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Mr

Sigmar Gabriel

c/o Federal Ministry for

Economic Affairs and Energy

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Introduction of patent EP 2594824

“Self-adjusting drive wheel”

Dear Minister,

I am taking the liberty of introducing to you a patent developed by me, the use of which allows to achieve a reduction of wear of minimum 30% in drive or conveyor chains.

This design of a chain or drive wheel is **UNIQUE** in the world, the special features of which allowing **ALL TEETH** of the chain wheel developed by me to be involved in the power transmission to the chain and the load thus being distributed to the individual teeth and the chain. The reason for this is that its teeth are moveable, whereas in conventional chain wheels the teeth are rigid and that after the while, due to wear, only the first tooth will bear the load of the chain.

This means that, with my invention, all teeth of the chain wheel are evenly loaded with the outcome that **chains** which otherwise, **depending on the size**, have to be replaced from to time at a potentially very **high**

financial expense and workload, will now last far longer, as they are far less loaded owing to the moveable teeth of the chain wheel.

This is further clearly shown in the following Power Point file set up on my website: www.selbsteinstellendes-kettenrad.com.

I have been dealing with the issue of enormous wear and high noise levels for more than 22 years.

The idea for the previous version of the patent emerged when I looked at a heavily worn chain link. I then studied the issue in depth and filed a patent application for the first patent DE 4317461 / EP 0599156 in 1993 via my employer, when I was still working with PWH, later Thyssen-Krupp. PWH was then taken over by Thyssen-Krupp and the latter transferred the patent rights to me in 1996.

After the former patent was in my possession, I subsequently implemented further improvements to the original patent. The self-adjusting chain wheel was used in a portal scraper at the Ensdorf power plant in 2001, where it has been running perfectly for more than 14 years. There, the **FIRST CHAIN** is still in use.

Between 2001 and 2003, the then patent was tested on a chain simulator by a major German manufacturer, company Kettenwulf in Eslohe.

An article was published in trade journal Konstruktion 7/8-002 where company Kettenwulf was mentioned as the contact, as it had concluded a licence agreement with me about the marketing of the self-adjusting chain wheel.

The test was run until 2003 and had an outstanding result (a reduction of wear of minimum 30%).

Company Kettenwulf sent me the examination report for disposal at my discretion WITHOUT any NON-DISCLOSURE AGREEMENT; this report, however, had to be removed from my website by myself in November 2015, see on this matter **EXPLANATORY NOTES ON THE EXAMINATION**

REPORT BY COMPANY KETTENWULF, as the examination report was subject to the so-called “small coin”.

After the test results had been ascertained, some more time passed before the licence agreement of 2004 was terminated **WITHOUT GIVING REASONS**.

Being a conscientious engineer, I was prepared to wait some time to see how my invention would prove its worth in practice.

In 2010, I was at the Ensdorf power plant and could see for myself that the self-adjusting chain wheel was still in service as before and was running **WITHOUT any wear of the chain**.

In November 2011, I went to the Ensdorf power plant again and on that occasion a complete chain link was dismantled for me, see the below picture. From this, it appeared very clearly that even after ten years of service at the time virtually no wear at the very chain link bolts could be detected:



Given that I had kept working on improvements to the former patent over the years, in 2010 I filed a **NEW** application for the **IMPROVED** patent under the number **EP 2594824**.

This new patent EP 2594824 was granted on 7th January 2015 and has property rights in the following ten European countries:

Germany – Austria – Switzerland – France - United Kingdom – Italy – Spain
– Romania - Czech Republic and Poland.

After I had initially still wasted quite some time at the beginning of 2015 with offering the patent for sale to German chain manufacturers, I have now been engaged for a few months in offering this patent for sale to plant and chain manufacturers worldwide and, above all, in outlining to OPERATORS the enormous benefits of the patent, such as:

- the self-adjusting drive wheel can be used for ALL TYPES OF CHAINS worldwide (plate link chains, roller chains, round link chains, etc.)
- there are countless possible applications, such as
 - in mines all over the world
 - in power plants
 - in the steel industry
 - in the paper industry
 - in the timber industry
 - in machine and plant engineering
 - in the bulk material handling industry
 - in the automotive industry
 - in waste incineration plants
 - in water treatment
 - and so on and so forth.
- a reduction of wear of minimum 30% is achieved, see Ensdorf power plant
- noise levels are lowered
- chains only have to be replaced at large intervals
- reduced downtimes for plants
- lower labour costs.

Please note that through the following three publications:

Publication in 1999 regarding round steel chains

Publication in trade journal “Konstruktion” 7/8-2002

Publication 01/2015 in trade journal “Hebezeuge+Fördermittel
[Hoists + Conveyors]“

which, along with further details on the patent, you can find on my website: www.selbsteinstellendes-kettenrad.com, both the previous patent and the new patent EP 2584824 in question have been known for years to the experts, that is, chain and plant manufacturers; on the other hand, for most operators this is totally new territory.

As I can see from the reaction to my circular letter and the statistics of my website, the patent is very well received worldwide and is even known, for instance, in Sao Tome and Principe and Tuvalu.

The companies contacted by me were mainly operators who surely asked themselves:

- how come we did not know about this system before
- how is it possible there were publications in the relevant trade journals back in 1999, 2002 and 2015 already which, of course, are only subscribed to by plant and chain manufacturers etc. and not by operators
- where can we purchase the self-adjusting chain wheel, where is there a plant manufacturer from whom we can order this chain wheel?

For these reasons, I took the liberty of introducing this patent to you as well as, in my view, in these difficult times of

increasingly scarce resources,

intense pollution of the environment,

noise impact on employees, residents, etc., (see on this issue FIRST USE OF THE SELF-ADJUSTING CHAIN WHEEL AT ENSDORF POWER

PLANT IN 2001, which **at the time could start operations only** because the self-adjusting chain wheel had been introduced), and also, of course, in terms of global competition

it is not irrelevant whether a chain has to be replaced at larger intervals or not.

After all, as Victor Hugo once put it:

“All the forces in the world are not so powerful as an idea whose time has come”

For further information, please do not hesitate to contact me should your interest have been aroused.

Yours sincerely

Karl Herkenrath