Subject: Blue observatory
Posted by Jenneke on Mon, 24 Aug 2020 20:41:29 GMT
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Description
Blue box in the shape of an observatory. With text Gruen the precision factory, measurement marking and a gruen crest. Underneath Gruen Time Hill, cincinnati. Made in USA. Blue velvet insert with watch holder.

The design was inspired by the old observatory shown in the 1929 guild book (probably neuchatel). The exact length of a second was determined by the motion of the earth around the sun. The precise optics in observatories allowed a precision measurement for time.

Period : 1948 -1950
Watch type : veri-thin
Size : tbd
Inventor : unknown
Patents : unknown (patents pending)

Box maker : B. C. N. Design Products, Inc. of Middle Village, NY (doing business also under the name “Braun-Crystal Mfg. Co)

File Attachments

1) B3A79AC2-114B-45B5-BBEF-E329E94FCF90.jpeg, downloaded 3250 times



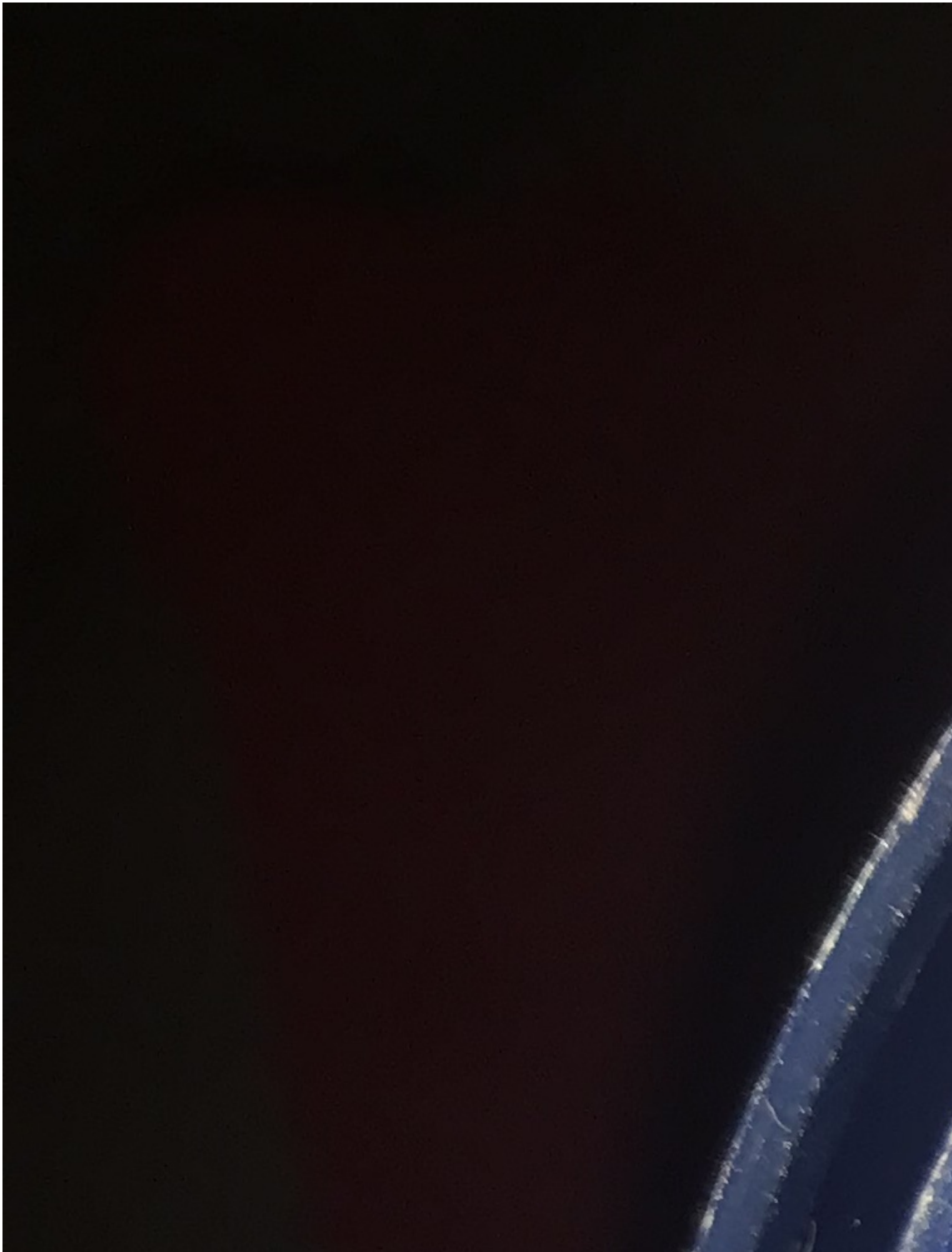
2) 225B2FBE-9DA1-45C2-8A85-3659A6E6D4CA.jpeg, downloaded 3275 times



3) 9A0C2D93-7A83-4427-9B0C-3C60C9809C4E.jpeg, downloaded 3268 times



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Gruen Wrist Watches have won 18 Observatory Awards★

Kew, Geneva and Neuenburg certificates awarded for Gruen Wristlet performance



It is seldom that anything except pocket watches and chronometers are submitted for official observatory tests. Because of the extreme smallness of ladies' wrist watches, it is not expected that they should even approach the accuracy and uniformly constant performance of the larger types of timepieces.

It is therefore a signal compliment to the skill of Guild craftsmanship, that Gruen Wrist Watches, submitted under the *identical tests for pocket watches*, should achieve records for accuracy that are considered extremely difficult for pocket types. Such certificates of award are to be valued much more highly in the case of wrist watches than for the larger models.

An idea of the mechanical exactness required to produce such watches is gained when it is realized that 130 to 150 different parts are assembled in the movement of a small wrist watch. A wrist watch mainspring has the force of about one-millionth horsepower. As compared to the modern type of giant electric locomotive which draws great trains over the mountains, it would require 4½ billion wrist watches to supply the equivalent power of one of these engines.

The balance wheel of such a watch beats four times faster than the human heart. It beats 18,000 times an hour or 432,000 times a day. If such a watch gains or loses only one minute a day, it means nothing more than that the balance wheel has varied 300 beats out of 432,000 — an exactness of 99.93%.

There are no other mechanisms which will operate to any near approach of this exactness, and these other mechanisms, as a rule, function on a fixed base or at least operate in a given position and are not subjected to the constant change in position of a wrist watch upon the arm.

The accomplishment of these wrist watch movements will therefore be better appreciated if the conditions of the Kew Observatory, Class A Certificate, which was recently granted, are reviewed:

Kew Observatory, Class A Certificate Tests

1 — The average of the daily departures from the mean daily rate, during the sa stage of trial, must not exceed 2 seconds in any one of the stages.

2 — The mean daily rate which, in the pendant-up position, must not differ fr the mean daily rate in the dial-up position by less than 5 seconds, and fr that in any position, by less than 10 seconds.

3 — The mean daily rate must not be affected by change of temperature beyo 0.3 second per 1 degree F.

4 — The mean daily rate must not exceed 10 seconds while in any position.

For 5 days the watches are tested in a constant temperature of 67 degrees F. wi pendant in the upright position. Each day they are wound and the time compar with the astronomical clock of the observatory. These comparisons are made to t fraction of a second.

For another 5 days they are tested in the same temperature with the pendant to t right. Then for 5 days additional the watches are tested pendant-left, with simi daily calculations made.

For 5 days the watches are tested in a refrigerator in a temperature of 42 degre For this test the watch is lying flat, dial up. No test is made the first day, but the 5 succeeding days daily comparisons are made with the observatory clock.

For 6 days the temperature reverts to 67 degrees with the watch in the sa position, but with daily check made of the variations after the first day.

For 6 days the watches are tested in an oven with a temperature of 92 degrees a finally tested for an additional 6 days in a normal temperature with the moveme in a dial-up position.

The last two stages of test are for 6 and 5 days respectively in a normal temperatu one period with the watch dial down and the last, with pendant up.

Total test 44 days with calculations made on 40 days.

Variations allowed under "A Certificate":

0.3 seconds to 1 degree F. temperature
10 seconds average variation, per day

These tests were attempted and the certificates sought simply because of the belief of Guild craftsmen in the inherent goodness of design and workmanship in Gruen Wrist Watches.

It is not to be expected that this same high rate of performance is to be obtained from a wrist watch in regular, daily use. The watches submitted under these observatory tests were especially adjusted, as are pocket watches offered for observatory ratings, and, during the periods of testing the movements were supported in a fixed position for long periods at a time. They were wound regularly and the watches attended with expert care.