




# EMMYWATCH

VINTAGE RESTORATIONS

## Seiko 2205A Movement Parts (1)

*Compiled by EmmyWatch - <https://www.emmywatch.com>*



Cal. 2205A

### Characteristics

Casing diameter : 17.20 $\phi$  mm  
 Maximum height : 5.65 mm  
 Vibrations per hour : 28,800  
 Automatic and auxiliary hand winding with sweep second  
 Calendar (date)  
 Instant date setting  
 "Diashock" Shock Resistant Device

112 224

122 220

161 221

171 221

201 220

224 220

225 220

231 220

241 220

245 220

251 220

301 110

310 221

315 220

331 110

341 220

345 220

261 222

271 220

281 221

282 223

283 221

284 220

285 220

381 220

☆382 220

☆383 220

☆383 221

☆383 222

384 220

385 220

387 220

388 220

389 220

☆396 221

481 220

491 180

768 220

014 603

014 604

014 605

011 221

014 317

☆351 221

☆351 222

372 220

373 250

☆193 220

500 221

511 220

514 220

530 220

☆542 221

546 220

551 220

553 220

860 220

556 221

☆801 220

☆801 222

☆801 224

☆801 225

802 220

808 220

810 220

811 220

817 220

880 220

881 220

883 220

012 121

012 129

012 204

012 208

012 263

012 279

012 280

012 407

012 422

012 668

012 670

012 724

012 736

012 746

012 750

390 221

3/4

Calibre No.	Jewels	Style Name	
<b>2205A</b>	<b>17j</b>		
PART NO.	LIST OF MATERIALS	PART NO.	LIST OF MATERIALS
112 224	Barrel & train-wheel bridge	551 220	First reduction wheel click
122 220	Center wheel bridge	553 220	Click spring for first reduction wheel
161 221	Pallet cock	860 220	Intermediate pinion for ratchet wheel
171 221	Balance cock	556 221	Date finger
☆ 193 220	Framework for automatic device with ball-bearing	☆ 801 220	Date dial
201 220	Complete barrel with arbor & mainspring	☆ 801 222	
224 220	Center wheel & pinion with cannon pinion	☆ 801 224	
225 220	Cannon pinion	☆ 801 225	
231 220	Third wheel & pinion	802 220	Date driving wheel
241 220	Fourth wheel & pinion	808 220	Date dial guard
245 220	Sweep second pinion	810 220	Date jumper
251 220	Escape wheel & pinion	811 220	Date jumper spring
261 222	Minute wheel	817 220	Intermediate date wheel
271 220	Hour wheel	880 220	Date corrector
281 221	Setting wheel	881 220	Date corrector lever
282 223	Clutch wheel	883 220	Date corrector spring
283 221	Winding pinion	012 121	Stud screw
284 220	Crown wheel	012 129	Friction spring screw for sweep second pinion
285 220	Ratchet wheel	012 129	Friction spring screw for intermediate pinion
301 110	Jewelled pallet fork & staff	012 204	Pallet cock screw
310 221	Balance complete with stud	012 208	Minute wheel bridge screw
315 220	Balance staff	012 263	Balance cock screw
331 110	Roller with jewel	012 279	Framework screw for automatic device with ball-bearing
341 220	Regulator	012 280	Barrel & train-wheel bridge screw
345 220	Stud holder	012 280	Center wheel bridge screw
☆ 351 221	Winding stem	012 407	Case screw
☆ 351 222		012 422	Screw for oscillating weight
372 220	Joint stem (movement portion)	012 668	Click screw
373 250	Joint stem (case portion)	012 670	Setting lever spring screw
381 220	Click	012 724	Dial screw
☆ 382 220	Click spring	012 736	Setting lever axle spring screw
☆ 383 220	Setting lever	012 746	Screw for 1st reduction wheel click guard
☆ 383 221		012 750	Date dial guard screw
☆ 383 222		011 521	Upper hole jewel for center wheel
384 220	Yoke (Clutch lever)	011 153	Lower hole jewel for center wheel
385 220	Yoke spring (Clutch lever spring)	011 542	Upper hole jewel for 3rd wheel
387 220	Minute wheel bridge	011 542	Lower hole jewel for 3rd wheel
388 220	Setting lever spring	011 541	Upper hole jewel for 4th wheel
389 220	Setting lever axle spring	011 528	Upper hole jewel for escape wheel
390 221	Setting lever axle	011 528	Lower hole jewel for escape wheel
☆ 396 221	Friction spring for sweep second pinion	011 713	Lower hole jewel for sweep second pinion
481 220	Crown wheel ring	011 505	Upper hole jewel for pallet
491 180	Dial washer	011 505	Lower hole jewel for pallet
768 220	Setting lever axle ring	013 014	Tube for barrel & train-wheel bridge screw
014 603	Diashock upper frame	013 014	Tube for center wheel bridge screw (long)
014 604	Diashock lower frame	013 015	Tube for center wheel bridge screw (short)
014 605	Diashock hole jewel with frame	013 016	Tube for date corrector
011 221	Diashock cap jewel	013 016	Tube for setting lever axle spring screw
014 317	Diashock spring		Tube for yoke spring
500 221	Oscillating weight	013 017	Tube for setting lever spring screw
511 220	First reduction wheel		
514 220	Second reduction wheel		
530 220	Friction spring for intermediate pinion		
☆ 542 221	Rocking seat for idle wheel (with wheels)		
546 220	First reduction wheel click guard		

☆⇨ Please see remarks on the next page.

☆⇨ Please see remarks on the next page.  
Items in light letters are not shown in photos.

Calibre No.

2205A

Jewels

17j

Style Name

Remarks :

Framework for automatic device with ball-bearing

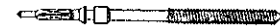
☆ 193 220.....Some movements use the separate parts—Framework for automatic device (Part No.191 220), Ball-bearing complete (Part No.821 220) and Screw for ball-bearing complete (Part No.012 751) — set up as unit. But the above parts can also be replaced by our more convenient part (Part No. 193 220) which unites the above three parts as single unit serving the purpose of the previous three separable parts.

Winding stem ——— Refer to the photograph on the front page and shapes in the lower diagram. ———

☆ 351 221.....Short winding stem (Thread is provided completely on the crown portion.)  
☆ 351 222.....Long winding stem (Thread is provided only on the end of the crown portion.)



☆ 351 221



☆ 351 222

Click spring

☆ 382 220..... 382 110 click spring also acceptable.

Setting lever

There are three types of setting levers. They are used according to the structure of cases and types of winding stems. Select a suitable one by the following procedures referring to the shapes indicated in the photos and Fig. 1.

In case of a one-piece water-resistant case, if an incorrect setting lever for dial diameter is used, the winding stem cannot be pulled out or the movement cannot be set in the case. Attention must be paid to this point. (Refer to Fig. 2, Example of suitable setting lever)

☆ 383 220.....Used for watch with joint stem, or with ordinary winding stem other than one-piece or square type water-resistant case.

☆ 383 221.....Used for one-piece water-resistant case with ordinary winding stem and dial of diameter 17.50~18.00 φmm.

☆ 383 222.....Used for one-piece water-resistant case with ordinary winding stem and dial of diameter 18.50~19.00 φmm.

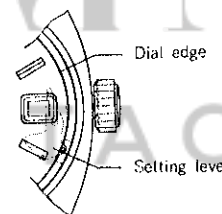
When parts number of the setting lever is unknown or when ordering setting levers other than the above, specify ① Cal. No. ② jewels ③ dial No. and ④ case No.

(Fig. 1)



☆ 383 220 ☆ 383 221 ☆ 383 222

(Fig. 2)



(Example of suitable setting lever)  
Tail of the setting lever is located between the dial and the case.

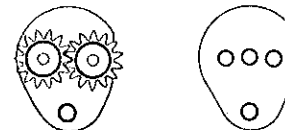
Friction spring for sweep second pinion

☆ 396 221..... 396 110 friction spring for sweep second pinion also acceptable.

Rocking seat for idle wheel (with wheels)

☆ 542 221.....Rocking seat for idle wheel (Part No. 542 220) and Idle wheels (2 pcs., Part No.508 220) are set jointly or sometimes set separately.

☆ 542 221 set in joint with Rocking seat and Idle wheels, can be used in common with the above two types when replacing (Refer to the right diagram).



☆ 542 221 (542 220)

Date dial

☆ 801 220 (Red figures on white background).....Used when both the crown and the date frame are located at 3 o'clock.

☆ 801 222 (Red figures on white background).....Used when the crown is located at 3 o'clock and the date frame at 6 o'clock.

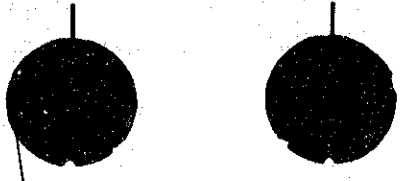
☆ 801 224 (White figures on black background) ...Used when both the crown and the date frame are located at 3 o'clock.










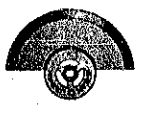

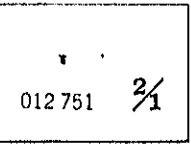
☆ 801 225 (White figures on black background) ...Used when the crown is located at 3 o'clock and the date frame at 6 o'clock.

If the date dial is required in any other type, specify ① Cal. No. ② jewels ③ the crown position ④ the date frame position and ⑤ the dial No.

EMMY WATCH  
VINAGE RESTORATIONS

Calibre No. <b>2205A</b>	Style Name
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 <p>Cal. 2205A</p>	<b>Characteristics</b> Casing diameter : 17.20 φmm Maximum height : 5.65 mm Vibrations per hour : 28,800 Automatic and auxiliary hand winding with sweep second Calendar (date) Instant date setting "Diashock" Shock Resistant Device "Diafix" Oil Lubrication Device
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 <p>112 030</p>	 <p>112 229</p>	 <p>122 227</p>	 <p>122 228</p>	 <p>251 221</p>	 <p>015 591</p>	 <p>015 513</p>
 <p>191 221</p>	 <p>☆193 222</p>	 <p>500 220</p>	 <p>821 220</p>	 <p>012 751 3/1</p>		

Catalog No. 22-05-2

Calibre No. <b>2205A</b>	Jewels 21 j 25 j	Style Name	
⇒ Basic Calibre 2205A 17J Catalog No. 22-05-1			
PART NO.	LIST OF MATERIALS	PART NO.	LIST OF MATERIALS
112 030	Barrel & train-wheel bridge(for 21j)	514 220	Second reduction wheel
112 229	Barrel & train-wheel bridge(for 25j)	530 220	Friction spring for intermediate pinion
122 227	Center wheel bridge (for 25j)	☆542 221	Rocking seat for idle wheel (with wheels)
122 228	Center wheel bridge (for 21j)	546 220	First reduction wheel click guard
161 221	Pallet cock	551 220	First reduction wheel click
171 221	Balance cock	553 220	Click spring for first reduction wheel
191 221	Framework for automatic device (for 25j)	<b>821 220</b>	<b>Ball-bearing complete (for 25j)</b>
☆193 222	Framework for automatic device with ball-bearing (for 21j)	860 220	Intermediate pinion for ratchet wheel
201 220	Complete barrel with arbor & mainspring	556 221	Date finger
224 220	Center wheel & pinion with cannon pinion	☆801 220	
225 220	Cannon pinion	☆801 222	Date dial
231 220	Third wheel & pinion	☆801 224	
241 220	Fourth wheel & pinion	☆801 225	
245 220	Sweep second pinion	☆801 226	
251 220	Escape wheel & pinion (for 21j)	802 220	Date driving wheel
<b>251 221</b>	<b>Escape wheel &amp; pinion (for 25j)</b>	808 220	Date dial guard
261 222	Minute wheel	810 220	Date jumper
271 220	Hour wheel	811 220	Date jumper spring
281 221	Setting wheel	817 220	Intermediate date wheel
282 223	Clutch wheel	880 220	Date corrector
283 221	Winding pinion	881 220	Date corrector lever
284 220	Crown wheel	883 220	Date corrector spring
285 220	Ratchet wheel	012 121	Stud screw
301 110	Jewelled pallet fork & staff	012 129	Friction spring screw for sweep second pinion
310 221	Balance complete with stud	012 129	Friction spring screw for intermediate pinion
315 220	Balance staff	012 204	Pallet cock screw
331 110	Roller with jewel	012 208	Minute wheel bridge screw
341 220	Regulator	012 263	Balance cock screw
345 220	Stud holder	012 279	Framework screw for automatic device
☆351 221	Winding stem	012 280	Barrel & train-wheel bridge screw
☆351 222	Winding stem	012 280	Center wheel bridge screw
372 220	Joint stem (movement portion)	012 407	Case screw
373 250	Joint stem (case portion)	012 422	Screw for oscillating weight
381 220	Click	012 668	Click screw
☆382 220	Click spring	012 670	Setting lever spring screw
☆383 220	Click spring	012 724	Dial screw
☆383 221	Setting lever	012 736	Setting lever axle spring screw
☆383 222	Setting lever	012 746	Screw for 1st reduction wheel click guard
384 220	Yoke (Clutch lever)	012 750	Date dial guard screw
385 220	Yoke spring (Clutch lever spring)	<b>012 751</b>	<b>Screw for ball-bearing complete (for 25j)</b>
387 220	Minute wheel bridge	011 159	Upper hole jewel for barrel
388 220	Setting lever spring	011 153	Lower hole jewel for barrel
389 220	Setting lever axle spring	011 521	Upper hole jewel for center wheel
390 221	Setting lever axle	011 153	Lower hole jewel for center wheel
☆396 221	Friction spring for sweep second pinion	011 542	Upper hole jewel for 3rd wheel
481 220	Crown wheel ring	011 542	Lower hole jewel for 3rd wheel
491 180	Dial washer	011 541	Upper hole jewel for 4th wheel
768 220	Setting lever axle ring	011 541	Lower hole jewel for 4th wheel
014 603	Diashock upper frame	011 528	Upper hole jewel for escape wheel (for 21j)
014 604	Diashock lower frame	011 528	Upper hole jewel for escape wheel
014 605	Diashock hole jewel with frame	011 713	Lower hole jewel for sweep second pinion
011 221	Diashock cap jewel	011 505	Upper hole jewel for pallet
014 317	Diashock spring	011 505	Lower hole jewel for pallet
<b>015 591</b>	<b>Diafix upper hole jewel with frame for escape wheel (for 25j)</b>		
011 221	Diafix cap jewel (for 25j)		
<b>015 513</b>	<b>Diafix spring (for 25j)</b>		
<b>500 220</b>	<b>Oscillating weight</b>		
511 220	First reduction wheel		

— continued on next page —

☆⇒ Please see remarks on the next page.  
As for all other parts not shown here, please refer to the basic calibre  
(Cal. No. **2205A** 17J Catalog No. 22-05-1 Red page).

☆⇒ Please see remarks on the next page.  
Items in light letters are not shown in photos; those parts are interchangeable with the basic calibre  
(Cal. No. **2205A** 17J Catalog No. 22-05-1 Red page).

Calibre No.	<b>2205A</b>	Jewels	21 j 25 j	Style Name	
⇒ Basic Calibre 2205A 17J Catalog No. 22-05-1					

PART NO.	LIST OF MATERIALS	PART NO.	LIST OF MATERIALS
— continued —			
011 157	Upper hole jewel for 1st reduction wheel	013 014	Tube for barrel & train-wheel bridge screw
011 157	Lower hole jewel for 1st reduction wheel (for 25j)	013 014	Tube for center wheel bridge screw (long)
011 157	Upper hole jewel for 2nd reduction wheel (for 25j)	013 015	Tube for center wheel bridge screw (short)
011 157	Lower hole jewel for 2nd reduction wheel (for 25j)	013 016	Tube for date corrector (Tube for setting lever axle spring screw)
		013 017	Tube for yoke spring (Tube for setting lever spring screw)

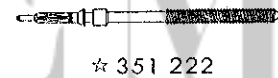
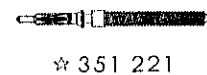
**Remarks :**

**Framework for automatic device with ball-bearing**

☆ 193 222(for 21j)..... Some movements use the separate parts — Framework for automatic device (Part No. 191 222), Ball-bearing complete (Part No. 821 220) and Screw for ball-bearing complete (Part No. 012 751)—set up as unit. But the above parts can also be replaced by our more convenient part (Part No. 193 222) which unites the above three parts as single unit serving the purpose of the previous three separable parts.

**Winding stem** ————— Refer to the photograph on the page of the basic calibre (Catalog No. 22-05-1) and shapes in the lower diagram.

☆ 351 221.....**Short** winding stem (Thread is provided completely on the crown portion.)  
 ☆ 351 222.....**Long** winding stem (Thread is provided only on the end of the crown portion.)



**Click spring**

☆ 382 220..... 382 110 click spring also acceptable.

**Setting lever**

There are three types of setting levers. They are used according to the structure of cases and types of winding stems. Select a suitable one by the following procedures referring to the shapes indicated in Fig. 1.

In case of a one-piece water-resistant case, if an incorrect setting lever for dial diameter is used, the winding stem cannot be pulled out or the movement cannot be set in the case. Attention must be paid to this point. (Refer to Fig. 2, Example of suitable setting lever)

☆ 383 220..... Used for watch with joint stem, or with ordinary winding stem other than one-piece or square type water-resistant case.

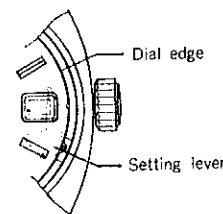
☆ 383 221..... Used for one-piece water-resistant case with ordinary winding stem and dial of diameter 17.50~18.00 φ mm.

☆ 383 222..... Used for one-piece water-resistant case with ordinary winding stem and dial of diameter 18.50~19.00 φ mm.

When parts number of the setting lever is unknown or when ordering setting levers other than the above, specify ① Cal. No. ② jewels ③ dial No. and ④ case No.



(Fig. 1)



(Example of suitable setting lever)  
Tail of the setting lever is located between the dial and the case.

**Friction spring for sweep second pinion**

☆ 396 221..... 396 110 friction spring for sweep second pinion also acceptable.

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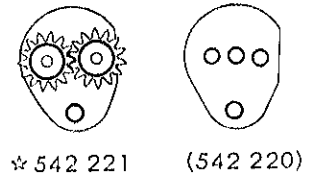
Calibre No.	<b>2205A</b>	Jewels	21 j 25 j	Style Name	
⇒ Basic Calibre 2205A 17J Catalog No. 22-05-1					

**Remarks :** — continued —

**Rocking seat for idle wheel (with wheels)**

☆ 542 221..... Rocking seat for idle wheel (Part No. 542 220) and Idle wheels (2 pcs., Part No. 508 220) are set jointly or sometimes set separately.

☆ 542 221 set in joint with Rocking seat and Idle wheels, can be used in common with the above two types when replacing ☆ 542 221 (Refer to the right diagram).



**Date dial**

☆ 801 220 (Red figures on white background)..... Used when both the crown and the date frame are located at 3 o'clock position.

☆ 801 222 (Red figures on white background)..... Used when the crown is located at 3 o'clock position and the date frame at 6 o'clock position.

☆ 801 224 (White figures on black background)..... Used when both the crown and the date frame are located at 3 o'clock position.

☆ 801 225 (White figures on black background)..... Used when the crown is located at 3 o'clock position and the date frame at 6 o'clock position.

☆ 801 226 (Black figures on white background)..... Used when both the crown and the date frame are located at 3 o'clock position.

If the date dial is required in any other type, specify ① Cal. No. ② jewels ③ the crown position ④ the date frame position and ⑤ dial No.

### (1) Specifications

Casing diameter 17.20mm  
 Height 5.66mm  
 Vibrations per hour 28,800  
 (8 beats per second)

Calendar with instant date setting mechanism (Pull-out type)

Automatic winding (with auxiliary hand winding mechanism)  
 Idle wheel system

### (2) Features

This movement is designed based on calibre 2202, to which automatic winding mechanism is added. Other mechanisms are identical with 2202. Since the automatic winding mechanism can be separated from the other mechanisms, independent assembly of the automatic winding mechanism is possible, and it can be installed on the movement main body as is.

As this automatic winding mechanism adopts an idle wheel system of simple construction of parts, it is excellent in abrasion-resistant and shock-resistant characteristics. Winding ability is also stabilized.

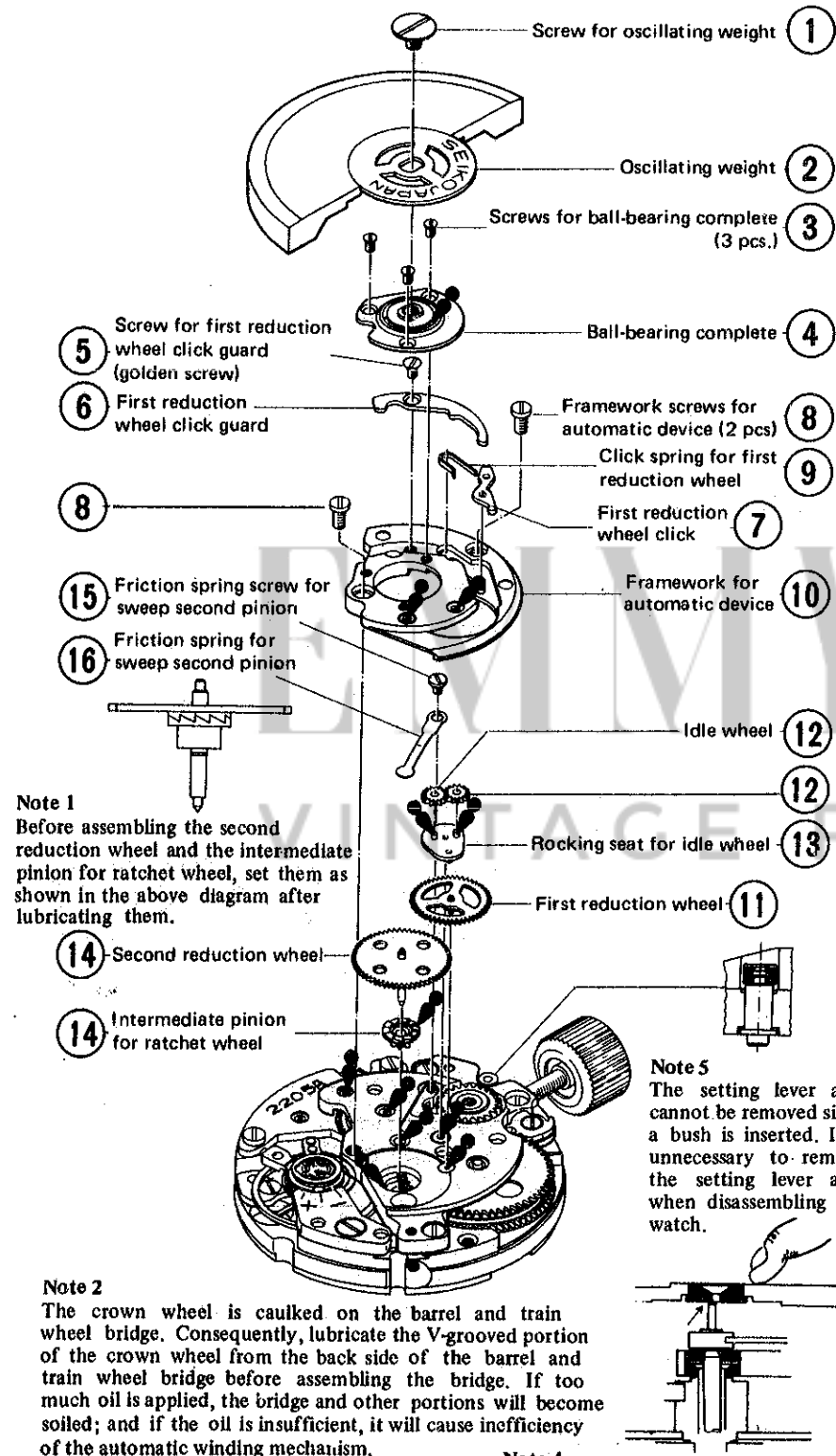
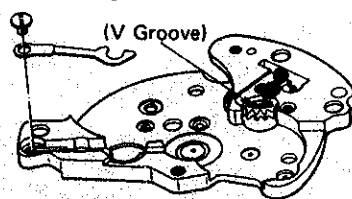
On the other hand, by adopting a simple clutch mechanism, hand winding of the mainspring is achieved smoothly.

### (3) Disassembly and assembly

Refer to 2202A for disassembling and assembling the train wheel, calendar, and date correcting mechanisms.

As for the automatic winding mechanism, disassemble according to Figs. ① - ⑯. Assemble by reversing the above procedures, Figs. ⑯ - ①, paying attention to the notes on the diagrams.

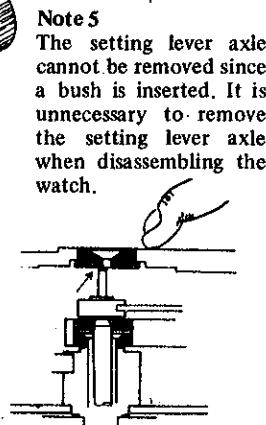
**Note 3**  
 Install the friction spring for intermediate pinion from the back side of the barrel and train wheel bridge before assembling the bridge. Confirm that the tip of the friction spring for intermediate pinion does not rub against the side of the barrel and train wheel bridge, or that its up-and-down motions are smooth. These are related to efficiency of the automatic winding mechanism.



**Note 1**  
 Before assembling the second reduction wheel and the intermediate pinion for ratchet wheel, set them as shown in the above diagram after lubricating them.

**Note 2**  
 The crown wheel is caulked on the barrel and train wheel bridge. Consequently, lubricate the V-grooved portion of the crown wheel from the back side of the barrel and train wheel bridge before assembling the bridge. If too much oil is applied, the bridge and other portions will become soiled; and if the oil is insufficient, it will cause inefficiency of the automatic winding mechanism.

**Note 4**  
 When assembling the barrel and train wheel bridge, if the upper surface of the bridge is forcibly depressed in a condition that the upper pivot of the sweep second pinion and the frame hole of the bridge are not set correctly (refer to the upper diagram), the frame hole will be crushed (at the arrow mark) and it causes stopping or other malfunctions.



### (4) Lubrication

The following colored symbols in the illustrated figures indicate the types of oil, quantities to be applied, and lubricating points. (Always comply with indications in figures.)

#### Types of oil

- ▶ Moebius Synt-A-Lube
- ▶ Seiko watch oil S-4

#### Oil quantity

- Sufficient quantity
- Normal quantity
- Extremely small quantity

### (5) Automatic winding mechanism

When the oscillating weight revolves clockwise, the idle wheel (A) turns counterclockwise by action of the oscillating weight pinion; also the rocking seat for idle wheel revolves in the arrow direction. (The pin of the rocking seat for idle wheel revolves in a range of hole of the barrel and train wheel bridge.) In this case, idle wheel (A) transmits force by meshing with the first reduction wheel, and idle wheel (B) is freed from the first reduction wheel (Refer to Fig. 1)

When the oscillating weight revolves counterclockwise, the idle wheel (A) turns clockwise, moving the rocking seat for idle wheel and disconnecting the first reduction wheel. On the contrary, the idle wheel (B) meshes with the first reduction wheel and transmits force by revolving in the direction of the arrow. Consequently, the first reduction wheel always revolves in one direction (clockwise) to wind up the mainspring. (Refer to Fig. 2)

Force transmission of the automatic winding mechanism is indicated on the right.

The first reduction wheel click prevents reverse revolution of the first reduction wheel by the action of the click spring for the first reduction wheel; that is, it prevents mainspring from loosening.

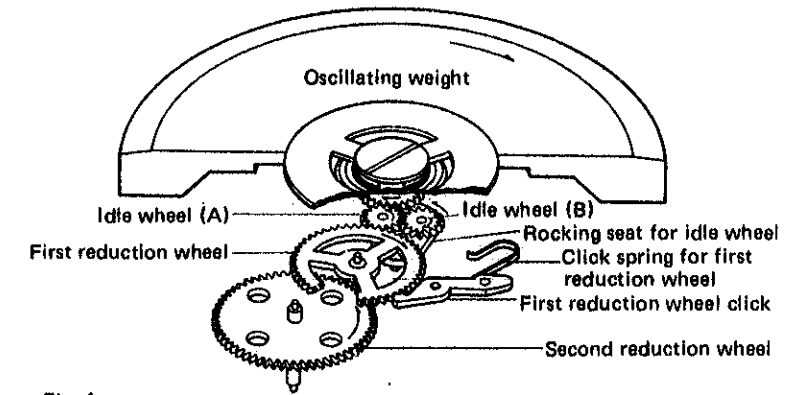


Fig. 1

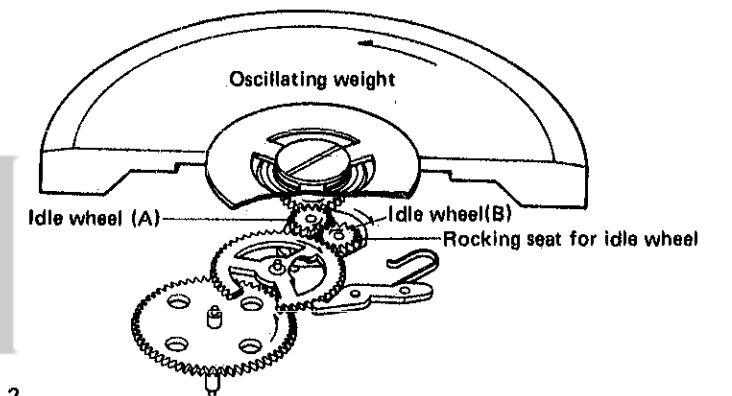
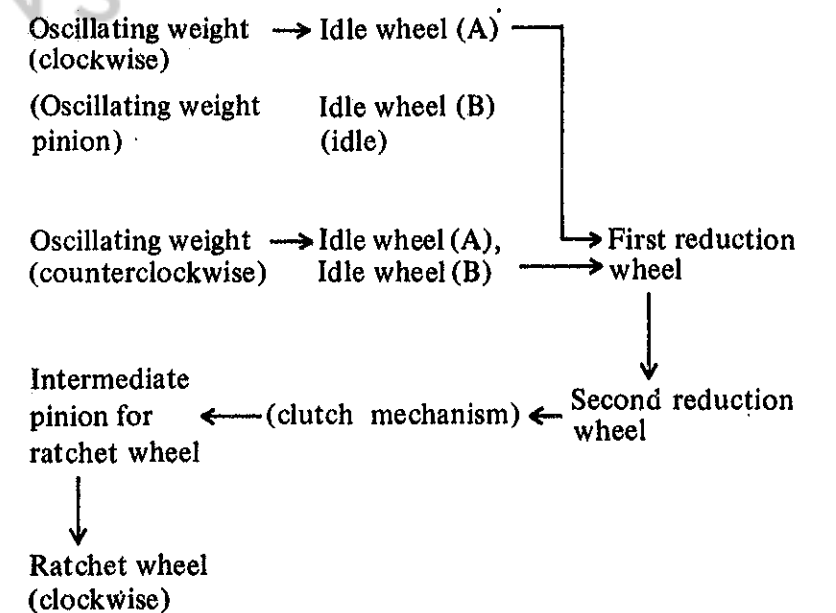


Fig. 2



## 2205A Automatic Winding Mechanism

### (6) Clutch mechanism

The clutch mechanism makes possible both automatic winding and hand winding of the mainspring. Compared with conventional mechanisms, this device is very simple and is the same as meshing of the winding pinion and the clutch wheel. (Refer to Fig. 3)

Force transmission of the hand winding mechanism is as follows:

Crown → Winding pinion → Crown wheel

Intermediate pinion ← Ratchet wheel

(Slip) (Winding the mainspring)

(Refer to Fig. 4)

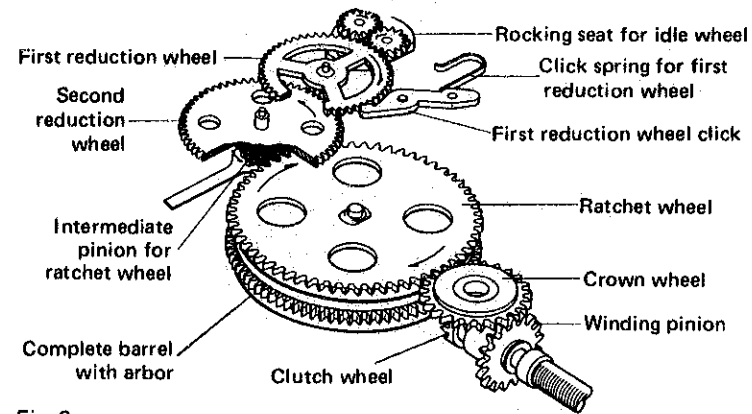


Fig. 3

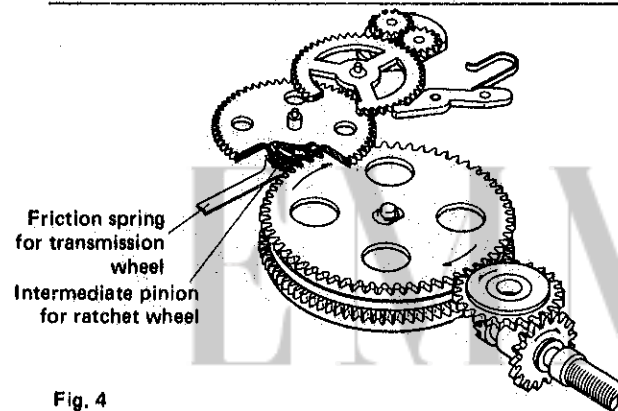
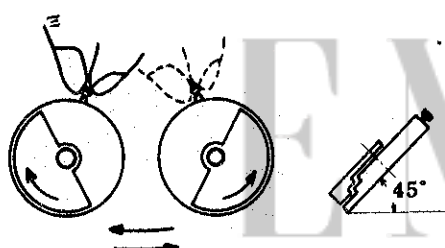
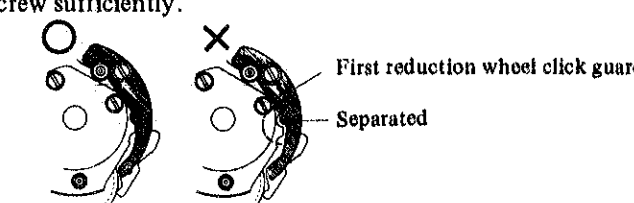
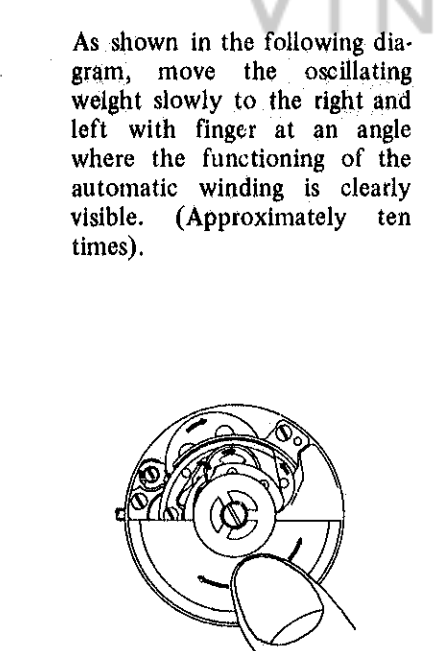
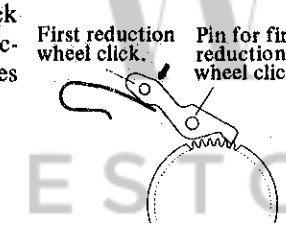
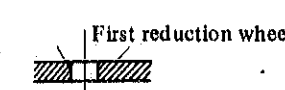

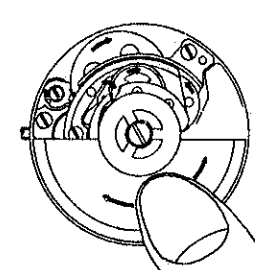
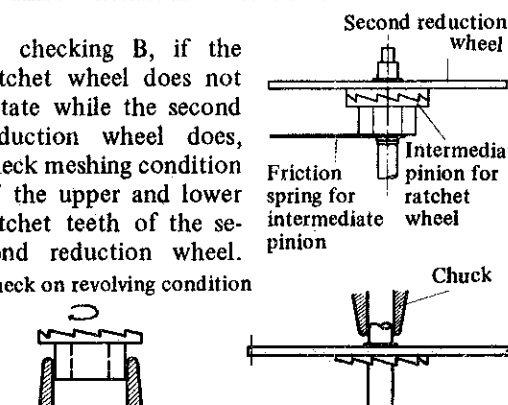
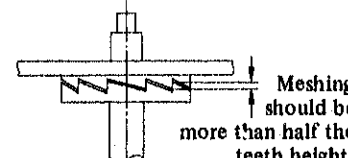
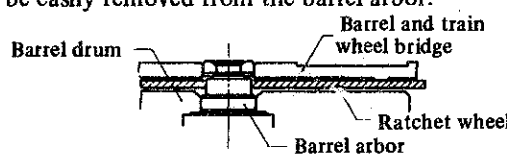
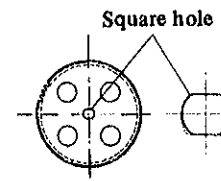


Fig. 4

# 2205A CHECKING ON WATCH STOPPING, AND REPAIRING AND ADJUSTING

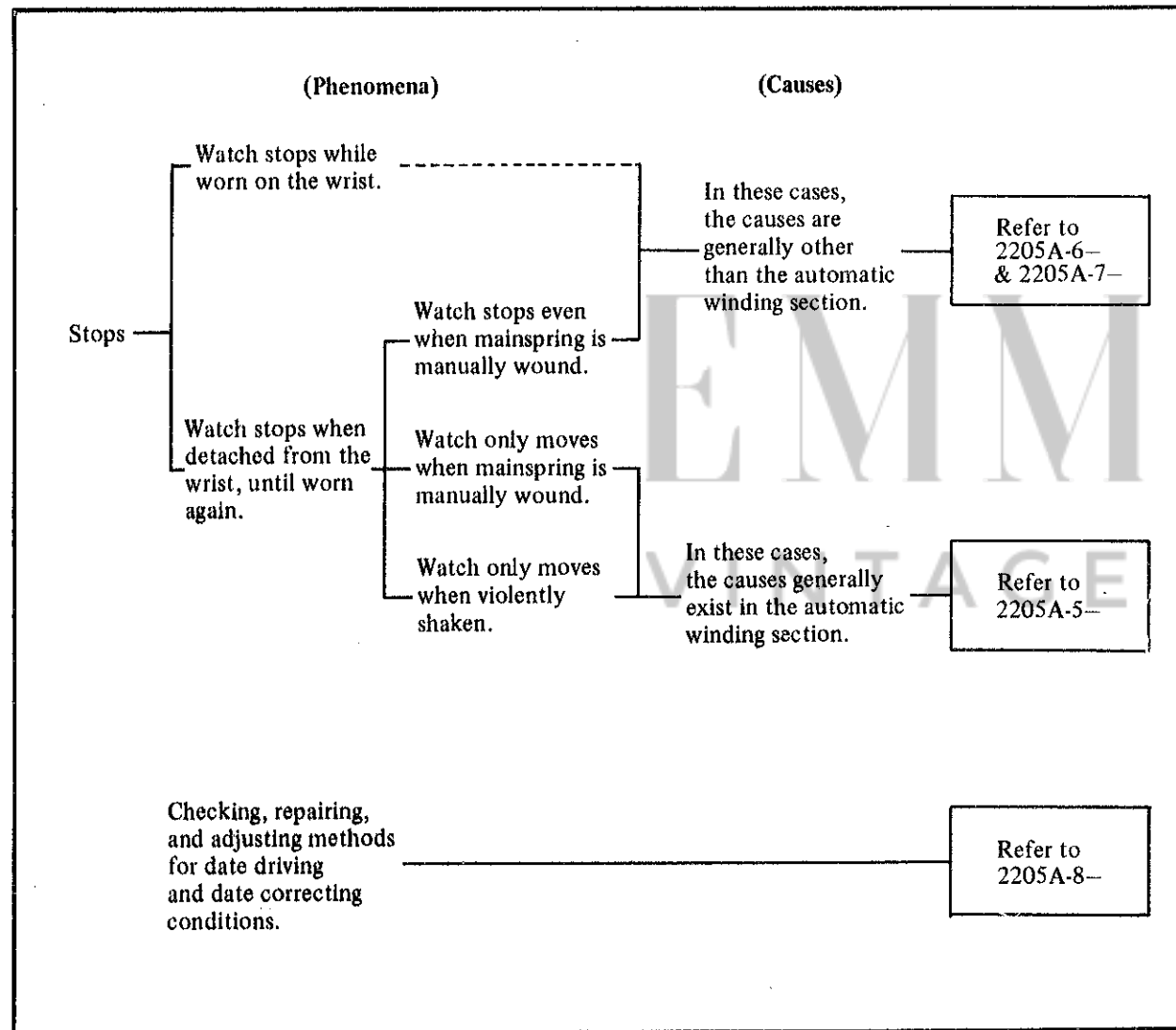
Checking (1)		Checking (2)	Results	Repairing and adjusting method.
A	<p>Incline watch about 45° and shake repeatedly, gently and slowly. Next, wind the main-spring manually about one revolution of the ratchet wheel, then check whether the oscillating weight moves smoothly or does not.</p> 	<p>1 As explained in A, slowly shake the watch and check whether the motion of the oscillating weight meets some resistance. (The oscillating weight may rub against the first reduction wheel click guard.)</p>	<p>Oscillating weight rubs against the first reduction wheel click guard.</p>	<p>While pushing the first reduction wheel click guard toward center portion of the bridge, tighten the screw sufficiently.</p> 
	<p>As shown in the following diagram, move the oscillating weight slowly to the right and left with finger at an angle where the functioning of the automatic winding is clearly visible. (Approximately ten times).</p> 	<p>2 In checking B, check whether the first reduction wheel click moves lightly or does not.</p> 	<p>Does not move lightly (Will not return easily)</p>	<p>If it does not move lightly, slightly expand the hole surface where the pin for first reduction wheel click is inserted.</p>  <p>Apply a small quantity of oil (Moebius A) to the head and side portion of the pin for first reduction wheel click.</p> 
B	<p>As shown in the following diagram, move the oscillating weight slowly to the right and left with finger at an angle where the functioning of the automatic winding is clearly visible. (Approximately ten times).</p> 	<p>3 In checking B, if the ratchet wheel does not rotate while the second reduction wheel does, check meshing condition of the upper and lower ratchet teeth of the second reduction wheel. Check on revolving condition</p> 	<p>Shallow meshing of the upper and lower ratchet teeth.</p> <p>Loosened mechanism.</p>	<p>If burrs exist between the upper and lower teeth, remove them. If teeth meshing is still shallow, replace the second reduction wheel.</p>  <p>Meshing should be more than half the teeth height.</p> <p>When the revolving condition is loose, replace the parts. Even when the transmission wheel holder spring is not effective, it may sometimes unmesh the meshing.</p>
	<p>For malfunction 1. in the automatic winding section.</p>	<p>4 Check whether the ratchet wheel can or can not be easily removed from the barrel arbor.</p> 	<p>Ratchet wheel does not easily removed from the barrel arbor.</p>	<p>Should installing the barrel arbor prove too difficult, use a fine file and slightly expand the ratchet wheel hole. Expand the hole as shown by dotted line in diagram.</p> 



## 2205A CHECKING ON WATCH STOPPING, AND REPAIRING AND ADJUSTING

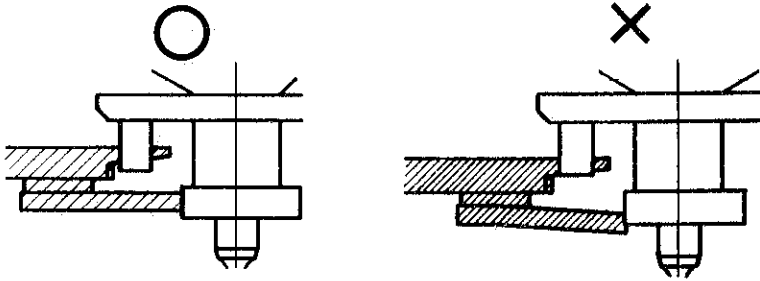
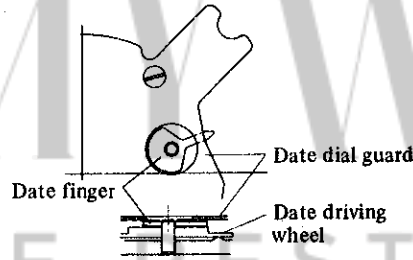
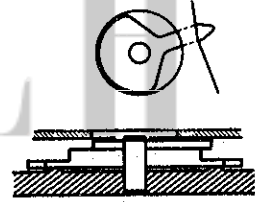
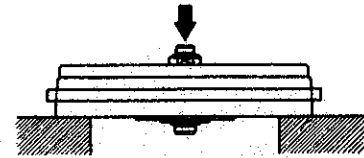
The pages of this guide mention ways and means of checking, repairing and adjusting unfunctioning Cal. 2205 watches and related further details on Lady's Automatic Winding Watches.

When accepting orders for repairing watches, always make sure of the following behavior to discover causes of the malfunction.



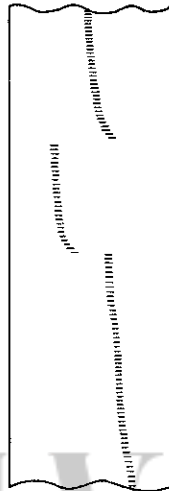
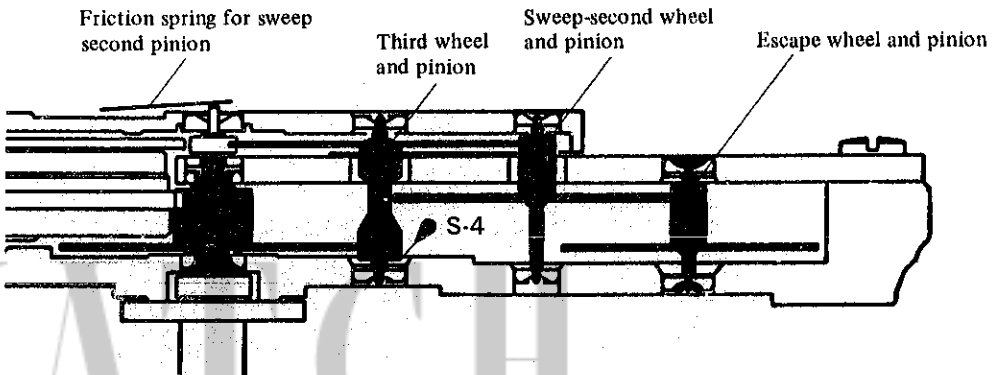
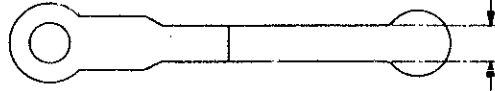

## 2205A CHECKING ON WATCH STOPPING, AND REPAIRING AND ADJUSTING

### 2. When malfunction exists elsewhere than in the automatic winding section (1)

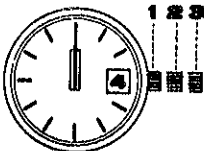
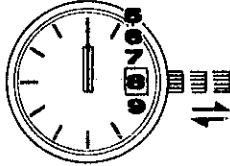
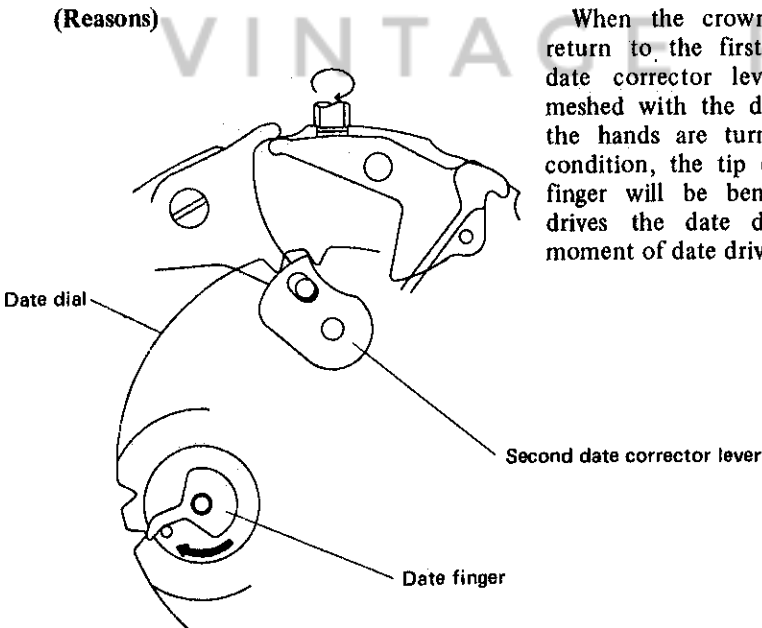
		Checking	Repairing and adjusting methods
When watch does not move even with mainspring fully wound.	1	Check whether or not the pallet tip is detached from the roller with jewel.	Adjust so that the tip comes to the center of the roller with jewel. 
	2	Check whether or not the pallet tip rubs against the roller jewel by turning over the watch.	
	3	When the train wheel does not rotate even when the balance and the pallet are detached, check on the following: a. Is there any dust or adherence? b. Is the date finger raised, thus rubbing the hole (inner side) of the date dial guard? Refer to the diagram on the right.	 
When amplitude of the balance movement is not sufficient even when the mainspring is manually wound.	4	Check on shake of the train wheel (shake in upper and lower direction). a. Does the teeth of center wheel and pinion rub the barrel due to too much shake of the center wheel and pinion? (Check position of the upper hole jewel for center wheel.) b. Is there any shake between the barrel and barrel arbor?	Correct shake of the train wheel. Correct shake of the center wheel bridge as follows or make replacement. 1. Remove the jewel with a chisel. 2. Narrow the hole diameter on the bridge (Diagram a.) 3. Drive in the jewel (Align jewel height with the bridge surface as shown in diagram b.) Create shake by lightly striking the barrel arbor from opposite side of the cover.
	5	Check for oil shortage on the pallet jewels	Wash the pallet with benzine and apply oil. (Moebius A) to the hole jewel. 

## 2205A CHECKING ON WATCH STOPPING, AND REPAIRING AND ADJUSTING

### 3. When malfunction exists elsewhere than in the automatic winding section (2)

	Checking	Repairing and adjusting methods.
<p>When watch moves and stops intermediately or starts to move given a light shock.</p>	<p><b>1</b> Check watch for interrupted beating rate as shown in diagram when measuring watch with timegrapher.</p>  <p style="text-align: center;">↓</p> <p>Check whether or not the torque of mainspring is transmitted sufficiently and the train wheel rotates lightly.</p>	<p>When the beating rate appears to be interrupted, thoroughly wash the third wheel and pinion, sweep-second wheel and pinion, and the escape wheel and pinion.</p> <p>Using Ultrasonic washer is recommended. When using a brush for washing, wash well the wheels and pinions.</p>  <p>After washing, if shake of wheels still exists or teeth tips are damaged, or interrupted beating rate still exist, then the sweep-second wheel and pinion and the escape wheel and pinion should be replaced. Apply small quantity of S-4 oil to lower pivot of the third wheel and pinion.</p>
	<p><b>2</b> Check on shake of the third wheel and pinion, sweep second wheel and pinion, escape wheel and pinion and teeth tips.</p>	<p>If malfunction still exists, adjust as follows:</p> <p>When the position has slipped  Adjust so that the pivot end of the sweep second pinion enters the range indicated by the arrows.</p> <p>When the spring is too strong or too weak  Bending of the tip some 5-6 times the thickness of the spring is sufficient.</p>
	<p><b>3</b> Check on installation position of the friction spring for sweep-second pinion and see how it presses.</p> <p>Has the installation position slipped? Is the pressing force of the friction spring for sweep-second pinion too strong or too weak?</p>	
	<p><b>4</b> In this case, check on oil shortage of the pallet jewels.</p>	

# 2205A CHECKING ON WATCH STOPPING, AND REPAIRING AND ADJUSTING

	Checking	Repairing and Adjusting Method
<p>When date driving fails, or when the crown does not smoothly return from the second click to the first click after date correction, the following inspection and repair procedures are recommended.</p> 	<p>As shown in the diagram below, make date correction by pulling out crown and check returning condition.</p>  <ol style="list-style-type: none"> <li>Date is changed by pulling crown out to the second click.</li> <li>Then, detach the finger, and slightly rotate crown. If it does not, in this condition, return to the first click, it is faulty.</li> </ol> <p>(Reasons)</p> <p>When the crown does not return to the first click, the date corrector lever remains meshed with the date dial. If the hands are turned in this condition, the tip of the date finger will be bent, since it drives the date dial at the moment of date driving.</p> 	<ol style="list-style-type: none"> <li>Apply sufficient amount of silicon grease to the crown gasket.</li> <li>In case of water resistant case, if the winding stem contacts the plate ring or the crown pipe of the case, adjust the crown position to the center.</li> <li>When the winding stem or the crown have been replaced and the clearance between crown and case is widened, the pipe packing of crown might become detached, and the crown refuse to return at the second click. Then reduce clearance to minimum between the crown and the case.</li> <li>When the date finger is bent or split, replace it.</li> </ol> 