

## **Construction and Manufacturing a Switch-off mechanism for Clocks with strike-mechanism**

During the daylight-time of the day, clocks with strike- or chime-mechanism are very useful. But during the night hours they are very annoying, especially if you have to sleep in the same room the clocks has its place. So I decided to create a time-controlled switch-off mechanism to stop the strike-mechanism during the night hours. A nice side effect is, that the spring of the strike-mechanism runs down slower, so you have to turn up less turnings and the strike-mechanism's bearings aren't worn during the time no-one recognizes the strikes.

### Constructing basics

The used movement – a movement of the producer Hermle, has got a rake to count the strikes to beat. The easy way to stop the strike-mechanism (blocking the wheeltrain) is not very useful because the strike-mechanism can be stopped, but when it starts again, it strikes twelve times (the rake is at the lowest point of the stair-wheel). So it must be found a way, to stop the strike-movement at special times AND to fix the rake, so it can't fall down during the switched-off time.

### Construction

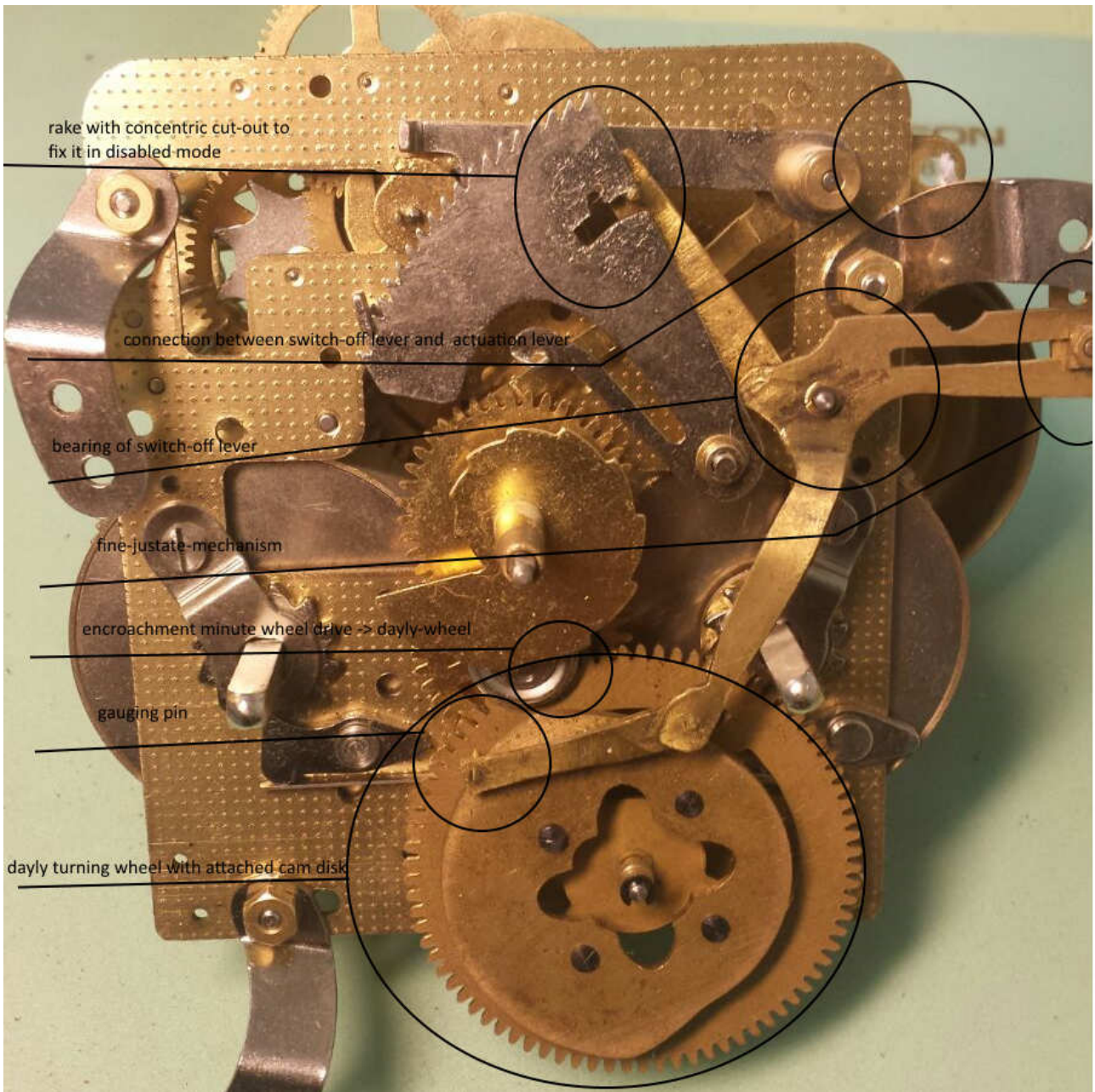
A cam disk is attached on a wheel turning once in 24 hours with a cam which is about 135° wide. This cam is gauged by a pin on a lever. The cam disk is made of brass and the surface the pin gauges is polished and lubricated. The front and back surfaces are line-grinded, The lever is riveted of short brass stripes because there was no time left to make the finally lever. So the night switch-off mechanism uses the provisionally manufactured lever with setting options (the single stripes are each riveted with one rivet, so the fixing points enable a turning of the stripes against each other). The provisional lever has no surface-finish (grinding, etc.)

### Functionality

The lever locks the strike-movement at the warning-pin (it raises the actuation lever so the movement is in the „warned-state“ during the whole switched-off period) and fixes the rake in its upper position. If the pin is raised by the cam, the lever is raised, too. So the strike-mechanism is in „warned-state“, the rake is fixed in the upper position, too. The strike-mechanism cannot strike unless the pin is lowered. If the pin is lowered by the cam (at about 5:55), the actuating lever falls onto the actuation cam at the driver cannon pinion, so the strike-mechanism is still locked (or in warning position), but the rake falls onto the cam's step of 6 o'clock. If the movement actuates the 6 o'clock-strike the striking train strikes the 6 strikes normally.

### Construction details

The wheel the cam disk is attached to has got 80 teeth and was milled at the wheel-milling-machine at school. It is driven by the minute wheel drive. The cam disk, the wheel and the lever are made of brass. The lever has got a fine-adjustment mechanism at its connection to the actuating lever. The switch-off lever and the 24-hour-wheel drives on pins/arbor which are screwed onto the front platine of the movement. The pins/arbor are made of steel and have got a groove to gather a spring clip to fix the wheel and the lever and a thread at their other end to screws them into the main plate.



rake with concentric cut-out to  
fix it in disabled mode

connection between switch-off lever and actuation lever

bearing of switch-off lever

fine-justate-mechanism

encroachment minute wheel drive -> dayly-wheel

gauging pin

dayly turning wheel with attached cam disk