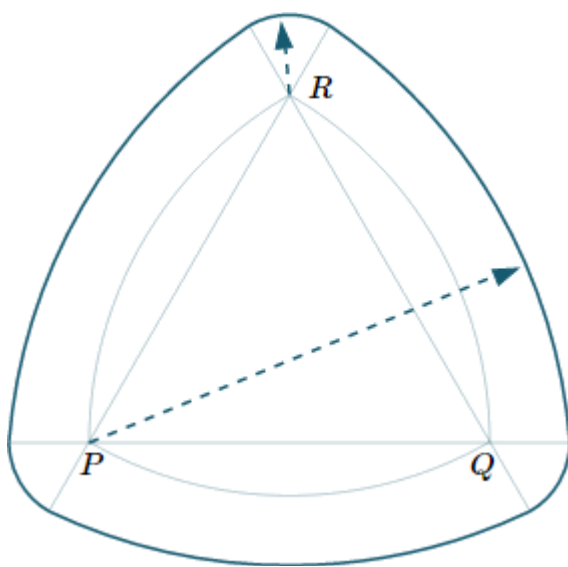


PRICIPLES OF DEREK PRATT'S REMONTOIRE

Derek Pratt: Above all an English watch-maker with an incredible fascination for all things mechanical and precision. Quietly patient, a keen eye for detail, and the unique ability to see the best properties of anything in sight.

Fascination with the rotary automobile engine became a part of watchmaking history via necessity. Tourbillon watches, as wonderfully flirtatious and practical as they are, have an inherent disturbance, they must abruptly/instantly stop and start multiple times each second. This rapid stop and go is particularly disturbing to the precision of the tourbillon escapement and ultimately degrades the accuracy. While researching rotary engines the reuleaux triangle and its unique geometric usefulness led to the discovery of an expired old patent circa 1930. The patent was for a constant force type of remontoire that utilized a reuleaux triangle within a system that had two important results...



The reuleaux triangle is elusive in appearance. It may not look to have anything in common with a circle but in fact shares the same property of a constant diameter. A simple reuleaux is drawn inside a modified reuleaux triangle. Both are based on a simple equilateral triangle, the simple one consisting of three intersecting arcs and the modified consists of 6 intersecting arcs.

...Firstly, the power provided by the mainspring is absolutely constant, as with a fusee, rather than very strong when fully wound and weaker as the mainspring winds down. Secondly, the remontoire results in dead seconds indication of the seconds hand. Both attributes of the reuleaux remontoire looked to be particularly beneficial to the unique tourbillon fault. Adapting the reuleaux inspired remontoire within the cage of a tourbillon reduced the stop and go effect by 80% and allows the

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tourbillon cage to rotate exactly 6 degrees between stops indicating each second precisely. A brilliant bit of collective cooperation!

Although the reuleaux remontoire is not Derek's original idea, it has become known, within the watchmaking community, as "Derek's Remontoire" due to his inventive use and refinement of the principal.

In about 2007 the idea of incorporating Derek's remontoire in a wristwatch with a stationary escapement, rather than a tourbillon, started to get serious attention from Derek and a few watchmaking friends. The first step was to make a prototype, which was shown at the Memorial Seminar held at Upton Hall in September 2011 honoring Derek's lifetime of achievements. In 2015 the idea of progressing the earlier prototype further and possibly making a few extra pieces that might be of interest for a few collectors has resulted in a more refined prototype, of which we feel Derek would be proud.

-Technical Overview-

Three important technical attributes were understood well in advance of advancing with this project.

1. Two free-standing mainspring barrels will be employed in parallel in order to generate a steady power supply for the remontoire and escapement. The barrels would be of Donner design.
2. The escapement will be of stationary lever design combined with Derek's remontoire. The rationale being that small tourbillons, as in wristwatches, generally experience substantial accuracy challenges due to the disproportionate size of the tourbillon compared with the watch itself.
3. The size of the watch will be reasonable and comfortable with center seconds. The later being of importance since a small sub-seconds chapter ring would be too difficult to read precisely.

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-Technical Details-

