SERVICE AND REPAIR DATA
ON HAMILTON AUTOMATICS
GRADE 658, 17 Jewels—Screw Rotor
GRADES 661, 667, 17 Jewels—Bolt Rotor
GRADES 662*, 690*, 17 Jewels—Bolt Rotor-Calendar
GRADE 664, 25 Jewels—Bolt Rotor
GRADE 665, 23 Jewels—Bolt Rotor

*FOR DETAILS OF CALENDAR MECHANISM SEE SERVICE BULLETIN 208.

HAMILTON SERVICE BULLETIN 207A

HAMILTON AUTOMATIC—a self-winding rotor watch whose oscillating weight winds the mainspring as it turns in either direction, not checked by banking stops.

Two main objectives determined its design:

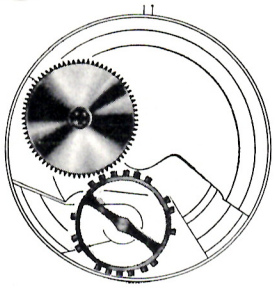
1. ***Minimum amount of wear and tear,*** achieved by adopting very simple mechanism, and by mutually well balanced members and an efficient, patented system.
2. ***Ease of dismantling,*** so as to make cleaning and oiling operations as simple as possible.

The new Hamilton Automatic is as simple as it is ingenious; its design will delight every watchmaker.

—A miracle of accuracy satisfying the most exacting customer.

—A masculine timepiece in handsome, rugged cases.

An Automatic watch in the Hamilton tradition of fine workmanship.



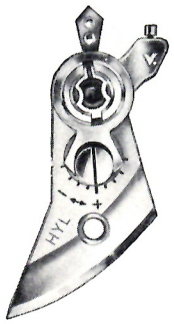
Direct drive sweep second; simple, rugged construction.

Large barrel provides more than adequate power reserve.

Unbreakable and stainless mainspring, specially produced for the Automatic.

Brake spring prevents over-winding of the mainspring—new design, dependable and regular in operation.

Extra large balance wheel assures great accuracy.



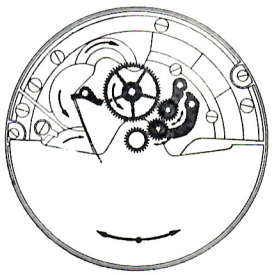
Anti-magnetic compensating and self-adjusting hairspring.

Balance wheel pivots shock-protected.

Two-piece regulator controlled by an eccentric permitting both rapid ***and*** very precise regulation. Graduations equal 20 seconds.

All parts fully interchangeable.

Rotor-type oscillating weight rotating freely round its axle; no banking stops, therefore no shocks transmitted to the movement. The pivot rests in sturdy jewels with a simple bolt arrangement and protected against breakage. Mainspring is positively wound by rotor movement in either direction, even the smallest displacement being effective.



Self-winding mechanism protected by four patents, ***of remarkable simplicity.*** Purely mechanical in operation, it possesses no complex or delicate parts.

The high efficiency of the system permits the use of a relatively light rotor, hence all parts are less subject ***to wear and tear.***

Self-winding gears protected by a special clutch when watch is wound manually.

Repairs easily handled, as all parts of self-winding device are held fast to bridge when movement is dismantled.

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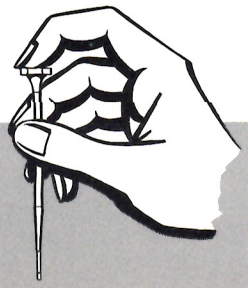
THE HAMILTON WATCH CO. LANCASTER, PENNSYLVANIA



SERVICE BULLETIN

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Hamilton
AUTOMATIC

EXAMINATION, DISMANTLING

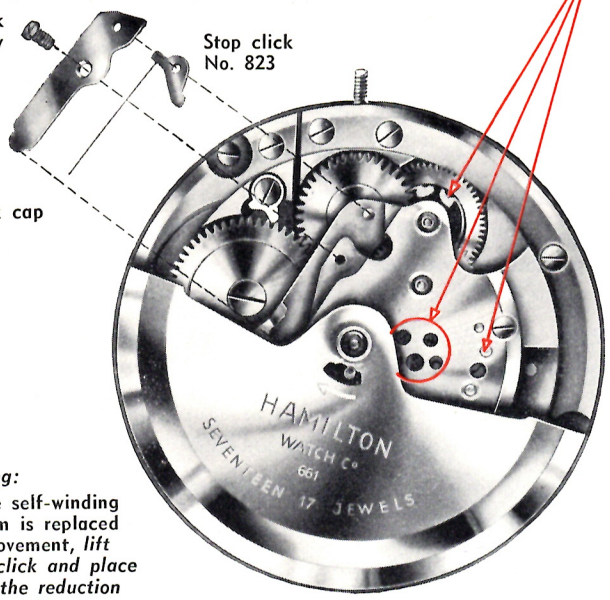
Without touching the self-winding mechanism at all . . .

—you can remove the detent.

Stop click cap screw No. 849

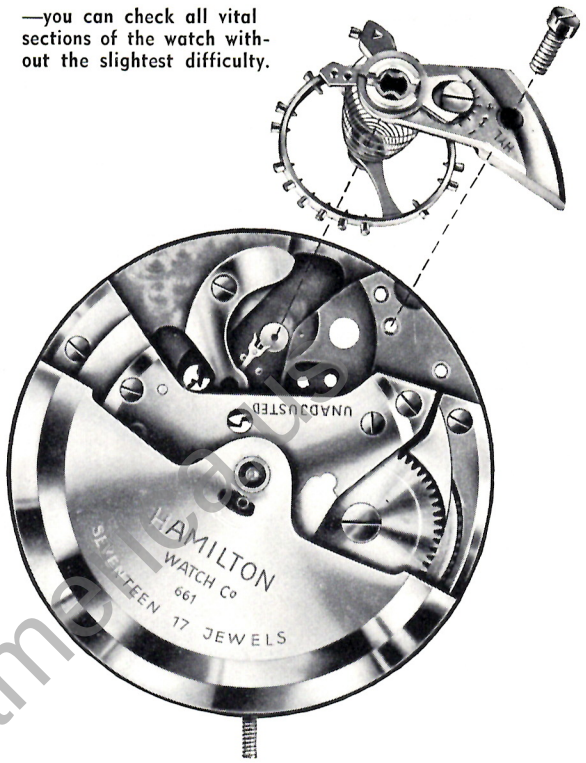
Stop click No. 823

Stop click cap No. 824

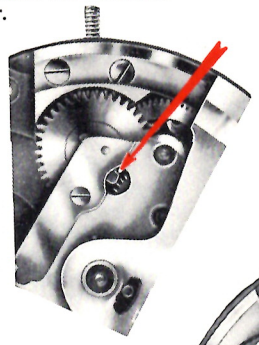


—you can check every single function of the automatic mechanism.

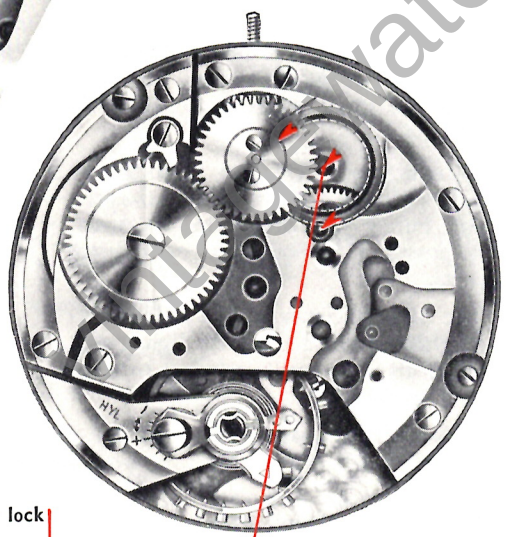
—you can check all vital sections of the watch without the slightest difficulty.



Assembling:
When the self-winding mechanism is replaced on the movement, *lift the stop click and place it beside the reduction gear.*



Movement



Coupling gear lock No. 838
Do not take apart when cleaning.

Coupling gear, complete No. 835

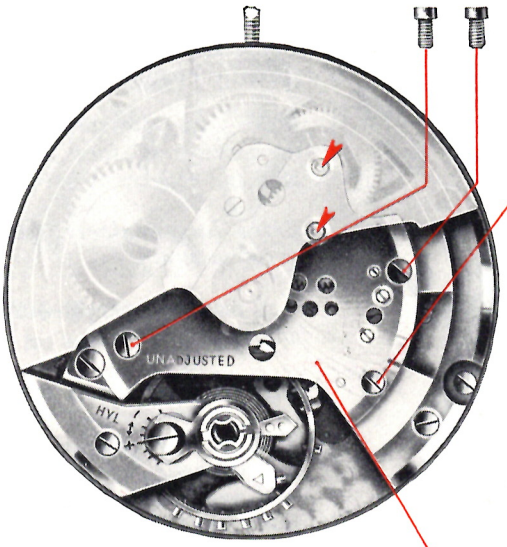
Do not oil!

Coupling gear No. 836

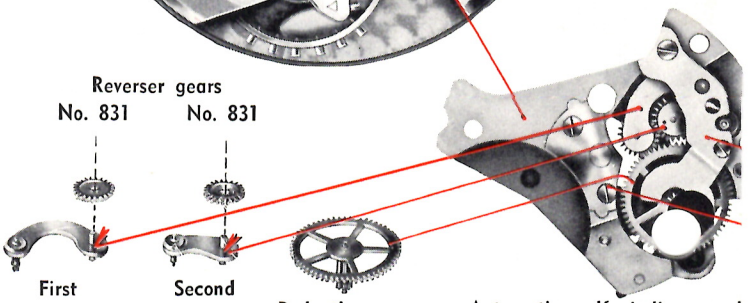
Blocking cam with pinion No. 837

Simply remove the three screws No. 847 and you can lift the entire self-winding mechanism off the movement.

No. 847



Reverser gears
No. 831 No. 831



First reverser arm No. 839

Second reverser arm No. 832

Reduction gear No. 828

Automatic self-winding mechanism in place (seen from below), bridge alone.

Grease with "Hamilton" STG 21 LUBE. The basic movement is oiled in the usual manner. Hamilton Material Catalog part numbers.

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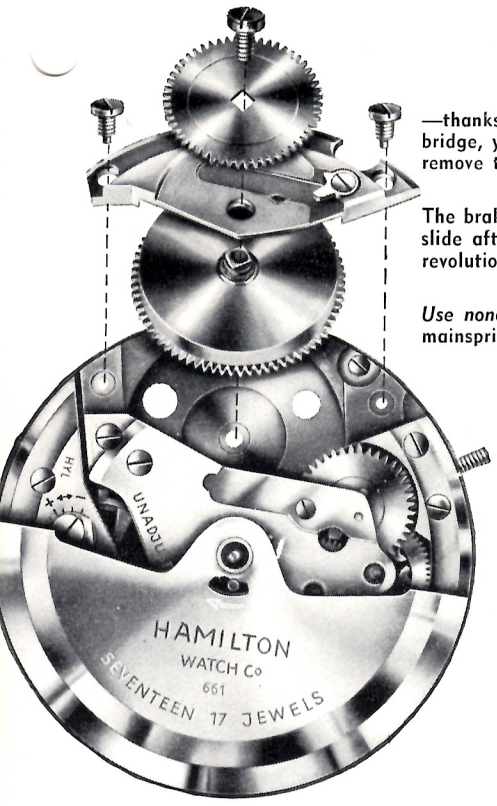
AND ASSEMBLING

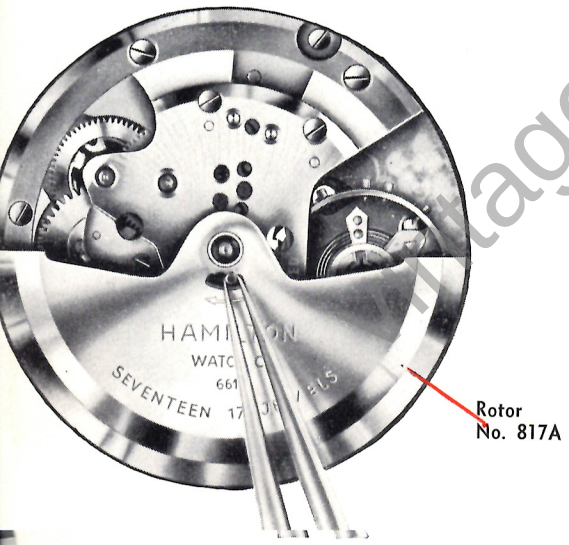


—thanks to its independent bridge, you can easily remove the barrel.

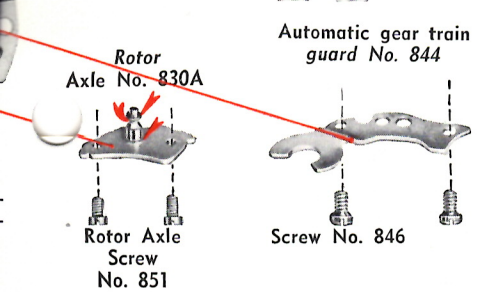
The brake spring will slide after 5¼ winding revolutions.

Use none but Hamilton mainsprings No. 821.

Pressing the pin in the direction of the arrow releases the rotor for removal.



Rotor No. 817A



Rotor Axle No. 830A

Automatic gear train guard No. 844

Rotor Axle Screw No. 851

Screw No. 846

SERVICE SUGGESTIONS

TWO PIECE REGULATOR—The easiest method of disassembling the two piece regulator is to remove the entire Incabloc mounting from the balance cock. Place balance cock on the bench top with regulator side down. Carefully remove the Incabloc mounting by removing the bolt (clip spring) from its underside. This can be done with a screw driver blade or tweezer point. The Incabloc mounting then comes free of the balance cock and the two piece regulator is easily removed.

To assemble, place the regulator cam in its recess in the balance cock. Place the Incabloc mounting on the bench, upside down; place the regulator follower on the Incabloc mounting; then place the regulator (with pins) in the recess of the regulator follower. Place the balance cock over the Incabloc mounting, at the same time placing the regulator cam in the fork of the regulator follower. Hold the balance cock down securely and replace the bolt (clip spring).

MAINSPRING BRIDLE—A small quantity of Hamilton STG 21 LUBE should be placed in the barrel so as to permit the bridle to slip. Make sure that the hook end of the mainspring is pinched sufficiently tight, so that one end of the mainspring bridle can be inserted in the hook and will stay there during the winding in process. The curve of the bridle is in the opposite direction to the curve of the mainspring. With the bridle held securely by the mainspring hook, wind the mainspring in with a winder until about an inch and a half remains to be wound in. When this point is reached, bend the free end of the bridle back, so as to enter the mainspring winder. When the free end of the bridle has entered the winder, the remainder of the spring can be wound in. The mainspring is then inserted in the barrel in the usual manner, which will put the bridle between the coils of the mainspring at the hook end.

ROTOR BOLT—The rotor bolt fastener can be disengaged by moving the bolt pin in the direction of the arrow engraved on the rotor. Simply move the rotor bolt pin from its locked position notch to the next notch and the rotor can be removed from its axle.

ROTOR SCREW—In grade 658 the rotor is fastened by a screw (Part No. 854). Both upper and lower rotor jewels are the same in grade 658.

COUPLING GEAR—The coupling gear consists of three parts, the coupling wheel, coupling gear lock, and the blocking cam with pinion. The blocking cam with pinion should be removed for cleaning. This can be done by grasping across the piece with tweezers and squeezing slightly to remove the blocking cam spring section from the groove in the wheel. Do not remove the coupling gear lock from the wheel, the blocking cam only should be removed.

REASSEMBLING AND OILING—The winding wheel should be free and without excess shake. It should be carefully lubricated with Hamilton STG 21 LUBE. Check the action of the bridle; this should start to slip after five and one half turns of winding.

Turn the automatic work bridge upside down. Lubricate the pins on the first reverser and the second reverser with Hamilton STG 21 LUBE. Put on the reverser gears; assemble the reversers to the automatic device bridge, with the reverser gears down, and the longer end of the reverser arbors up. Assemble and fasten the automatic device guard; fasten the rotor axle with its two screws, making sure that they are tight. Lubricate the lower pivot holes of the coupling gear and the reduction gear with Hamilton STG 21 LUBE. It is not necessary to lubricate the pivots of the reversers.

Assemble the blocking cam with pinion into the coupling gear, after having lubricated the lower part of the arbor of the coupling gear with Hamilton STG 21 LUBE, and then insert the end of the spring part of the blocking cam in the groove of the wheel. *Do not lubricate the groove in the coupling gear.* Put the coupling gear on the movement (it passes beneath the winding wheel with the pinion up).

Assemble the automatic device bridge with the complete mechanism mounted on it, and be sure that the pivots (upper coupling gear pivot, and the lower reduction gear pivot and reverser pivots) enter their respective holes. Fasten the bridge with its three screws and check freedom and endshake of the moving parts. Put on the stop click, which is mounted on a pin; check the set of the spring, screw down the stop click cap.

Lubricate the upper pivot holes of the coupling gear and the reduction gear, and then the two pivots and the upper shoulder of the rotor axle, as well as the upper corner of the groove; Hamilton STG 21 LUBE should be used throughout. Put on the rotor, turning it slightly to assist the engagement of the wheels. Push the rotor bolt pin the opposite direction to the arrow; *check the freedom of the rotor, and the action of the self-winding mechanism as a whole.*

In the basic movement Hamilton PML No. 92 oil should be used wherever oil is indicated. Hamilton STG 21 LUBE is used throughout the automatic mechanism as well as on the winding and setting parts of the basic movement. Hamilton PML No. 92 and Hamilton STG 21 LUBE are available from your Hamilton Materials Dealer.

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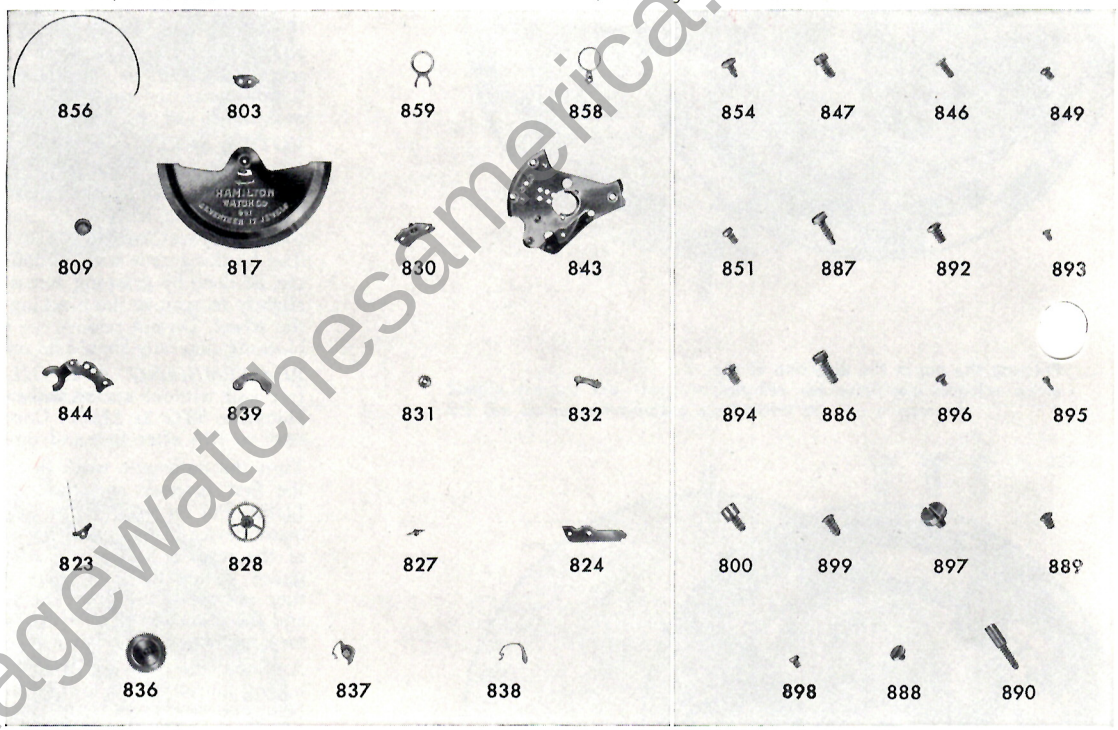
SPARE PARTS FOR GRADES 658-661-662-664-665-667-690

Part No.	Description
811	Arbor, barrel
834	Arbor, pallet
839	Arm, first reverser, complete
832	Arm, second reverser, complete
830	Axle, rotor (screw type), grade 658
830A	Axle, rotor (bolt type)
853	Balance, with screws
855	Balance, complete
805	Barrel and cap
7309	Bolt, Incabloc
915	Bolt, rotor, grades 661-662-664-665
843	Bridge, automatic device
856	Bridle, mainspring
885	Bushing for coupling gear lower
878	Bushing for coupling gear upper
868	Bushing for reverser lower
864	Bushing for reverser upper
862	Bushing for reduction gear lower
860	Bushing for reduction gear upper
806	Bushing for sweep second lower
837	Cam, blocking c/w pinion
809	Cam, regulator
902	Cap, date train, grade 662
813	Cap, dial train
824	Cap, stop click
819	Click
823	Click, stop c/w spring
815	Clutch
865	Collet, hairspring
906	Date, jumper, grade 662
836	Gear, coupling
835	Gear, coupling, complete
831	Gear, first or second reverser
903	Gear, indexing, grade 662
904	Gear, intermediate date, grade 662
828	Gear, reduction c/w pinion
844	Guard, automatic device
810	Hub, winding wheel
917	Incabloc unit lower
916	Incabloc unit upper
905	Indicator, date, grade 662
879	Endstone, Incabloc, upper
880	Endstone, Incabloc, lower
877	Jewel, Balance, Incabloc, upper or lower
869	Jewel, third upper
870	Jewel, third lower
871	Jewel, sweep second upper
872	Jewel, sweep second lower
873	Jewel, escape upper
874	Jewel, escape lower
875	Jewel, pallet upper
876	Jewel, pallet lower
862A	Jewel, reduction gear lower
883	Jewel, roller
801	Jewel, rotor upper, bolt type
802	Jewel, rotor, lower, bolt type, or upper or lower, screw type
881	Stone, pallet, receiving
682	Stone, pallet, discharging
833	Jewel, reverser upper, grades 664-665
867	Jewel, auxiliary reverser upper, grades 664-665
891	Jewel, coupling wheel upper, grades 664-665
919	Jewel, coupling wheel lower, grades 664-665
920	Jewel, reduction gear upper, grades 664-665
921	Jewel, reverser lower, grade 665
922	Jewel, auxiliary reverser lower, grade 665
818	Lever, clutch
838	Lock, coupling gear
822	Lever, setting, refill 205
821	Mainspring only
857	Pallet fork and arbor
829	Pinion, cannon, refill 206
907	Pinion, cannon, grade 662
814	Pinion, winding, refill 207
803	Plate, thrust, jeweled
803A	Plate, thrust, unjeweled
858	Regulator with pins
859	Regulator follower
863	Roller, combination, with pin
817	Rotor, complete, screw type, grade 658
817A	Rotor, complete, bolt type, grade 661
817B	Rotor, complete, bolt type, grade 662
817C	Rotor, complete, bolt type, grade 664
817D	Rotor, complete, bolt type, grade 665
847	Screw, automatic device bridge
846	Screw, automatic device guard
884	Screw, balance
896	Screw, balance lower, cap
886	Screw, balance cock
887	Screw, bridge
900	Screw, case (clamp)
901	Screw, case, special (half head)
923	Screw, case (ring)
892	Screw, center cock
888	Screw, click
908	Screw, date indexing gear, grade 662
909	Screw, date train cap, grade 662
918	Screw, dial, grade 662
890	Screw, dial foot
889	Screw, dial train cap
895	Screw, hairspring stud
910	Screw, intermediate date gear, grade 662
894	Screw, pallet cock
897	Screw, ratchet wheel
854	Screw, rotor
851	Screw, rotor axle
899	Screw, setting cap spring
800	Screw, setting lever
849	Screw, stop click cap
893	Screw, thrust plate
898	Screw, winding wheel
820	Spring, click, refill 208
825	Spring, clutch lever
911	Spring, date indexing gear, grade 662
912	Spring, date jumper, grade 662
861	Spring, hair
812	Spring, jewel, Incabloc
840	Spring, setting cap
827	Staff, balance, Incabloc, refill 209
826	Stem, winding, refill 210
866	Stud, hairspring
804	Washer, hour wheel
845	Wheel, center and pinion
913	Wheel, center seconds (fourth), grade 662
848	Wheel, third and pinion
850	Wheel, sweep second and pinion
852	Wheel, escape and pinion
841	Wheel, hour
914	Wheel, hour c/w date gear, grade 662
842	Wheel, minute
807	Wheel, ratchet
816	Wheel, setting
808	Wheel, winding



(SCREWS ENLARGED)

ILLUSTRATED PARTS (By Number)

Part No.	Description
800	Screw, setting lever
803	Thrust plate
809	Regulator cam
817A	Rotor, complete, bolt type
823	Click, stop, complete with spring
824	Cap, stop click
827	Staff, balance, Incabloc
828	Gear, reduction (transmission wheel)
830	Axle, rotor (screw type)
830B	Axle, rotor (bolt type)
831	Gear, reverser (first or second)
832	Arm, second reverser, complete
835	Gear, coupling, complete (not illustrated)
836	Gear, coupling, only
837	Cam, blocking, with pinion
838	Lock, coupling gear
839	Arm, first reverser, complete
843	Bridge, upper, for automatic device
844	Guard, for automatic device
846	Screw, automatic device guard
847	Screw, automatic device bridge
849	Screw, stop click cap
851	Screw, rotor axle
854	Screw, rotor
856	Mainspring bridle
858	Regulator with pins
859	Regulator follower
886	Screw, balance cock
887	Screw, bridge
888	Screw, click
889	Screw, dial train cap
890	Screw, dial foot
892	Screw, center cock
893	Screw, thrust plate
894	Screw, pallet cock
895	Screw, hairspring stud
896	Screw, balance lower cap
897	Screw, ratchet wheel
898	Screw, winding wheel
899	Screw, setting cap spring

Order repair parts through your wholesaler, giving the numbers and names, thus insuring prompt and efficient deliveries.

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