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Attention Docs & Hospitals: Greenberg Traurig Patent Agent Has 'Medical Splash Masks' for You



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COVID-19
BENCH & BAR

TV newscast after newscast are filled these days with doctors and political leaders saying they are short on the critical masks that help keep healthcare workers safe when treating COVID-19 patients.

Enter Greenberg Traurig patent agent Joseph Finan of Dallas.

A graduate of the Navy Nuclear Power School with an additional degree in mechanical engineering from Texas A&M, Finan is part of a growing grass roots effort using their 3-D printer expertise to produce medical masks for doctors, nurses and other healthcare professionals treating those infected with the coronavirus.

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A registered patent agent, Finan uses his 3-D printer to make parts for an open-source medical splash mask developed by Joseph Prusa, who actually made the 3-D printer Finan uses.

Finan and his colleagues have already “assembled and delivered” 72 splash masks to medical professionals in the Dallas and plan to produce another 20 by the end of the day tomorrow.

“The feedback has been very positive,” Finan told *The Texas Lawbook*. “We’ve incorporated a forehead cover and we’ve recently had a suggestion to print an open source ear-saver that allows the pressure from a face mask’s elastic straps to be taken off the ears. We integrated the ear-saver into the splash shield headband design, which allowed us to stretch our dwindling elastic supply from having enough for 150 splash shields to over 300.

“We’ve also been working with modifying the ear-saver design to be longer to make the splash shields more comfortable and adjustable for a wider range of head sizes,” he said. “This new innovation allows us to supply the requested ear-savers, which can be used together with the splash shield or separately, to our frontline heroes.

Even so, Finan needs help identifying the hospitals who have the need for their masks and are able to accept them.

The Texas Lawbook interviewed Finan on the project.

Texas Lawbook: What caused you to start this effort? Was there something specific that triggered you into action?

Finan: My girlfriend, Melissa Guerrero, and I heard about the gap in the medical supply chain and started doing research to see if there were any 3-D printable parts we could make to help. What we discovered is a large grass roots effort in the 3-D printing community around the world to create a distributed manufacturing network to help the cause. Melissa scoured the Internet and found links to local Dallas medical professionals

in need.

Lawbook: How many of you are involved in this project?

Finan: Melissa and I are a very small cog in the machine. There are a lot of people worldwide with 3-D printers who are willing to donate printer time. However, right now there is not a local coordinated effort here in Dallas to match the medical professionals and the makers (maker is term used for people who 3-D print like us) so we are looking to fill that gap. We have recently set up a GoFundMe (<http://gf.me/u/xt8wy8>) to help pay for the materials and reached our \$1,000 goal in half a day. Our relatives, friends and colleagues have been very generous. As we find other makers in the Dallas community, we can share these funds to help pay for the costs of materials.

Lawbook: In as simple terms as possible, how does this work? What are the basic steps to go from thinking about using a 3-D copier to making masks? Also, what kind of machine/copier do you do this on?

Finan: The rigid portion of the splash shield was designed by the manufacturer of my printer: Joseph Prusa. A detailed description can be found here: <https://www.prusaprinters.org/prints/25857-prusa-protective-face-shield-rc2>. A 3-D model file is downloaded, sent to the 3D printer, and the printing process begins. We use 1” sewing elastic for the headband. We had some difficulty finding the parts for the transparent face cover, so we adopted suggestions in the community to use 10 mil transparent binder covers instead. We then used an open source 3D modeling software called Blender to modify the ridged printed portion to where the pegs align with a 3-hole puncher: this standardizes the process while speeding it up and removing variability. Now our local medical professionals can make replacement face covers themselves from common office supplies as the face covers become scratched and worn. The printed ridged portion is strong biodegradable plastic and all parts can withstand bleach and alcohol cleaning.

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Lawbook: How many masks have you made? How many can you make per day?

Finan: Our capacity averages about five masks per day, as printing is a relatively slow process. We have already delivered 32 completed splash shields, and we are delivering another 20 soon. As we get more people printing in the Dallas area, we are optimistic we can grow this number proportionally. I have used my own funds to purchase a second Prusa MK3S MMU2 3D printer from Joseph Prusa that will double our production capability. The second 3D printer should be assembled and ready by next week.

Lawbook: How much does it cost to make per mask?

Finan: The cost is surprisingly reasonable. We are estimating a total of about \$3.00 per completed splash shield set.

Lawbook: What are you wanting to do with the masks?

Finan: We are providing the splash shield to local medical centers, but the goal has become to use the research we have already done to expand our efforts to other projects. We are currently looking at working with a group in NYC to help supply ventilator splitters so that multiple people can share the same ventilator machine. We want to create a network to help them and then have a network ready for when Dallas is likely to experience the same shortage of machine parts and supplies.

Lawbook: Can I order a mask?

Finan: Only if you are a medical professional in need. However, this is an open source project, so you are free to make your own.

Lawbook: What am I not asking that I should be asking?

Finan: The project is bigger than any one person. So getting the word out that there are makers in the Dallas community that can help and that the help is needed is more important than highlighting the efforts of any one individual.

By coordinating our efforts, we can build a distributed 3D manufacturing network that can help supply our front line with the items they need to fight the virus.

The material such as the 3D filament, elastic and office supplies are not on the “essential” list so supplies are dwindling. Shipping for what is out there is being canceled or delayed until late April which will be too late. We need help from others to highlight to our leaders that these materials are essential for the fight and that these businesses and factories need to stay open. We need more cogs in the machine. Anything anyone could do to help get the word out would be greatly appreciated.

Melissa and I can be contacted by makers and medical professionals at Dallas3dPrintersClub@gmail.com.