Technical Data

Hamilton Watch Company

LANCASTER, PENNSYLVANIA

INDEX
T. D. 120

15000-9-15-36 1000-9-4-40
1000-5-26-37 1500-8-1-41
1000-4-25-38 300-5-21-46
1000-9-27-39

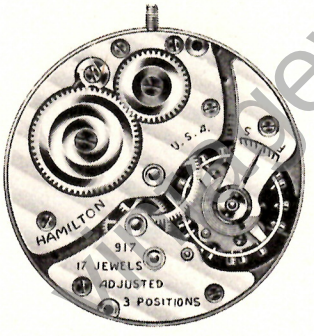
SUBJECT:

Grades 917 and 921 Pocket Watches
Construction Features and Service Information

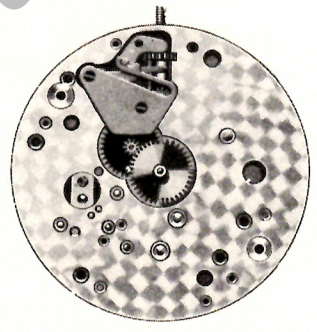
The new Grades 917 and 921 Hamilton Pocket Watches are a distinct advance in fine watch construction. They are the result of the most modern developments of our Research Laboratory, combined with sound engineering fundamentals which have been proven by our many years experience in the exclusive manufacture of fine watches. An examination of these movements will reveal that they are of exceptionally sturdy construction throughout. The pillar plate and bridges are unusually rigid, yet nowhere have clearances or accessibility been sacrificed.

True interchangeability of parts, an exclusive Hamilton feature, is provided throughout, except, of course, in the case of the hairspring.

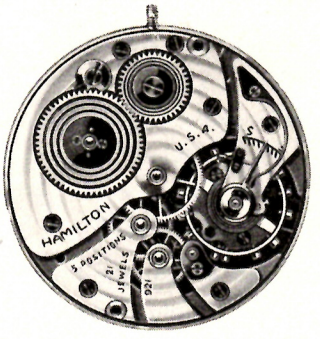
The Grade 917 movement is the first in its price class to be adjusted to three positions. This has been made possible by the special die and tool equipment and the precision methods used at the Hamilton factory.



Grade 917



Dial Side, 917



Grade 921

(Illustrations are actual size)

GRADE 917

Plates and bridges made of nickel, attractively damaskeened, and plated to afford maximum protection against tarnish and scratches—interchangeable parts—the latest improved friction jeweling—dependable, simplified stemwork—Elinvar hairspring and monometallic balance with built in temperature adjustments—17 ruby and sapphire jewels—adjusted to 3 positions.

GRADE 921

Plates and bridges made of nickel, attractively damaskeened, and plated to afford maximum protection against tarnish and scratches—interchangeable parts—improved friction jeweling—dependable, simplified stemwork—Elinvar hairspring and monometallic balance with built in temperature adjustments—highly efficient jeweled motor barrel unit—21 ruby and sapphire jewels—adjusted to 5 positions.

STEMWORK

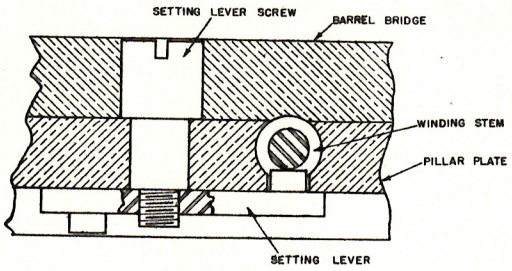


Figure 1

The improved stemwork in these movements is very simple and dependable. All parts have been designed very ruggedly to withstand abuse, assure security and function smoothly.

The setting lever screw is blued to distinguish it from the bridge screws. It should also be noted that this screw has no collar to retain the screw under the barrel bridge. (See figure 1.) After loosening the screw it is necessary to maintain a slight pressure with the screw driver in order to disengage the setting lever pin from the winding stem to permit removal of the stem. The purpose of this arrangement is to avoid the possibility of forcing the setting lever against the dial.

BALANCE AND HAIRSPRING ASSEMBLY

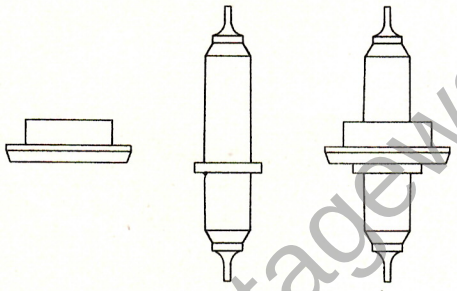


Figure 2

These movements are equipped with the exclusive Elinvar hairspring and solid monometallic balance unit, which minimizes the effects of magnetism, moisture and temperature changes.

The balance staff is of two piece construction (figure 2), providing the most convenient method possible for replacing broken staffs, and always insuring satisfactory repair work. By properly supporting the balance wheel hub on a staking tool the staff can be driven out directly. When driving in a new staff the balance should be placed on a staking stand as shown in figure 3, making sure the hole in the stump is smaller than diameter of hub thus avoiding distortion of balance arm. The collar on the staff is used as a driving shoulder, and the punch used should fit the staff very closely so that the pressure of the punch will be uniform all around the collar.

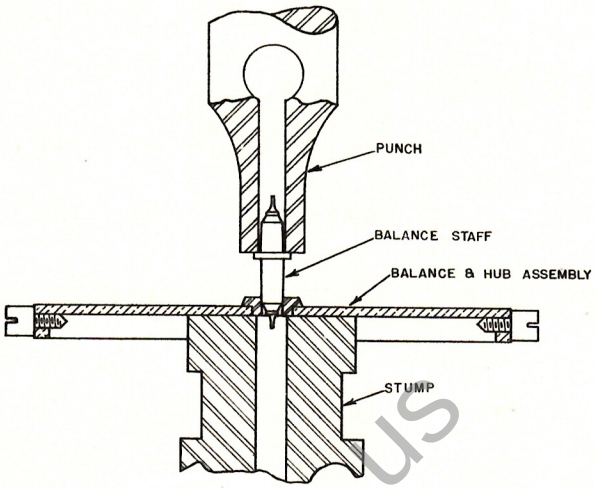


Figure 3

MOTOR BARREL UNIT

A new type of jeweled motor barrel unit has been incorporated in the design of the grade 921 movement. The assembly and component parts are illustrated in figures 4 and 5 respectively. The floating mainspring hook (H) permits greater freedom and self adjustment of the mainspring in the barrel, resulting in a very smooth transfer of power to the train.

In dismantling this unit it is preferable to first remove the ratchet wheel screws and ratchet wheel and then take off the barrel bridge.

The procedure in assembling is as follows:

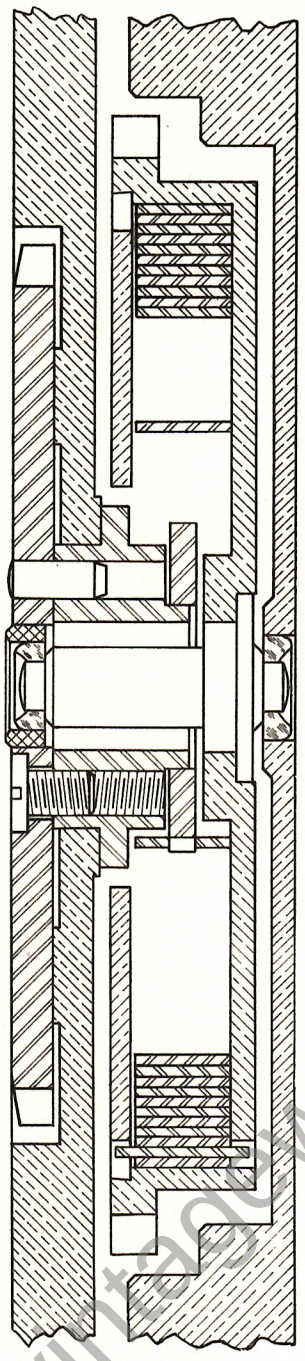
1. Wind the mainspring in the barrel, oil and snap on the cap.

2. Insert the floating mainspring hook (H) so that it engages the inner terminal of the mainspring.

3. Insert the square of the ratchet wheel arbor (E) into the mainspring hook and lubricate the ratchet wheel arbor.

4. Place this assembly on the pillar plate, along with the center wheel, and assemble the barrel bridge.

5. Lubricate the ratchet wheel seat on the barrel bridge, and fit on the ratchet wheel. This is done by lining up the wheel on the two dowel pins. Then, maintaining a slight pressure on the ratchet with the left index finger, move the barrel so that the arbor pivot enters the jewel hole. (It is well to protect the ratchet wheel with chamois or soft cloth.)



Motor Barrel Assembly

Figure 4

The barrel upper jewel and setting are friction driven into the ratchet wheel. This, combined with the dowel pin arrangement for locating the ratchet on the ratchet wheel arbor, always insures a perfect upright between the upper and lower jewels.

The barrel arbor is staked permanently to the barrel.

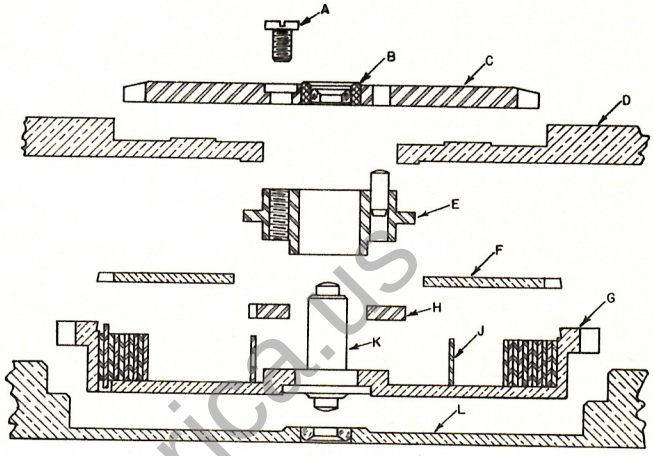


Figure 5

A—Ratchet Wheel Screw	F—Barrel Cap
B—Barrel Upper Jewel and Setting	G—Barrel
C—Ratchet Wheel	H—Mainspring Hook
D—Barrel Bridge	J—Mainspring
E—Ratchet Wheel Arbor	K—Barrel Arbor
	L—Pillar Plate

FRICTION JEWELING

The Hamilton method of improved friction jeweling is another important feature of these movements. Replacement of broken jewels is simple and quickly done. When dismantling the watch for cleaning it is only necessary to remove the endstone caps, the hole jewels being left undisturbed in the plate and bridge.

For detailed information regarding Friction Jeweling see Hamilton Technical Data Bulletins T. D. No. 102 and 119.

These movements are timed and tested on the Time-Microscope* to guarantee accurate and dependable timekeeping.

*"Time-Microscope" Reg. U.S. Pat. Off.