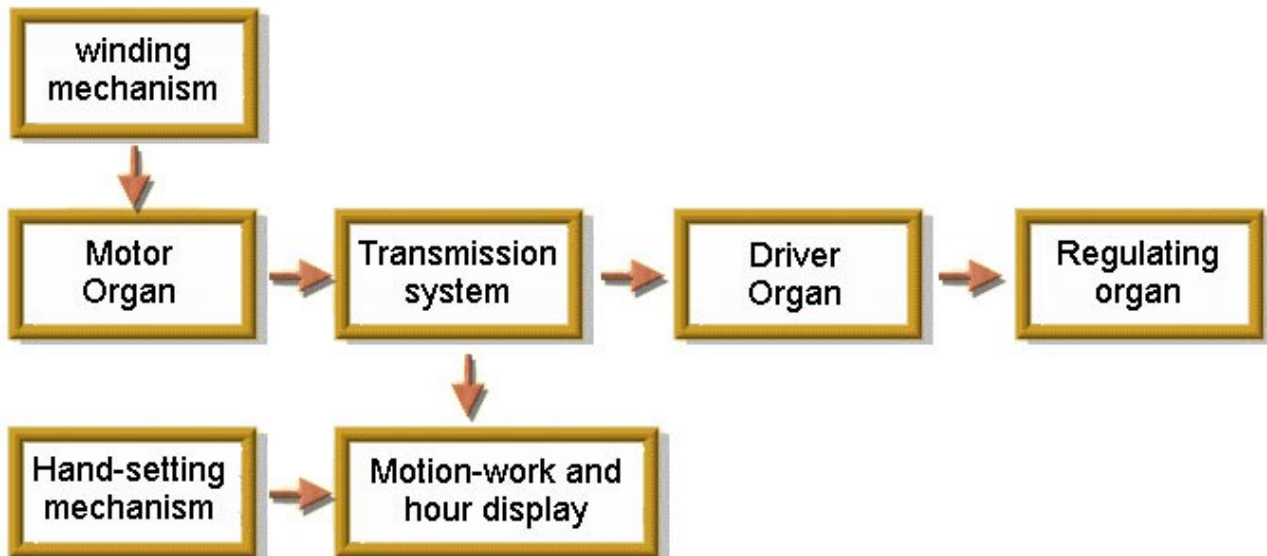


Working of a simple mechanical watch

Sketch of a mechanical watch :



The two sides of a mechanical watch :



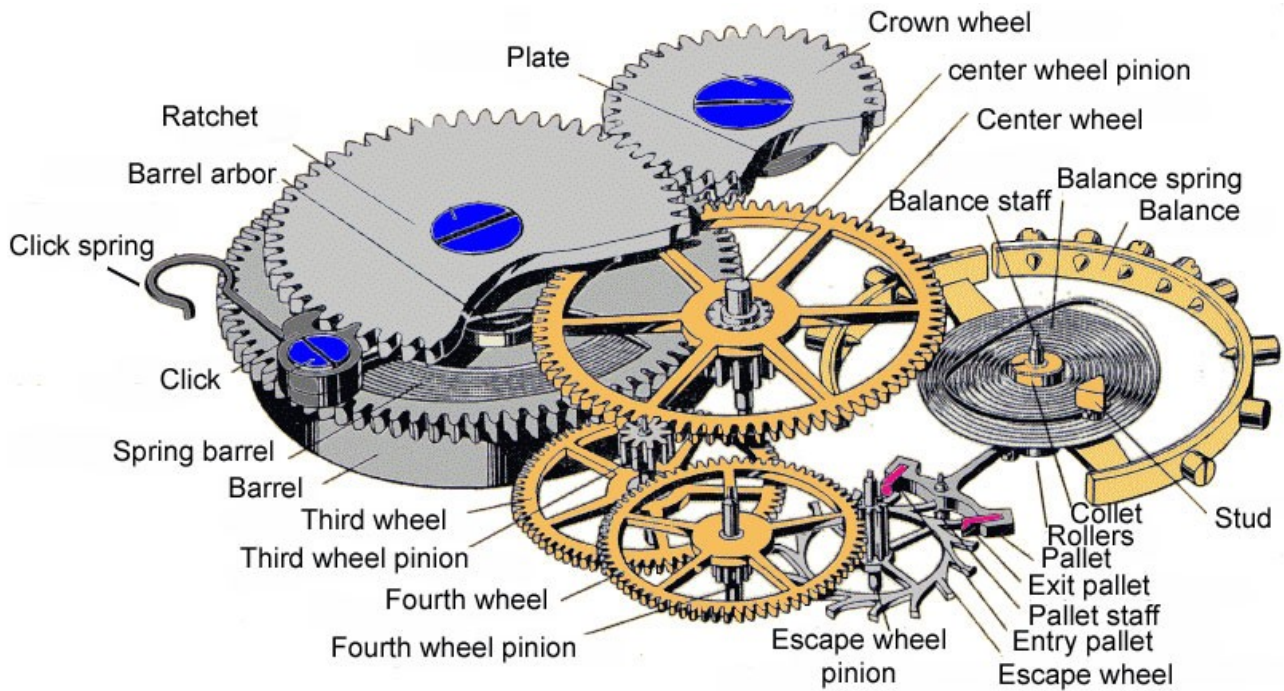
Geartrain side

This is the side you could see if on the back of your watch there was a glass.

On this side is the mechanism that works the watch.

This side is made up of the main plate that holds the geartrain and the bridges.

Terminology of the geartrain



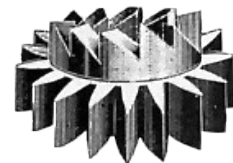
Working:

When you wind up your watch with the crown, you tighten its spring.

The winding stem



is equipped with a



winding pinion

and a sliding pinion (or wig-wag pinion).



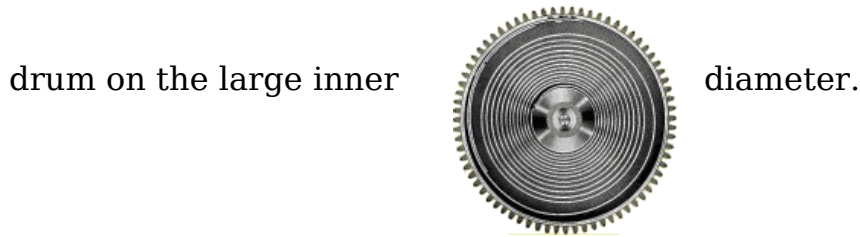
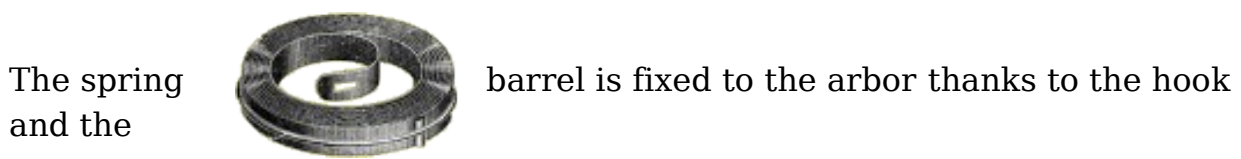
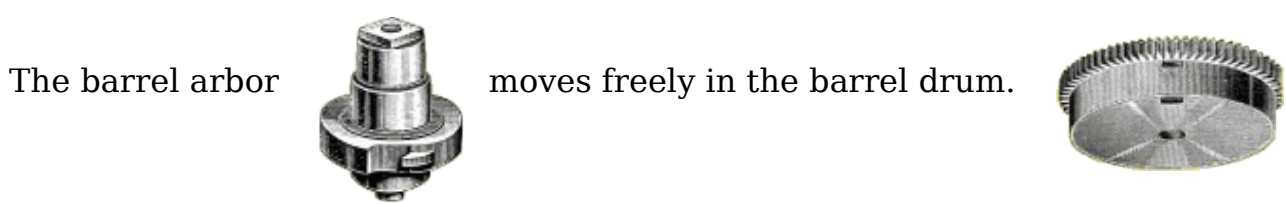
The hole of the wig-wag pinion is square and lays freely on the square part of the stem.

When you wind up your watch, the wig-wag pinion is held against the winding pinion thanks to the yoke.

The square part of the stem drives the wig-wag pinion that in turn drives the winding pinion thanks to its "Breguet" tothing.

Thanks to the crown wheel, the winding pinion drives the ratchet that is fixed on the square part of the barrel arbor.

The click prevents the ratchet from coming back and thus from unwinding again the spring barrel.



To sum up :

When you wind up your watch, you tighten to its maximum the spring around the barrel arbour.

Then, when your piece works, the spring wants to get back to its initial position. In consequence, it pulls the barrel drum that in turn transmits the driving force to the geartrain.

The driving force reaches the escapement. The escapement transmits gradually the driving force to the balance.

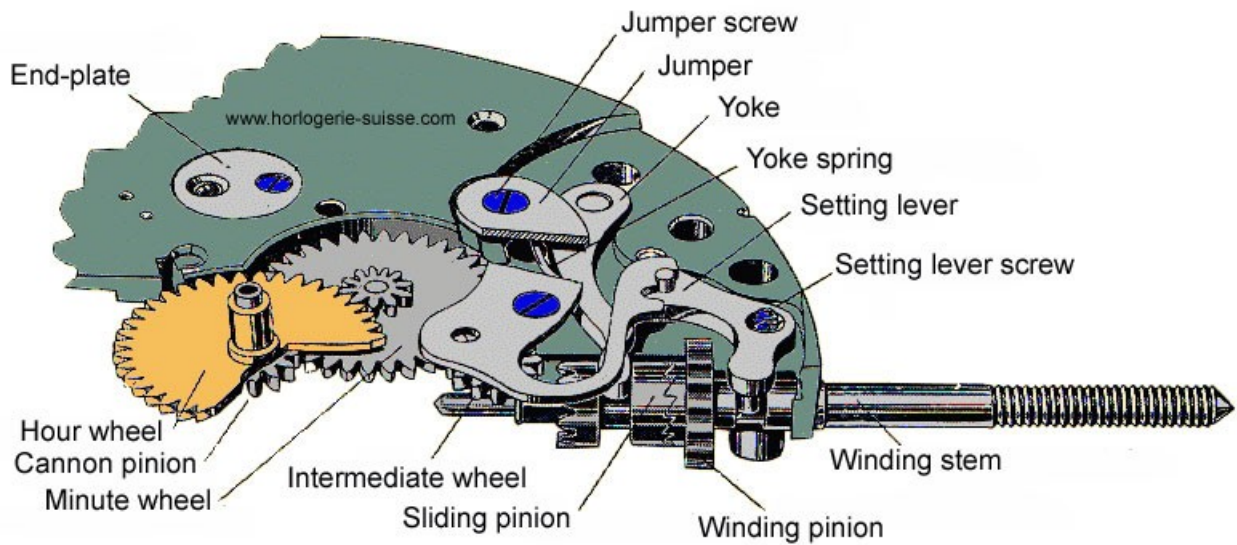
Thanks to this force, the balance swings and your watch works.

Winding Mechanism side

This is the side of your watch that is under the dial and the hands.
On this side are the winding mechanism and the hand-setting mechanism.



Winding terminology



Working:

See above for the reassembling

The hand-setting: When you pull the winding stem in order to regulate your watch, the setting lever, thanks to its stud that enters into the recess of the stem, is set in motion. This movement of the setting lever pushes the yoke forward. In consequence, the sliding pinion engages with the intermediate wheel.

Then, the intermediate wheel engages with the minute wheel that in turn engages with the cannon-pinion, that holds the minute hand, and with the hour wheel, that holds the hour hand.

In the meanwhile, the winding pinion is free and cannot engage the crown wheel because the sliding pinion and the winding pinion are no longer in contact with one another.