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## SIMPLIFIED APPARATUS FOR RECORDING WATERLEVEL FLUCTUATIONS

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To obtain continuous information of waterlevel fluctuations in waters where no permanent observations are made, e.g. in the lakes of Lapland, a simplified recorder was constructed. The main requirements for a field recorder were: Lightness, reliability, cheap construction without electrical parts and easy installation where no permanent sounding well is necessary. The recorder was also planned to operate during the ice-free period, which made possible the use of an all-glass float.

The frame of the recorder is made of impregnated plywood (12 mm). The recording drum C consists of a copper cylinder (diameter 80 mm) provided with a steel axle and ball bearings for soft running. At the other end of the axle is placed a toothwheel D, which is rotated by the mechanism of an 8-day clock E. This allows the recorder to operate for a period of one week during which the drum makes one revolution.

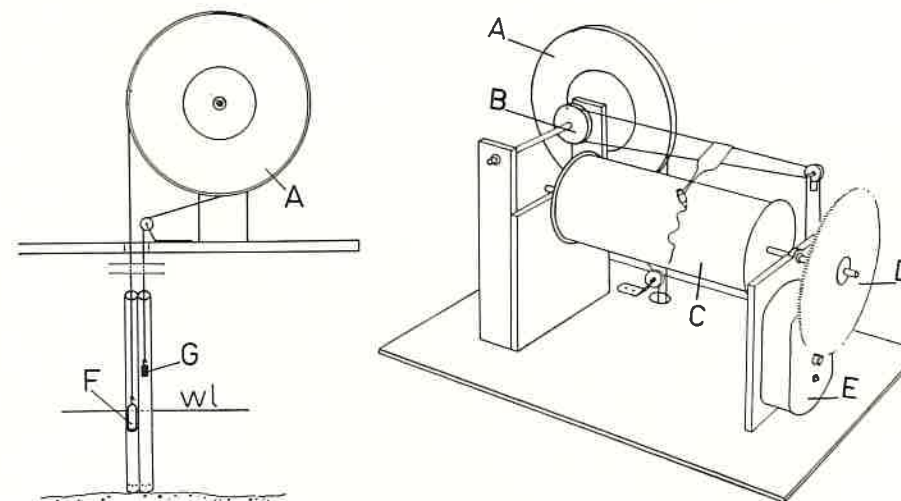


Fig. 1. Apparatus for recording waterlevel fluctuations. Explanation of symbols in text.

Recording paper is fixed on the drum with tape, and a stylus fitted on a nylon string from wheel B draws a line according to waterlevel alternations. Furrow wheels A and B (on the same axle) are again set in motion by the float F connected to the counterweight G with a nylon string via the wheel A. Changing of recording paper is possible by lifting the drum up from its bearing pockets.

The float and the counterweight are both placed in plastic tubes (diam. 50 mm). To avoid the influence of waves both tubes are secured in the bottom and are provided with only small holes near the bottom. The whole recorder is placed in a watertight wooden box on a four-pole stand below which are vertical tubes for the float and the counterweight.

In this model the radiuses of furrow wheels A and B are in a ratio 5 to 1 and the total length of the drum 30 cm, which allows recording of level fluctuations less than 1.5 metres. It is naturally possible by lengthening the drum to record as large fluctuations as desired.