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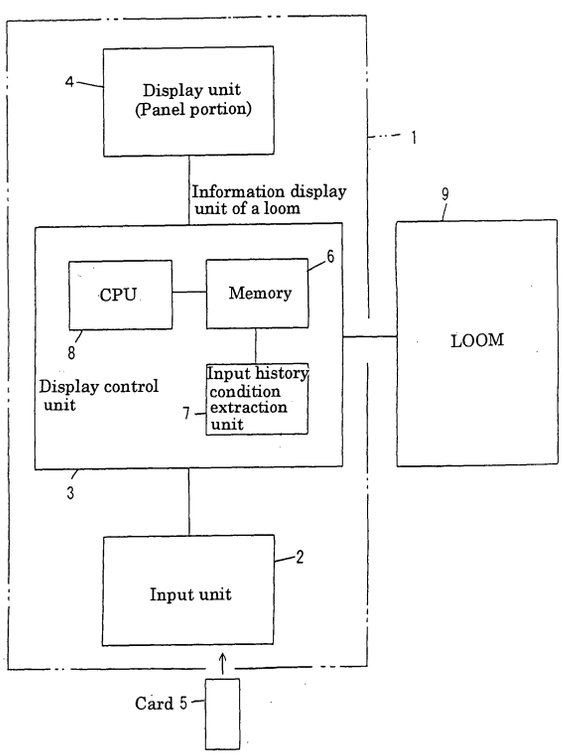
(54) Method of displaying input histories of loom data

(57) Input histories of an information display unit (1) of a loom (9) can be extracted based on specific items, particularly based on information associated with input persons, a cloth roll, stoppage causes. A method of displaying input histories of loom data in the information display unit (1) of the loom (9) comprising an input unit (2), a memory (6) for storing input histories of data relating to the loom (9), a display control unit (3) for extracting given data in the memory (6), and a display unit (4) for displaying given data extracted by the display control unit (3), said method comprising inputting information of an input person from the input unit (2) by an input person, pairing the input histories of the loom data and information of the input person and storing them in the memory (6), subsequently specifying information of a specific input person to extract an input history corresponding to the specific person from the memory (6), and displaying the extracted input history on the display unit (4).

FIG. 1



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Description

FIELD OF THE INVENTION

[0001] The invention relates to a method of displaying input histories of loom data.

BACKGROUND OF INVENTION

[0002] JP-A 7-122200 discloses a conventional technique wherein stoppage histories of a loom are stored in chronological order, and subsequently the stoppage histories are displayed on time-axis in descending order or ascending order.

[0003] With the conventional technique, when a cloth defect occurs in a woven fabric caused by, for example, setting mistake of a weaving condition, and so forth, the cause of the defect cannot be specified. In such a manner, since there has been conventionally no input histories of loom data, a weaving state cannot be grasped.

SUMMARY OF THE INVENTION

[0004] Accordingly, it is an object of the invention to extract input histories of an information display unit of a loom by specified items, especially, information associated with input persons, a cloth roll, and stoppage causes.

[0005] To that end, the method of displaying input histories of loom data in an information display unit (1) of a loom (9) of the invention comprising an input unit (2), a memory (6) for storing input histories of data relating to the loom (9), a display control unit (3) for extracting given data in the memory (6), and a display unit (4) for displaying given data extracted by the display control unit (3), comprises inputting information of an input person from the input unit (2) by an input person, pairing the input histories of the loom data and information of the input person and storing them in the memory (6), subsequently specifying information of a specific input person to extract an input history corresponding to the specific person from the memory (6), and displaying the extracted input history on the display unit (4). The information of an input person includes a type of employment in the field of the loom, a name of input person, a shift number, and the input person can display input histories of persons whose levels are lower than the input person himself or herself.

[0006] A method of displaying input histories of loom data in an information display unit (1) of a loom (9) comprising an input unit (2), a memory (6) for storing input histories of data relating to the loom (9), a display control unit (3) for extracting given data in the memory (6), and a display unit (4) for displaying given data extracted by the display control unit (3), comprises inputting information of a cloth roll from the input unit (2) by an input person, pairing the input history of the loom data and the information of cloth roll and storing them in the memory (6), subsequently specifying a cloth roll which is removed from a loom (hereinafter referred to simply as doffed cloth roll) to extract an input history corresponding to the doffed cloth roll from the memory (6), and displaying the extracted input history on the display unit (4). Information associated with the doffed cloth roll is information capable of specifying the doffed cloth roll, and includes doff time and a length of gray cloth.

[0007] A method of displaying input histories of loom data in an information display unit (1) of a loom (9) comprising an input unit (2), a memory (6) for storing input histories of data relating to the loom (9), a display control unit (3) for extracting given data in the memory (6), and a display unit (4) for displaying given data extracted by the display control unit (3), comprises pairing information of stoppage causes of the loom (9) and the input histories of the loom data during a weaving operation and storing them in the memory (6), subsequently extracting the input history corresponding to a specified stoppage cause from the memory (6) by specifying the stoppage cause, and displaying a plurality of input histories prior to the specification of the stoppage causes on the display unit (4). Incidentally, the setting of the number of input histories can be changed.

[0008] Meanwhile, the extracted input histories are individually displayed or input histories of a plurality of extraction conditions are displayed by a list. Further, in the case where the information of the input person is stored in the memory, it is sufficient that the input person inputs the information of the input person from the input unit, thereafter the input histories of the loom data are paired with the information of the input person and they are stored in the memory. Further, it is sufficient that the information of the input person is inputted every time the loom data is inputted, and the input histories of the loom data are paired with the information of the input person and they are stored in the memory. This is also applied to the case where the information associated with the cloth roll or the information of the stoppage cause is stored in the memory.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009]

Fig. 1 is a block diagram of an information display unit of a loom;

Fig. 2 is a table showing an example of storage of input histories;

Fig. 3 is a view for explaining an entire input history screen;

Fig. 4 is a view for explaining a cloth selection screen;

Fig. 5 is a flowchart when storing stoppage causes together with current time;

Fig. 6 is a flowchart when displaying input histories associated with the stoppage causes in Fig. 5;

Fig. 7 is a view for explaining an internal structure

of a memory when extracting input histories of the stoppage causes;

Fig. 8 is a flowchart when storing the input histories of the stoppage causes in the memory;

Fig. 9 is a flowchart when displaying the input histories associated with the stoppage causes in Fig. 8; and

Fig. 10 is a view for explaining an internal structure of a memory when extracting input histories of other stoppage causes.

PREFERRED EMBODIMENT OF THE INVENTION

[0010] Fig. 1 shows an information display unit 1 of a loom 9 for realizing a method of the invention. The information display unit 1 of the loom 9 comprises an input unit 2, a display control unit 3 and a display unit 4 respectively corresponding to one or not less than two looms 9.

[0011] The input unit 2 comprises an authentication card 5 of a user, or a card reader for inputting a password inherent to the user, a key board for inputting data, or a unit combined thereof so as to input information of input persons, information associated with a doffed cloth roll, information of stoppage causes, and so forth. Incidentally, in this embodiment, the display unit 4 is of touch panel type, and the touch panel display face (panel portion) constitutes a part of the input unit 2.

[0012] The display control unit 3 is connected to a corresponding loom 9, the input unit 2, and the display unit 4 and comprises a memory 6 for storing various input histories, an input history condition extraction unit 7 for extracting an input history according to a condition specified by the memory 6, and a CPU 8 for executing operations of storage, read of the input histories, extraction of the input histories, and storage of stoppage causes. The memory 6 stores therein various input histories, namely, input histories of various data relating to the loom 9 together with information of the input person, information associated with a cloth roll and information of the stoppage causes. The information of the input persons, the information associated with the cloth roll and the information of the stoppage causes are separate data which are not included in the input histories. Further, the information of the input persons includes types of employment in the weaving field, names of input persons, shift numbers. The shift numbers are numbers showing working hours on a shift system, for example, if a work system with three shifts in a day is taken, the shift numbers are represented by 1, 2, 3.

[0013] The display unit 4 receives the information of input history extracted by the display control unit 3, and displays specific items relating to the loom 9 on a CRT or a liquid crystal display (panel portion). For a mode of display of the input histories, they are individually displayed for every input history or displayed by a list.

[0014] For the input persons, and the weaving field, namely, levels of types of employment of persons engaged in a weaving mill, for example, when Manager, Supervisor, Fixer, Doffer, Weaver effect input of the authentication card 5 or inherent password as information of the input person from the input unit 2, the CPU 8 pairs the information of the input persons and the input histories of the data of the loom 9 and stores them in the memory 6 until inputting information (password) of a new input person on and after the time when the authentication card 5 or the inherent password is inputted.

[0015] Fig. 2 shows an example of storing input histories inside the memory 6. In this embodiment, the recording items which are objects of the input histories are stoppage causes, doff time, length of gray cloth, counted value of the length of gray cloth (optionally counted values of length of gray cloth during a weaving operation), shift numbers, shift starting time (the time when the shift is started based on predetermined set shift switching schedule), types of employment (level), names of input persons, input time, names of data, input values and so forth wherein they are stored in the memory 6 as the items and numerical values corresponding to these recording items. As set forth above, the input histories are paired with the information of input persons (shift numbers, types of employments (level), names of input persons in Fig. 2) and they are stored in the memory 6. The doff time and the length of gray cloth are stored as those at the time when the doff is effected. Accordingly, in the case where the doff is not effected at current time, doff time is represented as blank. The cloth roll may be numbered instead of the doff time, and the input history may be extracted from the number of cloth roll. Further, the information of the stoppage cause is paired with the input histories by the number which is predetermined set after the occurrence of the stoppage cause and immediately before the occurrence thereof, and they are stored in the memory 6.

[0016] Fig. 3 is an example of an entire input history screen. All the input histories are displayed on the entire input history screen in sequence of time. Icons at the left side of the screen show various function keys, and "Clear", "<", " >" and "Close" at the lower side show a key for erasing the input histories, keys for forward and backward moving of the input histories, and a key for closing the screen of the input histories. Other necessary items are displayed on the screen.

[0017] When a specific input person inputs his or her information or password by use of the input unit 2, then specifies his or her type or employment level, for example, "Manager" located at the second from the above by means of a pull down menu on the entire input history screen, the CPU 8 executes a program for extracting the input history to extract the input history alone corresponding to the specific input person ("Manager") from the memory 6, then displays it on the display unit 4. As a result, the specific input person ("Manager") can confirm the input history associated with himself or herself, thereby grasping an operation state of the loom 9 based on the state of input history. Although it is possible that

persons of the types of employment having various levels can display and confirm the input histories of persons of the type of employment of the same or lower levels, it is also possible that they can not display and confirm the input histories of persons of the type of employment of the upper levels.

[0018] Fig. 4 shows a cloth selection screen, wherein a list of a doff time and a length of gray cloth regarding the doffed cloth roll which has been doffed so far is displayed on the cloth selection screen. When the input person specifies a doffed cloth roll "Cloth" by the input unit 2 by means of the pull down menu on the entire input history screen in Fig. 3, the CPU 8 displays first the cloth selection screen in Fig. 4. Then, when the input person operates the input unit 2 to push "Display" on the corresponding column of the doffed cloth roll, the CPU 8 executes a program for extracting the input history, and extracts the input history corresponding to the selected cloth roll from the memory 6, and allows the display unit 4 to display the doff time corresponding to the selected cloth roll, the length of gray cloth or a counted value corresponding to the length of gray cloth on the display unit 4. It may be possible to display the input histories corresponding to a plurality of cloth rolls by a list. Further, it may be possible to extract the input histories corresponding to the shift numbers in the same manner as set forth above. In this case, when the shift number and the shift starting time are displayed by a list and the specific shift number is selected, the input history corresponding to the shift number is extracted and it is displayed on the display unit 4. This is also applied to information of stoppage causes, described later.

[0019] Further, information of the stoppage cause is stored in the memory 6 as shown in Fig. 2 when the stoppage cause occurs during a weaving operation of the loom 9. Accordingly, when the input person specifies the stoppage cause, mainly, a warp stoppage, a weft stoppage, and so forth, the CPU 8 extracts an input history corresponding to the specified stoppage cause from the memory 6, and displays the input histories of a plurality of stoppage causes prior to the specification by the display unit 4. Incidentally, the setting of the number of displays of the input histories can be changed. As a result, the input person can conjecture a causal relationship between a change of weaving condition and a stoppage cause (warp stoppage, weft stoppage), and hence he or she can cope with appropriately for preventing the stoppage cause based on the result of conjecture. Also in this case, the input histories are displayed individually for every stoppage cause or displayed by a list.

[0020] Fig. 5 shows a flowchart for storing stoppage causes together with current time. The storage of the stoppage causes and the current time is effected by the CPU 8 when it executes a program during the weaving operation. The loom 9 detects the stoppage cause during the weaving operation so that the CPU 8 executes the program, and supplies a signal inherent to the stoppage cause to the display control unit 3 when the stoppage cause occurs.

[0021] In the first step, it is decided as to whether information is inputted or not, and if inputted, i.e., if it is Y (yes), the program goes to a next step where the input history and the current time are stored in the memory 6, while if it is not inputted, i.e., if it is N (no), the program goes to a next step. In the next step, it is decided as to whether the loom is stopped or not, and if it is N, the program returns to the first step. However, if it is Y, it is decided as to whether the stoppage cause is "warp stoppage" or not so as to specify the stoppage cause, and if it is N in this deciding step, it is decided as to whether the stoppage cause is "weft stoppage" or not. Further, if it is N in this deciding step, other stoppage causes are sequentially decided. Incidentally, the branch of the program in respect of other stoppage causes is omitted in Fig. 5.

[0022] If it is Y in the step of deciding as to whether the stoppage cause is "warp stoppage" or not, the CPU 8 decides that the stoppage cause is "warp stoppage" to store it together with the current time in the memory 6. If it is Y in the step of deciding as to whether the stoppage cause is "weft stoppage" or not, the CPU 8 decides that the stoppage cause is "weft stoppage" to store it together with the current time in the memory 6.

[0023] Fig. 6 is a flowchart showing input histories associated with the stoppage causes when the stoppage of the input histories in Fig. 5 is effected. When the input person selects a stoppage cause by the input unit 2 or on a screen of the display unit 4, the CPU 8 extracts the input histories from the memory 6 by a predetermined set number corresponding to the selected stoppage causes and display the input histories of the stoppage causes by a list by the set number before selected by the display unit 4.

[0024] Fig. 7 shows an internal structure of the memory 6 when extracting the input histories of four stoppage causes (inputs 5 to 8) prior to the time of occurrence of the selected stoppage cause. Incidentally, the inputs 1 to 11 of the stoppage causes are stored inside the memory 6. In this case, the stoppage causes and the input histories are stored separately in the memory 6.

[0025] Fig. 8 shows a flowchart for storing the stoppage causes alone. The storage of the stoppage causes is effected by the CPU 8 when it execute a program during the weaving operation. The loom 9 detects the stoppage causes during the weaving operation so that the CPU 8 executes the program, and supplies a signal inherent to the stoppage causes to the display control unit 3 when the stoppage cause occurs.

[0026] In the first step, it is decided as to whether information is inputted or not, and if inputted, i.e., if it is Y (yes), the program goes to a next step where the input history is stored in the memory 6, while if it is not inputted, i.e., if it is N (no), the program goes to a next step. In the next step, it is decided as to whether the loom is stopped or not, and if it is N, the program returns to the first step. However, if it is Y, it is decided as to whether

the stoppage cause is "warp stoppage" or not so as to specify the stoppage cause, and if it is N in this deciding step, it is decided as to whether the stoppage cause is "weft stoppage" or not. Further, if it is N in this deciding step, other stoppage causes are sequentially decided. Incidentally, the branch of the program in respect of other stoppage causes is omitted in Fig. 8.

[0027] If it is Y in the step of deciding as to whether the stoppage cause is "warp stoppage" or not, the CPU 8 decides that the stoppage cause is "warp stoppage" to store it in the memory 6. If it is Y in the step of deciding as to whether the stoppage cause is "weft stoppage" or not, the CPU 8 decides that the stoppage cause is "weft stoppage" to store it in the memory 6.

[0028] Fig. 9 is a flowchart showing input histories associated with the stoppage causes when the storage of the input histories in Fig. 8 is effected. When the input person selects a stoppage cause by the input unit 2 or on a screen of the display unit 4, the CPU 8 extracts the input histories from the memory 6 by a predetermined set number corresponding to the selected stoppage causes and display the input histories of the stoppage causes by a list by the set number before selected by the display unit 4.

[0029] Fig. 10 shows an internal structure of the memory 6 when extracting the input histories of three stoppage causes (inputs 23 to 25) prior to the time of occurrence of the selected stoppage cause. Incidentally, the inputs 1 to 28 of the stoppage causes are stored inside the memory 6. In this case, since the stoppage causes are stored in the memory of the input histories, the input histories relative to the stoppages causes can be extracted from the input histories even if without storing time.

[0030] According to the method of displaying input histories of loom data of the first aspect of the invention, since in the information display unit 1 of the loom 9 comprising an input unit 2, a memory 6 for storing input histories of data relating to the loom 9, a display control unit 3 for extracting given data in the memory 6, and a display unit 4 for displaying given data extracted by the display control unit 3, the method comprises inputting information of an input person from the input unit 2 by an input person, pairing the input histories of the loom data and information of the input person and storing them in the memory 6, subsequently specifying information of a specific input person to extract an input history corresponding to the specific person from the memory 6, and displaying the extracted input history on the display unit 4, it is possible to confirm the input histories for every input person, and Manager and so forth can grasp the input state of the input persons such as other fitter Fixer and so forth, while if the shift is specified and viewed, the relation between the shift (shift person in charge) and the operability can be grasped. In such a manner, the input history can be extracted on the condition of the specific input person so that anomalous cause of a loom can be easily grasped without spending much time.

[0031] According to the method of displaying input histories of loom data of the second aspect of the invention, since in the information display unit 1 of the loom 9 comprising an input unit 2, a memory 6 for storing input histories of data relating to the loom 9, a display control unit 3 for extracting given data in the memory 6, and a display unit 4 for displaying given data extracted by the display control unit 3, the method comprises inputting information of a cloth roll from the input unit 2 by an input person, pairing the input history of the loom data and the information of cloth roll and storing them in the memory 6, subsequently specifying a doffed cloth roll to extract an input history corresponding to the doffed cloth roll, and displaying the extracted input history on the display unit 4, if there appears a cloth defect in a woven fabric, the history of the woven fabric while it is woven can be extracted, thereby easily finding out the cause of cloth defect. In such a manner, the input history can be extracted on the condition of the cloth roll so that anomalous cause of the cloth roll can be easily grasped without spending much time.

[0032] According to the method of displaying input histories of loom data of the third aspect of the invention, since in the information display unit 1 of the loom 9 comprising an input unit 2, a memory 6 for storing input histories of data relating to the loom 9, a display control unit 3 for extracting given data in the memory 6, and a display unit 4 for displaying given data extracted by the display control unit 3, the method comprises pairing information of stoppage causes of the loom 9 and the input histories of the loom data during a weaving operation and storing them in the memory 6, subsequently extracting the input history corresponding to a specified stoppage cause from the memory 6 by specifying the stoppage cause, and displaying a plurality of input histories prior to the specification of the stoppage causes on the display unit 4, it is found out what is inputted immediately before the occurrence of the stoppage cause so that the stoppage cause is prone to be found out. In such a manner, the input history can be extracted on the condition of the stoppage cause so that the stoppage cause can be easily confirmed without spending much time.

[0033] According to the method of displaying input histories of loom data of the fourth aspect of the invention, information of the input person includes a type of employment in a weaving field, a name of input person, a shift number. Accordingly, the input histories of the loom data can be displayed for every type of employment, the name of input person, and the shift number so that the individual administration thereof can be easily made.

[0034] According to the method of displaying input histories of loom data of the fifth aspect of the invention, since doff time and a length of gray cloth (including counted values) is displayed as information associated with the doffed cloth roll, an actual control of quality of the cloth roll can be easily effected.

[0035] According to the method of displaying input histories of loom data of the six aspect of the invention, since the setting of the number of displays of input histories can be changed, it can be utilized for setting future weaving conditions with reference to past data.

[0036] According to the method of displaying input histories of loom data of the seventh and eighth aspects of the invention, since the input histories extracted on the display screen are displayed individually or by a list, if displayed individually, the input history of the specific item can be easily confirmed while if displayed by a list, the input histories of a plurality of items can be easily confirmed.

[0037] According to the method of displaying input histories of loom data of the ninth aspect of the invention, since input histories of persons of the types of employment whose levels are lower than the level of the input person himself or herself can be displayed, production control for every level of ranks of persons can be effected from the input histories of persons of the types of employment whose levels are lower than the level of the input person himself or herself.

Claims

1. A method of displaying input histories of loom data in an information display unit (1) of a loom (9) comprising an input unit (2), a memory (6) for storing input histories of data relating to the loom (9), a display control unit (3) for extracting given data in the memory (6), and a display unit 4 for displaying given data extracted by the display control unit (3), said method comprising:

   inputting information of an input person from the input unit (2) by an input person;
   pairing the input histories of the loom data and information of the input person and storing them in the memory (6);
   subsequently specifying information of a specific input person to extract an input history corresponding to the specific person from the memory (6); and
   displaying the extracted input history on the display unit (4).

2. A method of displaying input histories of loom data in an information display unit (1) of a loom (9) comprising an input unit (2), a memory (6) for storing input histories of data relating to the loom (9), a display control unit (3) for extracting given data in the memory (6), and a display unit (4) for displaying given data extracted by the display control unit (3), said method comprising:

   inputting information of a cloth roll from the input unit (2) by an input person;
   pairing the input history of the loom data and the information of cloth roll and storing them in the memory (6);
   subsequently specifying a doffed cloth roll to extract an input history corresponding to the doffed cloth roll from the memory (6); and
   displaying the extracted input history on the display unit (4).

3. A method of displaying input histories of loom data an information display unit (1) of a loom (9) comprising an input unit (2), a memory (6) for storing input histories of data relating to the loom (9), a display control unit (3) for extracting given data in the memory (6), and a display unit (4) for displaying given data extracted by the display control unit (3), said method comprising:

   pairing information of stoppage causes of the loom (9) and the input histories of the loom data during a weaving operation and storing them in the memory (6);
   subsequently extracting the input history corresponding to a specified stoppage cause from the memory (6) by specifying the stoppage cause; and
   displaying a plurality of input histories prior to the specification of the stoppage causes on the display unit (4).

4. The method of displaying input histories of loom data according to Claim 1, wherein information of the input person includes a type of employment in a weaving field, a name of input person, a shift number.

5. The method of displaying input histories of loom data according to Claim 2, wherein information associated with the doffed cloth roll includes doff time and a length of gray cloth.

6. The method of displaying input histories of loom data according to Claim 1, 2 or 3, wherein setting of the number of displays of input histories can be changed.

7. The method of displaying input histories of loom data according to Claim 1, 2, 3, 4, 5 or 6, wherein the input histories are individually displayed on a display screen.

8. The method of displaying input histories of loom data according to Claim 1, 2, 3, 4, 5 or 6, wherein the input histories of a plurality of extracting conditions are displayed on a display screen by list.

9. The method of displaying input histories of loom data according to Claim 1 or 4, wherein an input per-

son can display input histories of persons of the types of employment whose levels are lower than the level of the input person himself or herself.

FIG. 1

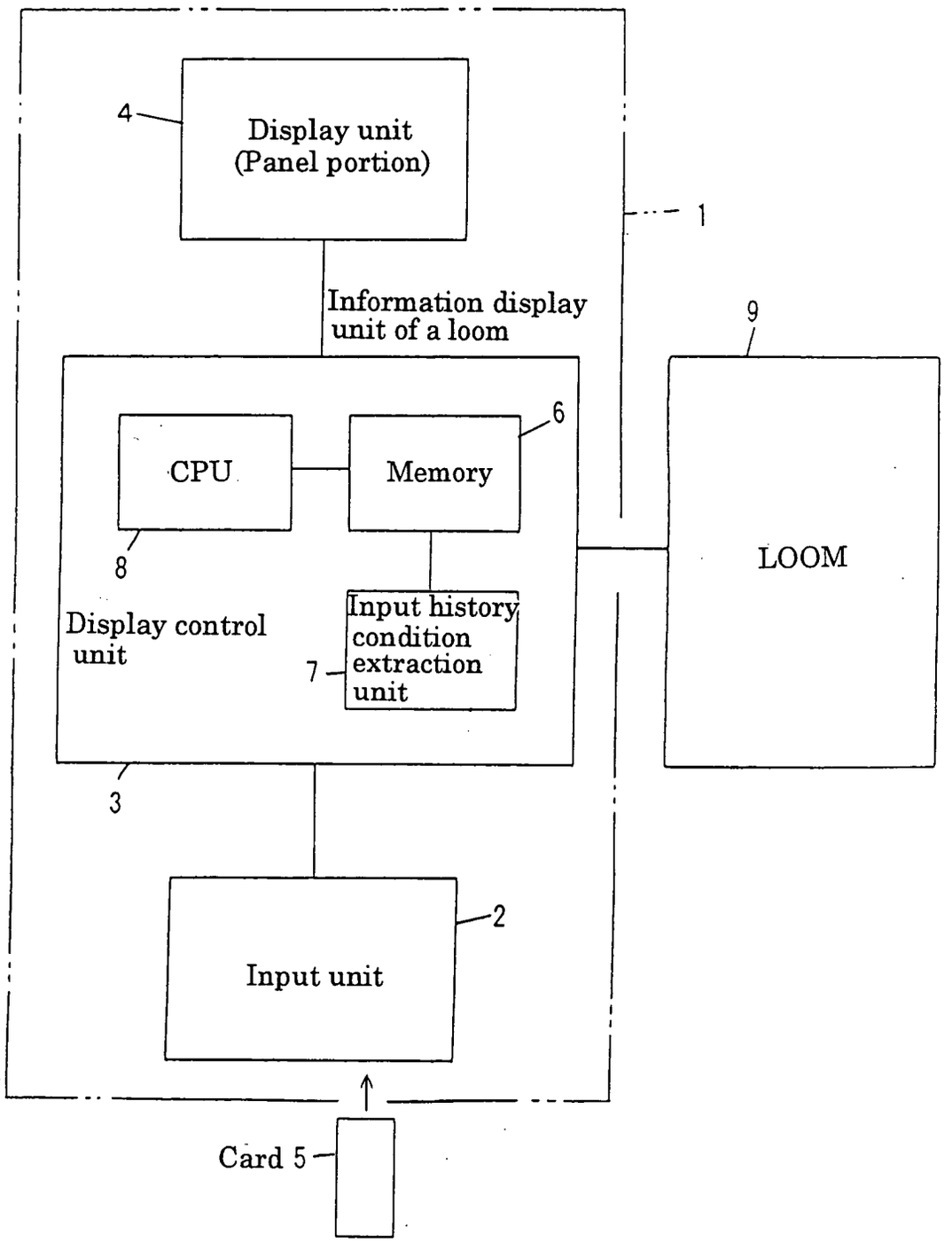
4
Display unit
(Panel portion)
1
Information display
unit of a loom
9
CPU
Memory
6
8
LOOM
Display control
unit
Input history
condition
extraction
unit
7
3
2
Input unit
Card 5

FIG. 2

Stoppage cause	Doff time	Length of gray cloth	Counted value of length of glay cloth	Shift number	Shift starting time	type of employment (Level)	Name of input person	inputted time	neme of data	inputted value
Blank column	Blank column	Blank column	C5"	S4	t4	Weaver	Weaver man	IT12	D9	200
Blank column	Blank column	Blank column	C4"	S4	t4	Manager	Manager man	IT11	D1	800
Blank column	Blank column	Blank column	C3"	S4	t4	Fixer	Fixer man	IT10	D3	360
Warp stoppage	Blank column	Blank column	C2"	S3	t3	Fixer	Fixer man	IT9	D4	705
Warp stoppage	Blank column	Blank column	C1"	S3	t3	Supervisor	Supervisor man	IT8	D1	20
Warp stoppage	T2	L2	C3'	S3	t3	Weaver	Weaver man	IT7	D6	3000
Blank column	T2	L2	C2'	S3	t3	Weaver	Weaver man	IT6	D7	1200
Weft stoppage	T2	L2	C1'	S2	t2	Supervisor	Supervisor man	IT5	D8	570
Weft stoppage	T1	L1	C4	S2	t2	Doffer	Doffer man	IT4	D2	200
Weft stoppage	T1	L1	C3	S2	t2	Weaver	Weaver man	IT3	D3	430
Blank column	T1	L1	C2	S1	t1	Fixer	Fixer man	IT2	D5	55
Blank column	T1	L1	C1	S1	t1	Manager	Manager man	IT1	D1	120

FIG. 3

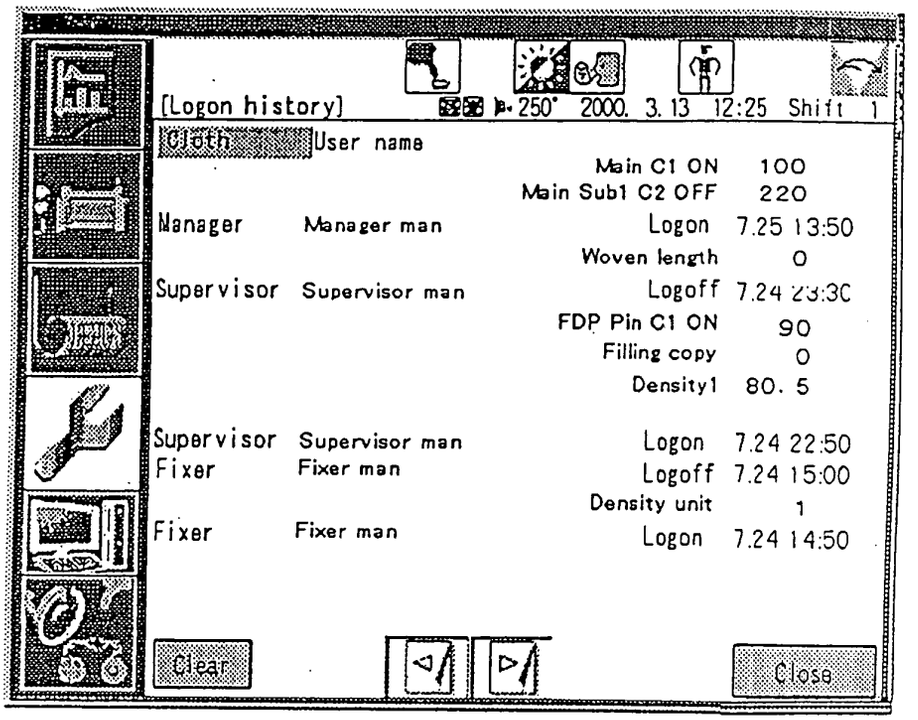
[Logon history]
250° 2000. 3. 13 12:25 Shift 1
Cloth
User name
Main C1 ON 100
Main Sub1 C2 OFF 220
Manager Manager man
Logon 7.25 13:50
Woven length 0
Supervisor Supervisor man
Logoff 7.24 23:30
FDP Pin C1 ON 90
Filling copy 0
Density1 80. 5
Supervisor Supervisor man
Logon 7.24 22:50
Fixer Fixer man
Logoff 7.24 15:00
Density unit 1
Fixer Fixer man
Logon 7.24 14:50
Clear
Close

FIG. 4

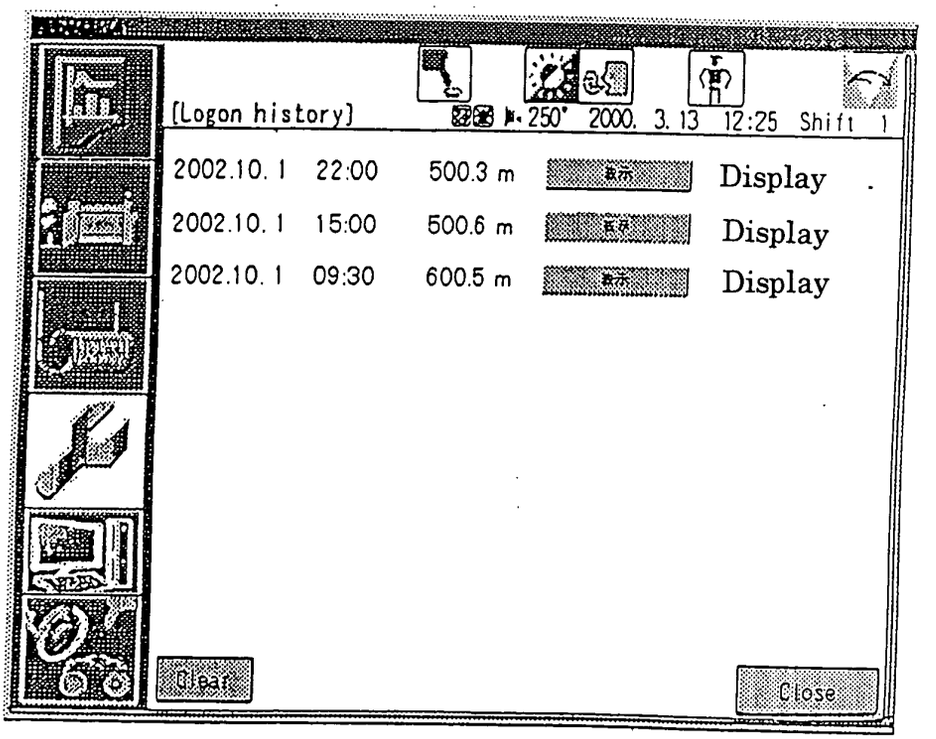
[Logon history]
250° 2000. 3. 13 12:25 Shift 1
2002.10. 1 22:00 500.3 m Display
2002.10. 1 15:00 500.6 m Display
2002.10. 1 09:30 600.5 m Display
Clear
Close

FIG. 5

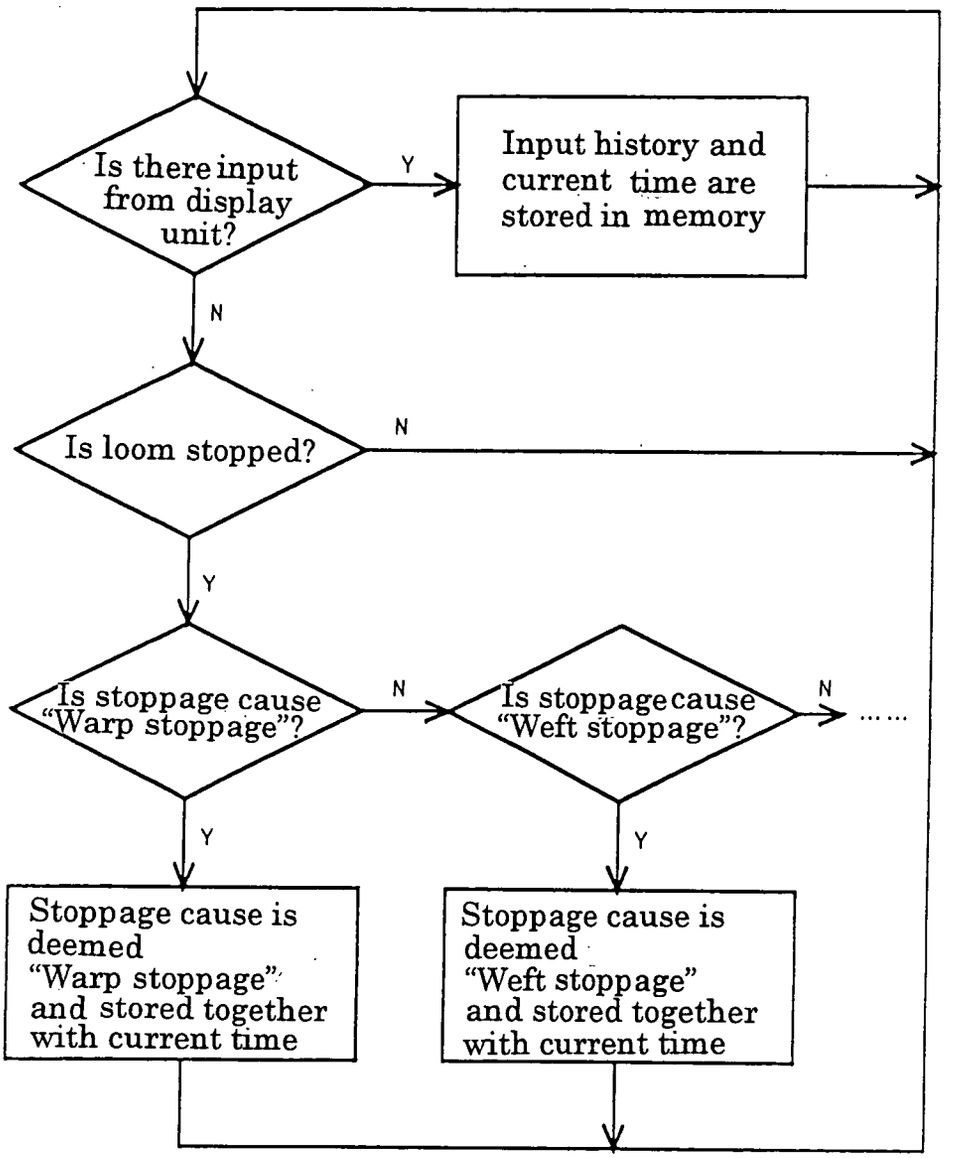
Is there input from display unit?
Y
Input history and current time are stored in memory
N
Is loom stopped?
N
Y
Is stoppage cause "Warp stoppage"?
N
Is stoppage cause "Weft stoppage"?
N
.....
Y
Y
Stoppage cause is deemed "Warp stoppage" and stored together with current time
Stoppage cause is deemed "Weft stoppage" and stored together with current time

FIG. 6

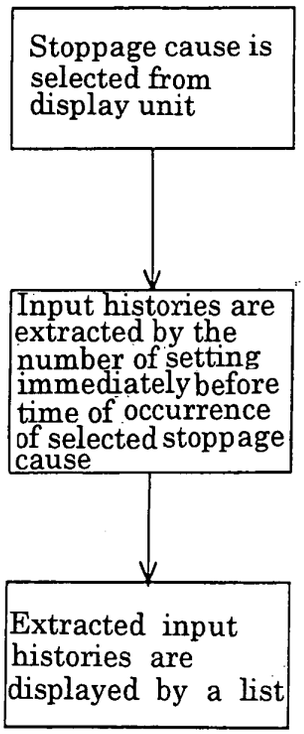
Stoppage cause is selected from display unit
Input histories are extracted by the number of setting immediately before time of occurrence of selected stoppage cause
Extracted input histories are displayed by a list

FIG. 7

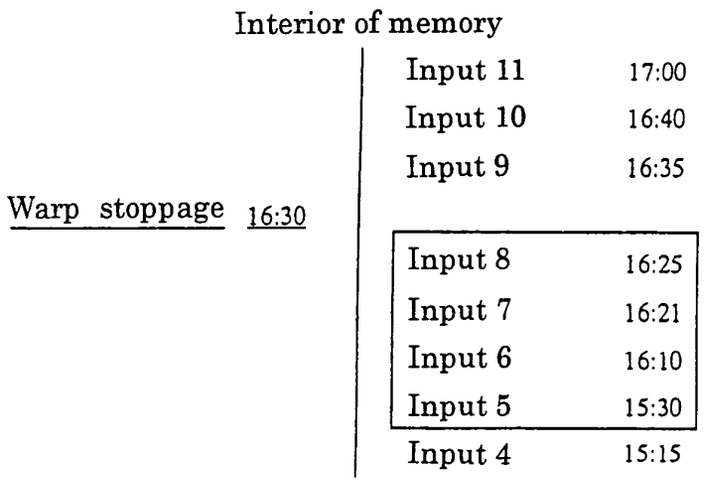
Interior of memory
Input 11 17:00
Input 10 16:40
Input 9 16:35
Warp stoppage 16:30
Input 8 16:25
Input 7 16:21
Input 6 16:10
Input 5 15:30
Input 4 15:15

FIG. 8

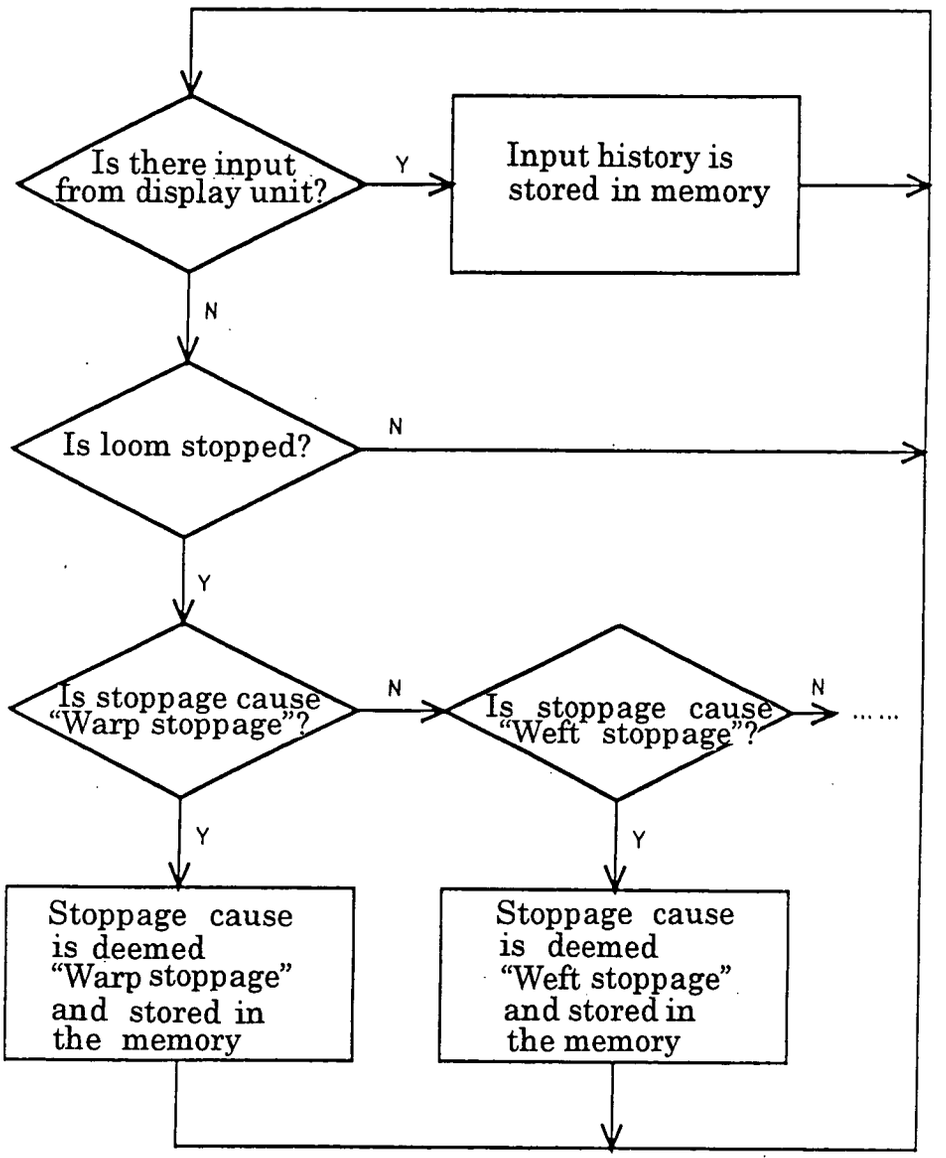
Is there input from display unit?
Y
Input history is stored in memory
N
Is loom stopped?
N
Y
Is stoppage cause "Warp stoppage"?
N
Is stoppage cause "Weft stoppage"?
N
.....
Y
Y
Stoppage cause is deemed "Warp stoppage" and stored in the memory
Stoppage cause is deemed "Weft stoppage" and stored in the memory

FIG. 9

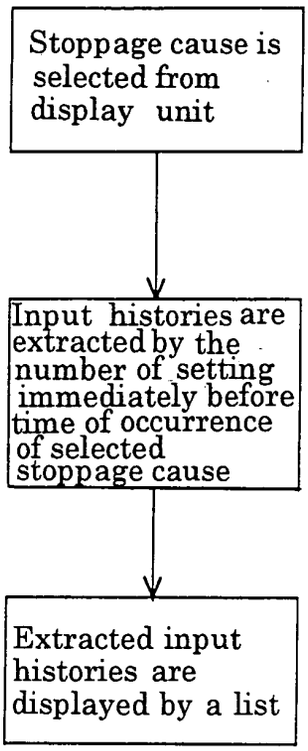

FIG.10

Interior of memory

Input 28

Input 27

Input 26

Warp stoppage

Input 25

Input 24

Input 23

Input 22

Input 21