handling apparatus, and notifies of the occurrence of trouble.

Further, preferably the paper sheets regarded as excessive ones at the delivery of the paper sheets can be put
5 into the first depositing/withdrawal port and the controller controls the paper sheets put into the first depositing/withdrawal port so as to be conveyed to the storage box.

Furthermore, preferably, when rejection occurs, the
10 rejected bill is returned to the storage box and the controller controls the lamp so as to be turned off after the rejected bill is subjected to prescribed treatment.

The present invention further includes a paper sheet handling system. A preferable embodiment thereof is a paper
15 sheet handling system having a paper sheet handling apparatus to receive or deliver paper sheets and a teller terminal that is connected to the paper sheet handling apparatus and operated by a clerk, wherein the paper sheet handling apparatus is provided with a first depositing/withdrawal port used for
20 receiving or delivering paper sheets, a storage box to store the paper sheets received or to be delivered, a conveyance path to connect the first depositing/withdrawal port to the storage box and convey the paper sheets, an identifying unit disposed in the conveyance path to identify the types and the
25 authenticity of the paper sheets, means for notifying the clerk,

and a controller to control the parts; the controller controls the apparatus so as to convey a paper sheet, which has been discharged from the storage box and has not been identified correctly (rejected) as a result of the judgment at the
5 identifying unit, to the first depositing/withdrawal port through the conveyance path and notifies the clerk of the occurrence of the rejection at the delivery of the paper sheets by the notifying means; and the teller terminal has a display to, when a rejected bill appears at the delivery of paper sheets,
10 display the incidence for the clerk and an input device to which the number or the amount of the paper sheets discharged to the first depositing/withdrawal port is input by the clerk.

Preferably, the number or the amount of the paper sheets regarded as excessive ones at the delivery of the paper sheets
15 can be input with the input device; and the controller controls the excessive paper sheets put from the first depositing/withdrawal port so as to be conveyed to the storage box.

Further preferably, the notifying means includes means
20 for displaying the occurrence of trouble on a display in the teller terminal.

The present invention, when a rejected bill appears at the delivery of checks, makes it possible to convey the rejected bill to a delivery port or a returning port, hence avoid the
25 clerk's labor, and improve the operating ratio of an apparatus.

BREIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 includes outside views of teller terminals and a paper sheet handling apparatus in an embodiment;

5 Fig. 2 is a view showing the outline of a paper sheet handling apparatus in an embodiment;

Fig. 3 is a view showing a control block of a paper sheet handling apparatus in an embodiment;

Fig. 4 is a flowchart showing the processing flow of check
10 delivery work in an embodiment (the first embodiment);

Fig. 5 is a flowchart showing the processing flow when rejection occurs in the first embodiment;

Fig. 6 is a view showing the handling of checks when a rejected bill appears in the first embodiment;

15 Fig. 7 is a flowchart showing the processing flow when rejection occurs in the second embodiment;

Fig. 8 is another flowchart showing the processing flow when rejection occurs in the second embodiment;

Fig. 9 is another flowchart showing the processing flow
20 when rejection occurs in the second embodiment;

Fig. 10 is a flowchart showing the processing flow when rejection occurs in the third embodiment;

Fig. 11 is a view showing the handling of checks when a rejected bill is conveyed to a returning port in the third
25 embodiment; and

Fig. 12 is a flowchart showing the processing flow when rejection occurs in the fourth embodiment.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

5 Embodiments according to the present invention are hereunder explained in detail in reference to Figs. 1 to 12.

Fig. 1 includes outline views of a paper sheet handling apparatus and teller terminals in an embodiment. The reference numeral 1 represents teller terminals used when a clerk handles customer information, trading information, and the like, and the reference numeral 2 represents a paper sheet handling apparatus used for delivering and depositing paper sheets such as checks and bills. The two teller terminals 1 are connected to the paper sheet handling apparatus 2 through communication lines 3. The reference numeral 4 represents a start button pushed by a clerk when the deposit of paper sheets starts, 5 represents a depositing port used for taking paper sheets into the paper sheet handling apparatus 2 when a clerk deposits the paper sheets, 6 represents a delivery port used for extracting paper sheets from the interior of the paper sheet handling apparatus 2 when a clerk delivers paper sheets, and 7 represents a returning port used for returning the rejected bill appearing at the time of deposit to a clerk.

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Further, the reference numeral 8 represents a delivery occupancy lamp to notify a clerk of a delivery occupancy state,

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90 represents a trouble lamp to notify a clerk of the occurrence of trouble, 91 represents a deposit occupancy lamp to notify a clerk of a deposit occupancy state, and 92 represents a display to notify a clerk or a maintenance person of words about the contents of the trouble.

A teller terminal 1 is a personal computer for example, and is provided with: a processor to process many kinds of information accompanying depositing and delivery of bills and checks; a display 15; and an input device 152.

Fig. 2 is a schematic side view of the paper sheet handling apparatus 2.

The reference numeral 20 represents a conveyance path to convey checks and bills to parts in the paper sheet handling apparatus 2, 21 represents a gate to switch the direction of the conveyance of checks and bills, 22 represents an identifying unit to identify the types and the authenticity of checks and bills, 23 represents a check storage box that can discharge and store checks, 24 represents bill storage boxes that can discharge and store bills, 25 represents a retrieval box to contain retrieved checks and bills, 26 represents a temporary holder to temporarily hold received checks and bills, and 27 represents a tray section that can be extracted when the check storage box 23 and the bill storage boxes 24 are taken out. In the embodiment, three bill storage boxes 24 are prepared so as to contain different types of bills

respectively. The reference numeral 28 represents a passage sensor to detect the passage of paper sheets, 29 represents an extract sensor to detect the extraction of paper sheets, and 30 represents a tray section extract sensor to detect the
5 extraction of the tray section 27.

Here, although a single check storage box 23 is prepared in the embodiment, plural check storage boxes may be installed. Further, the delivery port 6 and the returning port 7 may be integrated into one port.

10 Fig. 3 is a control block diagram of the paper sheet handling apparatus 2.

The paper sheet handling apparatus 2 has a business processing section 10 and a transport processing section 11 as the controlling sections. In the business processing
15 section 10, the reference numeral 101 represents a business processing main controller to exclusively control the two teller terminals 1 and control parts, 102 represents an upper communication controller to control communication with the teller terminals 1, 103 represents a button controller, 104
20 represents a buzzer controller, 105 represents a lamp controller, 106 represents a display controller, 107 represents a lower communication controller to control communication with the transport processing section, 108 represents a clock controller, and 109 represents a memory to
25 memorize set information of the business processing section.

In the transport processing section 11, the reference numeral 110 represents a transport processing main controller to control the transport of bills, 111 represents an upper communication controller to control communication with the business processing section 10, 112 represents a sensor controller, 113 represents a gate controller, 114 represents a transport motor controller, 115 represents a conveyance path travel counter, 116 represents an identifying processing unit to identify checks and bills, 117 represents a depositing port controller, 118 a delivery port controller, 119 a storage box controller, 120 a temporary holder controller, and 121 a memory to memorize set information of the transport processing section.

Next, an embodiment in the delivery of checks (the first embodiment) is explained in reference to Figs. 4 to 6. Here, Figs. 1 to 3 are also referred to occasionally.

When a clerk works on the delivery of checks, the clerk selects the delivery of checks and inputs the number (eight for example) of checks to be delivered at the teller terminal 1 (S201). The teller terminal 1 transmits the information on the number input through a communication line 3 to the paper sheet handling apparatus 2 (S202). The business processing main controller 101 judges whether or not the checks can be delivered and, if the answer is yes, directs the lamp controller 105 to turn on the delivery occupancy lamp 8 (S203), and further

directs the transport processing main controller 110 to discharge the eight checks through the lower communication controller 107. The transport processing main controller 110 directs the gate controller 113 to switch the gate 21 to the
5 direction where the checks are conveyed to the delivery port 6 (S204) and further directs the transport motor controller 114 to convey the checks through the conveyance path 20 (S205).

Next, the transport processing main controller 110 directs the storage box controller 119 to discharge checks from
10 the check storage box 23 (S206) and monitors the passage of paper sheets with plural passage sensors 28. Then every time when a check passes through, the identifying unit 22 judges whether or not a paper sheet is a check and transports the check to the delivery port 6. When there are no bills that are judged
15 as rejection at the identifying unit 22 and a designated number of bills are completely discharged (S208), the transport processing main controller 110 directs the storage box controller 119 to stop discharging checks from the check storage box 23 (S209). Then, after waiting until all the checks
20 to be conveyed through the conveyance path 20 are discharged (S210), the transport processing main controller 110 directs the transport motor controller 114 to stop the movement of the conveyance path 20 (S211).

Thereafter, the business processing main controller 101
25 notifies that the delivery of the eight checks is completed

through the upper communication controller 12 (S212). The teller terminal 1 displays that the delivery of the checks is successfully finished to notify the clerk (S213). The transport processing main controller 110 directs the delivery port controller 118 to open the delivery port 6 (S214). In order to let the clerk extract the checks from the delivery port 6, the business processing main controller 101 directs the lamp controller 105 to turn on and off the delivery occupancy lamp 8 (S215). The transport processing main controller 110 monitors whether or not the checks are extracted from the delivery port 6 with the extract sensor 209 (S216). When the clerk extracts the eight checks conveyed to the delivery port 6 (S217) and the extract sensor 209 detects the extraction (S216), the transport processing main controller 110 directs the delivery port controller 118 to close the delivery port 6 (S218).

Finally, the business processing main controller 101 renews the balance amount of the checks memorized in the memory 109 (S219) and controls the lamp controller 105 so as to turn off the delivery occupancy lamp 8 (S220). The clerk gives the delivered checks to the customer (S221) and finishes the delivery work of the checks.

Here, in the case of the maladjustment of the storage box or the bad storage conditions of checks, plural checks are discharged from the conveyance path in the state of overlapping

(in a companying state) in some cases. In such a case, the identifying unit 22 cannot recognize the check correctly and judges it as a rejected bill (S207). Processing operations (A) in the case where a rejected bill appears are shown in Fig.

5 5.

Next, processing operations of a rejected bill are explained in reference to Fig. 5.

In the case where the fifth check is a rejected bill when the delivery of eight checks is requested for example, the transport processing main controller 110 directs the storage box controller 119 to stop discharging checks from the check storage box 23 (S301). Since usually succeeding checks continuously conveyed have already been discharged from the check storage box 23, the transport processing main controller 110 monitors that all the checks are removed from the conveyance path 20 (S302). When all the continuously conveyed checks are sent to the delivery port 6 and it is confirmed that no check remains on the conveyance path, the transport processing main controller 110 controls the transport motor controller 114 and stops the movement of the conveyance path 20 (S303). Then, the business processing main controller 101 controls the lamp controller 105, turns on the trouble lamp 9 (S304), and notifies the teller terminal 1 that rejection has occurred (S305).

When the occurrence of rejection is notified, the notice (G01) that the delivery of the checks has failed and the

delivered checks are returned to the check storage box 23 is displayed on the display 15 in the teller terminal 1 and the clerk is notified to cope with the trouble (S306). When the clerk operates the confirmation button (G02), the transport processing main controller 110 controls the delivery port controller 118 and opens the shutter of the delivery port 6 (S307). Further, in order to let the clerk extract the checks from the delivery port 6, the business processing main controller 101 makes delivery port extraction request, controls the lamp controller 105, and turns on and off the delivery occupancy lamp 8 (S308). The transport processing main controller 110 monitors that the checks are extracted from the delivery port 6 and, when it detects that the clerk has extracted six checks from the delivery port 6 (S309), controls the delivery port controller 118 and closes the shutter of the delivery port 6 (S311).

The clerk, as shown in Fig. 6, rearranges the checks extracted from the delivery port 6 in the paper sheet handling apparatus 2 in ascending order while visually confirming the numbers printed on the checks (S312). Then the clerk pulls the tray section 27 in the paper sheet handling apparatus 2 toward him (S313). When the tray section 27 is pulled out, the transport processing main controller 110 monitors whether or not the tray section 27 is reset with a sensor 30 (S314).

The clerk extracts the check storage box 23 from the tray

section 27 (S315), sets checks in the check storage box 23 (S316), returns the check storage box 23 into the tray section 27 (S317), and brings back the tray section 27 to the original position in the paper sheet handling apparatus 2.

5 When the tray section extract sensor 30 detects that the tray section 27 is set (S314), the transport processing main controller 110 carries out initialization operation (S320). The business processing main controller 101 controls the lamp controller 105 and turns off the trouble lamp 9 (S320). When
10 the paper sheet handling apparatus 2 is ready for delivery work again, the clerk redoes the delivery work of checks.

As stated above, in the present embodiment, the clerk is simply required to extract checks only from the delivery port 6 when a rejected bill is caused in the delivery of checks
15 and hence it is possible to quickly recover from trouble and improve the operating ratio of an apparatus.

Next, the second embodiment is explained in reference to Figs. 7 to 9.

The embodiment is the case where process operations are
20 carried out in accordance with the number of the checks delivered when rejection occurs in the delivery of the checks. Here, in Fig. 7, the process operations up to the step S311 are identical to the operations explained in reference to Fig. 5 and hence the explanations thereof are omitted.

25 A clerk extracts checks from the delivery port 6 (S310),

confirms the number of the checks, and decides the next procedure. The clerk counts and confirms the number of the extracted checks (S412) and confirms whether the number is short of a required number (S413) or the number exceeds the
5 required number (S414). When the number is neither too many nor too small as a result of the confirmation, the clerk inputs the number or amount of the delivered checks and the end of the check delivery into the teller terminal 1 (S415). The business processing main controller 101 in the paper sheet
10 handling apparatus 2 renews the balance amount of checks memorized in the memory 109 (S416) and turns off the delivery occupancy lamp 8 and the trouble lamp 9 by controlling the lamp controller 105 (S417). Finally the clerk gives the checks delivered from the paper sheet handling apparatus 2 to the
15 customer and finishes the process operations (S418). Thereafter, the clerk can go to other operations.

When the number of the actually delivered checks is short of the number of the checks required for delivery in the step S413, the process operation shifts to the process (B) (refer
20 to Fig. 8). In Fig. 8, the clerk inputs the number of the delivered checks and the shortage of the delivered checks into the teller terminal 1 (S501). Then the business processing main controller 101 renews the balance amount of checks memorized in the memory 109 (S502) and turns off the trouble
25 lamp 9 by controlling the lamp controller 105 (S503). The clerk

inputs the number of the undelivered checks into the teller terminal 1 and continues to deliver checks in the same way as the first embodiment.

Further, when the number of actually delivered checks
5 exceeds the number of the checks required for delivery in the step S414, the process operation shifts to the process (C) (refer to Fig. 9). In Fig. 9, the clerk gives the customer the requested number of checks among the actually delivered checks (S601) and rearranges the excessive checks in ascending
10 order while visually confirming the numbers printed on the checks (S602). Then the clerk pulls the tray section 27 toward him (S603).

When the tray section 27 is pulled out, the transport processing main controller 110 monitors whether or not the tray
15 section 27 is reset with the sensor 30 (S604). The clerk extracts the check storage box 23 from the tray section 27 (S605) and sets the checks in the check storage box 23 (S606). Then the clerk returns the check storage box 23 to the tray section 27 (S607) and brings back the tray section 27 to the
20 original position in the paper sheet handling apparatus 2 (S608).

When the sensor 30 detects that the tray section 27 is set (S604), the transport processing main controller 110 carries out the initialization operation (S609). The business
25 processing main controller 101 turns off the trouble lamp 9

by controlling the lamp controller 105 (S610). The clerk
inputs the number of the delivered checks and the incidence
of the excessive check delivery into the teller terminal 1
(S611). Then the business processing main controller 101
5 renews the balance amount of checks memorized in the memory
109 (S612) and turns off the delivery occupancy lamp 8 by
controlling the lamp controller 105 (S613). The clerk
restarts his work and goes to other operations.

Although the explanations have been made on the case
10 where a clerk confirms the number of the delivered checks and
processes the operations in the present embodiment, it is also
possible for a clerk to input the amount of the delivered checks,
thereby confirm the amount of the delivered checks, and process
the operations.

15 As stated above, in the second embodiment, when rejection
occurs at the delivery of checks, a clerk neither extracts the
tray section 27 nor resets checks before checks are given to
a customer, and hence the customer is not forced to wait for
a long period of time.

20 Next, the third embodiment is explained in reference to
Figs. 10 and 11.

The embodiment is, when a rejected bill is caused, not
the case where all the checks are conveyed to the delivery port
6 like the first embodiment, but the case where the rejected
25 bill and the succeeding checks are conveyed to the returning

port 7. That is, when a rejected bill is caused, the checks are separately delivered through the delivery port 6 and the returning port 7.

Here, in Fig. 10, the same reference numerals are used
5 for the same steps as shown in Fig. 7 (for example, S307 to S311 and S412 to S418). The operations are the same as those explained in the second embodiment and hence the explanations thereof are omitted.

The transport processing main controller 110 directs the
10 storage box controller 119 to stop discharging checks from the check storage box 23 (S701) and monitors that the rejected bill reaches the gate 21 in front of the delivery port 6 (S702). When the rejected bill reaches the gate 21 in front of the delivery port 6, the transport processing main controller 110
15 controls the gate controller 113 and switches the gate 21 to the direction of the returning port 7 (S703). When the gate 21 is switched, the rejected bill and the succeeding checks are conveyed toward the returning port 7. Then the transport processing main controller 110 monitors that all the checks
20 moving on the conveyance path 20 are removed (S704).

After the checks succeeding the rejected bill are conveyed to the returning port 7, the transport processing main controller 110 stops the movement of the conveyance path 20 by controlling the transport motor controller 114 (S705).
25 Then, the business processing main controller 101 turns on the

trouble lamp 9 by controlling the lamp controller 105 (S706) and notifies the teller terminal 1 of the occurrence of rejection and the number of the checks conveyed to the delivery port 6 (S707). The teller terminal 1 displays the failure in the delivery of checks and the number of the checks delivered to the delivery port 6 (S708). For example, the number or the amount "X" of the delivered checks is displayed like the display G03 in Fig. 11.

Then the transport processing main controller 110 opens the shutter of the delivery port 6 by controlling the delivery port controller 118 (S307) and, in order to let the clerk extract checks from the delivery port 6 and the returning port 7, the business processing main controller 101 turns on and off the delivery occupancy lamp 8 by controlling the lamp controller 105. The transport processing main controller 110 monitors that the checks are extracted from the delivery port 6 and, when the clerk extracts six checks from the delivery port 6 (S709), detects the extraction (S308). Then the transport processing main controller 110 closes the shutter of the delivery port 6 by controlling the delivery port controller 118 (S311). The clerk extracts the check that is the rejected bill from the returning port 7 (S710).

As shown in Fig. 11, the clerk adds the number Y of the checks extracted from the returning port 7 to the number X displayed on the teller terminal 1 and confirms whether the

total number is short of (S413) or exceeds (S414) the number of checks requested for delivery. If the number is neither too many nor too small, the clerk operates the completion button G04 and inputs the number of the delivered checks and the
5 termination of the check delivery into the teller terminal 1 (S415). The succeeding processes including the process wherein the business processing main controller 101 renews the balance amount of the checks memorized in the memory 109 (S416) are the same as described earlier and hence the explanations
10 thereof are omitted.

As stated above, in the present embodiment, the number of the checks delivered to the delivery port 6 is determined and the clerk is simply required to confirm only the rejected bill conveyed to the returning port 7, and hence the clerk can
15 save the labor for confirming the checks.

Next, the fourth embodiment is explained in reference to Fig. 12.

The embodiment is, when the clerk returns the checks that have been excessive at the delivery of the checks, not the case
20 where the clerk extracts and sets the tray section 27, but the case where the clerk puts the checks through the depositing port 5 and returns the checks to the check storage box 23. Here, the processes until the clerk receives the rejected bill are the same as described earlier.

25 The clerk confirms the number or the amount of the checks

to be returned in the paper sheet handling apparatus 2 and inputs it into the teller terminal 1 (S801). The teller terminal 1 displays so as to put the checks aligned in ascending order by the clerk into the depositing port 5 one by one (S802).
5 The business processing main controller 101 turns on the deposit occupancy lamp by controlling the lamp controller 105 (S803).

The clerk puts a sheet of check into the depositing port 5 and pushes the start button 4 on the paper sheet handling
10 apparatus 2 (S804). Then, the conveyance path 20 starts moving (S805). The transport processing main controller 110 controls the depositing port controller 117 and discharges checks one by one from the depositing port 5. The checks discharged from the depositing port 5 pass through the identifying unit 22 and
15 whether or not they are valid checks is judged there (S807). As a result of the judgment, when the checks are judged to be handled with the paper sheet handling apparatus 2, the transport processing main controller 110 switches the gate by controlling the gate controller 113 and conveys the checks to
20 the check storage box 23. On the other hand, the checks that are judged not to be handled are conveyed and returned to the returning port 7.

The transport processing main controller 110 monitors that all the checks moving on the conveyance path 20 are removed
25 (S809). When the transport processing main controller 110

detects that the checks are stored in the check storage box 23 and all the checks on the conveyance path 20 are removed, the transport processing main controller 110 controls the transport motor controller 114 and stops the movement of the conveyance path 20 (S810). The teller terminal 1 repeats the processes of S802 to S811 until the number or the amount of the checks returned in the check storage box 23 reaches a certain level and the processes are completed (S811).

After the checks corresponding to the number or the amount input by the clerk are completely returned in the check storage box 23, the business processing main controller 101 turns off the deposit occupancy lamp by controlling the lamp controller 105 (S812). Then the teller terminal 1 displays the completion of the rejected bill returning operation (S813). Thereafter the clerk can go to other operations.

As stated above, in the present embodiment, the clerk can easily refill the check storage box 23 with checks without extracting the tray section 27 and taking out the check storage box 23 and the labor of the clerk can be mitigated.

In a paper sheet handling apparatus 2 in the first to fourth embodiments, it is also possible for a clerk to receive checks from a customer and retrieve the checks in the apparatus. An example of retrieving checks is explained hereunder.

A clerk selects the deposit transaction of checks at a teller terminal 1, puts the checks into the depositing port

5, and pushes the start button 4. The paper sheet handling apparatus 2 activates the conveyance path 20 and starts discharging the checks from the depositing port 5. The checks discharged from the depositing port 5 are judged at the
5 identifying unit 22. As a result of the judgment, valid checks are stored in the temporary holder 26. On the other hand, the checks that are judged not to be handled are returned to the returning port 7. When it is detected either that the checks are removed from the depositing port 5 or that the returning
10 port 7 or the temporary holder 26 is fully occupied, the paper sheet handling apparatus 2 stops the discharge from the depositing port 5 and the conveying operation of the conveyance path 20. Thereafter, when the clerk confirms the result of the deposit, the paper sheet handling apparatus 2 discharges
15 the checks stored in the temporary holder 26, conveys the checks to the retrieval box 25, and stores the checks in the retrieval box 25.

What Is Claimed is:

1. A paper sheet handling apparatus to receive or deliver paper sheets comprising:

5 a first depositing/withdrawal port used for receiving or delivering paper sheets;

a storage box to store the paper sheets received or to be delivered;

a conveyance path to connect the first
10 depositing/withdrawal port to the storage box and convey the paper sheets;

an identifying unit disposed in the conveyance path to identify the types and the authenticity of the paper sheets;

means for notifying a clerk; and

15 a controller to control the parts,

wherein the controller controls the apparatus so as to convey a paper sheet (hereunder referred to as a rejected bill), which has been discharged from the storage box and has not been identified correctly (hereunder referred to as rejection) as
20 a result of the judgment at the identifying unit, to the first depositing/withdrawal port through the conveyance path and notifies the clerk of the occurrence of the rejection at the delivery of the paper sheets by the notifying means.

25 2. A paper sheet handling apparatus to receive or deliver

paper sheets comprising:

a first depositing/withdrawal port used for receiving or delivering paper sheets;

a second depositing/withdrawal port used for returning
5 paper sheets;

a storage box to store the paper sheets received or to be delivered;

a conveyance path to connect the first
depositing/withdrawal port and the second
10 depositing/withdrawal port to the storage box and convey the paper sheets;

an identifying unit disposed in the conveyance path to identify the types and the authenticity of the paper sheets;

means for notifying a clerk; and

15 a controller to control the parts

wherein the controller controls the apparatus so as to convey the paper sheets that have been judged to be valid at the identifying unit to the first depositing/withdrawal port and so as to convey a paper sheet (hereunder referred to as
20 a rejected bill) that has been judged to be rejected at the identifying unit, together with succeeding paper sheets when there are the succeeding paper sheets, to the second depositing/withdrawal port and notifies the clerk of the occurrence of the rejection at the delivery of the paper sheets
25 by the notifying means.

3. The paper sheet handling apparatus according to Claim
1, wherein the notifying means is a lamp that is disposed in
the paper sheet handling apparatus, and notifies of the
5 occurrence of trouble.

4. The paper sheet handling apparatus according to Claim
2, wherein the notifying means is a lamp that is disposed in
the paper sheet handling apparatus, and notifies of the
10 occurrence of trouble.

5. The paper sheet handling apparatus according to Claim
1, wherein the paper sheets regarded as excessive ones at the
delivery of the paper sheets can be put into the first
15 depositing/withdrawal port and the controller controls the
paper sheets put into the first depositing/withdrawal port so
as to be conveyed to the storage box.

6. The paper sheet handling apparatus according to Claim
20 2, wherein the paper sheets regarded as excessive ones at the
delivery of the paper sheets can be put into the first
depositing/withdrawal port and the controller controls the
paper sheets put into the first depositing/withdrawal port so
as to be conveyed to the storage box.

7. The paper sheet handling apparatus according to Claim 3, wherein the paper sheets regarded as excessive ones at the delivery of the paper sheets can be put into the first depositing/withdrawal port and the controller controls the paper sheets put into the first depositing/withdrawal port so as to be conveyed to the storage box.

8. The paper sheet handling apparatus according to Claim 3, wherein, when rejection occurs, the rejected bill is returned to the storage box and the controller controls the lamp so as to be turned off after the rejected bill is subjected to prescribed treatment.

9. A paper sheet handling system having a paper sheet handling apparatus to receive or deliver paper sheets and a teller terminal that is connected to the paper sheet handling apparatus and operated by a clerk,

wherein the paper sheet handling apparatus is provided with a first depositing/withdrawal port used for receiving or delivering paper sheets, a storage box to store the paper sheets received or to be delivered, a conveyance path to connect the first depositing/withdrawal port to the storage box and convey the paper sheets, an identifying unit disposed in the conveyance path to identify the types and the authenticity of the paper sheets, means for notifying the clerk, and a

controller to control the parts;

the controller controls the apparatus so as to convey a paper sheet (hereunder referred to as a rejected bill), which has been discharged from the storage box and has not been
5 identified correctly (hereunder referred to as rejection) as a result of the judgment at the identifying unit, to the first depositing/withdrawal port through the conveyance path and notifies the clerk of the occurrence of the rejection at the delivery of the paper sheets by the notifying means; and

10 the teller terminal has a display to, when a rejected bill appears at the delivery of paper sheets, display the incidence for the clerk and an input device to which the number or the amount of the paper sheets discharged to the first depositing/withdrawal port is input by the clerk.

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10. The paper sheet handling system according to Claim 9,

wherein the number or the amount of the paper sheets regarded as excessive ones at the delivery of the paper sheets
20 can be input with the input device; and

the controller controls the excessive paper sheets put from the first depositing/withdrawal port so as to be conveyed to the storage box.

25 11. The paper sheet handling system according to Claim

9, wherein the notifying means includes means for displaying the occurrence of trouble on the display in the teller terminal.

12. The paper sheet handling system according to Claim
5 10, wherein the notifying means includes means for displaying the occurrence of trouble on the display in the teller terminal.