

Electric "Mysterious Clocks"

Les "mystérieuses" dans l'horlogerie électrique

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Mysterious clocks are well known in mechanical horology. These are clocks whose hands-motion mechanism is invisible or at least not immediately visible. Their principle is based on a motion that can not be seen, either because it is too slow or because the moving object is transparent.

From the 1930s to the 1960s, this idea has been re-used by several electric table clock manufacturers. A few such models are described here. Most are based on [synchronous motors](#). However, we will not study this well-known time-keeping mechanism, in order to better concentrate on the "mysterious" aspect, that is, the motion of the hands.

Nonetheless, I also own an electric master clock that can be considered as mysterious. In this case, it is the motion of the pendulum which is mysterious. This clock does not bear any indication about its origin, except the brand printed on the face: GENUS.

The most famous electric mysterious clock is probably the Golden Hour manufactured by the Jefferson Electric Company (Bellwood, Illinois, USA), whose patent dates from 1953 ([Fig. 1](#)). The motor is in the socket, while the hands are hung at the center of a round glass plate. This plate is set in a crown wheel hidden in the frame and driven by the motor. The frame also holds the numbers. The minute hand is fixed to the glass plate, which makes one revolution per hour, while the hour hand is driven by a conventional wheel train hung behind the hands' axis and held vertically by a weight. It appears that these clocks have not been produced in the USA, but in the Netherlands by the company Nederlandsche Uurwerkfabrieken NUFA NV. This manufacturer also built other models, including one whose minute hand is driven by a flexible axis inside a bent tube.

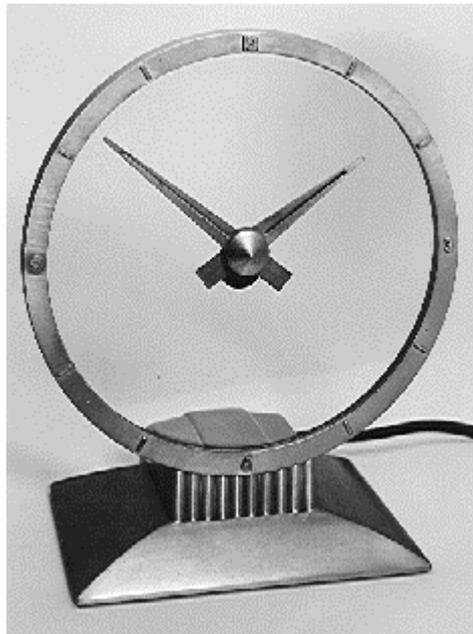


Fig. 1: Golden Hour table clock, produced by the Jefferson Electric Company.

There is also a model (named Suspense) that is not really mysterious but is based on exactly the same principle ([Fig. 2](#)). This table clock has a rectangular-frame shape, with the glass plate hung from the motor by a chain. The chain is also responsible for the motion of the plate.

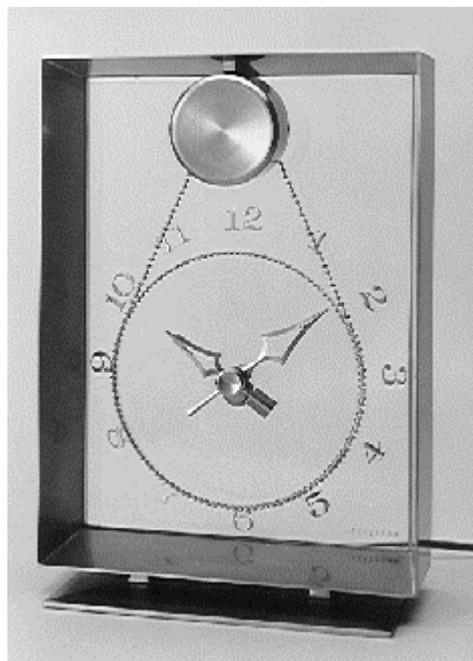


Fig. 2: Suspense table clock, produced by the Jefferson Electric Company.

A similar table clock was built by the Etalage Reclame Corporation in New York, and sometimes sold under the Tiffany name ([Fig. 3](#)). It is made of four glass plates. The front and back plates protect the clock, while the two middle plates are responsible for the motion of the hour and minute hands. The result is actually more aesthetic than mysterious, since the "trick" is almost obvious.



Fig. 3: Table clock manufactured by the Etalage Reclame Corporation.

The Haddon table clock is somewhat more subtle ([Fig. 4](#)). Similar in appearance to Jefferson's Golden Hour, it could not rely on the same principle since the hour indices are glued to the glass plate, which is therefore not turning. A closer inspection reveals a tiny metal wire protruding from the tip of the minute hand. This wire is attached to a crown wheel hidden in the frame, which ensures the motion of the minute hand. The hour wheel train is conventional. The socket also houses a small lamp that can light a wall behind the clock, making it ideal to be placed on top of a television set.

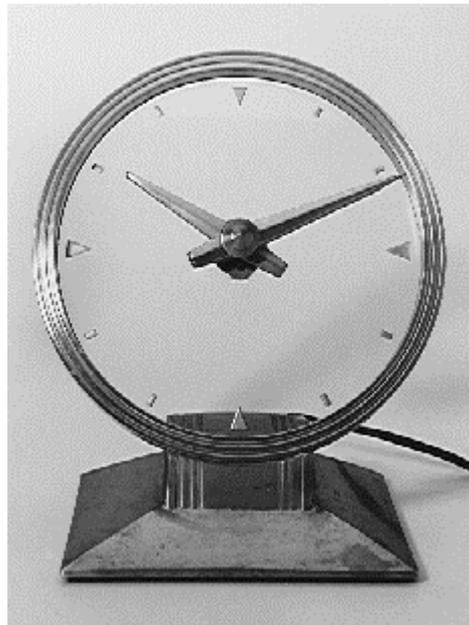


Fig. 4: Haddon table clock.

Going back in time, the Smith table clock (Smith English Clocks Ltd., Cricklewood, London), that was manufactured since 1935, presents a much more refined construction, since it is square (Fig. 5). Here is the key to the mystery: the motor, placed in the socket, drives a square glass plate in a slow swinging motion of 6 degrees. This plate is only slightly smaller than the frame (a few millimeters of margin being enough). The motion is transmitted, via a pawl, to a tiny wheel train packaged in a tube around the hands' axis. At each oscillation the hands advance by one minute. The forward motion lasts about 20-30 seconds (driving the hands), while the backward motion lasts about 30-40 seconds.



Fig. 5: Square table clock manufactured by Smith English Clocks Ltd.

The American company Master Crafters (Chicago, USA) - which is incidentally known for its cheap imitation of the Atmos (a synchronous motor drives the hands while the displayed movement is fake) - has also built a model similar to the Smith clock, but with 2 visible pawls ([Fig. 6](#)). It is an elegant clock, but one understands more easily how it works.

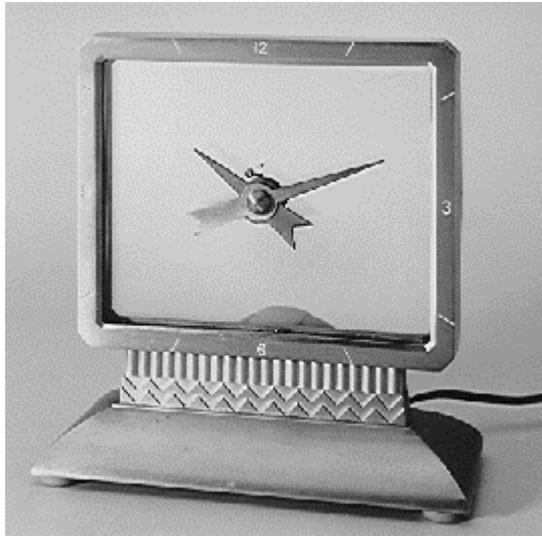


Fig. 6: Master Crafters table clock.

The GENUS master clock can also be considered as mysterious. To this this day, I have been unable to find any mention of it in the literature. It has a pendulum, but one sees neither a weight, nor a winding hole, nor an electric coil. In fact, such a coil is hidden within the thickness of the wood under a thin veneer layer. Electric wires are hidden in the same way. Finally, the soft iron structure at the bottom of the pendulum is "disguised" as an adjusting screw. Moreover, this screw is brass coated to look like a non-magnetic metal. The electric impulse is controlled by a mercury contact that swings with the pendulum and is hidden behind the face. Every minute, a secondary-clock impulse is generated by another mercury contact controlled via an electro-magnet. The clock's construction is heavy with strange steel plates several millimeters thick, which are hardly necessary since the gear is reduced to a minimum. The case is in mahogany. This piece seems to date from the 1940s-50s.

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