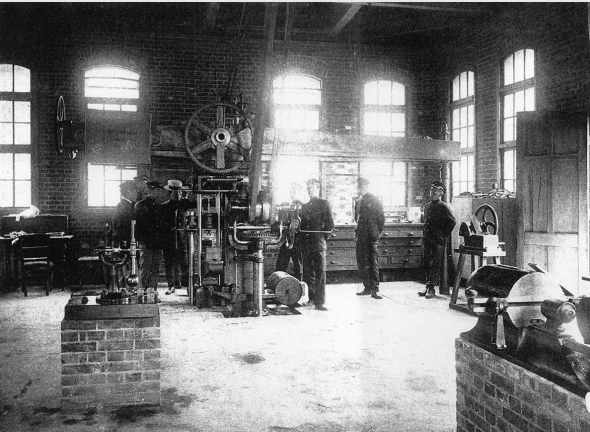
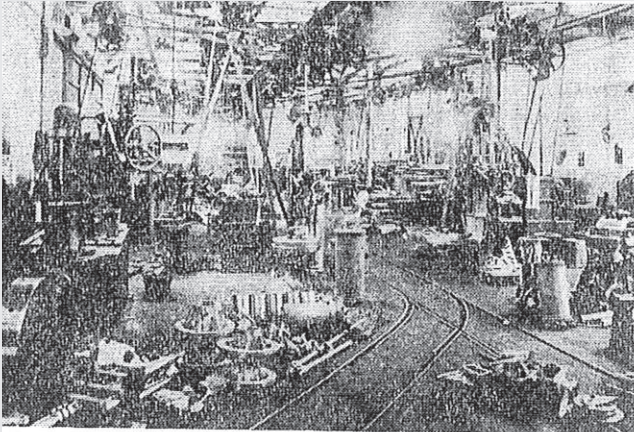
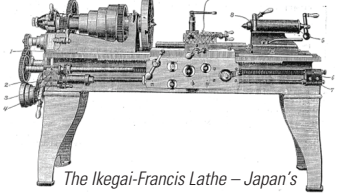
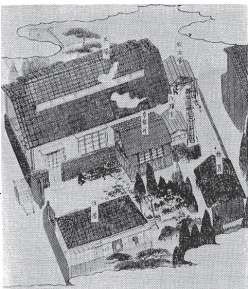


Henry Ford born		1863	
		1866	July 19th Charles Albert Francis born in Mansfield, Mass. Francis received his early education in the schools of Mansfield and served an apprenticeship with the Mansfield Watch Tool Company. <i>The Journal of American Society of Mechanical Engineers, No.38</i>
			August 10th Charles Albert (or Robert) Francis was born in Mansfield. Father's name: Hiram? (birth certificate difficult to read) <i>Mansfield City Record</i>
Sakichi Toyoda born in Kosai Area	March 19th	1867	
Tokyo Shokko Gakko founded (the ancestor school of Tokyo Institute of Technology)	May 26th	1881	
		1884	From 1884 until 1890, Francis was a machinist, tool and model maker for L. L. PoUands of Worcester, Mass. <i>The Journal of ASME</i>
		1889	Francis marries Carrie L. Smith, living in Worcester. <i>City record</i>
		1890	1890, Francis was a mechanic for the Department of Physics at Clark University in Worcester; remained there until 1894. <i>The Journal of ASME</i>
Tokyo Shokko Gakko renamed Tokyo Kogyo Gakko	March 24th		
Sakichi visited and was famously inspired at the 3rd Domestic Exhibition of Industry in Tokyo	April		
Sakichi's first loom patent: Toyoda Manual Loom (patent 1891/May/14)	November 11th		
John Dewey at University of Chicago, creates the Dewey School with emphasis on integration of "thinking" and "doing" in education		1892	May 3rd Francis' daughter Carrie A. Francis born. <i>City record</i>
Sakichi established the company Toyoda Shoten		1894	1894-1899, Francis was a mechanic at the University of Chicago. <i>The Journal of ASME</i>
Sakichi established Takehira Plant of Toyoda Shoten		1895	
Northrop loom patent application filed with Japan Patent Office (JPO).		1897	
		1899	Between 1899 and 1903 Francis was tool maker for the Veeder Manufacturing Co. at Hartford; special mechanic at the Yerkes Observatory, foreman of the Meter Department of the Diamond Meter Co. in Peoria, IL., and the Pratt & Whitney Co. in Hartford. <i>The Journal of ASME</i>
Sakichi established the company Igeta Shokai	November		
Sakichi became the Chief Engineer (Gishicho) of Igeta Shokai	December		
Takatsuiji from Kanebo visited Hopedale, Mass, site of manufacture of Northrop Loom at Draper Loom Co. Northrop loom patent granted by JPO.		1900	
According to the 1902 teacher list of the School, the immediate predecessor teacher of Charles was an American named Herbert Almon Stephens (spelling is inferred from Japanese phonetic alphabet). (recorded in the school Annual Report, Dec. 1902)		1902	
Toyoda Shoten renamed Toyoda Shokai			
The school Headmaster Dr. Seiichi Tejima made a request to Japanese General Consul Sadatsuchi Uchida in New York City to select an appropriate person as the successor (the request was made between January and Sept. 1903 and recorded in the school Annual Report published in Dec. 1903).		1903	Francis resided in Hartford, Connecticut. <i>City Directory</i>
The Higher Technological School of Tokyo built a new shop for looms within its weaving department			
			
<i>Higher Technological School of Tokyo</i>			
			
<i>Factory that Francis laid out with rails for material flow</i>			
Sakichi established Toyoda Shokai Shimazaki Plant. Toyoda Shokai HQ moved to Fujisaki-Cho from Takehira-Cho (profitable at this time).	January	1906	
			November 3rd In 1903, Francis became Instructor and Master Mechanic at the Higher Technological School of Tokyo. <i>The Journal of ASME</i> Francis arrives in Tokyo. The school Annual Report shows Charles A. Francis as the instructor for Machine practice. <i>The date (Nov. 3) was recorded by the Secretary, Dept. of Minister of Education of Japan.</i> The "Ikegai Ironworks 50 Year History" book states incorrectly that Charles had 20 plus years experience at Pratt & Whitney.
		1904	Article by Francis "American Tools in Japan" published in American Machinist. <i>American Machinist, vol. 27</i>
		1905	Francis became a member of ASME The school Headmaster Dr. Tejima ordered two sets of powered lathes (Bradford Type, 6 feet) from Ikegai Ironworks for the machinery department of the Higher Technological School of Tokyo (HTS). Instructor Charles A. Francis directly led the development. Ikegai Ironworks names this development of a lathe that was comparable in quality to American products as an epochmaking event in the company's history. <i>"Ikegai Ironworks 50 Year History" (Japanese)</i>
			
			<i>The Ikegai-Francis Lathe - Japan's first high-speed precision lathe</i>
			May Secretary of Department of the Minister of Education recorded the following in a table of foreign teachers in Japan: <ul style="list-style-type: none">Charles A. FrancisNationality: USAResponsibility: Machinery PracticePayment per month: 300 JPYReturning Transportation budget: 675JPYPeriod: From Nov. 3, 1903 to Nov. 2, 1906 (This is the initial contract period. Actually he was a teacher until Feb. 1909 according to the "Tokyo Institute of Technology 60 Year History")Remarks: With wife Abode: Boarding at Suzuki's house, 34, Akashi-Cho, Kyobashi-ku, Tokyo (according to the Who's Who in Japan, Francis moved later to Shio-machi, Yotsuya-ku)" <i>Japan Minister of Education Secretariat records (Japanese)</i>
			June Francis' article titled "Specification of 14 inch Engine Lathe for the Higher Technological School of Tokyo" was published in JSME Journal. Though no author's name is listed in the magazine, Francis wrote later in JSME Journal, that he had authored the article. <i>Journal of Japan Society of Mechanical Engineers (JSME) (Japanese), Vol.VIII, No.13</i>
			October Francis gives speech at the Japan Society of Mechanical Engineering (JSME); transcript published later in the JSME Journal. Two of Francis' articles published ; 1) "Mechanical and Industrial Lines in Japan and American Machine Tools"(speech transcript) 2) "Tools: Steel and Its Changes in Hardening" <i>Journal of Japan Society of Mechanical Engineers, vol.8, No.14</i>
Sakichi established Toyodashi Shokki Company (Toyoda Loom Company). Sakichi became Senior Vice President (Joumu) and Chief Engineer. (this was an active period of invention for Sakichi, with 16 patents granted from 1907 to 1910.)	February 4th	1907	
Sakichi established Nagoya Weaving Company (and closed the weaving plant of Toyoda Shokai. Nagoya Weaving was built for narrow-width experimental iron looms, though it proved inadequate)			May Francis makes official contract with Ikegai Ironworks upon completion of contract with Ministry of Education. Francis leaves the HTS Tokyo in Feb. 1909 (according to "Tokyo Institute of Technology 60 Year History"). However, Nakamura reports that Francis extended his contract with the HTS Tokyo. " <i>Ikegai Ironworks 50 Year History</i> "; " <i>Memories of Ikegai Kishiro</i> " (Japanese) chapter by Seiichi Nakamura, Francis' student and translator
			November Published updated version of June 1905 article by Francis, "Specification of 14 inch Engine Lathe for the Higher Technological School of Tokyo"
			
			<i>Ikegai Ironworks Factory</i>
			March 4th Photo shows Francis' signature ("Memories of Ikegai Kishiro")
			April Some time after April, Francis started to work with Ikegai Ironworks. Payment was 300 JPY per month. " <i>Memories of Ikegai Kishiro</i> " (Japanese)
			June 13th Article by Francis "The Tokyo Industrial Exhibition" <i>American Machinist, June 13, 1907 - view digitized copy here.</i>
			June 20th Article by Francis "Lantern Slides for Shop Instruction - A Method Devised to Teach Japanese Workmen, Which Should Be Equally Good in Any Trade School or Shop" <i>American Machinist, June 20, 1907 - view digitized copy here.</i>
			July Francis' portrait and photo of his shop in photo album of HTS Tokyo Graduating Students. <i>JSME Library</i>
			October Francis parts with Ikegai Ironworks. Francis had conflicts with Ikegai management. Ikegai management wanted Francis to focus only on teaching technical machine building, but Francis insisted on emphasizing the necessity of a systematic, plant-wide transformation plan. Ikegai may have been uncomfortable with the payment of 300 JPY. Nakamura reports that Francis informed him of his intentions to leave Ikegai to join Toyoda. Francis may have moved to Naogya as early as late 1907. However, "Ikegai Ironworks 50 Year History" states that Francis was with them until 1908. " <i>Ikegai Ironworks 50 Year History</i> " (Japanese); " <i>Memories of Ikegai Kishiro</i> " (Japanese)
Model T production at Piquette Road.		1908	Francis joins the company founded by Sakichi Toyoda Toyodashiki Shokki (Toyoda Loom Company). Francis joined in the young company's third fiscal year, or 1908. Payment was 500 JPY for two weeks per month. <i>Toyodashiki Shokki 30 Year History</i> " (Japanese)
Seiichi Nakamura received a letter from Francis when he was manager of Japan-America Gramophone Manufacturing in Kawasaki City. Francis suggested that Nakamura leave Ikegai Ironworks to join Japan-America Gramophone. Japan-America Gramophone Manufacturing located in the current Minato-Cho in Kawasaki later became Nihon Columbia. The founder, Frederick W. Horn was a well-known trading business man living in Yokohama. Horn and Francis would have known each other. " <i>Memories of Ikegai Kishiro</i> "	March	1909	February Francis left the Higher Technological School of Tokyo " <i>Tokyo Institute of Technology 60 Year History</i> " (Japanese)
Akiji Nishikawa, who would become one of Sakichi Toyoda's closest associates (and senior executive of Sakichi's China business, where Sakichi spent most of his later years), graduated from the Higher Technological School of Tokyo. Nishikawa must have been taught by Francis at the School.	July		Year End Francis concluded his work in Japan with the Japan-America Gramophone Manufacturing company. Following a dispute there with a German executive, Francis decides to return to the US. Seiichi Nakamura moved to Shibaura Seisakusho, current Toshiba. " <i>Memories of Ikegai Kishiro</i> "
Sakichi resigned as managing director of Toyodashiki Shokki (Toyoda Loom Company)	April	1910	
Sakichi departed for the US and Europe with Akiji Nishikawa	May 8th		May 31st Francis departed Yokohama on the Chicago Maru and arrived Tacoma (Washington) with his wife on June 14th <i>Seattle Passenger & Crew List</i>
Sakichi returned to Japan	January	1911	Francis was "Manufacturing Superintendent of National Printing Machinery Co., Inc., Athol, Mass., Page 258 CHANGES IN MEMBERSHIP 267: FRANCIS, Charles A. (Associate, 1906), Mfg. Supt., Natl. Ptg. Mch. Co., Inc., 167 Hapgood St., and /or mail, P. O. Box 979, Athol, Mass." <i>The Journal of American Society of Mechanical Engineers, Feb. 1911 VOL. 33 No. 2</i>
Sakichi established Toyoda Jido Shokufu (Toyoda Automatic Loom Works, Ltd).	October		
Factory completed in September 1912 as the Toyoda Jido Shokufu Plant. The plant was capable of housing 200 looms, but lack of funds resulted in quantities only half the number originally intended. To obtain funding for the required machinery, Sakichi renegotiated the terms of the contract transferring his loom patent rights to Toyoda Loom Company.	September	1912	
Sakichi traded all of his patent claims to Toyoda Loom Company for a one-time payment of 80,000 yen which he used to purchase additional looms, bringing the total number of looms at the plant to 200, including eight automatic power looms that were used for research.	October		
		1913	Francis was foreman at the General Electric Co. Pittsfield, Mass. <i>The Journal of ASME</i>
		1915	Francis joined the Remington Arms Co. in Bridgeport, Conn. <i>The Journal of ASME</i>
		1916	Francis died at his home in Bridgeport, January 14, 1916. <i>The Journal of ASME</i>