

***TECHNICAL  
INFORMATION***

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**CITIZEN QUARTZ**

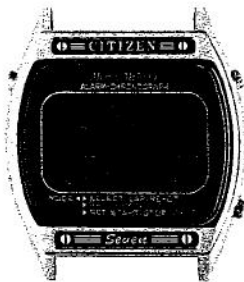
**Cal. No. 957❖❖**

 **CITIZEN**

## CONTENTS

§1. OUTLINE .....	P. 1
§2. FEATURES .....	P. 1
§3. SPECIFICATIONS .....	P. 2
§4. HANDLING INSTRUCTIONS .....	P. 3
§5. STRUCTURE OF MODULE .....	P. 8
§6. DISASSEMBLY/ASSEMBLY OF MODULE .....	P. 9
§7. TROUBLESHOOTING AND ADJUSTMENT .....	P.12

## §1. OUTLINE



This is a multi-function digital quartz watch that is developed and completed through the Citizen's up-to-the-minute electronic technology. It incorporates a microcomputer-type LSI plus the Citizen's first "melody alarm" and "alphanumeric" in addition to the time and calendar displays plus the seven functions that can be operated at will by the user.

Thus this new watch will surely satisfy the multifarious needs of contemporary users.

## §2. FEATURES

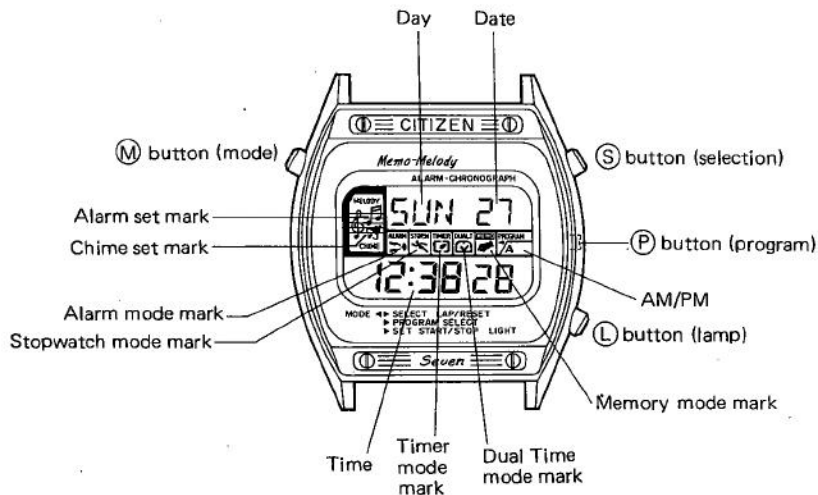
- 1) An advanced digital watch incorporating a watch-use microcomputer.
- 2) The unique melody alarm tells the time in a soft melody of music (Foster's "Oh Susanna".) ringing about 16 seconds.
- 3) The alphanumeric memory can store 12 digits of alphabet and figures in all: 10 digits of figures (capable of storing a telephone number including the toll number) plus 2 digits of alphabet (showing the initials of a name or the like).
- 4) In addition to the melody alarm, the normal alarm is also available in a selective use between a "daily alarm" and a "weekly alarm".
- 5) The three functions can be freely programed (selected) among the normal alarm, the 1/100 sec. stopwatch, the timer, the dual time and the alphanumeric memory in addition to the melody alarm and the chime. Thus 125 different kinds of patterns (excluding the fixed functions) are available.
- 6) In the time display mode, the time and calendar are displayed simultaneously in two tiers. The days of the week are displayed by the liquid crystal in three alphabet letters like analog watches, which is the first adaption in the Citizen's digital watches.

## § 3. SPECIFICATIONS

Caliber No.	9570A/B-00	
Type	Digital quartz crystal watch	
Size of module (mm)	27 $\phi$ (28 $\phi$ max.) x 5.15 <sup>t</sup> (6.2 <sup>t</sup> at power cell part)	
Accuracy	$\pm 20$ sec./month at normal temperatures	
Oscillation	32,768Hz	
Method of display	FE-type nematic LC (Liquid Crystal) with 2-split multiplex driving	
Intergrated circuit	C/MOS-LSI (1 unit)	
Effective temperature range	$\pm 0^{\circ}\text{C} \sim +55^{\circ}\text{C}$ (32 $^{\circ}\text{F} \sim 131^{\circ}\text{F}$ )	
Adjustment of time rate	By trimmer condenser	
Display functions	Time	Hour, minute, second, A/P, day & date
	Melody alarm	Hour, minute, OFF/ON, A/P & day*
	Alarm	Hour, minute, OFF/ON, A/P & day*
	Stopwatch	Minute, second & 1/100 sec. (60 min. or less) Hour, minute & second (60 min. or more) (Unit of count: 1/100 sec.; 24-hour count)
	Timer	Hour, minute & second (Unit of set: 1 min.; 24-hour count)
	Dual time	Hour, minute, second & A/P
	Alphanumeric memory	Alphabet letters (up to 2 digits) plus figures (up to 2 digits): 12 digits in all for storage
	Chime	Chime set mark
		* Display of day (Alarm mode) For the display of days of the week, a selection is possible between the "weekly" and "daily" (DLY) displays. * The mode number is displayed for alarm, stopwatch, timer and dual time each.
Additional functions	<ul style="list-style-type: none"> <li>● Illumination lamp</li> <li>● Instant manual return system</li> <li>● Alarm monitor</li> <li>● Melody monitor</li> <li>● 12-/24-hour switching function (Programming mode)</li> <li>● Fully automatic calendar (1980 ~ 2079)</li> </ul>	
Power cell (Silver oxide cell)	Parts No. : 280-15 (1 unit) Cell code : SR1130W.(Ag <sub>2</sub> O/KOH) Nominal voltage: 1.55V Size : 11.6 mm $\phi$ x 3.1 mm <sup>t</sup> Capacity : 80 mA <sup>H</sup> Lifetime : About 2 years (3 sec. lamp lighting, 40 sec. alarm & 24-time hourly chime per day)	
Remarks	A : Silver color (Reflecting plate) B : Gold color (Reflecting plate)	

§4. HANDLING INSTRUCTIONS (The flashing area is shown by O.)

4-1. Nomenclature and Functions



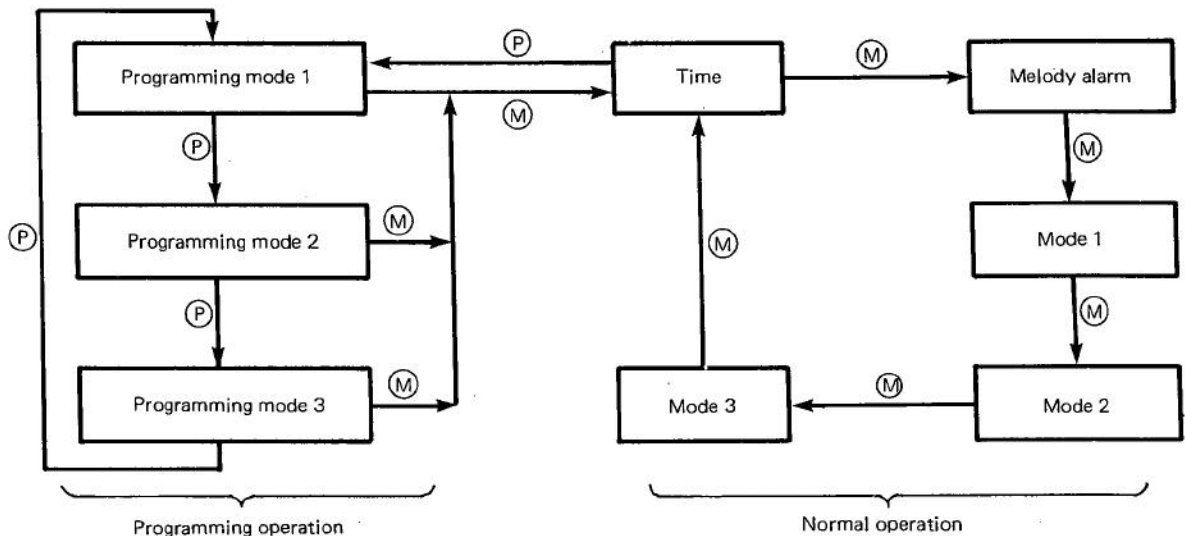
4-2. Out line of Operation

In this caliber, the three modes following the two basic modes (time & melody alarm) can be selected freely.

- ① Time/Melody alarm → Alarm → Stopwatch → Timer → Time
- ② Time/Melody alarm → Stopwatch → Alarm → Memory → Time
- ③ Time/Melody alarm → Timer → Memory → Dual time → Time

Thus 125 different types of set patterns are available excluding the basic modes since five modes can be selected (alarm, 1/100 sec. stopwatch, timer, dual time and alphanumeric memory).

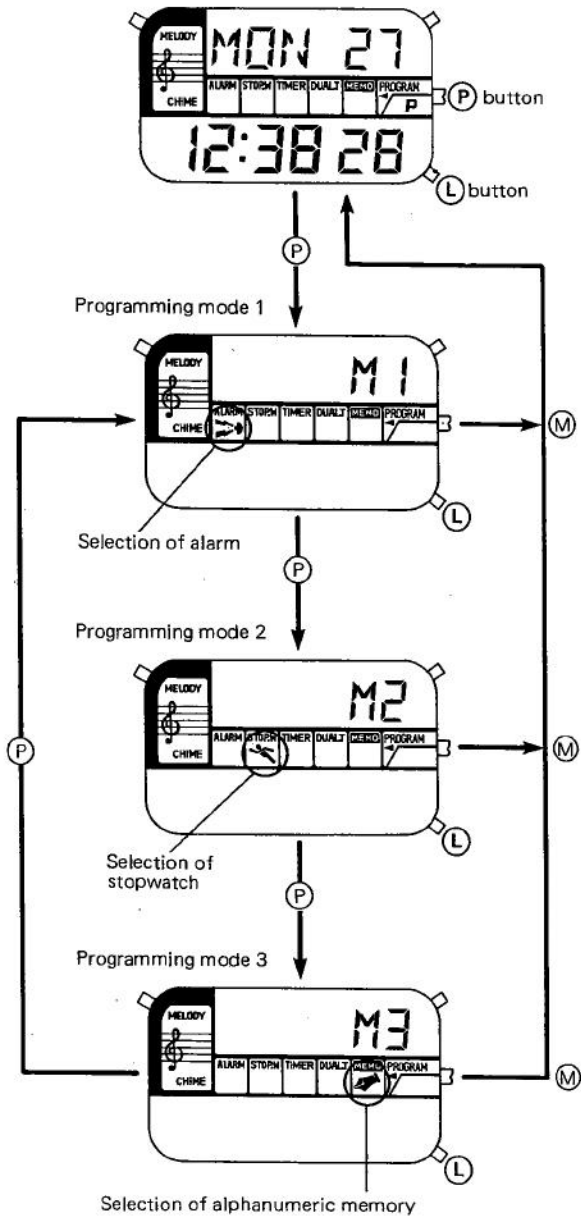
The operation in the programming mode is one of the major features of this caliber. The three functions are selected to be used properly in this mode. The basic system of operation is illustrated as follows.



(The function designated in the programming mode 1 appears in the mode 1.)

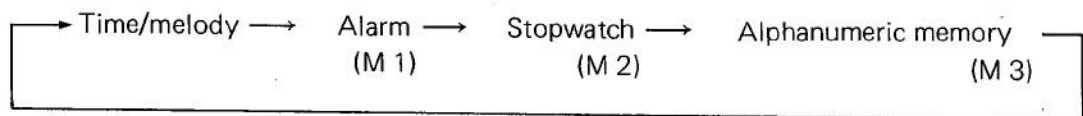
### 4-3. Programming Operation

The programming model 1 is obtained with push of (P) button in the mode of time display.



As shown in the diagram, M1 is displayed in the programming mode 1 with other digits suppressed. The selected function is flashing at this moment, and an alteration is given to the selection by (L) button. The (P) button is pushed when the mode desired mark to be selected has a flashing to shift to the programming mode 2. After this the operation is carried out in the same way and each programming mode number is displayed by M1 ~ M3. With every push of (P) button, the mode varies as M1 → M2 → M3 → M1 and so on. With push of (M) button after an operation of programming, the mode is reset to the time display (Instant manual return).

In the case of the above illustration, the mode changes as shown below.

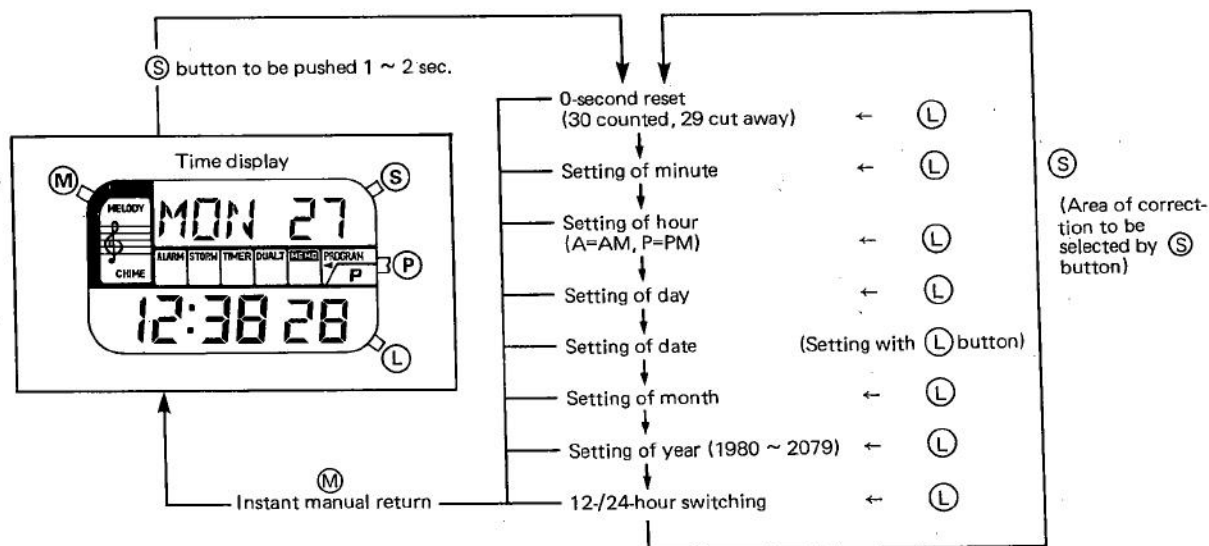


## 4-4. Correcting method

A correction mode is obtained by pushing (S) button for 1 ~ 2 seconds, and the correction is carried out by (L) button with call-out of the area of correction with push of (S) button. The correction mode is cancelled with push of (M) button (Instant manual return). The time is quickly advanced with a continuous push of (L) button.

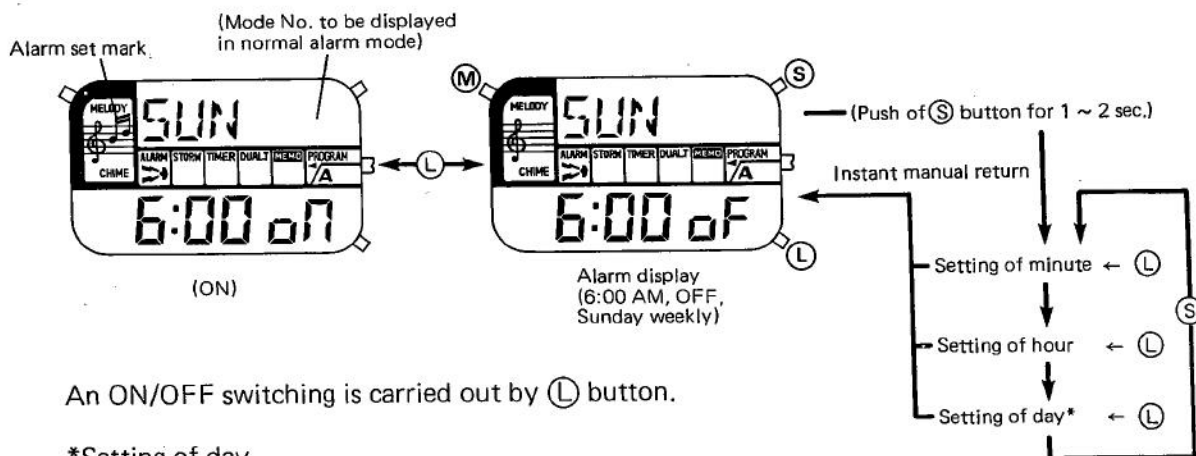
The above-mentioned procedures are available in common to all correcting operations of this caliber.

## 4-5. Setting of Time



## 4-6. Operation of Alarm

The operating procedure is identical between the melody alarm and the normal alarm. The mode number is displayed for the normal alarm.



An ON/OFF switching is carried out by (L) button.

\*Setting of day

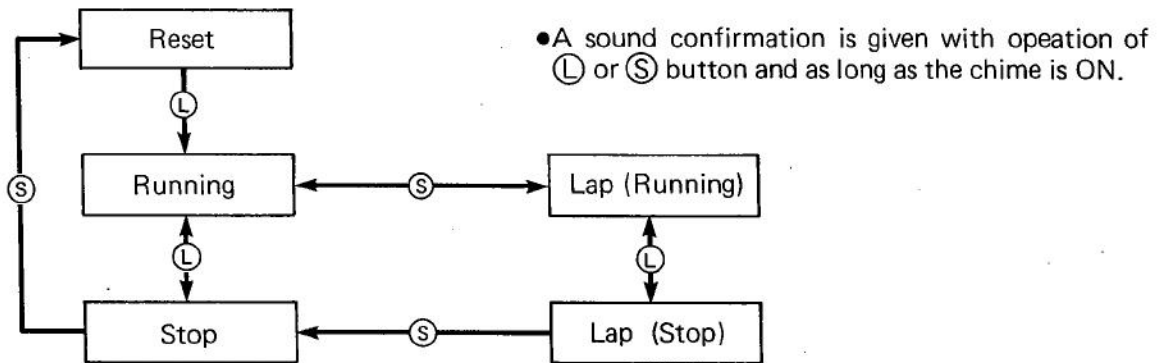
The days of the week are set in the following cycle.

SUN → MON → TUE → WED → THU → FRI → SAT →  
DLY → SUN → .....

The "weekly alarm" and the "daily alarm" are given by setting the day of the week and the DLY respectively.

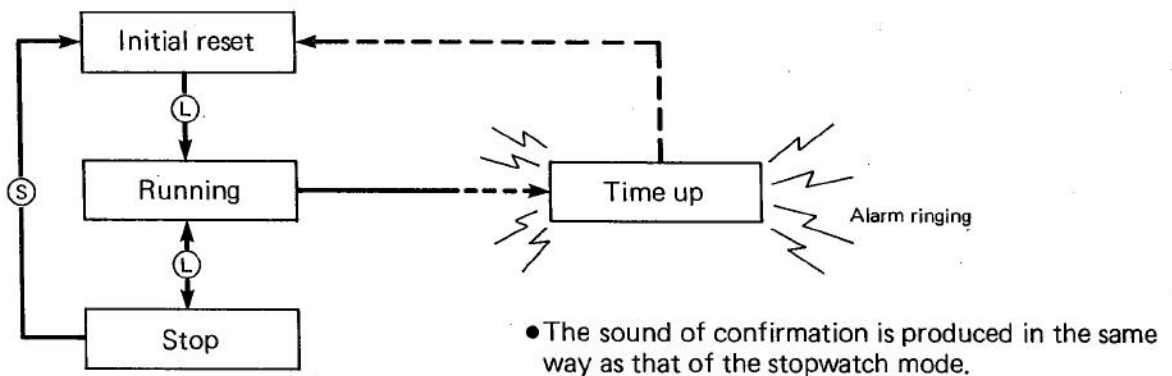
#### 4-7. Operation of Stopwatch

The operating procedure is identical to other conventional stopwatches except for a part of the form of display and the position of the buttons.



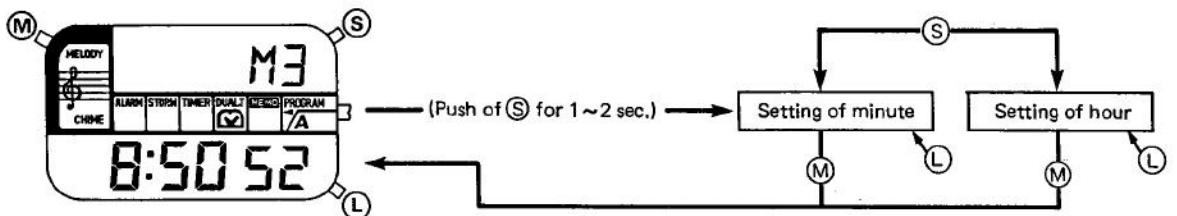
#### 4-8. Operation of Timer

The time is set in the same way as the setting of the alarm. After setting the time, an operation is given in the following procedure.

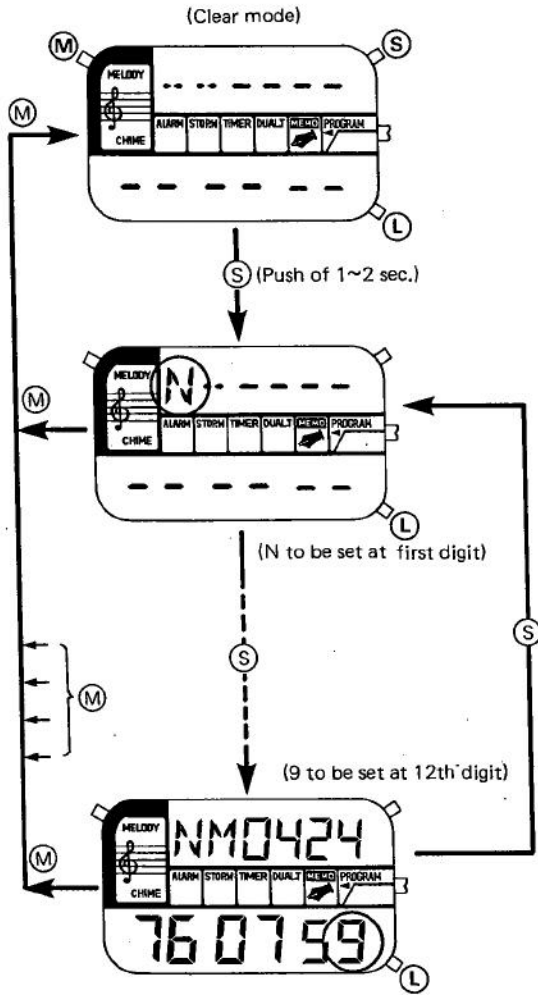


#### 4-9. Setting of Dual Time

The maximum three different types of watches can be set with this caliber. The setting procedure of time is identical to the normal time setting. And no setting is given to the second since the second is synchronous with the time.



4-10. Operation of Alphanumeric Memory



The alphanumeric memory stores the figures or alphabet letters up to 12 digits and then reads them when necessary. In other words, this memory has a function of so-called "memo pad" or the like to store the maximum three telephone numbers.

The writing into this memory is carried out by S and L buttons. With push of S button for 1 ~ 2 seconds, the setting mode is obtained. Then the setting is carried out by L button, and the digit for setting is selected by S button. The selected digit shifts from the left to the right and from the upper tier to the lower tier, and this position of shift is shown by a flashing. An instant manual return is given with push of M button.

With a simultaneous push of S and L buttons, the display is cleared to give a bar (—) display to each digit.

Either alphabet letters or figures can be set at the 1st 2nd digits, and only figures are set at and after the 3rd digit. And no mode number is displayed in this memory mode.

- With push of L button for 1 ~ 2 seconds, the time is advanced quickly by 8Hz.

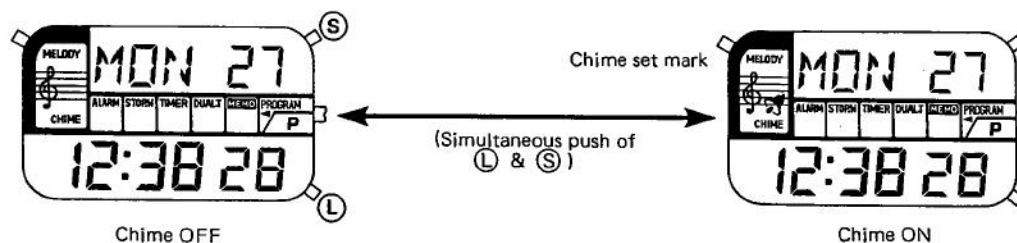
(Telephone number 0424-76-0759 stored for Mr. NM.)

- The forms of display are shown below for the alphanumeric memory.

A B C D E F G H I J K L M N O P Q R S T  
 U V W X Y Z -- (bar display)

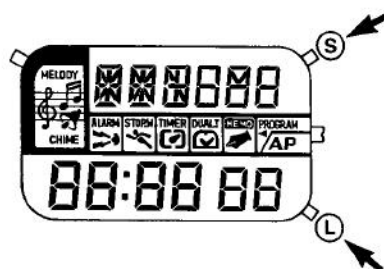
#### 4-11. Melody Monitor and ON/OFF of Chime

The melody alarm is given with a simultaneous push of (L) and (S) buttons in the mode of time display, and the ON and OFF of the chime vary alternately with every delivery of the melody alarm. And only the melody monitor is possible even in the mode of melody alarm display.



#### 4-12. Full-segment Glow

The all segments on the display screen glow by giving a simultaneous push to both (L) and (S) buttons during a switching between the 12- and 24-hour displays in a setting mode of time and calendar.



#### 4-13. Alarm Monitor

An alarm monitor is possible with a simultaneous push of (L) and (S) buttons in the alarm mode. This monitor is also possible by pushing (S) button while the alarm function mark is flashing in the programming mode.

### §5. STRUCTURE OF MODULE

The structure of module of this caliber is completely identical to the Cal. No. 9200-series watches.

