



CREATING INNOVATION

*George Daniels, the major watchmaker in the world for the 20th century
in a very rare and revealing interview, in December 2009...*

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CONSTANTIN STIKAS: *If one looks back, one can see that most important innovations were made centuries ago, by Abraham-Louis Breguet and few other major watchmakers in the 18th century. How difficult is it to innovate today in watchmaking?*

GEORGE DANIELS: How to innovate in watchmaking? Well, there are still several things in watchmaking that need attention, development to improve them, and of course the most obvious is the escapement. I devoted my life some years ago, to perfecting the escapement for mechanical watches. The lever escapement, which is the most commonly used, is now beginning to decline, while the escapements are better because they work without lubrication. If there is no lubrication, there's no change of consistency of the oil, and the watches therefore produce more exact time-keeping.

How did you begin working on the co-axial?

I invented the co-axial in 1970, because no new and better escapements had been made in the industry after the introduction of the lever escapement. The lever escapement is not a very satisfactory one, and I set myself the task of finding a

better way, in pulsing balanced mechanism. The conclusion of that was the co-axial escapement.

You worked with Omega from the beginning or was it your own research on escapements?

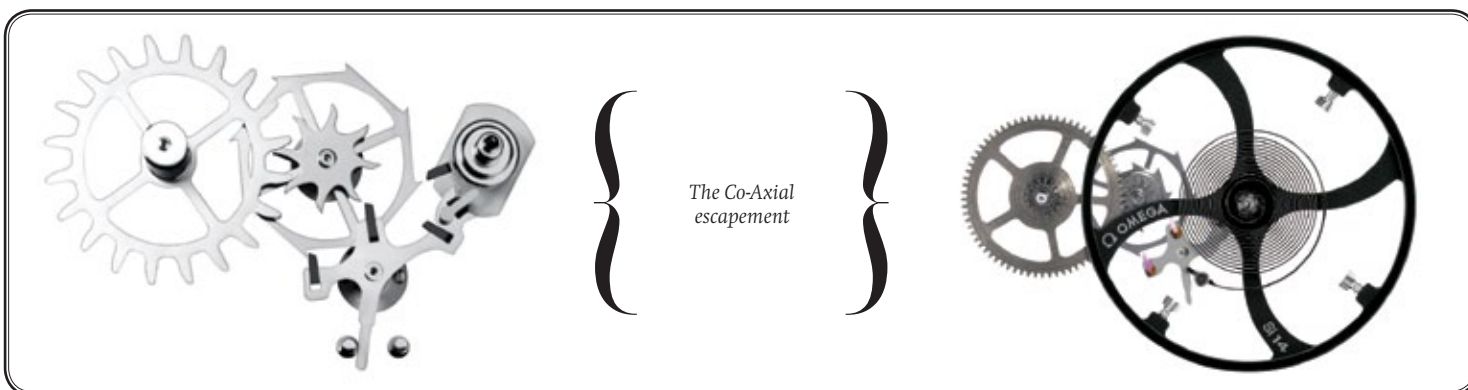
I was twenty years old when I came out of the army, I wanted to be a watchmaker and so I set myself up in business as a trade repairer, and I managed to secure a contract with Omega. So it was I began to be associated with Omega, but I've never worked for Omega – I only worked with them.

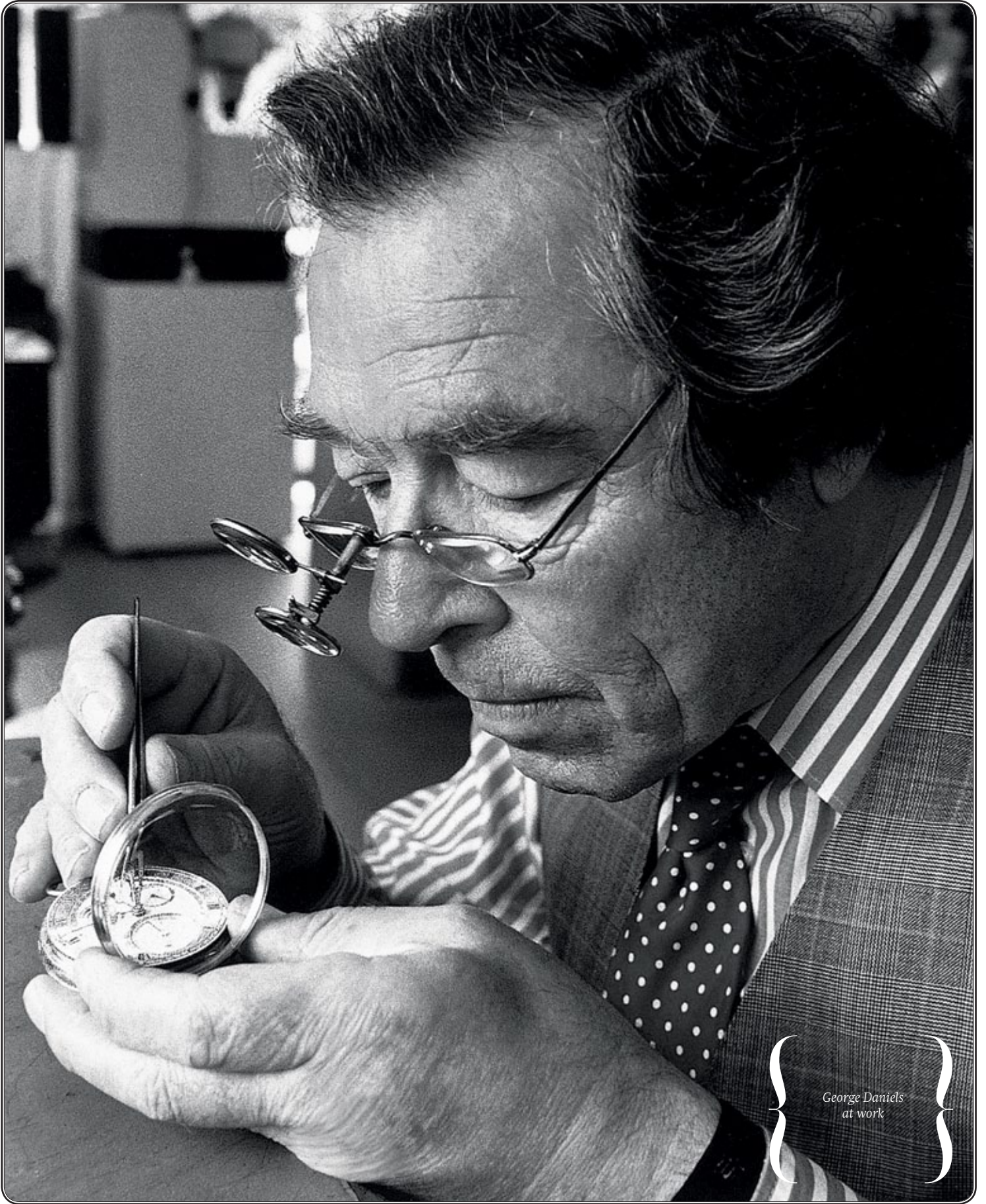
Was there another brand interested in the co-axial before Omega?

The first escapement was made in 1970, the 1970s. It was the first Daniels' escapement, and it was the first escapement without the necessity for lubrication. The difficulty was that my new escapement was rather large and we needed a smaller escapement for smaller watches, and so that turned me towards experimenting and to produce what eventually became the co-axial escapement.



CLICK TO LISTEN





George Daniels
at work



Before you made the co-axial with Omega, you had spoken to Patek Philippe and Rolex?

I wasn't with them, I made prototypes of their watches. They didn't know I was doing that.

But you hadn't spoken to them? They didn't know of the co-axial at that time?

At that time, no, they didn't like it.

They didn't like it? So you had shown it to them?



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I would make a prototype, and then go to Switzerland. Show it to the factories. But they didn't understand it, or care about it. They didn't show any serious interest.

Which brand was that?

That was Patek, and Rolex, and who else was it? Well, I can't recall their names now.

When you introduced the co-axial to Omega, you had worked with someone from Omega, or was it something you did yourself and they just bought it?

No, it was all made by me.

That we know. But I mean you worked with the Omega team on this, or was it something they bought and put inside their watches?

Yes. We had a cooperation between some Omega technicians and myself in order to develop the tools for quantity production.

And to put this inside the movement? Or did you do this yourself before?

Yes. I made the whole of the watch before Omega took an interest in it.

Who was President of Omega at that time?

I don't know. I didn't have anything to do with Omega, excepting with the chief technician who was Mr. Kilian Eisenegger. Mr. Kilian Eisenegger was the chief technician, and together he and I worked out the system for the tooling and the making of the quantity produced watches.

But Omega has exclusivity for the co-axial?

No. They are the only people making it. They don't have exclusivity.

Anyone can use it?



CLICK TO LISTEN

Anyone can use it, yes. I have several inventions in the world, which anyone can use.

They don't have a contract with you that only they can use the name co-axial and your name?

No, anyone can use the name co-axial, or use their own co-axial, or make their own co-axial. Anyone can do it.

But they don't choose to use it. Why? Is it expensive to make the tooling?

It needs to be made very accurately. Apart from that, there's no difficulty. And I made all the first co-axials myself, with my own hands – hand tools, no machinery. So it's only for mass production that one needs to develop an escapement.

Do you remember the year you went to Rolex and Patek Philippe?

It was around... Just give me a moment to think. I made my first oil-less watch in 1974... So the interviews with the factories would be about '72 to '76.

With Omega, you worked 25 years later... With the co-axial, I mean.

We developed it, I don't now how long it was later. I think it was about 20 years.

Omega brought out the co-axial to the public 10 years ago. So it was '99.

Yes, it was on sale to the public in '99.

Twenty five years after you made it!...

It nearly took 20 years to persuade the Swiss industry to open its eyes and see the merit of the escapement.

Is the co-axial only an escapement for everyday watches, or can it be used in Haute Horlogerie pieces?

The co-axial will fit into any watch. All could use co-axial. I have several watches here made by Longines, Rolex, Omega, Patek Philippe – they all have co-axial escapements, which I put in myself.

These are for your personal use?

They are prototypes for examination of the results.

And you put the co-axial escapement inside the movements of this watches to test it?

I do it to find out the best way to make it. What is the best design for it.

And what is the result?

Well, the escapement is so successful, it's now been taken up by Omega, who use it in every calibre of their manufacture, and another manufacturer in Sussex in England, the brand Frodsham, which is making another Daniels escapement. It has completed all its prototype tests, and the results in time keeping are brilliant, and so we are now manufacturing it. It will be even more accurate than the co-axial.

It is the same with the co-axial?

They have the new independent double wheel escapement.



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- A+B -
The back and the front face of a beautiful, George Daniels' 1-minute tourbillon pocket watch with detent escapement and retrograde hour indication



- C+D -
The front and the back face of a tourbillon watch with co-axial escapement, entirely handmade by George Daniels in two pieces in 2004



- E -
All the movements in Roger W. Smith's Series 2 watches, include the Co-axial escapement

- F -
Roger W. Smith's Series 2 / Edition 2 is priced at £50,000, and there is a two-year waiting list as everything on it is handmade



Today there is a lot of companies making grand complications watches. What do you think of the many complications included in one watch? Are they important, or it is only a marketing strategie?



The public like complicated watches. The public are the masters. They decide what they're going to buy, and they like complicated watches. I sometimes make them myself. With tourbillon, chronograph, mainspring reserve, equation of time, all those mechanisms, can get into different watches and I've used all of them at some time or other. Do you know my book, "All in Good Time"?



I have to say I don't have it yet.

You need it, because it will tell you everything that I make. It's all in that book.

I have your book about the techniques of watchmaking.

There is another one. Philosophical.

What do you think of English watchmaking? You want to speak a bit about it? Everyone knows about Swiss watchmaking, but there's a story in England too...

Yes. Hand watchmaking was started by me in the early 1970s. I was the first to make hand-built watches. There were none before the early 1970s. Since then, several young men have taken up with making their own handmade watches, which are very much enjoyed by the public. Of course handmade watches are very expensive, but connoisseurs don't mind. If it's the best, they will insist on having it. But a watch is not necessarily better because it has a tourbillon and a calendar and a chronograph and all very complicated things that watchmakers put into their watches. It doesn't necessarily make for a better watch and quite often watches with too much complication don't go so well as simple watches.



You have changed the escapement. If you were to change another thing in watchmaking, what would you change to make an even better watch?

The only department that needs to be improved now is the self-winding mechanism. The automatic winding. It needs more attention, more development, more invention.

Have you worked on this?

Many years ago I made some self-winding watches, but I turned to other things as more interesting.

Do you have a collection of watches?

I have a collection of watches. Yes.

Do you want to speak about which brand you like in watchmaking?



They each have their reputation. Patek Philippe say they produce highest quality. But in fact they have no more quality than any other top makers. Some makers say their watches

are more robust, stronger, better use for sporting events like golf or tennis, but the watch is subjected to a great deal of agitation and movement. It just depends on what you want the watch for.

Are you planning something now? A new movement?

Yes, I am making a watch at the moment which won't be completed for another year or so. I only make one watch each year, so I'm very careful what I make. I have no more time to spare. Exactly for one more each year.

What kind of watch are you creating now?

The watches are all different. I never make two watches the same. That is what the customer looks for.



Your watches are top quality, but, at the same time they are also very beautiful. Their dials are magnificent!...

I'm glad you like them.

All people like them...

I like a watch to be very simple in appearance. I don't like complication on the dial. The dial is for the hands, and the complication if for the back of the watch. Everything here is made with aesthetics above all else.



How many watches did you produce throughout your life?

I've made about 120 watches.



I had an interview with Philippe Dufour. You know Philippe Dufour?

Yes, he makes repeating watches.

He also makes the Simplicity model. We spoke about innovation and I asked him what has been innovative over the last years and he said that besides the co-axial, there was nothing innovative. Do you think so too? What do you think of the use of silicium and other new materials in watchmaking?

Waste of time. Unnecessary.

Why?

Watches have been running for 700 years on brass and steel, and then someone comes along and experiments with different materials... Absolutely no advantage whatever. Just makes a watch more complex, more expensive, and it is quite unnecessary to use these new materials. They are in use because manufacturers failed to make successful watches with old materials. So they turned to a new methods which they themselves feel they invented, which are made in order to simplify the complexity of the movement. Absolutely unnecessary.



How important is the handmade work? We see today handmade watches that are priced at many thousands of euros, but at the same time they do not have the precision



of the co-axial movement, that is not handmade, but is top technology...

You must ask them that. The Swiss are very conservative. They don't like changes. They don't like the co-axial escapement. It's too good for them. They don't want it. Omega now fit it to the whole of their production. And other makers will do the same thing. It's quite superior to any ordinary escapement. It's also the first new escapement for 400 years. Think of that. Four hundred years. The co-axial is that escapement.



Is there a watch brand you specially like?

No. They're all the same thing. All the same. They have no innovation.

What do you think of Abraham-Louis Breguet?

Brilliant. Breguet was a genius. I wrote his life story. It's been published for some years now. It's very expensive, but you might find one somewhere. It's published in French, and Italian and English. It's called The Art of Breguet.



What do you think of tourbillon movement?

Tourbillons were fine when Breguet invented them, in the early 18th century. They were fine and useful then, because watches were not so well made. The tourbillon could average out the errors and give you a smoother idea of time-keeping, but for the modern watch, they are quite unnecessary and even can be deleterious and produce poor time-keeping. They shouldn't be used nowadays, but people like to see them going round, so they make them.

Every brand has a tourbillon today...

Yes (laughs). Well, they like tourbillons because they go round and round. There's some action there.

Which complication do you like the most to make?

Well, that depends on my interest, which at the moment is escapements. Escapements have been badly neglected. I told you, it's over 300 years since we had a new escapement. And there must be many other escapements not yet discovered.

People think the tourbillon is very difficult, but perhaps they don't know, that the chronograph is more difficult to produce than a tourbillon...

Yes, but it's not so spectacular.

Today, we have precision time-keeping in mobile telephones, in quartz watches. Is still accuracy – the big advantage of tourbillon watches in theory – important, as it was before?

No. Not at all. It's not in the least bit important. Even airplanes don't run to timetables. Trains don't run to timetables. Nothing runs to a timetable now. We all live within 5 minutes. And you're quite right. The tourbillon is not necessary in a modern watch.

Which complication is for you the most difficult to produce?

I don't know. I stick to my work with escapements. I don't have time for anything else. I'm too old now. So, I'm happy with escapements.

How old are you today? (Editor's note: December 2009).

Eighty four years.

Do you know the work of the Japanese? Do you know Seiko's Crédor watches?

They make tourbillons, don't they?

They have made a very beautiful minute repeater. Philippe Dufour said they have better finishing than Patek Philippe. Have you seen their watches?

Yes, but the finish is not important. A watch will go very well without a high finish. But it looks very attractive. It looks very smart...

Is there something else you'd like to say? Something we haven't spoken about?

I should like to mention that a young man who was my assistant, stood out to be a brilliant watchmaker. He's now established here, in the Isle of Man, with his workshop, and between him in his workshop and me in my workshop, we are the only place in the world where you can buy a totally handmade watch.

What is the name of this man?

Roger Smith. And he's now practicing making watches here, and we both live in the Isle of Man and so, if you want a completely handmade individually designed watch, in the full front of technology, you must come to the Isle of Man where they are made.

Are there watches that you've made with Roger Smith?

Often we work together.

Do you wear a watch every day?

Well, yes. I wear Daniels!... What else?

Thank you very much Mr. Daniels. It was an honour speaking to you.

If you're going to publish something about my work, I would be interested to receive a copy...

Editor's note: I do not usually include the last parts of the conversation with my interviewee, when I publish interviews. They do not have anything to do with the subject of the interview. In this case, however, Daniels' insistence that I send him a copy of the magazine in which the interview first appeared made an impression on me. Is it possible that the most important watchmaker of the 20th century looked forward to seeing an interview as if it were his first? In conversation with his associate and searching in the Internet, I discovered that in his 6 decades career, he had given very few interviews before he granted me one!..