

# HIS IDEA FAUCET KEEPS RUNNING

PATENTED WATER-CONSERVING DEVICE IS JUST THE START FOR KNOWLEDGE-HUNGRY RENAISSANCE MAN **BY EDITH G. TOLCHIN**

**I generally prefer** the story behind the inventor, sometimes more than the story of the invention itself. This is especially true when interviewing the young innovators who will shape our nation and make it greater.

Recent University of Virginia graduate Zihan Chen, 21, holds a 2016 patent for a faucet design that, according to Chen, “minimizes water waste and manufacturing costs while maximizing user experience and personal hygiene.” I asked him about the details of this invention and information about his other patents pending in the field of electronic devices, user interfaces and home appliance-related inventions.

Ah, the energy of youth!

**Edith G. Tolchin (EGT):** Have your background and education led to any of your inventions?

**Zihan Chen (ZC):** I graduated this May from the University of Virginia with a major in studio art and a minor in architecture. I have been fascinated with designing and inventing way before I began studying at the university. I submitted my first patent application about four years ago.

All the inventions I’ve had so far are from my personal observation and creation and have no direct relation to my education or my field of study. But the study of art did open my eyes a bit and in some ways changed my way of observing, which I think definitely contributed to my ability to invent.

**EGT:** How did you come up with your first patented idea, the new faucet design?

**ZC:** I came up with the idea about three years ago. It all began when I noticed people leaving the water faucet

on, running, while using hand soap. That annoyed me when I saw clean water being wasted. You can imagine that a lot of people all around the world are also leaving faucets on during hand washing, so every single second a great amount of water is dumped without even being used.

I tried to invent a faucet that could “teach” its users to save water and end that problem. After about a month of researching and designing, my Tango faucet finally came about. However, it went way beyond just solving the initial water-wasting problem and became a total game changer.

**EGT:** How is this faucet different?

**ZC:** Tango is a faucet that is redesigned on many levels to achieve great improvements on the user experience, water and energy saving, and manufacturing cost. All the improvements come from the design of a very simple but novel structure which differs from all others.

The knob is circled by water coming out so that all the dirt and hand soap that is brought onto it by the user’s hand will be washed away immediately after the knob is rotated “on.” No second-time pollution happens when the user turns off the water, and the knob is always clean and ready for the next user.

The soap dispenser now is incorporated into the knob of the faucet, and the outlet of soap—located at the end of the knob—will be covered by water when the faucet is on. In this way, the user has to turn off the water to access the soap so that a great amount of unnecessary water waste is prevented.

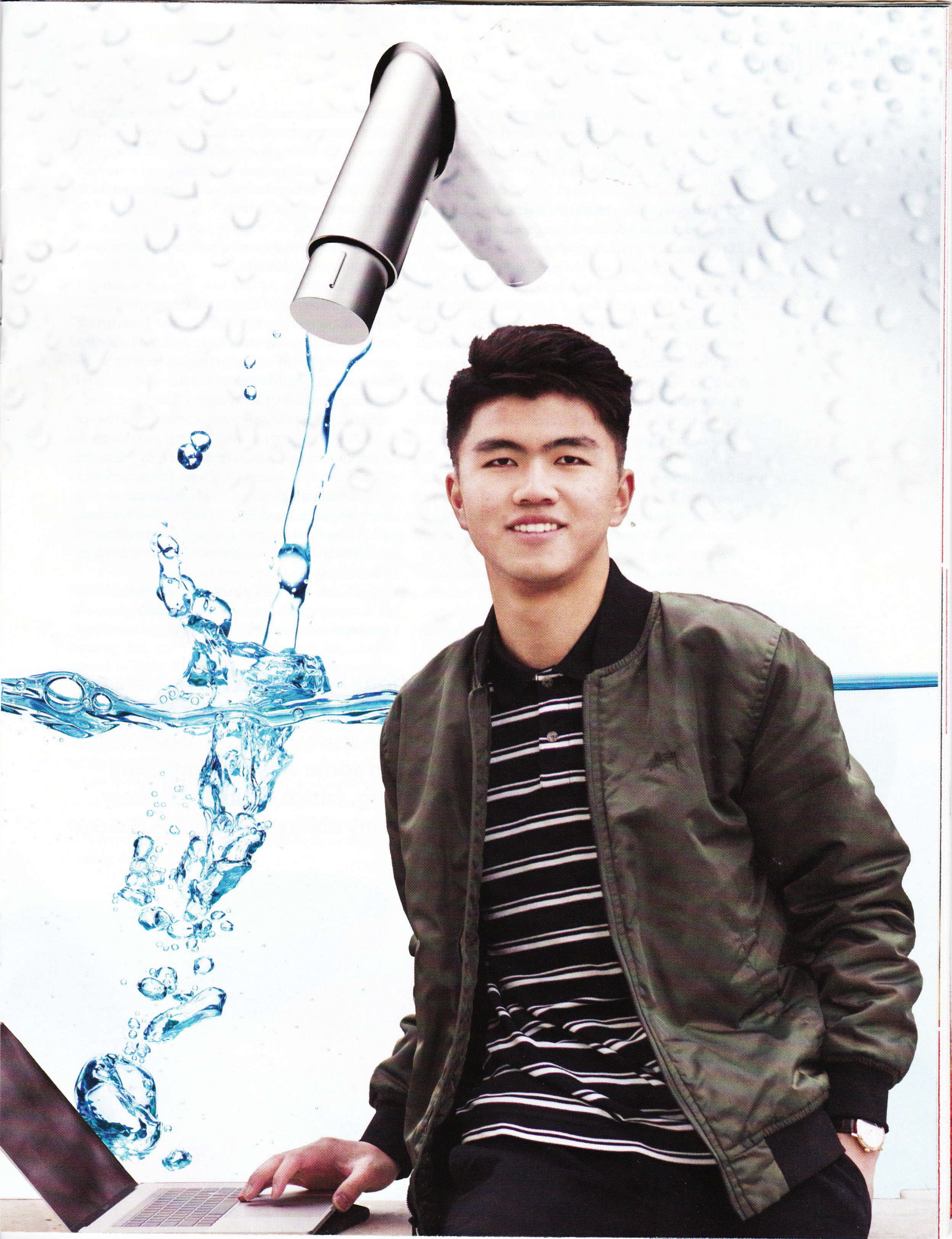
Tango surpasses similar products on the market in all aspects, with easy and low-cost production, more stable performance, better user experience and great

In addition to his faucet that has a design patent, 21-year-old Zihan Chen (opposite page) has a host of other patent-pending inventions in the United States.



PHOTO BY DAN ADDISON/UVA UNIVERSITY COMMUNICATIONS







water and electricity savings. The annular outlet distributes the same amount of water discretely in a wider and more efficient range, which pushes the water savings of Tango to an even higher level.

**EGT:** Do you plan to create a business, manufacture on your own, or get a licensing agreement?

**ZC:** Currently, my broker and I are looking for potential buyers, and I am considering licensing the patent as well. We first reached out to some of the companies in the field, and a few of them showed interest. I am confident. I believe this is a great invention, and most important it solves tough problems—problems that exist every day and problems that cause a shortage of water resources which threatens the planet. I will be more than happy and proud to see the production and application of the faucet, which means that I have made my contribution to the environment.

**EGT:** Tell us about your other patent-pending inventions.

**ZC:** Besides the faucet invention, which has already been granted in the United States, I currently have five other patents pending in the U.S.—a method for pairing of electronic devices based on short-range communications by analyzing the intervals between motions; a method of dynamic text presenting on electronic

devices based on motions detected; a method of contacting for emergency, using electronic devices activated by a pattern of active buttons; a structure design of refrigerator devices that prevents objects from falling, and a structure design of a container that produces a more comfortable and hygienic way to wash fruits.

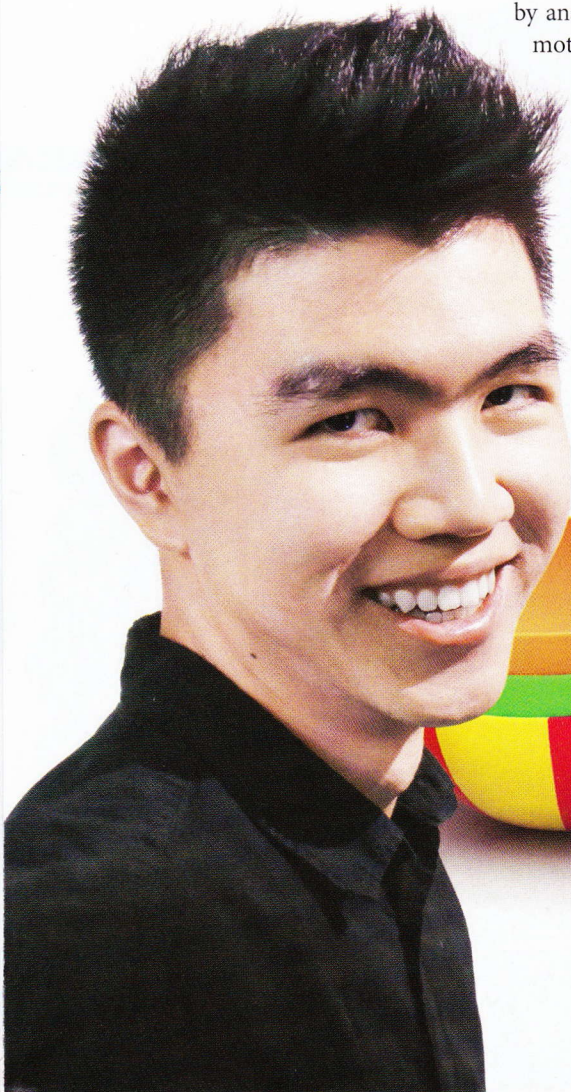
**EGT:** Do you have a specific category of inventions that holds your interest?

**ZC:** I do, actually. In my very early stages of inventing, I was just searching for problems and coming up with solutions from my everyday life. Well, of course I couldn't file patents on all the ideas I had, sadly, for the sake of time and money. I can only select the ideas that I think have the most potential to be commercialized and to be successful on the market and then file a patent on those.

The faucet and the refrigerator invention were two of those. Later, I started to switch my focus to electronic devices and internet-related inventions only. I am a fan of those technology items. I always follow the most updated technology and news, like biometric sensing under screens, and mobile payment in an augmented reality. I have been studying a significant amount of inventions and patents in that area, by a lot of industry leaders like Apple, Google and Facebook.

I don't have a very deep background in engineering, but in no way can that stop me from inventing because I focus more on the user level. I always try to put myself

**"All the inventions I've had so far ... have no direct relation to my education or my field of study. But the study of art did open my eyes a bit and in some ways changed my way of observing, which I think definitely contributed to my ability to invent."** —ZIHAN CHEN



One of Zihan Chen's innovations is a structure design of a container that provides a more comfortable and hygienic way to wash fruits.



inside those innovations and to maximize the functionality and user experience based on updated technology with new inventions.

**EGT: Do you have a favorite among your inventions?**

**ZC:** Honestly, I like all of them. They all solve existing and common problems and provide better solutions. If I am asked to pick only one as my most favorite, it would be the faucet.

**EGT: What are your hobbies or other interests?**

**ZC:** I started to fly airplanes when I was 19, and I became a private pilot after a year's training. I enjoy observing from different angles. I believe that is also something a good inventor should always be doing.

I also founded a game studio and developed a few mobile games with my friends not long ago. Some of the games went pretty well and got quite an amount of downloads. Please check those out at [secstudio.com](http://secstudio.com) and try them.

Other than these, I enjoy graphic design and have done some internationally awarded work. Currently, I am spending some time with a top advertising company and doing some brainstorming and designing for it.

**EGT: What are your future goals?**

**ZC:** I was admitted to a graduate design program in New York City, and I will spend the next two years learning and experiencing the city that I've always wanted to be in. Different from a lot of other people, I do have a life goal but won't really make very specific life plans for the next few years other than trying to do my best every day. I just keep doing and learning from what I did, and keep correcting myself and searching for the best in my adventures.

I do want to be involved in inventing in some ways in the future, either professionally or as a personal hobby. Inventing is something I have been fascinated with for a very long time, and it seems to be something I will be doing for a long time.

I am still on my way of proving to myself if it is possible for me to be a professional inventor and achieve what I want. It might take another few years—but if I get the answer and the answer is yes, then I might just talk to a few of my attorneys I have been working with and form an inventing team. Otherwise I might be working for a company. But I think as long as I have the ideas, I will survive easily.

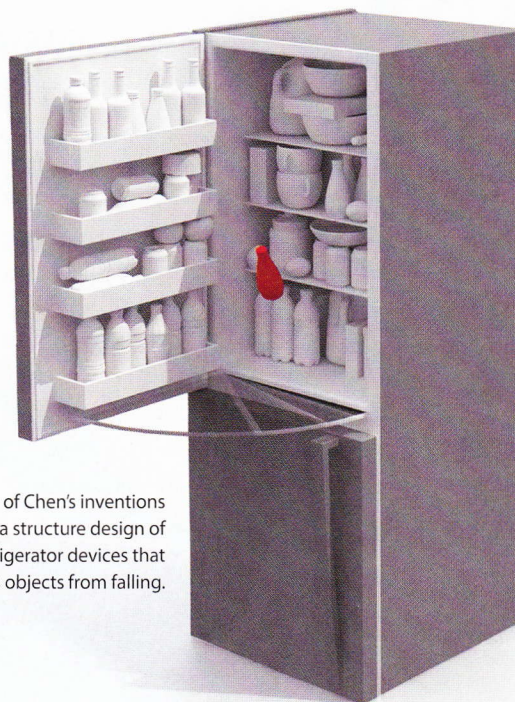
**EGT: If you could invent a solution for world peace, what would that be?**

**ZC:** World peace is quite a complicated problem. Thousands and thousands of people from different areas are working on that every day, and yet we still face tough situations. I certainly do not think that there is just one thing to be invented to make the world peaceful all of a sudden.

I believe that an educational opportunity for everyone on the planet is a first step. So I might start with coming up with a new media or method based on current information technology for massively spreading valuable knowledge at low cost and helping to create an educational equality for underdeveloped areas. 📖

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Books by **Edie Tolchin** ([egt@edietolchin.com](mailto:egt@edietolchin.com)) include "Fanny on Fire" ([fannyonfire.com](http://fannyonfire.com)) and "Secrets of Successful Inventing." She has written for *Inventors Digest* since 2000. Edie has owned EGT Global Trading since 1997, assisting inventors with product safety issues and China manufacturing.



Another of Chen's inventions is a structure design of refrigerator devices that prevents objects from falling.



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Isabel and Caroline Bercaw, inventors of Da Bomb Bath Fizzers; photo by Eliesa Johnson.

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