

The Evolution of Separation and My Troubles

This is really what boggles everybody's minds about the patent. It on a process over 100 years old. Seriously.

In the late 1900's, Dr. Hawley developed the Hawley Retainer for post orthodontic treatment. Even way back then, separation was known to be necessary. The monomers and polymers that we use to make the acrylic would bond to the cast. In an article published in the European Journal of Orthodontics in 1923, Dr. Hawley, in discussing the Hawley Retainer, wrote, "...apply foil #60 in the normal manner."

Back then, they used tin foil as separators. The cast would be covered in thin layers of tin foil strips so that bonding would not occur.

Fast forward to 1943. Tin was scarce due to the war and the process of layering strips of tin foil on models was time consuming. Some genius came out with Liquid Foil. I have no idea what it was, but the models could be dipped into the stuff or brushed on with a paintbrush, allowed to dry, and then the appliances made as usual.

Some version of Liquid Foil was used for the next 60 years and is still in use.

In the early 2000's, things started to change. 3D printing began to be introduced into our industry. So, instead of plaster or stone models, we had to deal with resin, or plastic, models. Achieving separation was a bit more difficult.

Too many factors went into what would work and what would not work. Every type of liquid foil was used and none were reliable. Many labs went to over the counter solutions. Vaseline worked perfectly, as did Chapstick. PAM cooking spray worked well--especially the BBQ variety. Many labs came up with in house solutions that they will not share. Models were being printed and appliances were being made.

In 2015, I bought my first 3D printer, the Juell by Park Dental Technologies. The interesting thing about it, though, is that it is not a 3D printer. Most 3D printers nowadays are not. It has to do with the types of technology used. Juell uses DLP technology.

I did my research. I knew there were separation issues so I wanted to find a printer where I could avoid them. I was assured that the Juell models separated fine. I tested them and they did, with the same liquid foil type separator that I had used for decades. But then I started printing.

The samples I received and tested were printed solid and post cured in a tanning bed. I was printing hollow and post curing in the company suggested acrylic nail curer. Things did not go well as I busted my way through a hundred models and dozens of separators. I went to Vaseline but the entire industry was looking for something better.

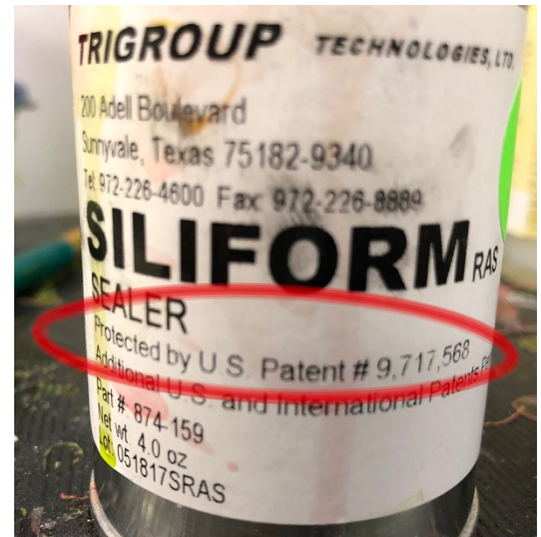
I stumbled across a post online about Siliform. I got a sample and the stuff worked! I could just dip my paintbrush in, coat the models, and separation was as easy as getting my fingernail under there! But there were issues, as explained in "The Elephant in the Room."

Some labs stuck with the Siliform; others, including me, moved on to PVA based separators that had also been used in our industry, but in dental labs, for decades. They worked. Not as well as the Siliform, but they worked well enough without the issues. So, like we did with Siliform, we spread the word to the other labs.

And that is when we began getting the C&D Letters.

The models have changed, the materials have changed, but the process never did. The Adells, owners of TriGroup Technologies and Siliform, patented the process of applying separator to a 3D printed model.

That is what boggles our minds. They did not patent Siliform. Or any of the other products they came out with. They patented a process to make sure we had to buy their products. They still advertise that their products are protected by patent # 9,717,568. It is right there on the cans.



How can this be legal? Can a process patent be used to protect a non-patented product?