EMMYWATCH

VINTAGE RESTORATIONS

Seiko 2517B Movement Parts (1)

Compiled by EmmyWatch - https://www.emmywatch.com

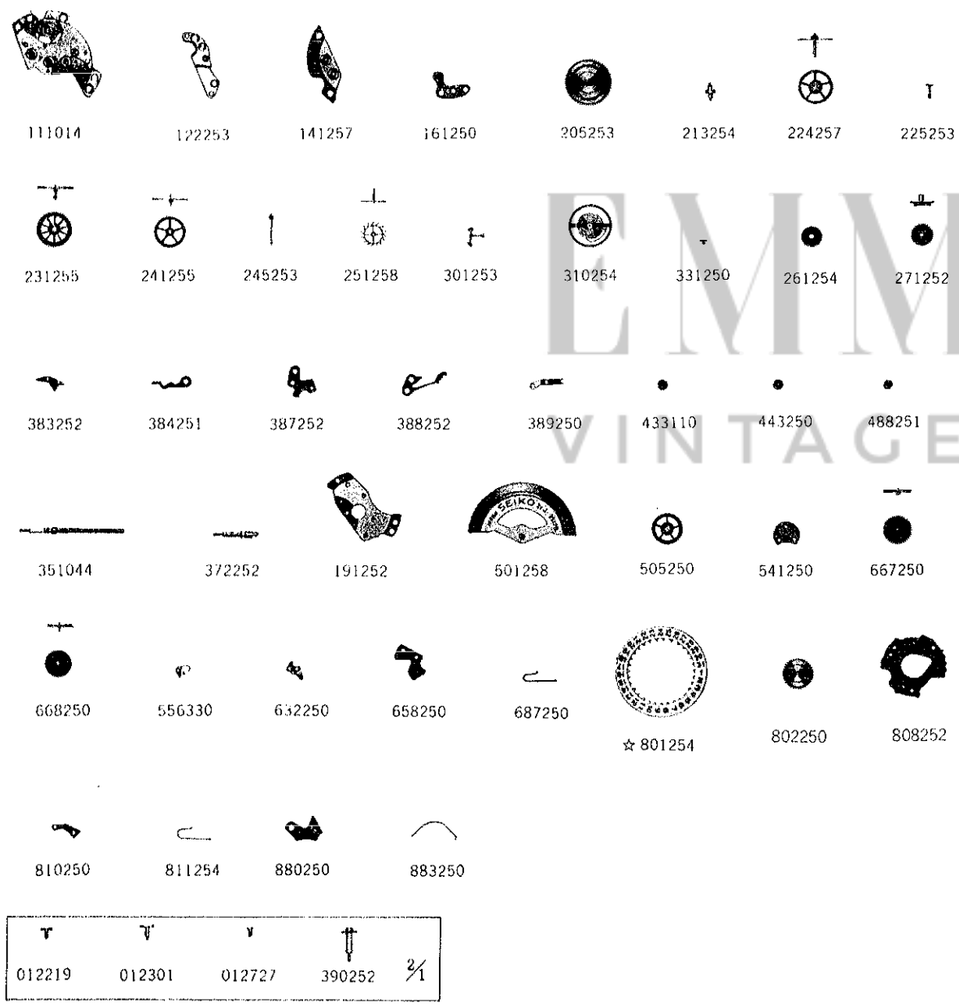
SEIKO

Calibre No.	Jewels	Style Name
2517B ⇨Basic Calibre **2501A** 17J Catalog No. 25-01-1	21j	

Cal. 2517B

Characteristics

Casing diameter: 17.20 ϕ mm
Maximum height: 5.85 mm
Vibrations per hour: 19,800
Automatic winding with sweep second
Calendar (date)
Pull & push instant date setting
"Diashock" Shock Resistant Device



Catalog No. 25-17-2

☆⇨Please see remarks on the reverse page.
As for all other parts not shown here, please refer to the basic calibre (Cal. No. **2501A** 17J Catalog No. 25-01-1 Red page).

Calibre No.	Jewels	Style Name
2517B ⇨Basic Calibre **2501A** 17J Catalog No. 25-01-1	21j	

PART NO.	LIST OF MATERIALS
111014	**Barrel bridge**
122253	**Center wheel bridge**
141257	**Fourth wheel bridge**
161250	**Pallet cock**
171250	Balance cock
191252	**Framework for automatic device**
205253	**Complete barrel with arbor**
213254	**Barrel arbor**
224257	**Center wheel & pinion with cannon pinion**
225253	**Cannon pinion**
231255	**Third wheel & pinion**
241255	**Fourth wheel & pinion**
245253	**Sweep second pinion**
251258	**Escape wheel & pinion**
261254	**Minute wheel**
271252	**Hour wheel**
281250	Setting wheel
282250	Clutch wheel
283250	Winding pinion
284250	Crown wheel
285250	Ratchet wheel
301253	**Jewelled pallet fork & staff**
310254	**Balance complete with stud**
315250	Balance staff
331250	**Roller with jewel**
341250	Regulator
345250	Stud holder
351044	**Winding stem**
372252	**Joint stem (movement portion)**
373250	Joint stem (case portion)
381030	Click
382030	Click spring
383252	**Setting lever**
384251	**Yoke (Clutch lever)**
385250	Yoke spring (Clutch lever spring)
387252	**Minute wheel bridge**
388252	**Setting lever spring**
389250	**Setting lever axle spring**
390252	**Setting lever axle**
401030	Mainspring with slipping attachment (self-greasing)
433110	**Upper hole jewel with frame for escape wheel**
443250	**Upper hole jewel with frame for 3rd wheel**
443250	**Upper hole jewel with frame for 4th wheel**
481250	Crown wheel ring
488251	**Upper hole jewel with frame for sweep second pinion**
491180	Dial washer
014413	Diashock upper frame
014414	Diashock lower frame
014415	Diashock hole jewel with frame

PART NO.	LIST OF MATERIALS
011212	Diashock cap jewel
014417	Diashock spring
501258	**Oscillating weight with pinion**
505250	**Transmission wheel**
541250	**Oscillating weight axle**
545030	Oscillating weight fork
667250	**First locking wheel**
668250	**Second locking wheel**
556330	**Date finger**
632250	**Date corrector finger**
658250	**Date corrector guard**
687250	**Date corrector finger spring**
☆ **801254**	**Date dial**
802250	**Date driving wheel**
808252	**Date dial guard**
810250	**Date jumper**
811254	**Date jumper spring**
880250	**Date corrector**
883250	**Date corrector spring**
012118	Barrel bridge screw, short
012118	Fourth wheel bridge screw
012118	Balance cock screw
012118	Setting lever axle spring screw
012120	Dial screw
012121	Stud screw
012204	Pallet cock screw
012219	**Center wheel bridge screw**
012241	Framework screw for automatic device
012252	Barrel bridge screw, long
012301	**Date corrector spring screw**
012407	Case screw
012501	Crown wheel screw
012642	Click screw
012711	Screw for oscillating weight axle
012727	**Minute wheel bridge screw**
012727	**Date dial guard screw**
012727	**Date corrector guard screw**
012744	Screw for oscillating weight fork
011521	Upper hole jewel for center wheel
011153	Lower hole jewel for center wheel
011423	Lower hole jewel for 3rd wheel
011423	Lower hole jewel for 4th wheel
011713	Lower hole jewel for sweep second pinion
011528	Lower hole jewel for escape wheel
011505	Upper hole jewel for pallet
011505	Lower hole jewel for pallet
011157	Upper hole jewel for transmission wheel
011157	Lower hole jewel for transmission wheel
013106	Tube for minute wheel bridge screw (Cylinder type)
013113	Tube for bridge screw, short
013175	Tube for minute wheel bridge screw (Recessed type)
013176	Tube for bridge screw, long

Remarks :

Date dial

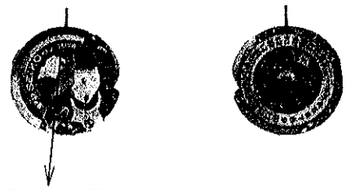
☆ 801254 ·····Used when both the crown and the date frame are located at **3** o'clock.

If the date dial is required in any other type, specify ① Cal. No. ② the crown position ③ the date frame position and ④ the dial No.

☆⇨Please see remarks.
Items in light letters are not shown in photos; those parts are interchangeable with the basic calibre (Cal. No. **2501A** 17J Catalog No. 25-01-1 Red page).

SEIKO

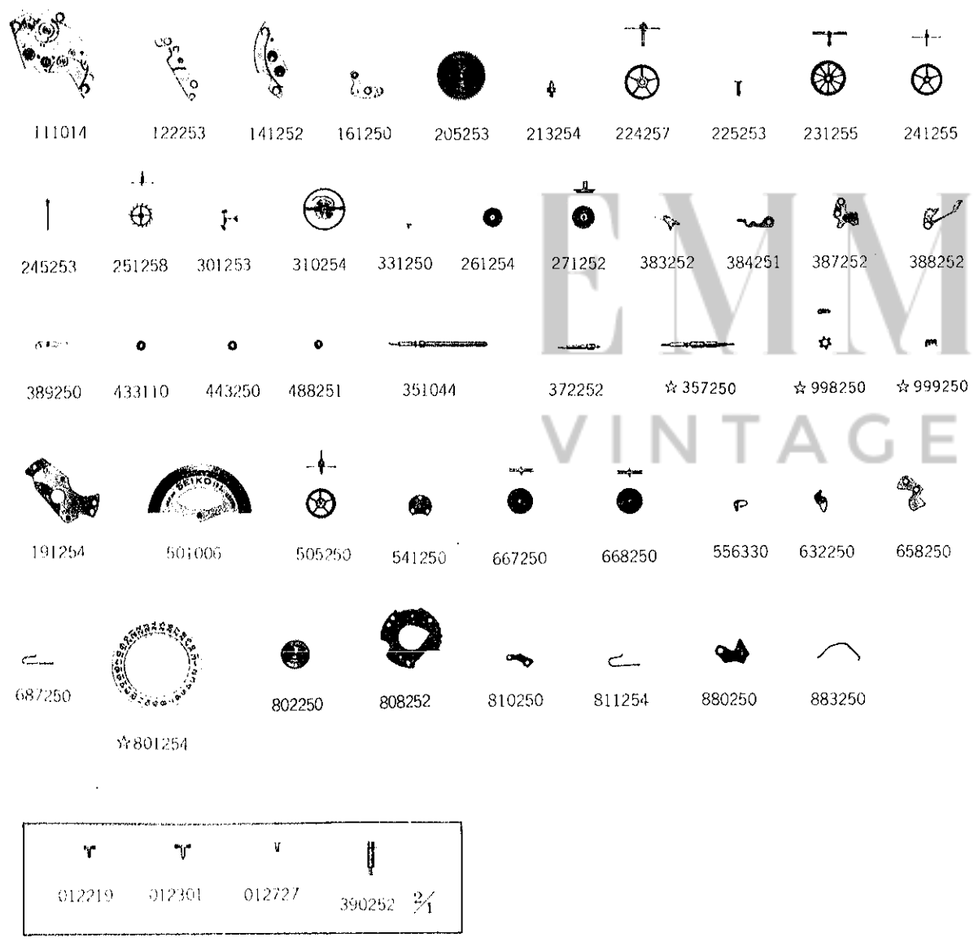
Calibre No.	Jewels	Style Name
2517B	17j	
⇨ Basic Calibre **2501A** 17J Catalog No. 25-01-1		



Cal. 2517B

Characteristics

Casing diameter : 17.20φmm
Maximum height : 5.85 mm
Vibrations per hour : 19,800
Automatic winding with sweep second
Calendar (date)
Pull & push instant date setting
"Diashock" Shock Resistant Device



Catalog No. 25-17-3

☆ ⇨ Please see remarks on the reverse page.
As for all other parts not shown here, please refer to the basic calibre (Cal. No. **2501A** 17J Catalog No. 25-01-1 Red page).

Calibre No.	Jewels	Style Name
2517B	17j	
⇨ Basic Calibre **2501A** 17J Catalog No. 25-01-1		

PART NO.	LIST OF MATERIALS
111014	**Barrel bridge**
122253	**Center wheel bridge**
141252	**Fourth wheel bridge**
161250	**Pallet cock**
171250	Balance cock
191254	**Framework for automatic device**
205253	**Complete barrel with arbor**
213254	**Barrel arbor**
224257	**Center wheel & pinion with cannon pinion**
225253	**Cannon pinion**
231255	**Third wheel & pinion**
241255	**Fourth wheel & pinion**
245253	**Sweep second pinion**
251258	**Escape wheel & pinion**
261254	**Minute wheel**
271252	**Hour wheel**
281250	Setting wheel
282250	Clutch wheel
283250	Winding pinion
284250	Crown wheel
285250	Ratchet wheel
301253	**Jewelled pallet fork & staff**
310254	**Balance complete with stud**
315250	Balance staff
331250	**Roller with jewel**
341250	Regulator
345250	Stud holder
☆ **351044** / **357250**	**Winding stem**
372252	**Joint stem (movement portion)**
373250	Joint stem (case portion)
381030	Click
382030	Click spring
383252	**Setting lever**
384251	**Yoke (Clutch lever)**
385250	Yoke spring (Clutch lever spring)
387252	**Minute wheel bridge**
388252	**Setting lever spring**
389250	**Setting lever axle spring**
390252	**Setting lever axle**
401030	Mainspring with slipping attachment (self-greasing)
433110	**Upper hole jewel with frame for escape wheel**
443250	**Upper hole jewel with frame for 3rd wheel**
481250	Crown wheel ring
488251	**Upper hole jewel with frame for sweep second pinion**
491180	Dial washer
☆ **998250**	**Indicator wheel**
☆ **999250**	**Indicator wheel spring**
014413	Diashock upper frame
014414	Diashock lower frame
014415	Diashock hole jewel with frame
011212	Diashock cap jewel
014417	Diashock spring
501006	**Oscillating weight with pinion**
505250	**Transmission wheel**
541250	**Oscillating weight axle**
545030	Oscillating weight fork
667250	**First locking wheel**
668250	**Second locking wheel**
556330	**Date finger**
632250	**Date corrector finger**
658250	**Date corrector guard**
687250	**Date corrector finger spring**
☆ **801254**	**Date dial**
802250	**Date driving wheel**
808252	**Date dial guard**
810250	**Date jumper**
811254	**Date jumper spring**
880250	**Date corrector**
883250	**Date corrector spring**
012118	Barrel bridge screw, short
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012118	Balance cock screw
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012120	Dial screw
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012204	Pallet cock screw
012219	**Center wheel bridge screw**
012241	Framework screw for automatic device
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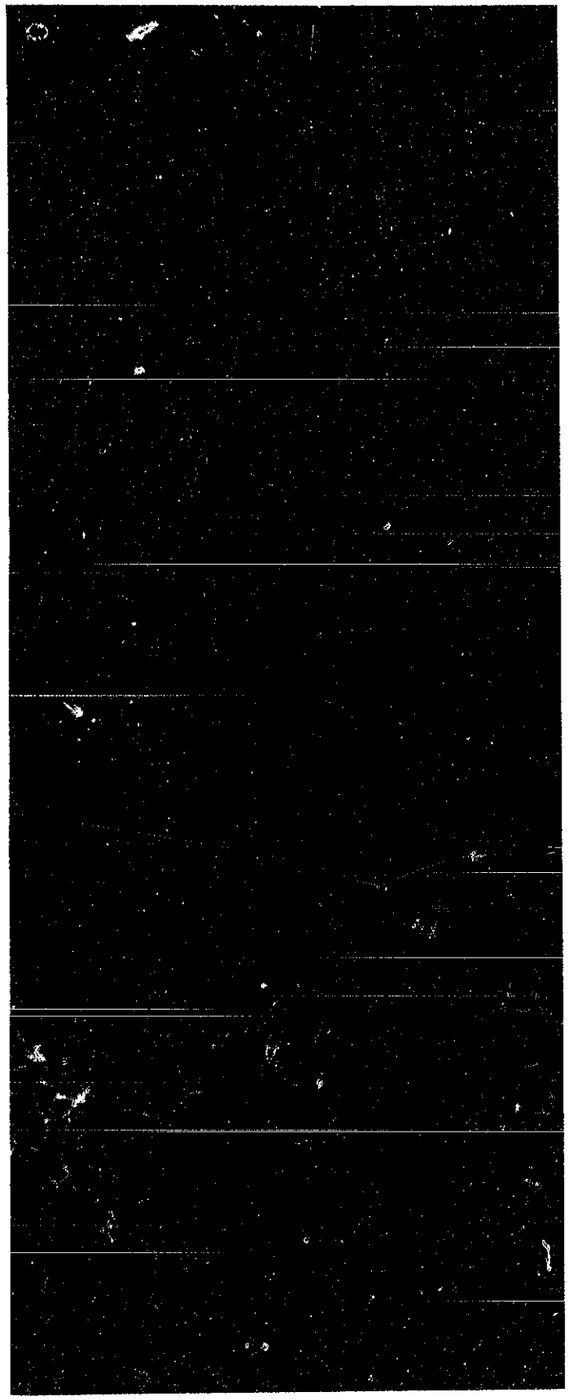
012744	Screw for oscillating weight fork
011521	Upper hole jewel for center wheel
011153	Lower hole jewel for center wheel
011423	Lower hole jewel for 3rd wheel
011713	Lower hole jewel for sweep second pinion
011528	Lower hole jewel for escape wheel
011505	Upper hole jewel for pallet
011505	Lower hole jewel for pallet
013106	Tube for minute wheel bridge screw (Cylinder type)
013113	Tube for bridge screw, short
013175	Tube for minute wheel bridge screw (Recessed type)
013176	Tube for bridge screw, long

Remarks :
☆357250 (Winding stem)
☆998250 (Indicator wheel)
☆999250 (Indicator wheel spring)
} These parts are available only for watches with rotating dial ring.

☆801254 (Date dial) ····· Used when both the crown and the date frame are located at **3** o'clock.
If the date dial is required in any other type, specify ① Cal. No. ② the crown position ③ the date frame position and ④ the dial No.

☆ ⇨ Please see remarks.
Items in light letters are not shown in photos; those parts are interchangeable with the basic calibre (Cal. No. **2501A** 17J Catalog No. 25-01-1 Red page).

2517B (Seikomatic lady calendar)



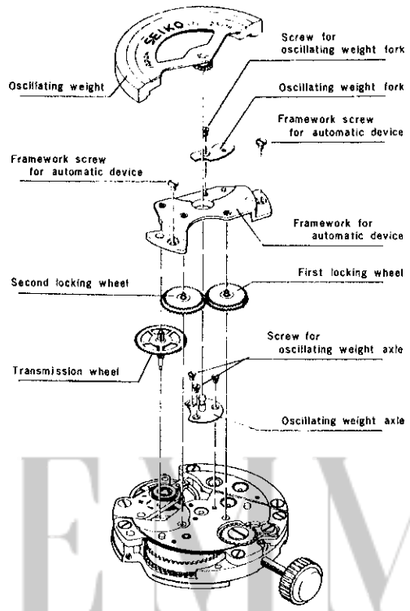


Fig. 1

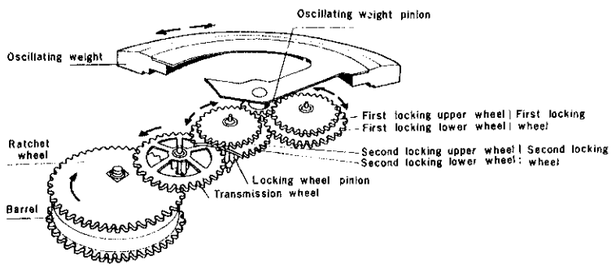
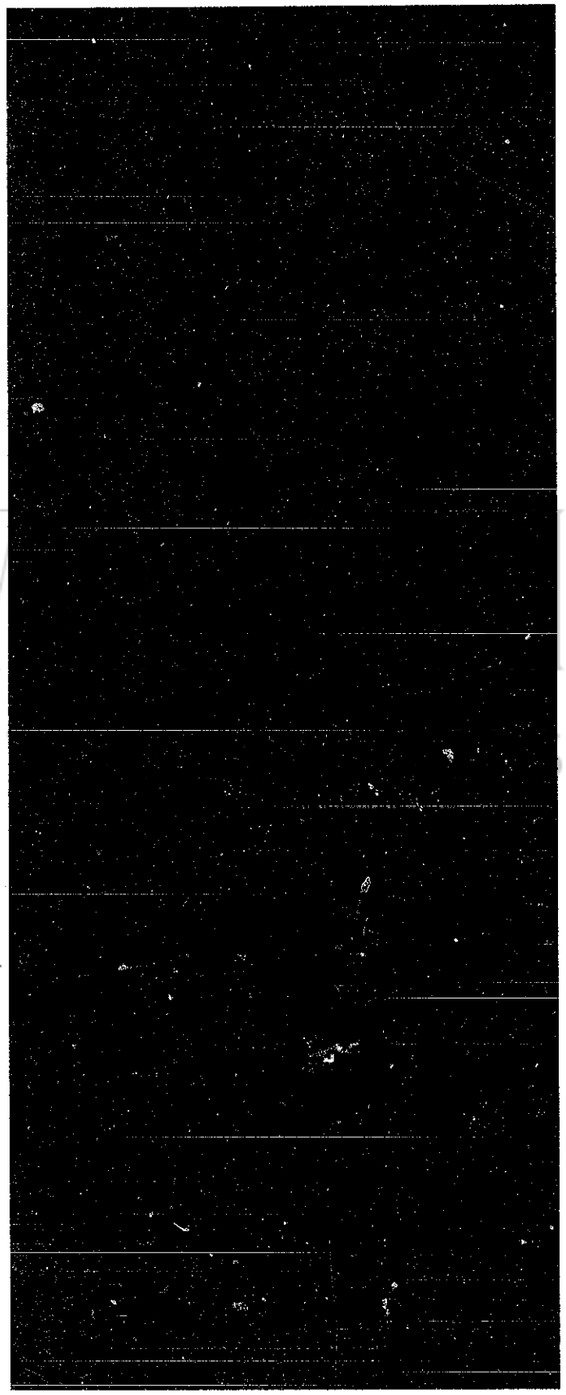
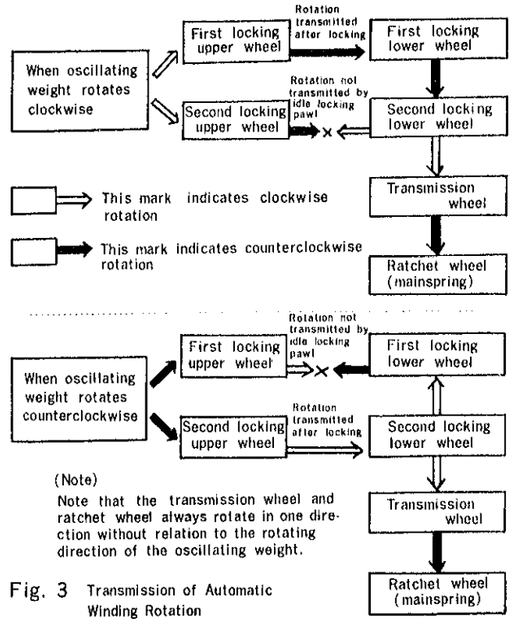


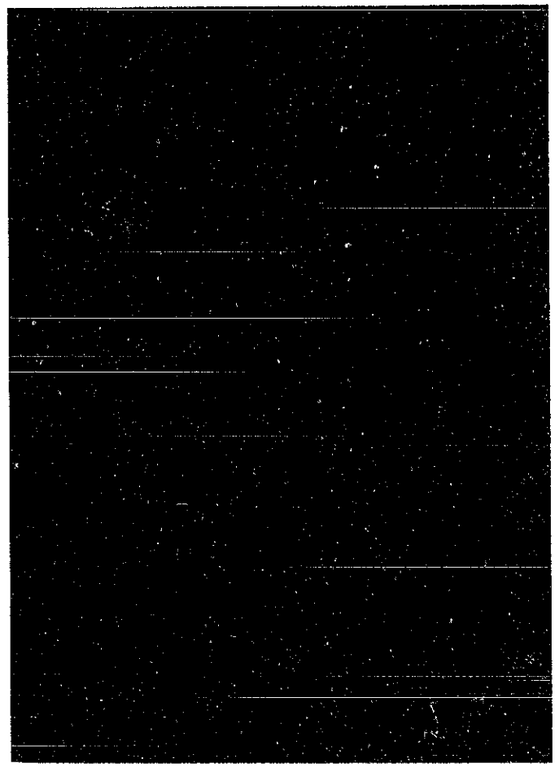
Fig. 2 Structure of Automatic Winding Gear Train

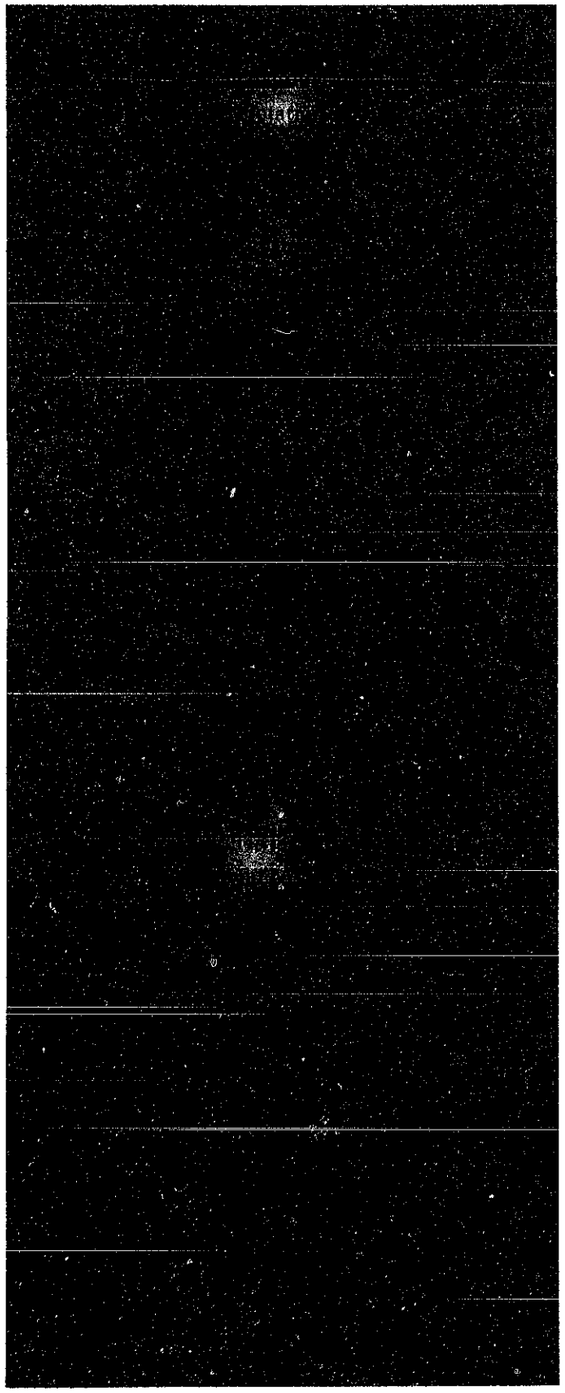




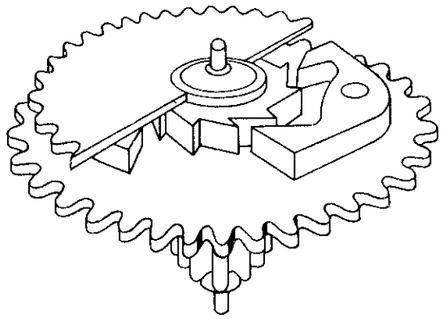
(Note)
Note that the transmission wheel and ratchet wheel always rotate in one direction without relation to the rotating direction of the oscillating weight.

Fig. 3 Transmission of Automatic Winding Rotation





Structure of(first) locking wheel



(Note) Regarding the second locking Wheel, directions of locking pawl and ratchet wheel are reversed.

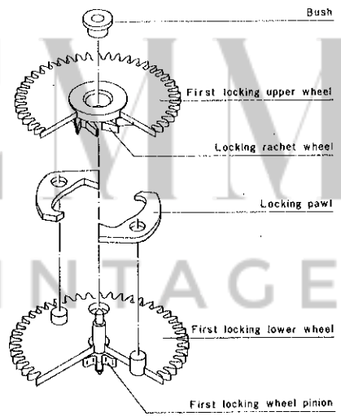


Fig. 4

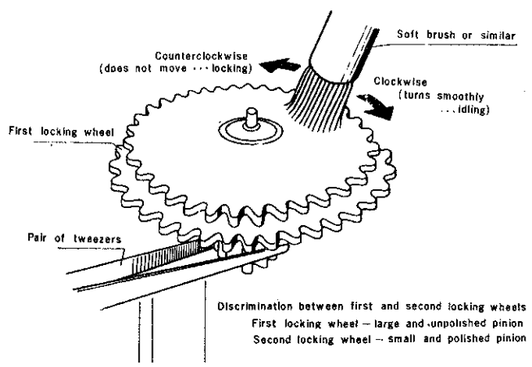
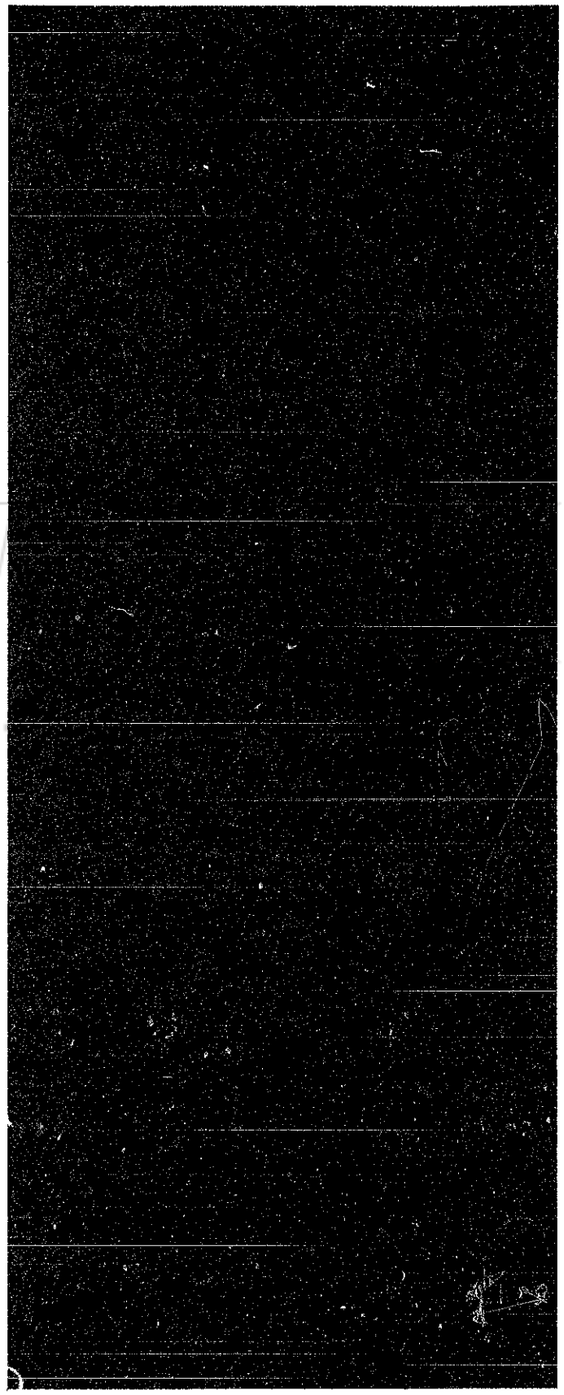


Fig. 5 Action of (First) Locking Wheel



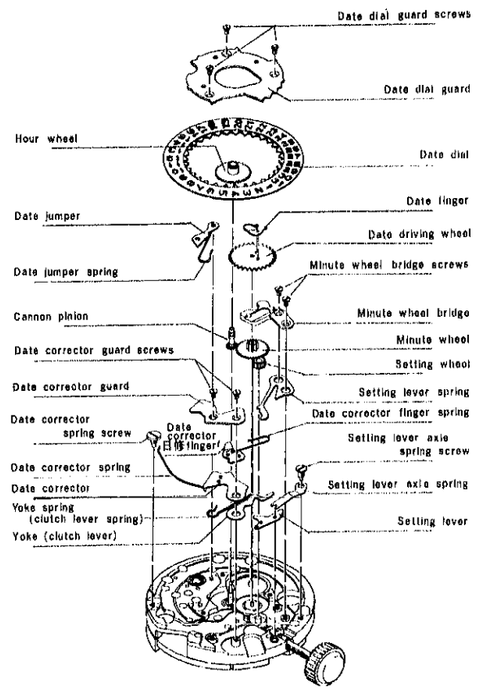


Fig. 6

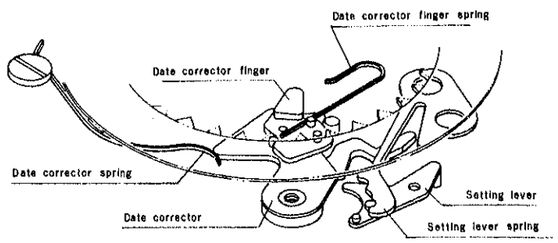
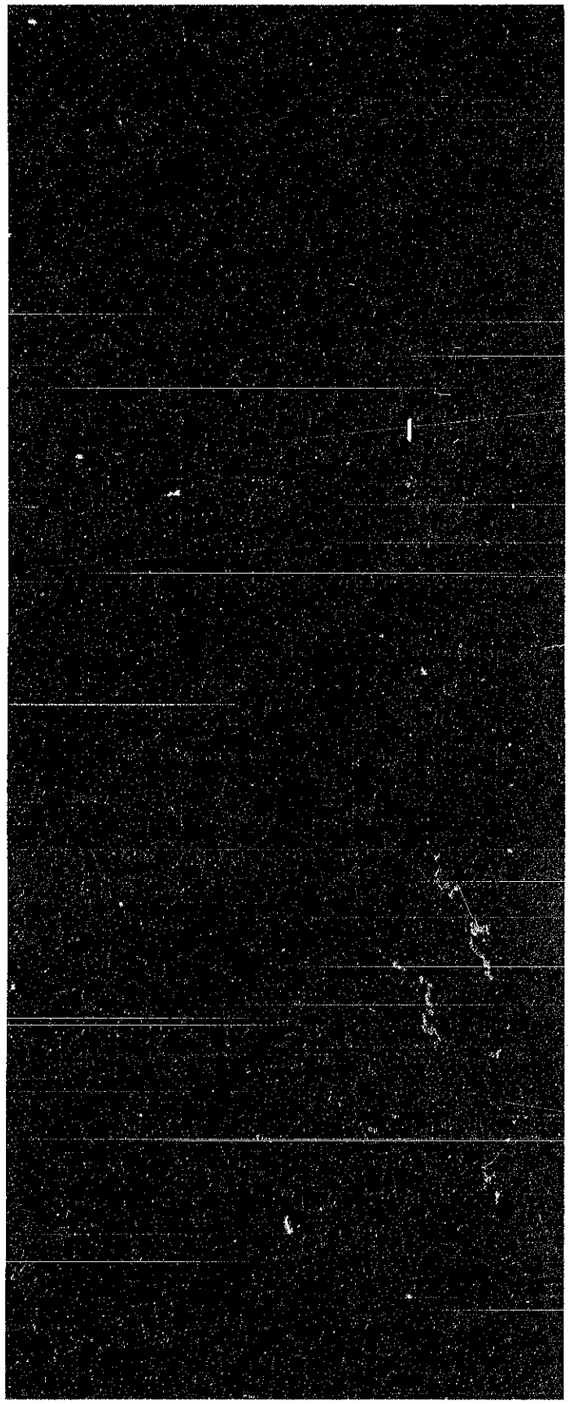


Fig. 7



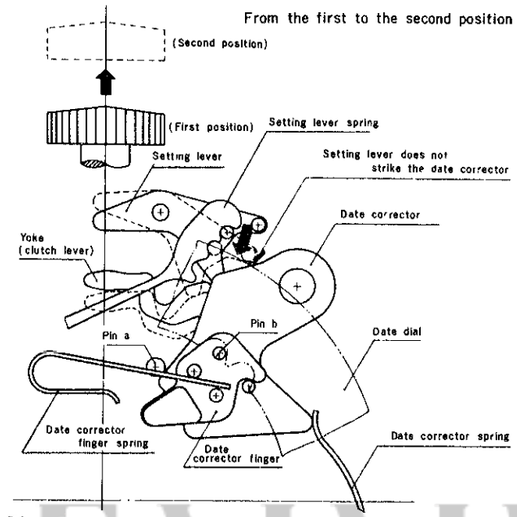


Fig. 8

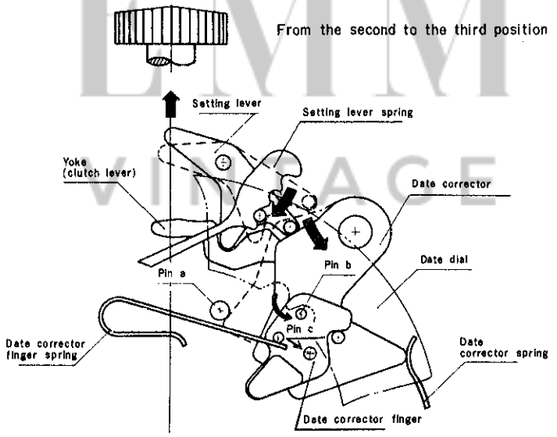
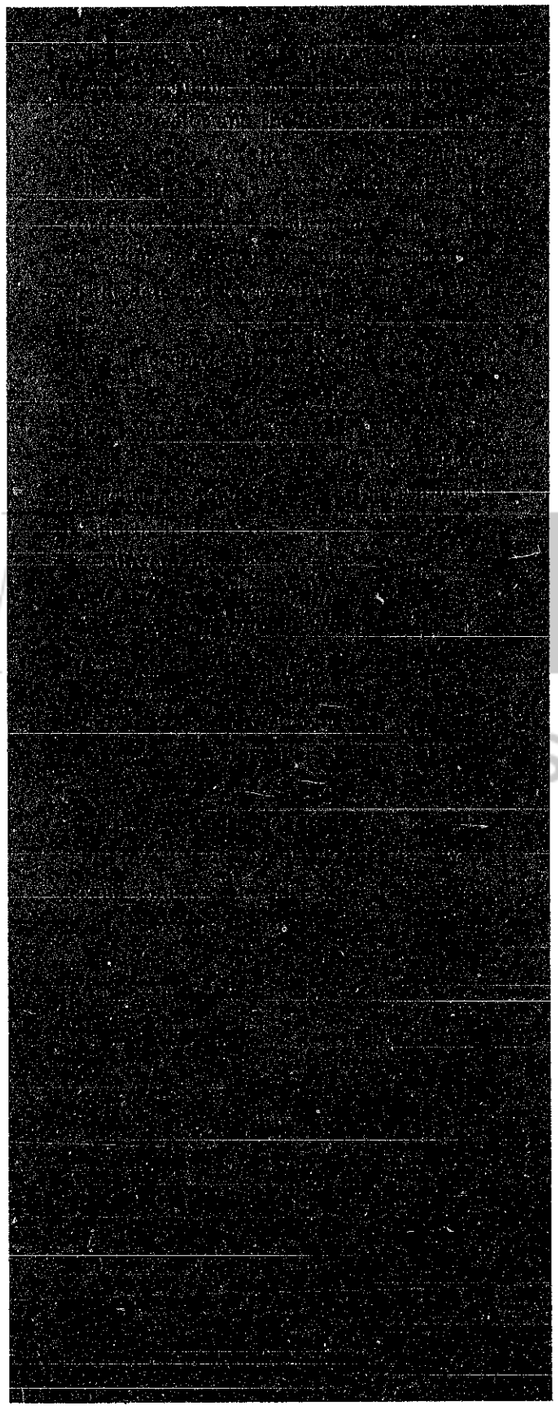


Fig. 9



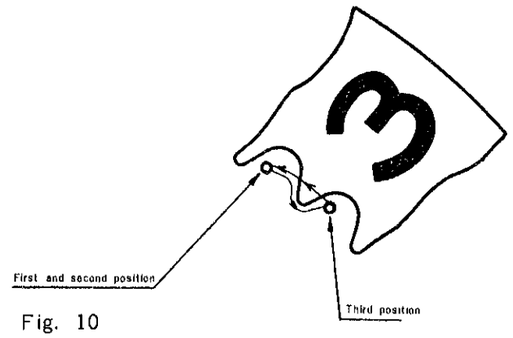


Fig. 10

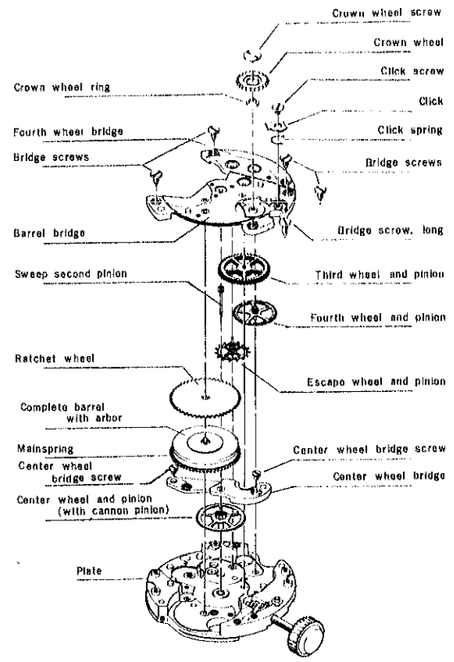
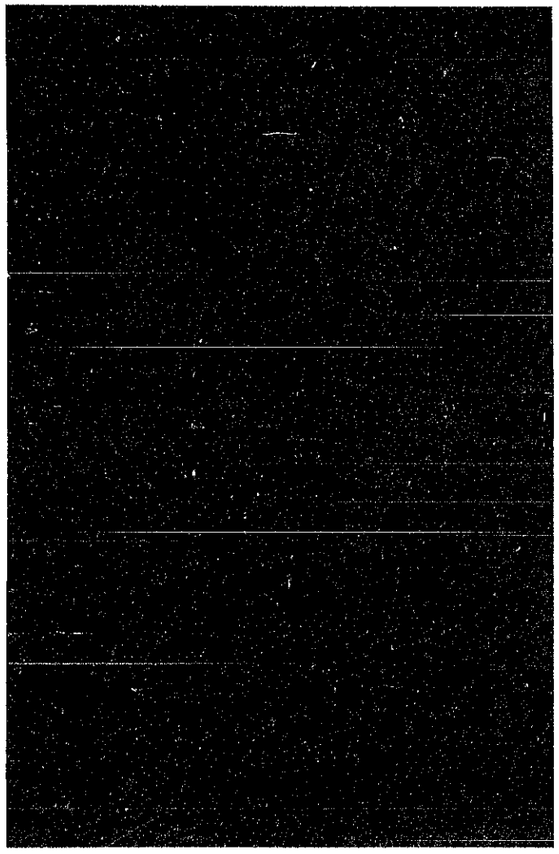


Fig. 11 Force Transmission Mechanism



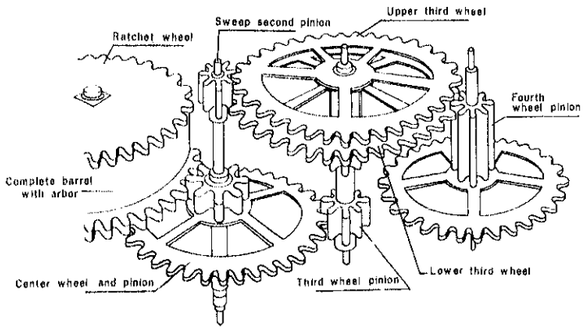
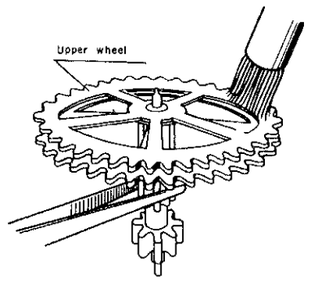
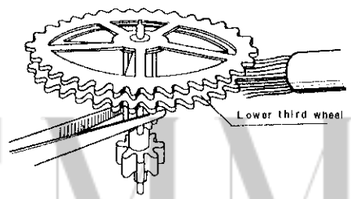


Fig. 12



Turn the upper wheel while holding the pinion with a pair of tweezers ····Does not turn.



Turn the lower wheel while holding the pinion with a pair of tweezers ····Turns smoothly.

Fig. 13

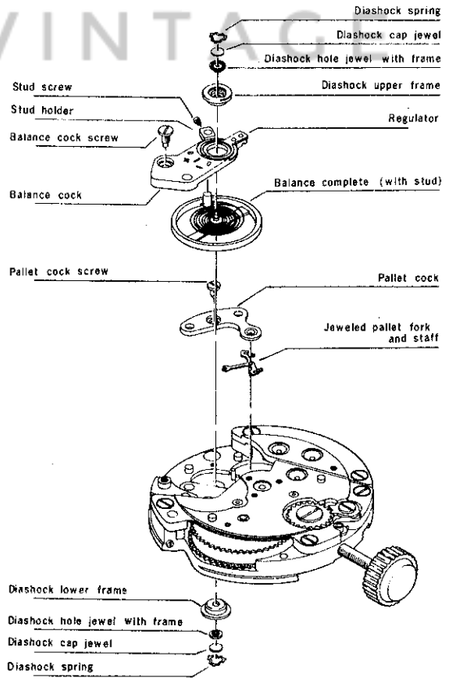
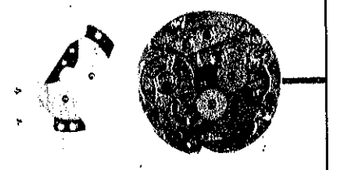
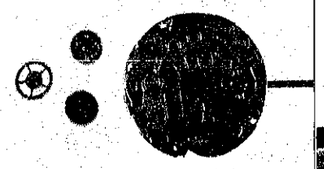
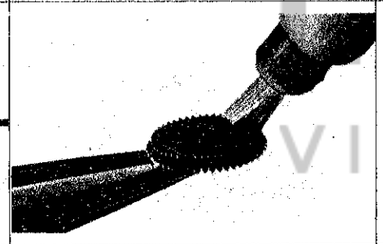


Fig. 14

		1 OSCILLATING WEIGHT	2 FRAMEWORK FOR AUTOMATIC DEVICE
Disassembly	Method	1) Remove screw for oscillating weight fork 2) Remove oscillating weight fork 3) Remove oscillating weight	1) Remove framework screws for automatic device (2 pcs) 2) Remove framework
	Remark	Check height of oscillating weight from surface of plate before removing it and confirm that oscillating weight does not touch the plate or case back. When removing oscillating weight in a condition that force of mainspring is left applied, sometimes the jewel may be broken. Disassembly should be started after teeth of the click and crown wheel are interlocked.	
Assembly		19 CONFIRMATION OF OSCILLATING WEIGHT ROTATING CONDITION	18 OSCILLATING WEIGHT	17 FRAMEWORK FOR AUTOMATIC DEVICE
	Photo			
	Method	1) Wind crown slowly after placing movement horizontally, facing oscillating weight upward 2) Then, confirm whether or not oscillating weight rotates (escape checking); if it rotates, then escaping is defective. 3) When mainspring is considerably wound, turn the oscillating weight by approximately 90° several times with a finger, then release oscillating weight and check reversing angle (lock checking). 4) Fully wind and place movement vertically; rotate the movement slowly to check whether or not oscillating weight rotates together with movement. (following rotation check)	1) Lubricate oscillating weight axle (watch oil S-4 or Moebius grease "Remontoires") 2) Set oscillating weight 3) Lubricate a portion of oscillating weight fork where it contacts the oscillating weight (watch oil S-4 or Moebius grease "Remontoires") 4) Set oscillating weight fork on framework for automatic device and fasten its screw 5) Fasten screw for oscillating weight 6) Check for end shake and height of oscillating weight	1) Set framework for automatic device 2) Fasten framework screws for automatic device (2 pcs) 3) Check end shakes of first and second locking wheel 4) Lubricate upper pivot of transmission wheel (watch oil S-4)
	Remark	When oscillating weight rotates in case above, this indicates defective escaping of locking wheel, requiring cleaning. Reversely rotating over 90° indicates defective locking of the locking wheel, requiring replacing. If oscillating weight rotates together with movement, check escapement of locking wheel, and height and end shake of oscillating weight.	Height of oscillating weight is satisfactorily positioned when the clearance with framework is between minimum 0.2mm and maximum 0.4mm.	When tightening framework screws for automatic device, do so after confirming correct interlock of locking wheel and locking wheel pivot. Correctly lubricate upper pivot with only a small quantity of oil.

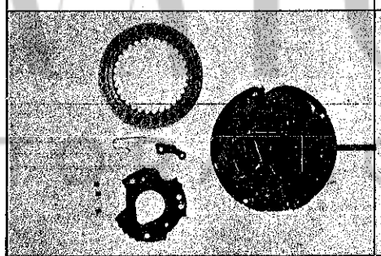
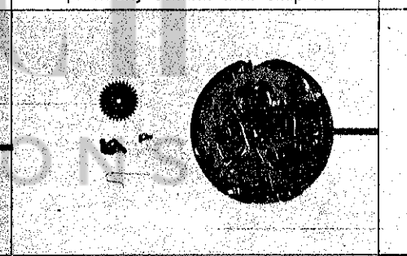
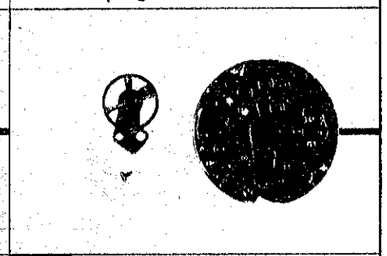
Disassembly

	3 LOCKING WHEEL AND TRANSMISSION WHEEL		
Method	1) Remove second locking wheel 2) Remove first locking wheel 3) Remove transmission wheel		
Remark	Discriminating features of differential wheels are— Outer diameter of pinion is large and teeth are thin...First locking wheel Outer diameter of pinion is small and teeth are thick...Second locking wheel		
Photo			

Assembly

	16 LOCKING WHEEL AND TRANSMISSION WHEEL	15 CHECK OF LOCKING WHEEL	14 LUBRICATION
Method	1) Set transmission wheel 2) Lubricate upper and lower pivots of first and second locking wheels (Moebius Synt-A-Lube) 3) Set first locking wheel 4) Set second locking wheel	Check escaping and locking conditions of locking wheel by turning it with a very soft paint brush while holding the locking wheel pinion with tweezers. As shown in above photo, when checking escape of locking wheel, turn locking upper wheel in escape direction with a small paint brush while holding pinion with tweezers. If rotation is sluggish, escape is defective. Concerning the direction of escape, first locking wheel is right rotation (clockwise) and second locking wheel is left rotation (counterclockwise). (For the locking test, turn locking wheel in reverse direction. If it turns reversely above 45°, this is defective locking.)	Refer to p. 2517–14
Remark	Set second locking wheel on the nearer portion to transmission wheel.		

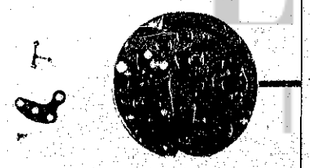
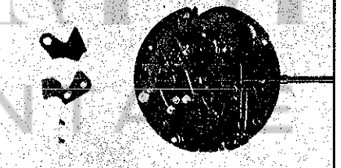
Disassembly

	4 DATE DIAL GUARD DATE JUMPER	5 DATE DRIVING WHEEL (WITH DATE FINGER & SPRING)	6 BALANCE COCK
Method	1) Remove date dial guard screws (3 pcs) 2) Remove date dial guard 3) Remove date jumper 4) Remove date dial 5) Remove date jumper spring	1) Remove date finger 2) Remove date driving wheel 3) Detach date corrector finger spring 4) Remove date corrector finger	1) Unwind mainspring 2) Remove balance cock screw 3) Remove balance cock
Remark	When removing date dial, pay attention to date jumper spring because it easily leaps off.	When detaching date finger spring, pay attention to avoid bending the spring welded portion while holding it up. Also handle the date corrector finger spring carefully because it springs up easily. Since the date jumper spring and date corrector finger spring are similar size and shaped, previously confirm their shapes.	Before removing balance cock, confirm state of playing of hairspring between regulator key stud and pin portion to be realized while assembling. When removing the balance cock with balance, be careful not to deform shape of hairspring.
Photo			

Assembly

	13 DATE DIAL GUARD DATE JUMPER	12 DATE DRIVING WHEEL DATE CORRECTOR FINGER	11 BALANCE COCK
Method	1) Set date jumper spring 2) Set date dial 3) Set date jumper 4) Set date dial guard 5) Fasten date dial guard screws (3 pcs) 6) Lubricate on the side cannon pinion (watch oil S-4 or Moebius grease "Remontoires") 7) Set hour wheel 8) Make test run of date dial (5 rotations) 9) Check for date driving and date correcting conditions	1) Set date corrector finger 2) Set date corrector finger spring 3) Lubricate tube for date driving wheel screw (Moebius Synt-A-Lube) 4) Set date driving wheel 5) Set date finger	1) Set balance cock with baiance 2) Fasten balance cock screw 3) Check for proper end shake of balance 4) Check for state of hairspring and action of escapement 5) Adjust height of stud head
Remark	Inspect for dust on date dial guard and date dial guide portion of plate. When change of date dial is defective, apply a small quantity of Moebius Synt-A-Lube to contacting side surface of date jumper. Never allow height of date dial guard screw to project above date dial guard.	Correctly insert date corrector finger spring into recessed portion of minute wheel bridge; further, make sure not to confuse with date jumper spring. Carefully assemble date finger to prevent deforming it.	Do not change the condition of hairspring and shape of hairspring.

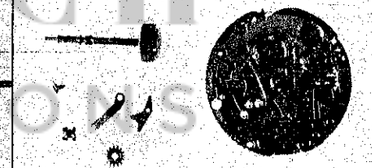
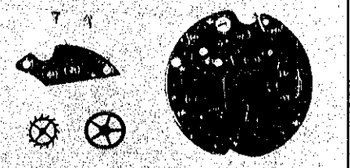
Disassembly

7 BALANCE	8 JEWELED PALLET FORK & STAFF	9 DATE CORRECTOR
Method 1) Remove stud after loosening stud screw 2) Remove balance by turning regulator key with driver	1) Remove pallet cock screw 2) Remove pallet cock 3) Remove pallet	1) Remove date corrector guard screws (2 pcs) 2) Remove date corrector guard 3) Remove date corrector
Remark Pay attention not to deform shape of hairspring.		Do not remove date corrector spring and date corrector spring screw.
Photo		

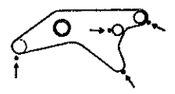
Assembly

10 BALANCE	9 JEWELLED PALLET FORK & STAFF	8 DATE CORRECTOR
Method 1) Check shape of hairspring 2) Place balance on balance cock 3) Insert hairspring between regulator key and regulator pin, and insert stud into stud holder 4) Turn regulator key 5) Fasten stud screw	1) Lubricate jeweled pallet fork (Moebius Synt-A-Lube) 2) Set pallet and cock 3) Fasten pallet cock screw 4) Lubricate pallet upper and lower pivots 5) Confirm engaging degree of pallet jewel	1) Set date corrector 2) Set date corrector guard 3) Fasten date corrector guard screws (2 pcs) 4) Check for date corrector end shake and its action
Remark When inserting stud into stud holder and inserting hairspring between regulator key and regulator pin, make sure not to deform shape of hairpring.	Engagement of jeweled pallet fork should be 1/4–1/5 of jewel width for the first lock and approximately 1/2 of the first lock quantity for the second lock.	When date corrector shows defective action, sometimes it is due to improper lubrication of setting lever, so carefully check it.
Photo		

Disassembly

10 YOKE (CLUTCH LEVER) AND MINUTE WHEEL	11 WINDING STEM AND SETTING LEVER	12 FOURTH WHEEL BRIDGE
Method 1) Remove minute wheel bridge screw (2 pcs) 2) Remove minute wheel bridge 3) Remove setting lever spring 4) Remove minute wheel and setting wheel 5) Remove yoke spring (clutch lever spring) and yoke (clutch lever)	1) Remove setting lever axle spring screw 2) Remove setting lever axle spring 3) Remove setting lever 4) Remove winding stem 5) Remove clutch wheel and winding wheel	1) Remove fourth wheel bridge screws (2 pcs) 2) Remove fourth wheel bridge 3) Remove fourth wheel and pinion 4) Remove escape wheel and pinion
Remark Be careful not to deform yoke spring.		
Photo		

Assembly

7 YOKE (CLUTCH LEVER) AND MINUTE WHEEL	6 WINDING STEM AND SETTING LEVER	5 FOURTH WHEEL BRIDGE
Method 1) Set yoke, clutch lever spring 2) Set setting wheel and minute wheel 3) Set setting lever spring 4) Set minute wheel bridge 5) Fasten minute wheel bridge screw (2 pcs) 6) Check for end shake of minute wheel and conditions of crown extracting and depressing 7) Check for conditions of free running and hand setting	1) Set winding wheel and clutch wheel 2) Set winding stem after lubricating it (watch oil S–4 or Moebius grease "Remontoires") 3) Set setting lever 4) Set setting lever axle spring 5) Fasten setting lever axle spring screw 6) Lubricate tube for yoke, setting lever, winding wheel, clutch wheel, setting wheel, and tube for minute wheel pin (watch oil S–4 or Moebius grease "Remontoires")	1) Set escape wheel and pinion after lubricating upper and lower pivots (Moebius Synt-A-Lube) 2) Set fourth wheel and pinion after lubricating upper and lower pivots (Moebius Synt-A-Lube) 3) Set fourth wheel bridge 4) Fasten fourth wheel bridge screws (2 pcs) 5) Check for end shake and rotating condition of each wheel
Remark Do not adjust to heavy hand setting (make the turn smoothly by suitable pinion folding)	Lubricating portions of setting lever are as follows. 	When rotating condition is not smooth on any wheel, recheck for oil quantity and end shake.
Photo		

Disassembly

13 BARREL BRIDGE

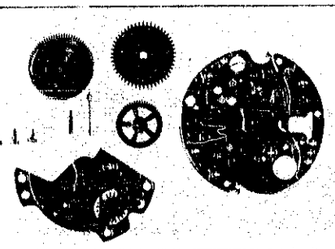
Method

1) Remove barrel bridge screws (2 pcs) and bridge screw, long (1 pce.)
2) Remove barrel bridge
3) Remove setting lever axle
4) Remove ratchet wheel
5) Remove complete barrel with arbor
6) Remove third wheel and pinion
7) Remove sweep second pinion

Remark

It is not necessary to remove oscillating weight axle.

Photo



14 TRAIN-WHEEL BRIDGE

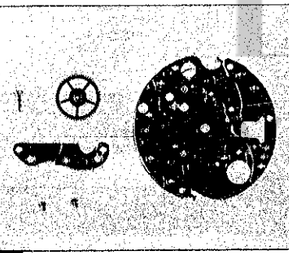
Method

1) Remove cannon pinion
2) Center wheel bridge screw (2 pcs)
3) Remove center wheel bridge
4) Remove center wheel and pinion

Remark

Pull out cannon pinion vertically. If it is pulled out on an inclined position, occasionally the center wheel arbor may bend or break.

Photo



15 CROWN WHEEL

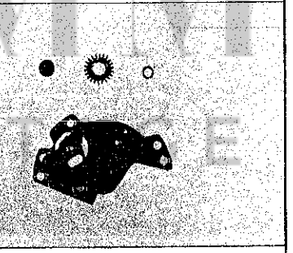
Method

1) Remove crown wheel screw
2) Remove crown wheel
   Remove crown wheel ring

Remark

Crown wheel screw is a left-handed screw. Do not remove click.

Photo



Assembly

4 BARREL BRIDGE

Method

1) Lubricate sweep second pinion and set it (Moebius Synt-A-Lube)
2) Set third wheel and pinion after lubricating upper and lower pivots (watch oil S-4)
3) Set complete barrel with arbor after lubricating upper and lower privots (watch oil S-4 or Moebius grease "Remontoires")
4) Set ratchet wheel
5) Set setting lever axle
6) Set barrel bridge
7) Tighten barrel bridge screws (3 pcs); one is long screw
8) Check for end shake and inspect rotating condition of each wheel

Remark

Before tightening bridge screws, confirm rotating condition of each wheel.

Moebius Synt-A-Lube

3 TRAIN-WHEEL BRIDGE

Method

1) Set center wheel and pinion after lubricating upper and lower pivots
2) Set center wheel bridge
3) Tighten center wheel bridge screw (2 pcs)
4) Turn over movement and lubricate on lower stem
5) Push in cannon pinion
6) Check for end shake of center wheel and pinion
7) Lubricate the lower hole jewel of transmission wheel

Remark

Push in cannon pinion vertically. Initially perform lubrication of transmission wheel lower pivot, because this becomes impossible after completing assembly.
Lubricate them. (watch oil S-4)

2 CROWN WHEEL

Method

1) Set crown wheel ring
2) Lubricate on the side of crown wheel ring (watch oil S-4 or Moebius grease "Remontoires")
3) Set crown wheel
4) Tighten crown wheel screw
5) Confirm rotating condition of crown wheel

Disassembly

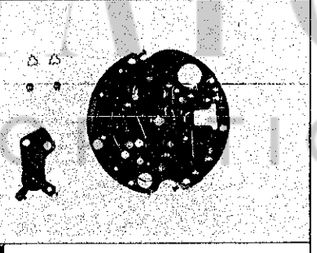
16 DIASHOCK

Method

1) Detach Diashock spring
2) Remove hole jewel with frame left attaching cap jewel

Remark

Photo



Assembly

1 DIASHOCK

Method

1) Place cap jewel with flat surface upward
2) Put drop of oil on its center, holding cap jewel with tweezers
3) Set Diashock hole jewel with frame over oiled cap jewel

Remark

Identification of locking wheel and lubrication method

There are three types of I, II and III locking wheels used in the 25-series automatic watch, the lubrication method different for each type.
When repairing watches, the type must be correctly identified to perform appropriate lubrication.

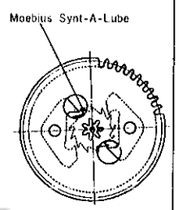
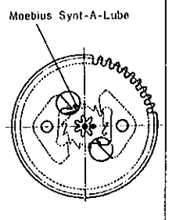
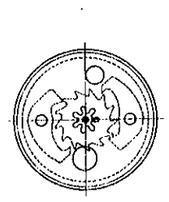
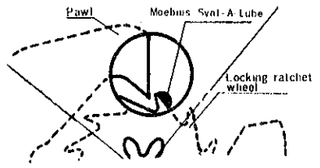
Item \ Type	I	II	III
Rear-view Shape			
	○Tip of pawl visible through viewing hole ○Pivot diameter smaller than type II locking wheel	○Tip of pawl visible through viewing hole ○Pivot diameter larger than type I locking wheel	○Pawl not visible through viewing hole
Lubrication method	Lubricate ratchet of locking wheel by inserting an oiling stick through pawl viewing hole. (small quantity of Moebius Synt-A-Lube 		**Lubrication unnecessary**
Parts number of	First locking wheel, 667031	First locking wheel, 667032	First locking wheel, 667250
Locking wheel correspond	Second locking wheel, 668031	Second locking wheel, 668032	Second locking wheel, 668250

Table 1 Identification of Locking Wheel and Lubrication Method