

FALL CHRONOMETER, GRAVITY CHRONOMETER

Maker, source: unknown

y=Year made, acquired: c. 1900

l x w x h; 40 x 30 x 55 cm

Markings on tracks: 1 - 37 (1 unit = 1 centimeters)

The Fall Chronometer generated a constant period of time by letting a mass fall through a measured distance. The above instrument derives from the Gravity Chronometer invented by Cattell in 1886. Like the Control Hammer Apparatus, researchers used the Fall Chronometer to help calibrate the Hipp Chronoscope.



The control instrument was the fundamental timing device of the laboratory upon which all timing calibrations relied. According to Titchener (1905; 1915), proper use of control apparatus depended on a good amount of precision, constant oversight, and mastery of operation. Experienced researchers tended to use complex control apparatus, while less experienced undergraduates used primitive, simpler instruments. Wundt's famous Hammer Control Apparatus, for example, could only be used by a select group of people.

Operation of various Control Instruments depended much on the tacit knowledge, experience, personal choice, and idiosyncrasies of a given researcher. Experimenters became partial to using one of the three variations of the control instruments - hammer, pendulum or gravity chronometers. Each kind of control instrument had a family of variations - some complex, some simple.

While studying under Wundt, Kirschmann and Külpe performed an exhaustively thorough study regarding the accuracy of control instruments.

In the Literature:

Cattell, McK. J. (1886b). The Time Taken Up by Cerebral Operations, *Mind*, 11: 220-242

Külpe, Beschrieben von O., and A. Kirschmann. Ein Aparat zur Controle Zeitmessender Instrumente, *Philosophische Studien*, 8: 145

Titchener, E. B. (1915). *Instructors Manual*. 2: 340-43

Titchener, E. B. (1905). *Student's Manual*. 2: 151-53.