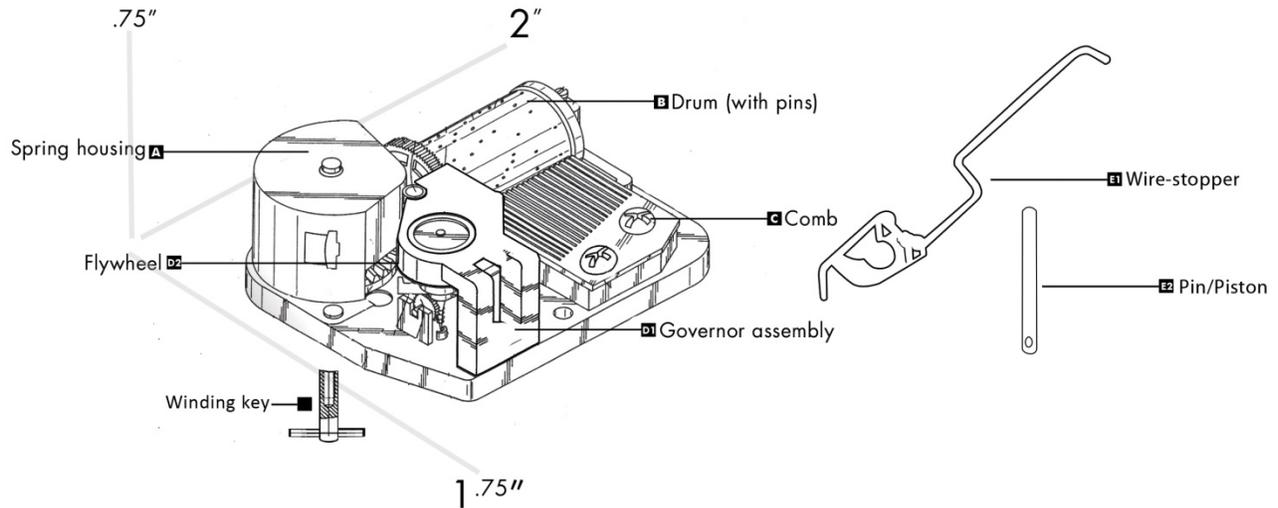


18 NOTE MECHANICAL MOVEMENT DIAGRAM

Explanation of components that form the musical mechanism



- A. **Spring housing (clock-spring, ratchet wheel / winding key)** - The clock spring is the driving force behind a music box mechanism. The spring is wound using a ratchet wheel attached to a winding key. This builds up tension in the spring. Depending on the note size, it can produce a playing time of anywhere from 2-3 minutes thru 20 minutes or more.
- B. **Drum (with pins)** - The drum is a preprogrammed cylinder with pins that protrude that strike the teeth of the comb to produces a sound (note) at the intended time.
- C. **Comb (vibration plate)** - Similar to the teeth on a comb, the vibration plate is composed on teeth (notes) that are unique from each other. When the pins from the drum strike the shorter teeth, it produces a high pitch sound. The longer teeth produce a much lower pitch sound.

(Fact: The comb and drum are unique to a particular melody and are not interchangeable. Replacing either part will produce unintended sounds.)

- D. **Governor Assembly & flywheel** - The governor assembly regulates the force produced by the clock spring. As the spring releases tension, the flywheel (governor) spins using air to create frictional resistance to maintain the speed or tempo of the melody.
- E. **Optional Wire-stopper and piston** - The wire-stopper and pin are key additions to a music box movement. The wire-stopper and pin work together with the lid of the music box to function as an "on and off" switch.

The first part to installing a music box movement into your box is to decide in advance if you want to include a "on and off" type feature. Understanding how the wire-stopper works will assist you not only in its installation but also the placement within the box.

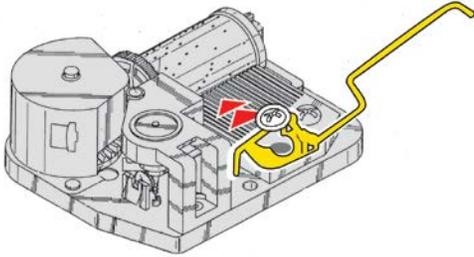
INSTALLATION (*wire-stopper to movement*)

Step 1 Loosen (but do not remove*) the left side screw on comb

Step 2 Place wire-stopper base with open side facing away from you (towards drum) and slide under screw. Tighten screw.

The wire-stopper should now be mounted on the movement with the short end facing left (towards the governor) and the long end to the right (as shown on diagram to the left).

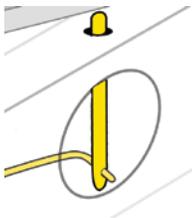
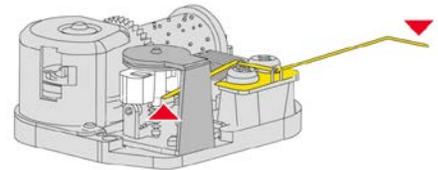
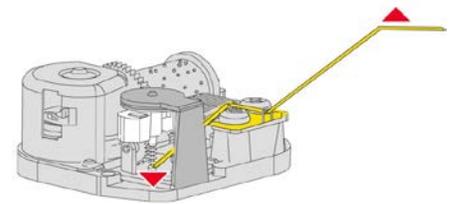
** Removing a screw or loosening both screws on the comb can cause it to be displaced. Realignment of the comb requires years of experience to master.*



HOW IT WORKS (*wire-stopper + piston*)

Once the wire-stopper has been installed it should resemble the movement illustrated in the diagram to the right. The pressure of the tiny spring on the center of the wire will naturally position the short end downward resting below the fly wheel in the governor assembly. The long end will sit higher.

Pressing down on the long end will cause the short end to move upwards blocking the flywheel from spinning (thus preventing the music from playing).



The "piston" is a metal or brass rod that sits vertically in the wall of the box and is what makes physical contact with the lid of the box. A hole is pre-drilled at the bottom of the piston. This is where the wire-stopper is slipped into the rod. This enables the rod to suspend vertically as shown on your left.

Since the configuration of your box is unique, explicit instructions is not possible. However, the diagrams to your right illustrates how the placement of the movement is critical when using the wire-stopper and piston to enable the lid to trigger the music.

The key factor is placing the movement towards the rear of the box. This is due to the amount of weight needed to push down on the piston. The closer the movement is to the hinge, the more weight the lid provides. Thus forcing the piston down triggering the wire-stopper to move up and block the fly-wheel from spinning (stopping the music).

