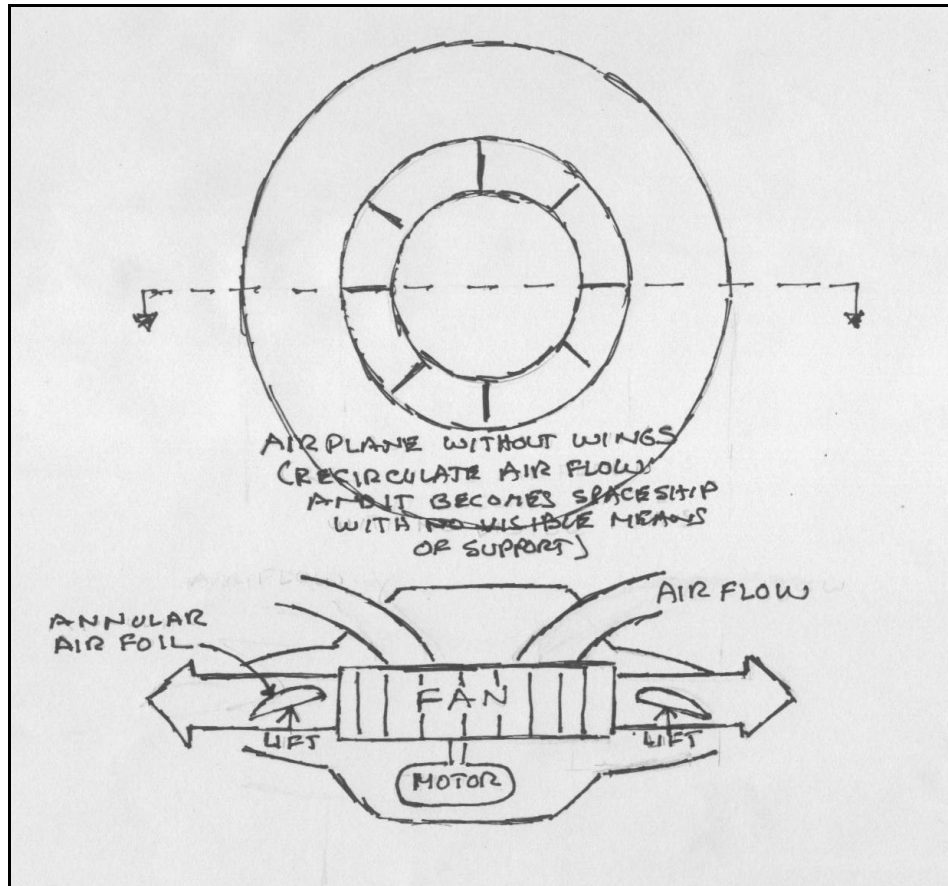


Planes without Wings and Spaceships with No Visible Means of Support

Regarding myself as an inventor, I invent a new category of flight...



It started in 1963. I was working for Celanese Corporation in the Charlotte applications development labs. The labs were in the basement of a large, yellow-brick building located on what was then the edge of Charlotte. The Eastern Airlines reservation center was across Park Road. The Rathskeller, one of the few real bars in Charlotte at the time, occupied a basement off Montford, a mile toward town. Sometimes, I would go there when I stayed overnight in Charlotte, drinking beer that I really didn't like, listening to conversations between the Eastern Airlines people who frequented the place.

The applications labs tested and developed products used by Celanese customers. The facility reproduced, on a small scale, all the textile manufacturing operations in which Celanese artificial fibers were likely to be processed. Later, after I came in one day wearing a tie instead of a green shirt with Tom on the front, I ran the hosiery knitting lab where stretch stockings were developed.

This was my second real job. Previously I had painted houses for my father, done six months of active duty in the Reserves, and worked as a lab technician (my first real job) for Fiber Industries, which Celanese owned with Imperial Chemical Industries, a big British firm. Before that I spent some time at NC State where I studied to become an aeronautical engineer. I occupied my last week on campus eating peanut butter sandwiches, going to movies, and trying to drink port wine.

(Imperial Chemicals Industries was featured in *The Man in the White Suit* in which Alec Guinness played an earnest but naive textile chemist who invented a fiber that could never get dirty.)

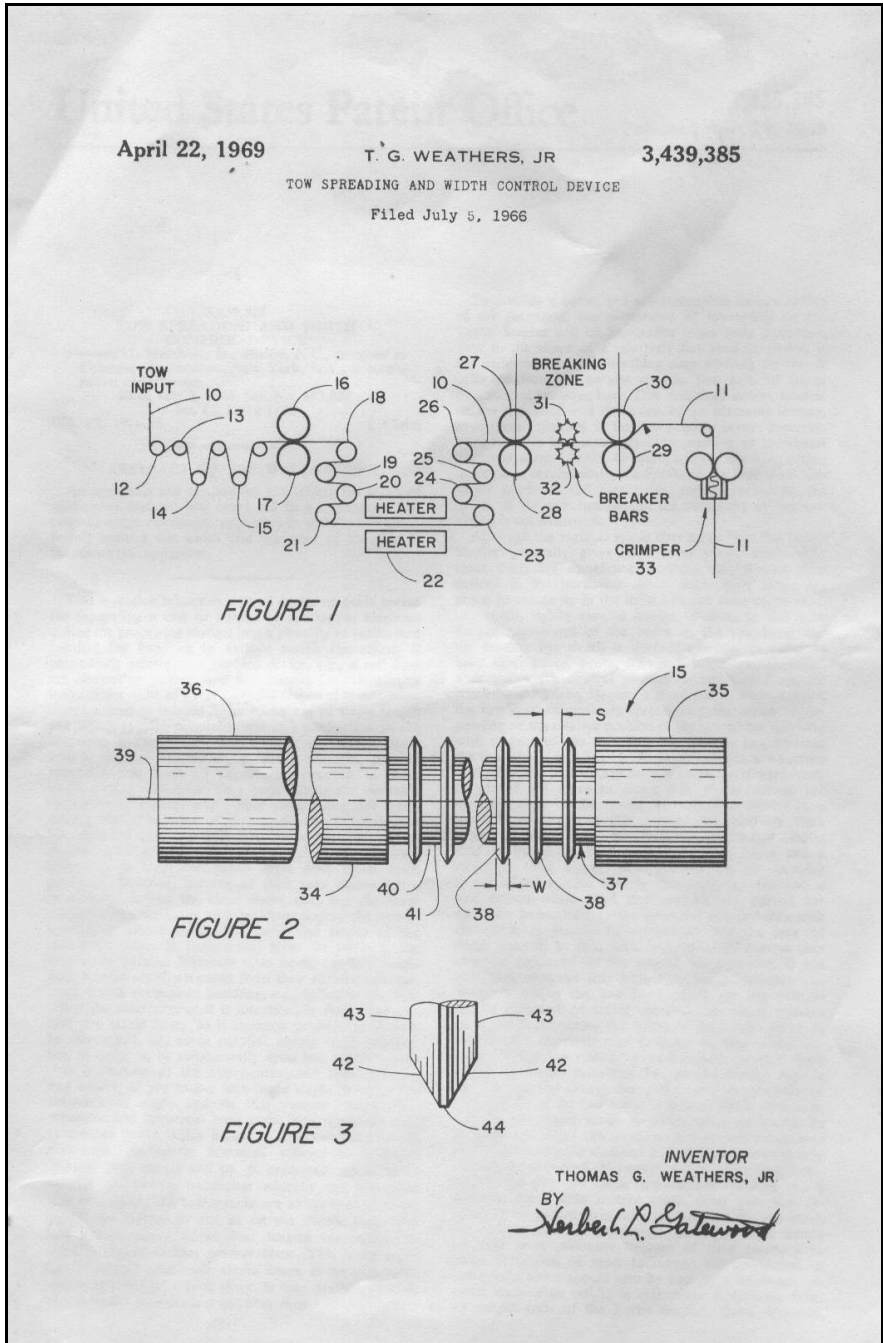
At Celanese, I was a technician, assisting engineers in various development projects. The first engineer I worked for was Jim Williams. He was a nice guy. He let me drive his Alfa Romeo and his old Rolls Royce. He also gave me the opportunity to call myself an inventor.

That I got a patent was not all that unusual. Everybody in the labs was potentially an inventor and a number of other technicians were awarded patents. However, in my case, getting the patent stirred dormant grandiosity, resulting eventually in planes without wings and other developments.

My work-related invention happened in 1963 during my first week at Celanese. Not sure what to do with me, Jim put me in the Yarn lab. I worked near but not with ladies who wore starched green uniforms and moved like dancers down aisles of spinning frames.

Jim introduced me to the ladies, who promptly ignored me, then showed me how to run tests on the Turbo Stapler. It converted long, continuous bundles of fibers called "tow" into short individual lengths called "staple". The tow started out about the width of a hand. The converter machine spread the bundle about three or four times wider before it was cut. The problem was that cross-fibers prevented the web from being spread uniformly. My "invention" was to simply let the tow pass over the back of my closed fists. My protruding knuckles acted as guides, causing the tow to maintain its width.

Jim had me write up my discovery and work with the machine shop to create a prototype device that replaced my knuckles with a finned rod which we attached to the converter. Then he submitted my idea to the Celanese patent department. I don't think he believed that they would actually pursue it. I always suspected he just wanted to make me feel good – to be a part of this group of engineers and scientists. However, the patent department apparently didn't care if an idea had any value, just that it satisfied the criteria for patentability. Their job was to get as many patents as possible for Celanese. As a result, several years later patent 3,439,385 issued with my name on it.



Although I knew this idea was worthless, I began to see myself in a different light. New York patent attorneys in expensive suits interviewed me about how my “invention” worked. They deferred to me. I was no longer a kid wearing a green work uniform with “Tom” on the front. I was an inventor. This idea might be worthless, but other ideas might not be.

The planes without wings happened because a lot of our work involved devices that used air to spread fibers which were then stuffed into pillows. It was inevitable that thinking about the uses of air reminded me of ducted fans. Also, I had a lot of spare time. When the engineers didn’t need anything, I worked on correspondence courses, read, wrote stories, and from time to time thought about grand ideas. Nobody seemed to care.

I was probably thinking about how I thought ducted fans worked – how the air flowing over the lip that goes around the top of the duct causes lift – when it struck me. All other airplanes get lift by moving wings through the air. Fixed wing planes move the entire airplane to get air flow over the wing. Helicopters move just the wing. The ducted fan, as I misunderstood it, seemed to be moving air across a stationary lifting surface (the curved lip).

Moving air instead of the wing seemed inherently more efficient. Why move the entire airplane (or the rotors in the case of a helicopter) when you could just move the air? Air is insubstantial; airplanes are big and heavy.

Lacking the theoretical knowledge, I never determined how much energy it would take to move enough air to lift a craft. I expect it might have ended up like my work-related idea to use a hot-air jet for tufting carpets. One of the engineers speculated that a full-scale machine would use all the steam generating capacity of the local power plant.

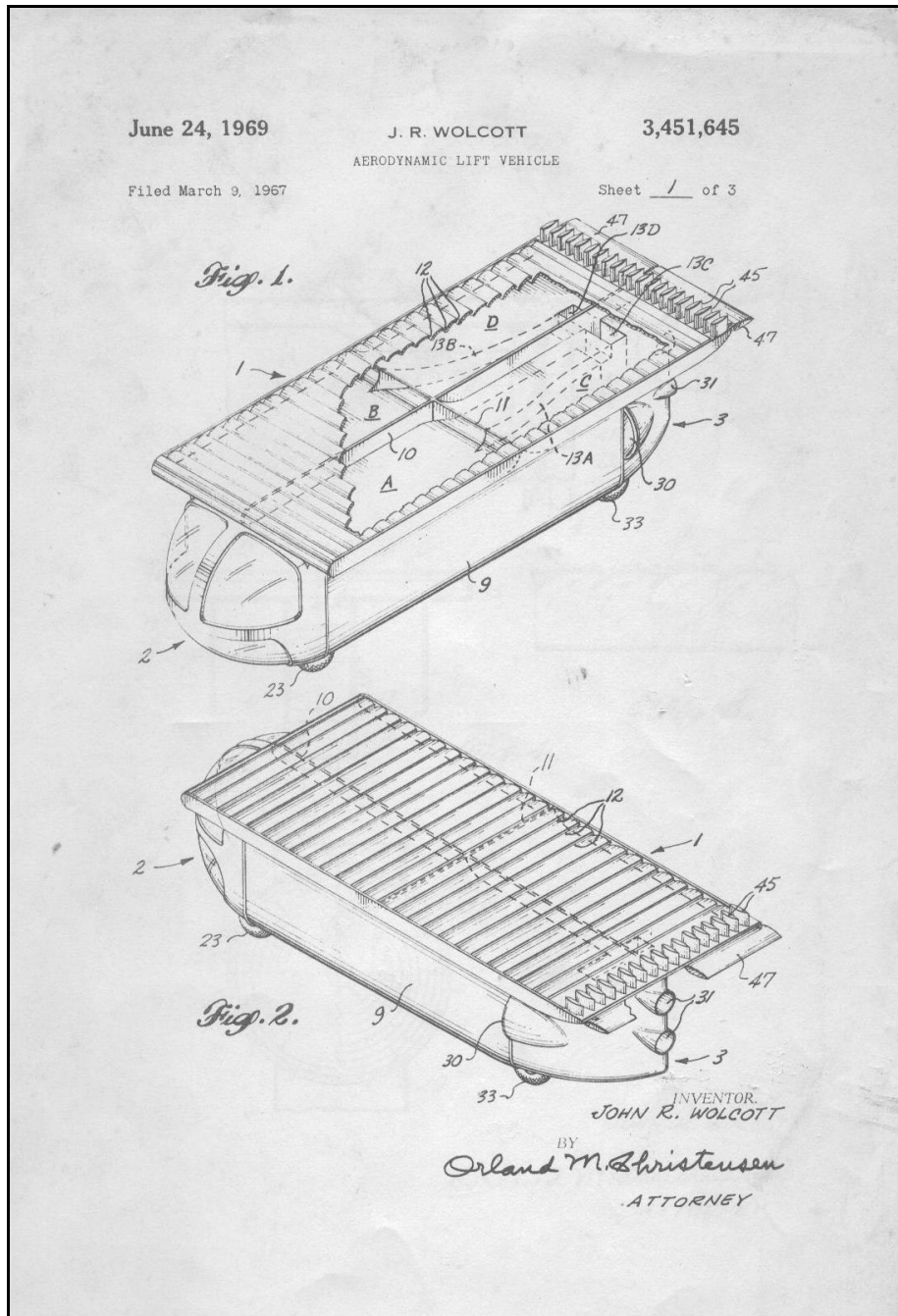
I attempted to build a model using a motor from a small-scale electric train, but got sleepy trying to find a small squirrel-cage fan to blow air across a lifting surface. And lifting plywood sheets with the air hoses from our lab didn’t really prove anything.

However, I did pursue the idea in a conceptual fashion. I drew pictures of various aircraft that embodied the principle. Most were shaped like flying saucers or Frisbees. They sucked air (in theory) through ports in the top or bottom and then blew it out the edges across narrow circular (or, annular) wings. Later versions dispensed with airfoils altogether, simply venting air across the upper surface of a body, which itself could be hidden. Like blowing air across a piece of paper, the pressure difference between the upper and lower surfaces would generate lift.

These craft looked like real flying saucers. In my 40 mile commute across country from Shelby to Charlotte, I had extended fantasies about creating full-scale models which I would demonstrate to an astonished world. I could see myself soaring over the traffic, even flying past Shelby, going over the mountains to somewhere else.

The final iteration of the idea was the spaceship. This was a fully enclosed craft that re-circulated air across the lifting surface. By eliminating the need for an external source of air, I had created (on paper of course) a space craft with no visible means of propulsion.

I expect that the planes without wings might work, at least in theory. In 1970, when I was a Patent Investigator for W.R.Grace and regularly going to the Patent Office in Washington , I found three patents (3,465,988, 3,424,404, 3,451,645) which were similar to what I proposed. The cover from one of the patents is shown below.



In my own defense, I never really thought the spaceship would work. It would be like lifting yourself by your own bootstraps. Joe, my boyhood friend who actually became a rocket scientist, said he thought the idea seemed feasible – but I suspected even then that he wasn't paying attention.

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