South Bend Lathe

Miniature Replica Made by

Wilbur Henry Dexter

This working miniature replica of a six inch South Bend lathe was the cherished creation of Wilbur ("Bill") Henry Dexter. This model of South Bend was his favored piece of machine equipment. The replica was most likely made in the late 1940s or early 1950s.

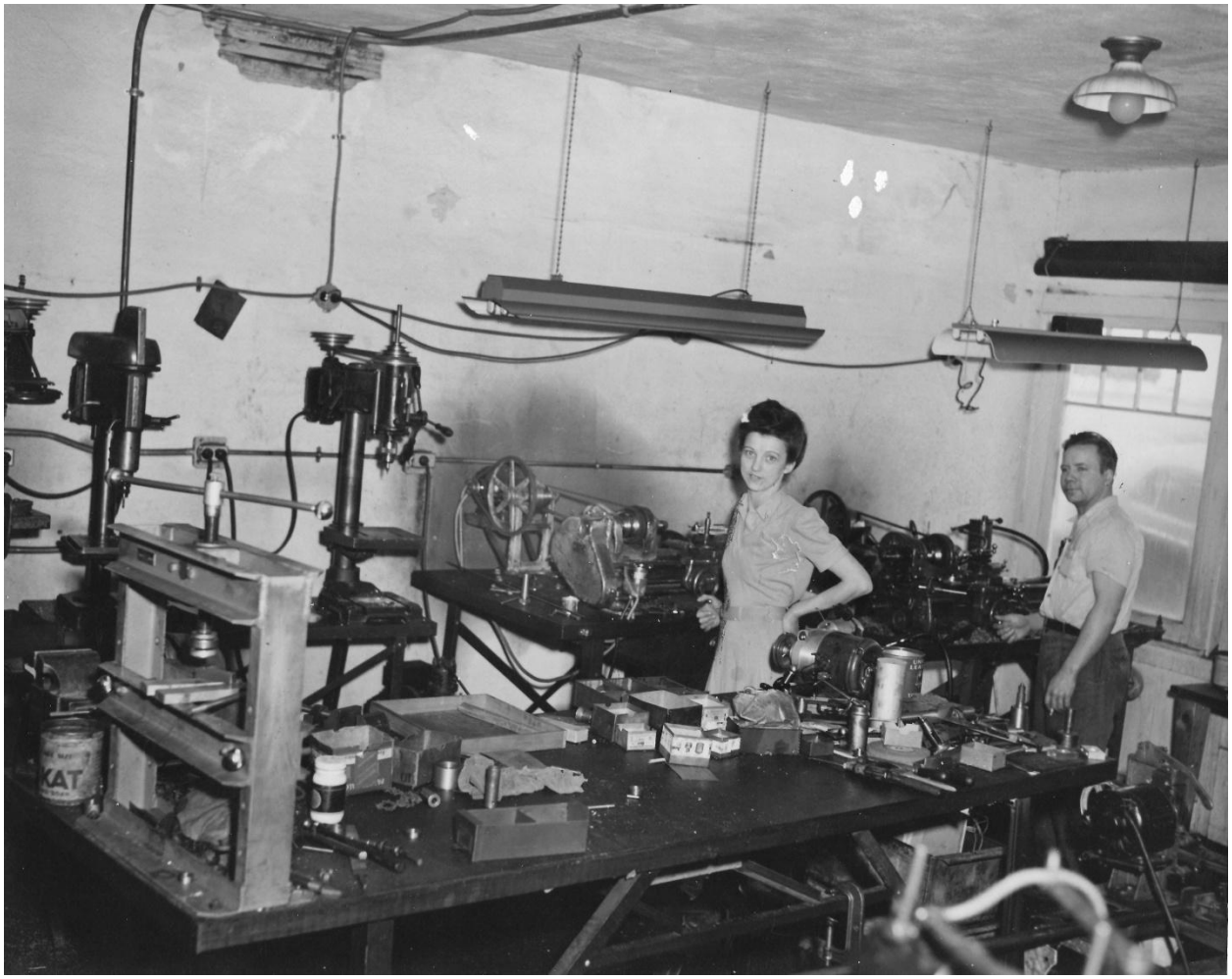
Wilbur, the child of Dutch heritage immigrants, was born July 5th 1912 in Medina Minnesota. He was raised on a nearby dairy farm, the youngest of 8 siblings. He gained the skills typical of farm kids of the period. He was not a particularly engaged student in school and would drop out by the end of 10th grade (although some census data disagrees claiming he completed school). In the late twenties and into the early thirties it appears he was making a living from carpentry and probably other handyman skills acquired from his experiences on the farm.

The 1930s were tough times and especially so for a young man with little education and meager marketable skills; so it was probably a relief when he was able to sign on with the newly created Civilian Conservation Corps in 1934. He was stationed at several project camps in Minnesota (including F-32 Mack MN, F-34 Grand Rapids MN, and DS-135 Onamia MN). According to his discharge papers he left the CCCs in March of 1935 with the reason “to accept employment”. From what we can tell it looks like by 1936 he was working as a machinist in the Minneapolis area and I believe he worked for the Onan Company, manufacturer of, most notably, gasoline powered generators. In addition, it seems he ran a small “Fixit Shop” on the side.

Within a year or two, seeking better opportunities, he moved west following Neil, one of his brothers, to Inglewood California a suburb of Los Angeles immediately northeast of the airport. Wilbur found employment as a tool and die maker for North American Aviation. He encouraged his sweetheart, Lillian Pearl Sonenstahl, to join him in California where they soon married.

Wedding day!

In a couple of years he set off on his own to establish a small machine shop in an aging storefront with an attached apartment along Centinela Ave. where he catered to the volumes of sub-contract work that flowed from the major aircraft manufactures during the war. He and Lillian ran the full shop by themselves.



The Centinela Avenue shop during World War II. Yes, Lillian knew how to wrangle a lathe!

I (Leland Dexter, their only child) was born into this workshop environment in 1946. After the war Wilbur expanded his machining operations and moved a few miles south to a larger shop on Yukon Ave. in Hawthorn. It was a major operation with several employees and I believe their main product was table saws (could likely be the Timberline brand name). Unfortunately Sears and Roebuck marketed a similar Craftsman model and ultimately the Timberline could not compete.

Lillian at the Centinela Avenue shop.

After a year or two hiatus visiting relatives back in Minnesota and helping members of the family build houses; Wilbur returned to Inglewood in 1953 where he found a house with a sizeable workshop in the back yard located along Arbor Vita St. on the south side of town. After teaching himself the requirements, he then passed the exam for a California State Professional License. He established himself as a self employed mechanical engineer operating under the name Dexter Laboratory. He worked freelance as a consulting design engineer / prototype development machinist etc. Much of his work over the years was in conjunction with other self-starting engineer and scientist types like John H. Ransom (optics) and Ed Sheridan (another medium size machine shop owner).

Perhaps the prototype to the Timberline brand of table saws

Thomas Edison was one of Wilbur's heroes and he became a self styled-inventor himself. He obtained a number of patents (appears to be five) over his lifetime including a linear bearing, a lens grinder for shaping eyeglass lenses and a pre-electronic computer mechanical graphics milling machine (like a fancy pantograph) that could replicated solid objects variably scaled in X and Y called the DexterGraph (see attached spreadsheet). He was also fascinated with the direct conversion of heat to electricity and I remember watching him working with numerous chemicals inserted in chambers of various materials, applying heat and reading the output voltage and current (see sample notes attached). Or watching him make a simple, but effective, heat engine out of a wheel bristling with many loops of bent Nitinol wire that would turn when dipped in a pan of hot water.

Wilbur and Lillian were very interested in antiques. They both loved to collect and play various mechanical musical items; but Wilbur especially liked antique American-made pocket watches. As a teenager, I was bored stiff when on our family travels he would stop and chat about watches for what seemed like hours with the jeweler in every town we would pass through. Then when he was done in the shop and I thought we would finally be back on the road; he would return to the car to inform us the guy had even more old watches at his home!

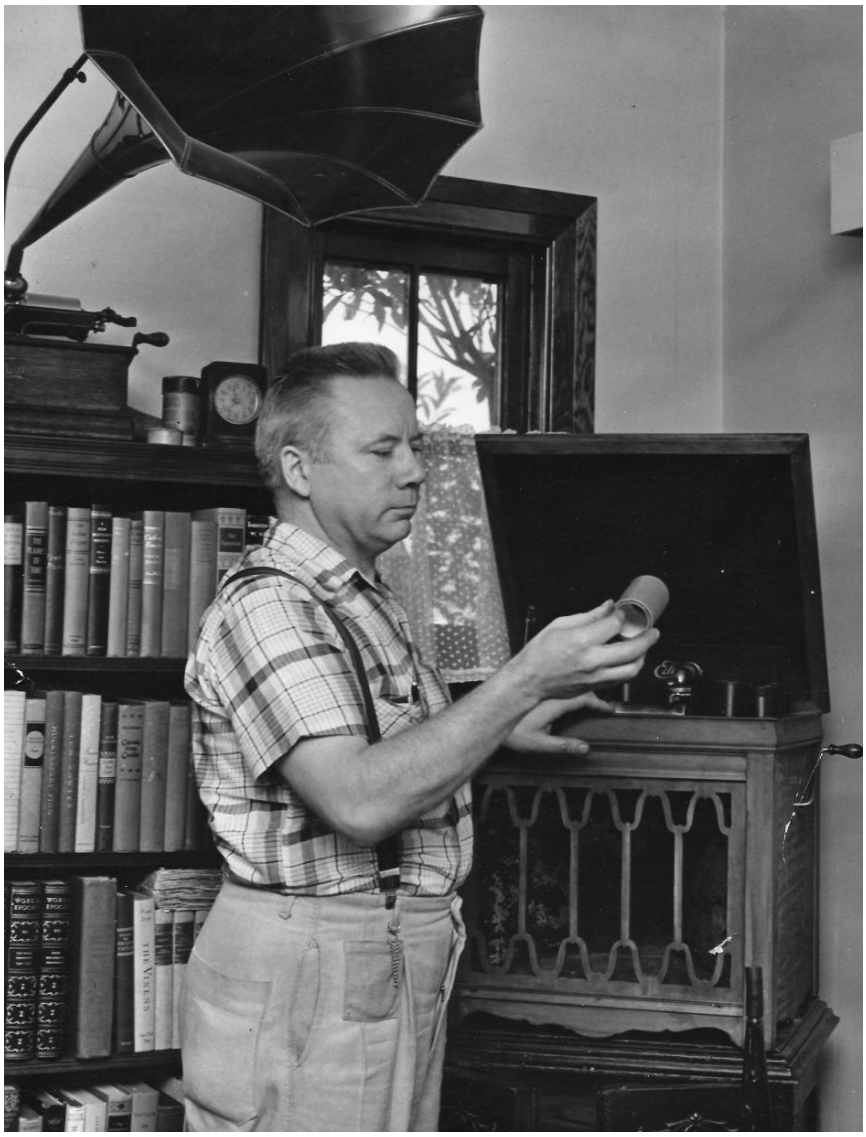


Photo of Wilbur provided by a reporter for the local Inglewood newspaper when it ran a story on his antique musical collection ca. 1960s .

In the end though, his sizeable and expertly restored collection provided my mother with a good portion of her retirement income. Wilbur Dexter lived to be 73 when lung cancer resulting from an almost life-long smoking habit caught up with him. Lillian outlived him by five more years and died at the age of 78.

My deepest gratitude goes out to genealogist extraordinaire Ms. Wendy Allen of Durango Colorado for her assistance in locating some critical pieces of this biography.

Leland Russell Dexter, Ph.D.
Loving son.
March 1, 2020

Wilbur H. Dexter patents:

search URL:	https://patents.google.com/?inventor=Wilbur+H+Dexter		
id	title	assignee	inventor/author
US-2983553-A	Linear bearing	Wilbur H Dexter	Wilbur H Dexter
US-3085326-A	Can punch	Wilbur H Dexter, Howard A Wilson	Wilbur H Dexter, Howard A Wilson
US-3653296-A	Fluid powered oscillatory drive	John H Ransom Lab Inc, Wilbur H Dexter	Wilbur H Dexter
US-2725689-A	Apparatus for grinding the edges of eyeglass lenses	Super Cut	Wilbur H Dexter
US-2898680-A	Duplicating device	Wilbur H Dexter	Wilbur H Dexter

(Continued)

search URL:			
id	priority date	filing/creation date	publication date
US-2983553-A	2/24/1959	2/24/1959	5/9/1961
US-3085326-A	5/22/1961	5/22/1961	4/16/1963
US-3653296-A	12/12/1969	12/12/1969	4/4/1972
US-2725689-A	9/13/1951	9/13/1951	12/6/1955
US-2898680-A	7/26/1954	7/26/1954	8/11/1959

EXPERIMENTS AND RESULTS IN THERMO-ELECTRICITY BY WILBUR H. DEXTER ON SEPT. 13, 1959

EXPERIMENT #1

Two (2) pieces of copper plate, measuring approximately 1/16 inch thick by 3/4 inch wide by 6 inches long, with a thin layer of moist baking soda (sodium bicarbonate) approximately 1 square inch in area, were clamped together with ceramic blocks on each side of the copper plates to serve as insulators and the soda placed between the copper plat plates. An acetylene air torch was used for the heat source. A Simpson milliammeter, model #230, was connected one terminal to each copper plate. With application of the heat, a slight burst of current was evident as the moisture in the soda evaporated. After the burst of current the meter returned to zero reading until the soda had reached the melting point, at which time a current of electrical energy was produced, indicated on the meter at approximately 15 milliamperes. The current flow continued until the copper plates made contact with one another causing a short out.

EXPERIMENT #2

Two (2) copper plates of approximately the same dimensions as used in experiment #1 were clamped together with a steel clamp. Mica sheet about .015 of an inch in thickness was used to insulate the copper plates from one another and also to insulate the copper plates from the steel clamp. The above described assembly was placed in a crucible approximately 3 inches deep, by 2½ inches in diameter at top, in which was melted baking soda (sodium bicarbonate) to a depth of about 1½ inches. With the above described copper mica assembly resting on the bottom of the crucible and the meter leads connecting, one to each copper element, a burst of current as noted in experiment #1 was evident when heat was first applied with acetylene air torch. The burst of current was only momentary until the soda became melted, at which time a current out put was produced which registered on the meter in excess of 50 milliamperes. The temperature having reached the melting point of mica, resulted in a short circuit between the two copper elements.

EXPERIMENT #3

Borax was melted in a crucible of the same size as in the previous experiment, to a depth of approximately 1½ inches. Two (2) copper elements connected to the meter were inserted in the melted borax and an electric current was immediately evident, registering on the meter as high as 50 milliamperes and varied with the distance apart of the elements.

After producing electrical energy in the above described manner, an aluminum element approximately 1/16 inch by 3/4 inch by 6 inches in length was used in place of one of the copper elements. This resultd in an immediate surge of electrical out put. The capacity of the meter, being 250 milliamperes, was exceeded. The meter was replaced by a 1½ volt flashlight bulb, which was lighted nicely by the device. The voltage was checked at this point and found to be 2 plus across the line. The aluminum soon melted and deposited melted aluminum at the bottom of the crucible which alloyed with the copper oxide, in suspension in the borax. It was noted that the copper was being reduced to an oxide in the afore going process.

At this point 2 titanium elements were used in place of copper, one of which was made to contact the aluminum copper alloy puddle at the bottom of the crucible. The other titanium element was suspended so as to avoid contact with the puddle or the other titanium element. This resulted in a meter reading of 30 to 40 milliamperes which was maintained for approximately one half hour, at which time the elements were with-d drawn from the borax, cooled and found to be heavily coated with a substance which resembles copper oxide. In the afore going experiments the only means of noting temperature was the fact that the soda (in experiment #1 and #2) and the borax (in experiment #3) was maintained in a melted state. Also I believe that the results are sufficiently promising to merit further investigation along this line, which to the best of my knowledge introduces evidence of a novel phenomena heretofore unexplored. I would like to experiment further with other materials, such as melted sodium as the heat transfer medium and various metals as elements.

Wilbur H. Dexter