

CHRISTIAN KLINGS POWERFUL CREATION

We first featured the work of Christian Klings in issue #42. His one of a kind tourbillon wristwatch with chitne was a clear statement of his capabilities and talents. While preparing his prior editorial feature, Mr. Klings had brought to my attention another project that was already in progress. After promising silence, Mr. Klings filled me in on his incredible idea to create a mechanical wristwatch that would run for up to six weeks on only one winding!

Having an idea of such

magnitude is one thing. Bringing it to life is another. After hundreds of hours of experimentation, his first prototype was finished. Although the power reserve achieved was phenomenal, it was not the 1,000 hours targeted by Klings. Well, no one is perfect and big ideas often go through several stages of trial and error before reaching perfection.

What follows are the first published pictures of his prototype movement, which as you will read, did not quite fulfill Mr. Klings expectations with regard to accuracy

and longevity. In his mind he came to know this was unfortunately a dead end. But rather than call it quits, Mr. Klings has done what any great inventor does. Take the knowledge gleaned from past failures and use it to move forward towards the goal burning in his mind.

Perseverance is critical. Some might remember the story of when the famous inventor Thomas Edison was experimenting to create the world's first practical electric light. After numerous failures, Mr. Edison was approached by a reporter

who highlighted the fact that Edison's experiments had failed hundreds of times and he went on to offer that man was surely meant to light his way through life with oil lamps. Edison's response was perfect. He simply said, "I have not failed hundreds of times, rather I have successfully identified hundreds of ways that will not work, therefore putting me that much closer to the method that will work."

Mr. Christian Klings is one step closer to the way that will work!

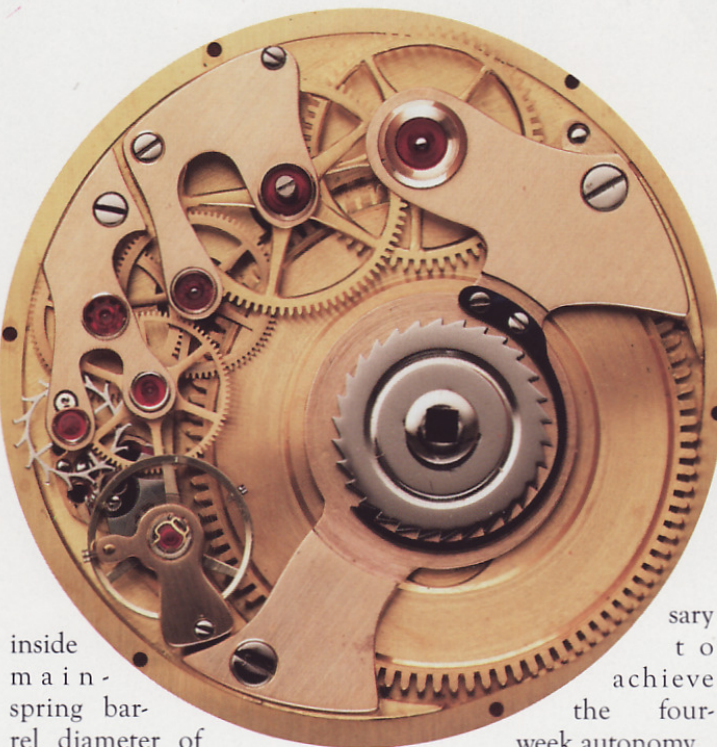
Editor

by Christian Klings

Three years ago, while browsing through a European watch magazine in my home in sunny California, I stumbled across a picture of a pocket-watch with a one-year power reserve. Somehow, I just couldn't forget the idea of a watch with such an incredibly long running capacity.

While I had already built a Tourbillon, a huge accomplishment in and of itself, I was ready for a new challenge. And so I set out to build something that had never been manufactured before - an unprecedented wristwatch with a power reserve of no less than 1000 hours.

After approximately 2000 hours of design and manufacturing, the first prototype was finished. Even with an



inside main-spring barrel diameter of 19 mm and a mainspring arbor diameter that was reasonably large, there was still a small, yet significant amount of power loss, which was made even more fragile by the addition of two intermediate wheels that were neces-

sary to achieve the four-week autonomy.

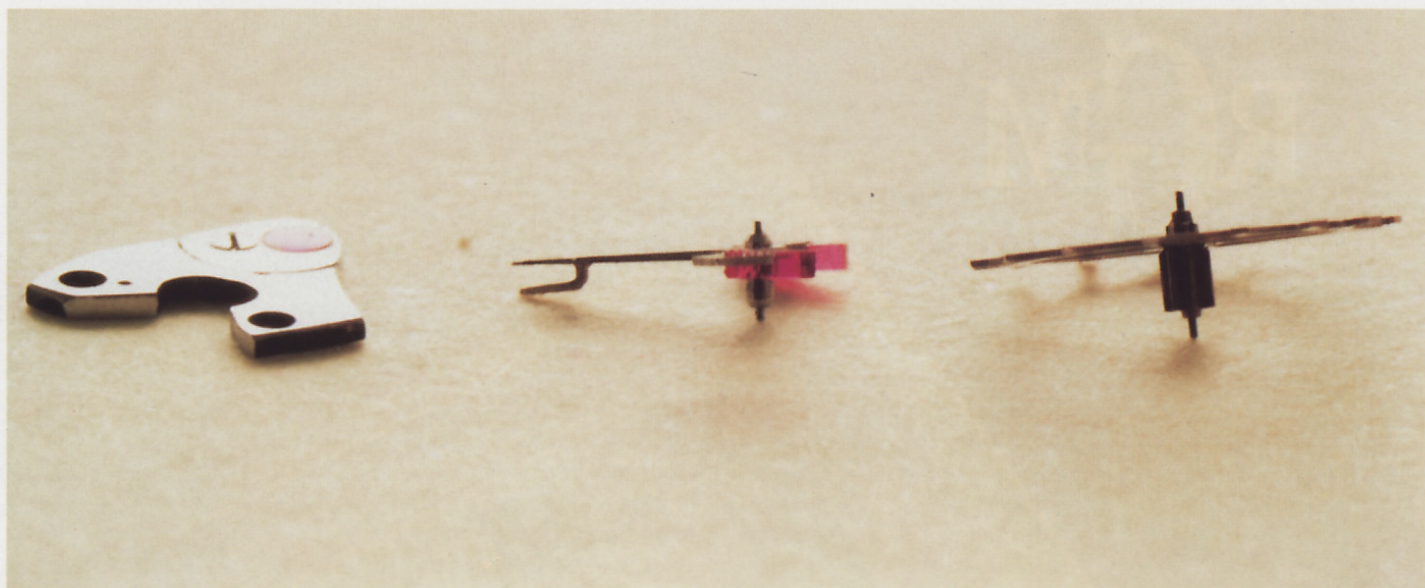
All wheels are equipped with twelve leaf pinions, with the exception of the fourth wheel which features ten leaf pinions, and the escapement wheel with eight leaf pinions. Twelve leaf pinions, if geared properly, allow for very little

sliding friction between the wheel and pinion during engagement. This is important in order to ensure that the power from the mainspring is transmitted to the escapement as equally as possible.

The pivots of the fourth wheel, escapement wheel, pallet fork, and balance, are extremely small, with a diameter from 0.07mm to 0.08 mm. In addition, the escapement wheel, pallet fork, and balance are all equipped with cup jewels so as to reduce axial friction.

The thickness of the escapement and pallet fork are reduced to a minimum of 0.10 mm, a feat which dimin-

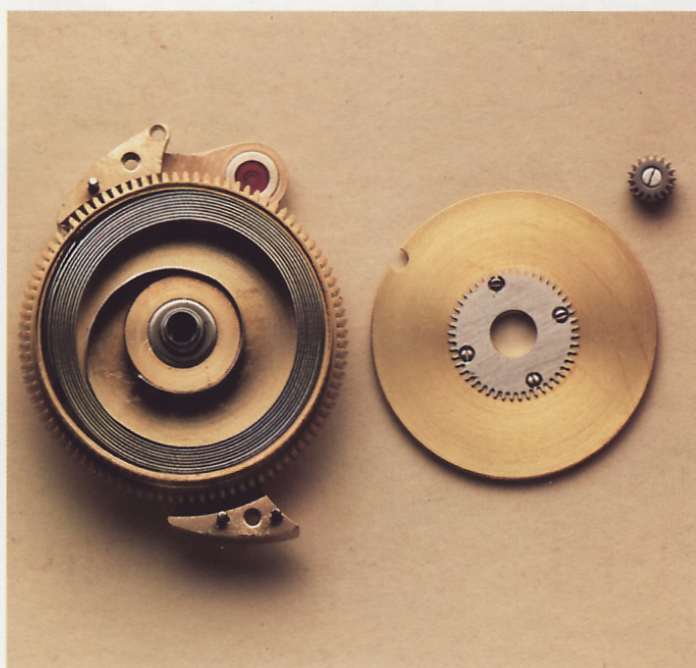
Above: The mechanism that defies time. This is the first generation prototype that led Mr. Klings to his ultimate success in the achieving an amazing power reserve.



Above and below: Various elements are by necessity hand made in Mr. Klings own shop.

ishes the weight by approximately 60%, thus decreasing the inertia and quickening the response to the balance. Weight reduction of certain parts is notably beneficial, especially in small escapements where very little power is needed.

Nevertheless, with every adjustment taken into consideration, the watch still had a time difference of up to 25 seconds per day. While I knew that there was not much more I could do to improve the timekeeping, I was now faced with an even bigger problem - the power loss from day 1 to day 31 was just too large. Fully wound, the amplitude of the balance is 250 degrees to each side. After 31 days, the amplitude



is thus only approximately 170 degrees. This discrepancy in the amplitude is the main problem of improper timekeeping.

After 2500 hours of hard work, I was disappointed with my unsatisfying timekeeping results. Much to my dismay, I had to admit that I had taken the wrong approach. It is not in my personality to give up and so

I chose to learn from the past and begin anew.

In order to succeed, I realized that I had to change my outlook in designing such projects. Every other day, when I reached my peak of imagination, I did a small amount of design work on paper. Five hundred hours later, I had discovered a much better approach, but I still wasn't fully satisfied. I

decided then and there that when I built my new prototype, it would be my final one.

Finally, after countless hours spent sitting in cafes, enjoying the California summer and watching sunsets by the ocean, the idea came to me. With a diameter of 34 mm and an autonomy of (yes!) 1008 hours, which is accomplished with unique Remontoire mechanism that winds the watch every 30 seconds, this new model has a frequency of 28,800 pulsations per hour and is practically perfect.

The construction of this new movement is near completion and I am looking forward to introducing my new unparalleled wristwatch exclusively in "International Wristwatch" very soon.

