

FROM A SHINGLE AND SAWMILL CAMP TO A COWBOY TOWN:
BANDERA, TEXAS

by Lauren A. Langford

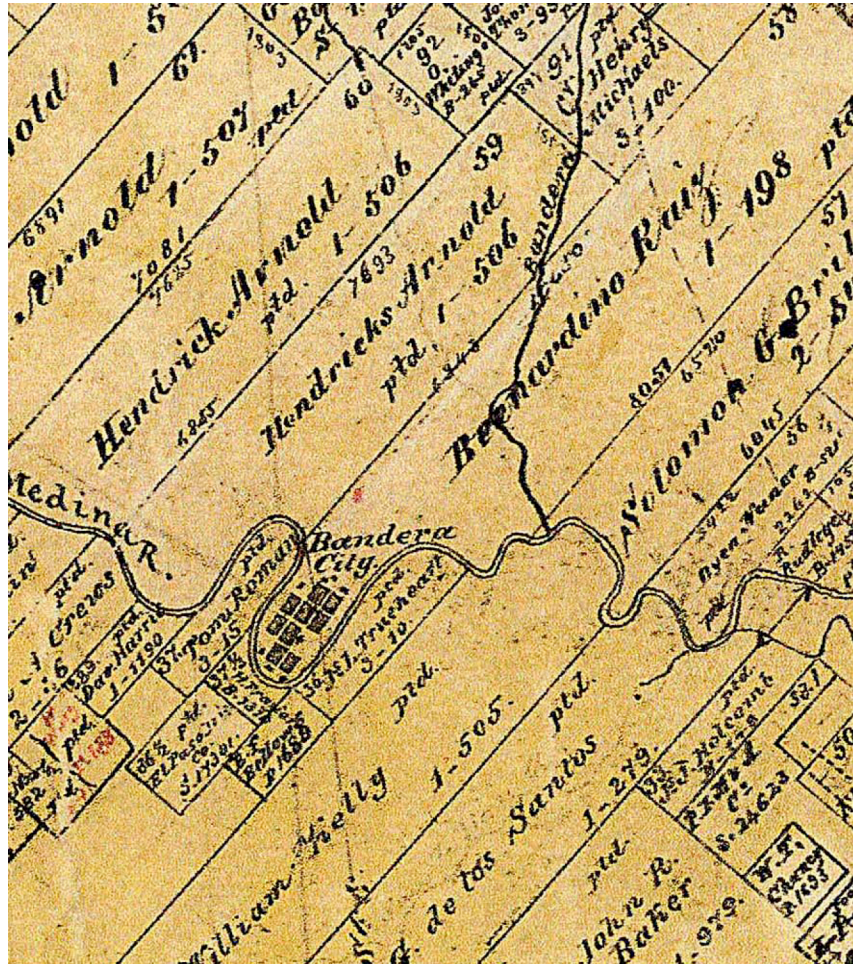


Figure 1: 1862 map of Bandera showing the hairpin curve of the Medina River

For early settlers of the North America, the immediate needs of life were food, shelter and clothing. In their European homelands, the colonists had been accustomed to seeking the services of various kinds of mills to fill these needs. Sawmills supplied lumber for building, wind and water-powered gristmills ground flour for bread. Fulling mills worked woolen homespun into wearable fabric.³¹

From the 13th century until about the middle of the 19th, most sawmills consisted of a straight saw blade strung tight in a rectangular wooden frame, called a sash or gate. The saw sash was connected to a water wheel below it through a crank and by a wooden sweep or pitman arm (the latter taking its name from the man who, before sawmills made him obsolete, stood in a pit below a log and pulled a saw through the wood by hand to make boards) (Fig. 2). The turning motion of the water wheel was converted to the up and down motion of the saw by the eccentric crank. Some power from the saw sash was used to turn a large gear, called a rag wheel. This in turn moved the carriage that the log rested on, pulling the log through the saw. The saw cut into the log on its down stroke, and the log moved forward again on the up stroke. After one board was sawed, the log carriage was run back to the other end of the mill, the log moved over, and another board cut. This process was repeated until the whole log had been sawed into lumber. Often a sawyer would square up two sides of a log first, then turn the log 90 degrees so that the flat sides would be on the top and bottom. Then when the log was sawed into boards it would have all straight edges.^{30,31}

The traditional method for making wooden shingles in the 17th and 18th centuries was to hand split them from log sections known as bolts, or billets. These bolts were quartered or split into wedges. A mallet and froe (or ax) were used to split or rive out thin planks of wood along the grain (Fig. 2). If a tapered shingle was desired, the bolt was flipped after each successive strike with the froe and mallet. Shingle fabrication was revolutionized in the early 19th century by water/steam-powered sawmills. Shingle mills made possible the production of uniform shingles in mass quantities. The sawn shingle of uniform taper and smooth surface eliminated the need to hand dress. The supply of wooden shingles was therefore no longer limited by local factors.^{30,31}

The wood species varied according to available local woods, but only the heartwood, or inner section, of the log was usually used. The softer sapwood generally was not used because it deteriorated quickly. Because hand split shingles were somewhat irregular along the split surface, it was necessary to dress or plane the shingles on a shaving horse with a draw-knife or draw-shave to make them fit evenly on the roof. This reworking was necessary to provide a tight-fitting roof over typically open

shingle lath or sheathing boards. Dressing, or smoothing of shingles, was almost universal, no matter what wood was used or in what part of the country the building was located, except in those cases where a temporary or very utilitarian roof was needed. ^{30,31}

The immigrants to the United States brought people skilled in milling. They had been schooled in the milling technologies that had evolved over centuries. Mills were set up on rivers, streams and brooks. Villages formed around the mills. The miller, millard or millwright, (a term that eventually designated the mill builder) was a very special person. He had to be accomplished in many areas: carpentry, architecture, engineering, basic mechanics and hydraulics. Simple mechanical principles such as gearing, the lever, the inclined plane, the wedge, the screw, the pulley and cord, and the crank were all incorporated into the structure of mill machinery. The mill might have been the first industry of a community. The miller and the blacksmith are early town fathers.

To build a mill you needed a millwright and a blacksmith. A young American inventor, Oliver Evans (1755-1819), helped to revolutionize mills with the ideas he presented in his book, *Young Mill-Wright & Miller's Guide* (Fig. 3). ¹⁰

Mills had more than a utilitarian function. Often they were the meeting place, the center of gossip and exchange of information. Many people today are familiar with the old song, "Down by the Millstream." And who has not used the term "to go through the mill" in reference to enduring a hardship? When a millstone is found as a grave marker, most often the stone was in use when the miller was injured at the mill.³¹

By 1826 there were several mills in Texas.⁵ These mills were operated by hand, or powered by horses or mules. A primitive mill usually was constructed between two trees of convenient size and separation. A beam extended horizontally from tree to tree about ten feet above the ground. In its center was a hole for a vertical shaft that extended downward to the millstone. A mule hitched to a horizontal arm set into the shaft was made to walk in a circle. Frequently, several such arms and two or more mules or horses were used. One unique early mill in Grayson County was powered by a 125-foot cogged wheel turned by oxen, the cogs in the periphery of the driving wheel meshing into the

mill machinery. This large, cogged driving wheel was tilted so that oxen walking up its slope on the right of the axis caused the wheel to rotate clockwise.^{6,7}

In Texas, one of the first mills propelled by water was a saw and grist mill built in 1826 on Mill Creek by three brothers: James, John, and William Cumings.⁵⁻⁷ In 1833 Stephen F. Austin stated that there were two steam sawmill-gristmills and six water-powered mills in his colony.⁵ In 1837 the Congress of the Republic of Texas chartered the Texas Steam Mill Company of Harris County.^{6,7} This organization rapidly became specialized in lumber milling, as did other smaller mills. It milled grist only on request. Other sawmills were built in the Orange/Beaumont areas. Not only were these towns located in a large forested area, but they also were close to the Gulf of Mexico and not dependent upon rail transportation. The first mill built in what is now Orange County was put up by Robert E. Booth in about 1837, and was run by water. The early mills such as the Booth mill used an upright or sash-saw utilizing an up and down stroke. In 1848 Page circular saws (invented by Tabitha Babbitt, Note 1.) were sold in Houston.^{6,7} The Lyman Wight Colony built their first gristmill in Austin Colony in 1846. They had traveled from Illinois bringing with them their own millstones. Within the Colony were several millwrights, blacksmiths, and carpenters.^{16,29}

Note 1. In 1813, Shaker-Sister, Tabitha Babbitt (1784-1854) invented the first circular saw used in a sawmill. Babbitt was working in the spinning house at the Harvard Shaker community in Massachusetts, when she decided to invent an improvement to the two-man pit saws that were being used for lumber production.

...After watching the brothers sawing, she concluded that their back and forth motion wasted half their effort, and mounted a notched metal disc on her spinning wheel to demonstrate her proposed improvements.... Sister Tabitha intended the blade to be turned by water power.^{17,20,26}

The influx of people into Texas created a huge demand for building materials. San Antonio doubled in population between 1850 and 1860, becoming the largest town in Texas. Materials to build forts were needed as settlers expanded into Indian territories. Cypress wood, because of its durability and availability, was a much sought after lumber. The first pioneers to utilize the supply of cypress trees (Fig. 4) growing in the hairpin curve of the Medina River, west of Castroville, were A. M. Milstead, Thomas

Odem, and P. D. Saner. In 1852, they camped on the hill above the Medina River and chopped cypress shingles by hand.¹²⁻¹⁴

Soon, others were interested in the cypress lumber supply along the Medina River. Charles DeMontel (1812-1882) lawyer, surveyor, and Castroville mill owner; John James, surveyor (1819-1877) and attorney, John H. Herndon (1813-1878) formed an association and signed an agreement on June 15, 1852, that was the beginning of the town of Bandera.¹²⁻¹⁴ The goal of the association was to establish a sawmill and shingle manufacturing facility on the banks of the Medina River northwest of Castroville (Fig. 5). It was stated in the agreement that they would bring either immigrants or settlers to the area to use as a labor force. John James agreed to put up the land he had surveyed in May, 1841. The land was the Bernardino Ruiz Survey (Fig. 1). DeMontel moved the horse-powered mill in Castroville northwest on the Medina (Fig. 6) to the newly created Bandera.¹⁴ This horse mill was powered by a horse that walked on a treadmill set up as an inclined plane. As the horse walked, he stayed in one place but the treadmill moving under his hooves turned the gears that made the mill function.

Bringing in immigrants, or settlers, to work was not an easy task. Most settlers wanted to homestead land and not work for wages. Until more settlers could be attracted, Bandera remained just a migrant cypress shingle camp filled with makeshift houses and tents. DeMontel and his association desperately needed settlers.

In October, 1854, a group of immigrants from Upper Silesia, Poland, sailed from Bremen, Germany, on the ship, *The Weser*. They sailed 55 days arriving in Galveston, Texas, in February, 1855. From Galveston they continued to Indianola, then to Victoria and Panna Maria. They found no opportunities to work in any of these places. They traveled northwest to Castroville, which had been recently (1847) settled by a group from Alsace, France. Charles DeMontel sent ox carts to Castroville to transport the sixteen immigrant families to Bandera to work in the sawmill. ¹²⁻¹⁴ With the hard-working Polish immigrants, the James, Montel, & Company was able to construct a dam across the river a short way upriver from where Cedar Street comes to a dead end (Fig. 7). The workers then dug a millrace next to the river from the dam at Fourteenth Street.

A water-powered mill was located at this site. Each immigrant family was given a lot upon which they could build their cypress log home. The shingle camp was becoming a town.

The town of Bandera prospered because of the cypress mill and the industrious settlers. The Polish immigrants became expert shingle makers. The cypress trees were milled into 16-inch blocks, split and rived with a froe knife and wooden mallet. The rough cut shingles would then be taken to the old shaving house and trimmed to a feathered edge with a drawing knife. The finished shingles were stacked to season and then baled in bundles of 1,000. One big ox-wagon could haul about 25,000 shingles. The price in San Antonio was about \$4.50 per thousand shingles. A good shingle maker could make a thousand shingles a day.^{3,12-14,19}

The trip to San Antonio was long and arduous. The threat of an Indian attack, the hilly terrain, and rough road made every mile a challenge. Some of the grades over the hills were so steep that the bundled shingles would sometimes slide off the wagons. One spot on the trail is still known as "slide off mountain." (Fig. 8)

As the mill grew, the James, Montel & Company hired David Monroe (March 27, 1858), a member of the Lyman Wight Colony, to manage the mill. ^{12-14,16,24} DeMontel bought land at the sheriff's auctions, sold it cheap and on credit to the mill workers. The ambitious settlers cultivated the fertile land above the river and built homes in which to raise their families. The area following the flood plain of the Medina River became known as "Polish Fields."

Bandera suffered through the Civil War, but recovered during reconstruction because of the cypress trade. The need for cypress lumber grew even greater as more forts were built along the western frontier. (Fig. 9) The cypress mills at Bandera supplied cypress shingles for Fort Inge, Camp Wood, Camp Verde, Fort Lincoln and Fort Concho, the forts built by the United States Army in an arc on the western frontier, known then as the "Comanche Barrier." ⁹

On January 28, 1867, John Herndon sold to F. H. Shladoer, “the rights and privileges and control of the race and the dam, also all the oxen, yokes, chains, carts, wagons, and blacksmith tools. Horses and everything pertaining to the saw and grist mills.” On February 25, 1867, Shladoer bought two more lots on the millrace from Charles Schmidtke.⁴

In 1869, Charles Schmidtke joined George Hay in business. On November 1, 1870, Hay and Schmidtke, with investors H. C. McKay and Henry “Buck” Hamilton, bought the mill from F. H. Schladoer and John James. The partnership of Hay and Schmidtke brought the millrace from 14th Street upriver to Main Street on January 3, 1871. ⁴ The system was improved. New saws were bought to cut shingles and turn out good lumber. A flour mill was added. The power for these mills was a turbine water wheel in the river.⁴

The Medina River has always flooded. It arises in north and west prongs (Fig. 6) that originate in springs in the Edwards Plateau divide of northwest Bandera County and converge near Medina (at 29°48’ N, 99°15’ W). The river then flows southeast for 116 miles to its mouth, on the San Antonio River in south Bexar County (at 29°14’ N, 98°24’ W). Central Texas has long been known as “flash flood alley” because the meteorological characteristics, along with the orographic influences caused by the Balconies Escarpment (Fig. 11), produce conditions that cause large rainstorms and catastrophic floods.^{1,2,8,21,27,28}

Despite the flooding of the Medina River, the cypress and flour mills always managed to recover. The floods of April 7 and August 5, 1900, (not associated with the Galveston Hurricane of 1900²⁸), however, were different. The floodwaters started from a two-day storm in Central Texas. The storm water filled the Colorado, Brazos and Guadalupe Rivers, sending torrents of water through all the unsuspecting towns. Walls of water washed downstream through the waterways. The water rose for more than 30 ft on the Medina River. (Fig. 10) The mills in Bandera were forever swept away. (Fig. 12)

References

1. Abbott PL, Woodruff, Jr., eds. The Balcones Escarpment. 1986.
<http://www.lib.utexas.edu/geo/BalconesEscarpment/BalconesEscarpment.html>
2. Baker VR, 1975, Flood hazards along the Balcones Escarpment in central Texas; alternative approaches to their recognition, mapping, and management: Univ. of Texas at Austin, Bureau of Economic Geology Circular 75-5, p. 22.
<http://www.lib.utexas.edu/geo/BalconesEscarpment/BalconesEscarpment.html>
3. Bandera County History Book Committee. History of Bandera County Texas. Curtis Media Corporation. Dallas, Texas. 1986.
4. Bandera County Court House Records.
5. Barkley, Roy. Ed. Handbook of Texas Online
<http://www.tsha.utexas.edu/handbook/online/>
6. Block WT. Early Sawmills of the Louisiana-Texas Borderlands. Woodville, Texas. Dogwood Press. 1996. p 281.
7. Block WT. Texas' First Big Sawmill.
<http://www.wtblock.com/wtblockjr/sawmill.htm>
8. Caran SC, Baker VR. Flooding Along the Balcones Escarpment, Central Texas. in Abbott, Patrick L. and Woodruff, C.M., Jr. eds., 1986.
<http://www.lib.utexas.edu/geo/BalconesEscarpment/BalconesEscarpment.html>
9. Cashion T. Texas and the Western Frontier.
<http://www.texasbeyondhistory.net/forts/frontier.html>
10. Evans Oliver. Kinetic Models for Design Digital Library.
http://historical.library.cornell.edu/kmoddl/toc_evans1.html
11. From Muscle to Machine. <http://www.mackinacparks.com>
12. Hunter, J. Marvin. A Brief History of Bandera County: Covering More Than Eighty Years of Intrepid History. Bandera, Texas. Frontier Times, 1936.
13. Hunter, John Marvin. 100 Years in Bandera, 1853-1953: A Story of Sturdy Pioneers, Their Struggles and Hardships, and Their Heroic Achievements. Hunter's Printing. Bandera, Texas. 1953.
14. Hunter, J. Marvin, Pioneer History of Bandera County. Hunter's Printing. Bandera, Texas. 1922.
15. Landmark Inn Museum, Castroville, Texas. Texas State Historic Site.
<http://www.twpd.state.tx.us/park/landmark/museum.htm>
16. Langford LA and Wight J. The Lyman Wight Colony. Bandera County Historian. 24:3, 2003.
17. Nelson, RE. ed. Directory of American Toolmakers: A listing of identified makers of tools who worked in Canada and the United States before 1900. Early American

- Industries. 1999.
18. Old Sturbridge Village. <http://www.osv.org>
 19. Postert LF. The Dam, Millrace, and Sawmill of Early Bandera. *Bandera County Historian*. 15:1, 1993.
 20. Shaker Manifesto (1890), cited by Autumn Stanley in 'Women Hold Up Two-thirds of the Sky: Notes for the revised history of technology', in Joan Rothschild (ed.), *Machina Ex Dea: Feminist Perspectives in Technology*, NY, Pergamon Press, 1983.
 21. Slade RM, Jr. Large Rainstorms along the Balcones Escarpment in Central Texas. In Abbott PL, Woodruff CM, eds. *The Balcones Escarpment, Central Texas: Geological Society of America*. 1986, p15-20.
[http://www.lib.utexas.edu/geo/BalconesEscarpment/pages 15-19.html](http://www.lib.utexas.edu/geo/BalconesEscarpment/pages%2015-19.html).
 22. Society for Preservation of Old Mills. <http://www.spoom.org>
 23. Taylor Sawmill: A Technical Explanation.
<http://chapterhouse2.nhvt.net/users/momaw/taylormill/taylormill.htm>
 24. Tobin P. Early History of the Old Court House. *Bandera County Historian*. 22:2. 2001.
 25. Tobin P. 150 Years in Bandera 1853-2003. 24:2, 2003.
 26. Vare EA, Ptacek G. *Mothers of Invention: From the Bra to the Bomb, Forgotten Women and their Unforgettable Ideas*. New York. William Morrow. 1987.
 27. Watershed Concepts.
http://www.watershedconcepts.com/wcresources/TX_FloodStudy/txapproxdata/HTML/Bandera.html#
 28. *Weather, People, and History*. Dr. Isaac M. Cline.
<http://www.islandnet.com/~see/weather/history/icline.htm>
 29. Wight JB. *The Wild Ram of the Mountain: Lyman Wight*. Afton Thrift Print. Star Valley. Wyoming. 1966.
 30. Wilbur CK. *Homebuilding and Woodworking in Colonial America*. The Globe Pequot Press. Guilford. Connecticut. 1992.
 31. Zimiles, Martha and Murray. *Early American Mills*. Bramhall House. New York. 1973.

Figure Legends

Figure 1: 1862 map of Bandera showing hairpin curve of the Medina River.

Figure 2: Basic sawmill and shingle cutting design and methods. The lower image shows the use of a froe and mallet in making a billet which resulted in a shingle.^{11,18,30}

Figure 3: Miller's Guide by Oliver Evans.¹⁰

Figure 4: Cypress tree on the Medina River in Bandera, Texas. Photo by LA Langford 5/07/2005.

Figure 5: From a 1904 map of Bandera County showing the city and location of the old milldam.

Figure 6: Map showing Bandera and Castroville on the Medina River. The origins of the Medina are indicated with arrows (upper left).

Figure 7: Map showing the dam, millrace and later mills at Fourteenth Street. ¹⁸

Figure 8: Topographic map showing State Hwy 16 at "slide-off" mountain (box) located between San Geronimo and Helotes. 29° 37' 04" N 98° 44' 01" W

Figure 9: The forts forming the "Comanche Barrier" ⁹

Figure 10a: Markers on the old mill at Castroville correspond to the flood levels of the Medina River. Landmark Inn Museum, Castroville, Texas. Texas State Historic Site. Photo by LA Langford 5/07/2005.

Fig. 10b. Flood zone of the Medina River at Bandera in the 2002 flood. ²⁹

Figure 11: Balcones Escarpment area in Central Texas. ²¹

Figure 12: The approximate site of the original mill built by DeMontel on the hairpin of the Medina at Bandera. Photo by LA Langford 5/07/2005.

Figure 13: Authorization letter from Dr. CK Wilbur.

Figure 14: At present, John Delayre, Ph.D., is constructing a working model of the sawmill drawn by Dr. CK Wilbur. The model will be on display in Bandera, Texas.

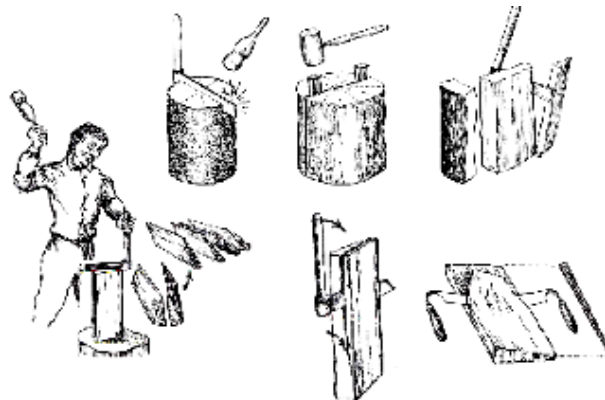
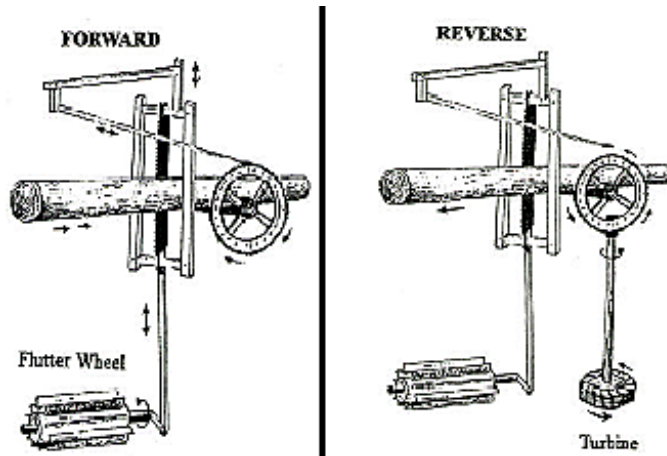
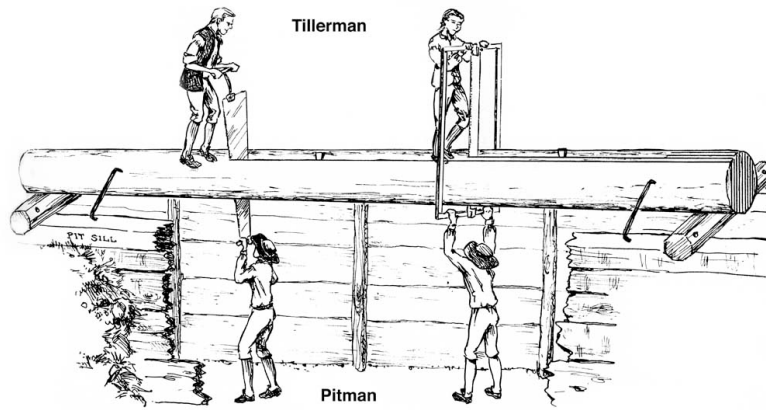


Figure 2: Basic sawmill and shingle cutting design and methods. The lower image shows the use of a froe and mallet in making a billet which resulted in a shingle.^{11,18,30}

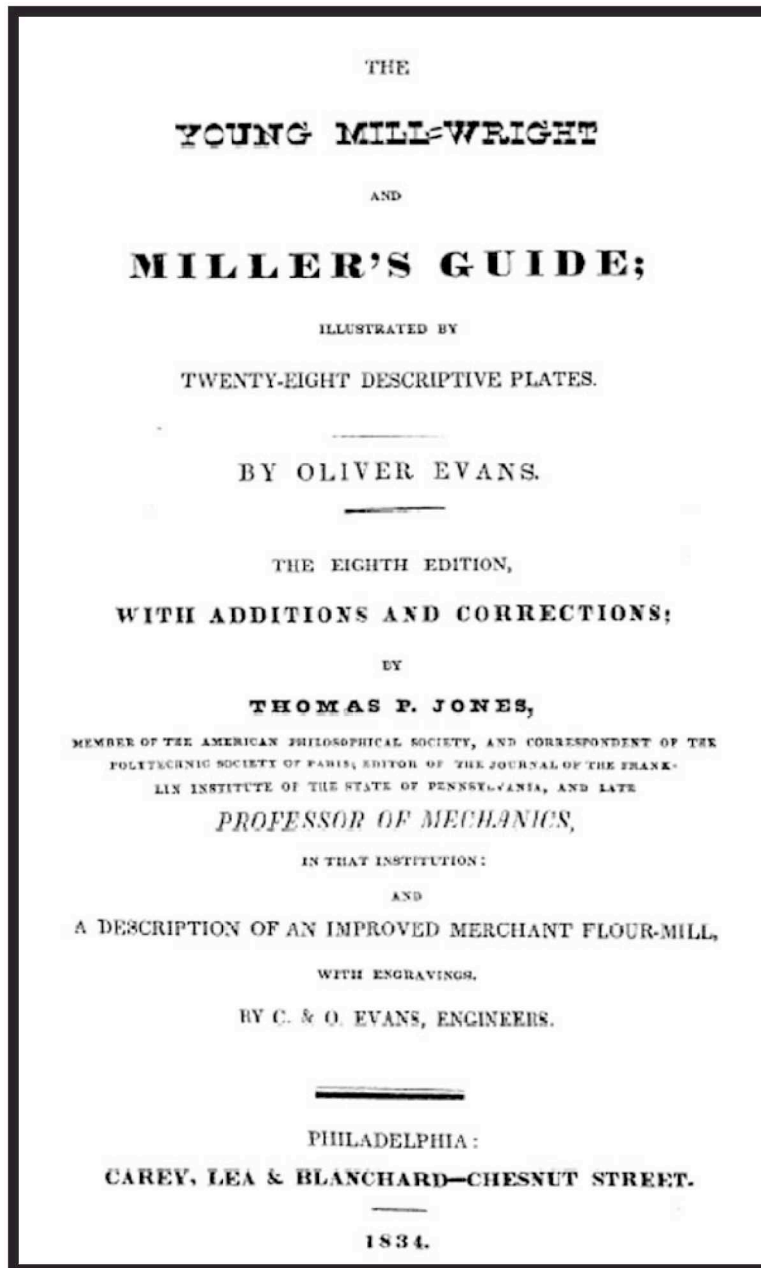


Figure 3: Miller's Guide by Oliver Evans.¹⁰



Figure 4: Cypress tree on the Medina River in Bandera, Texas.
Photo by LA Langford 5/07/2005

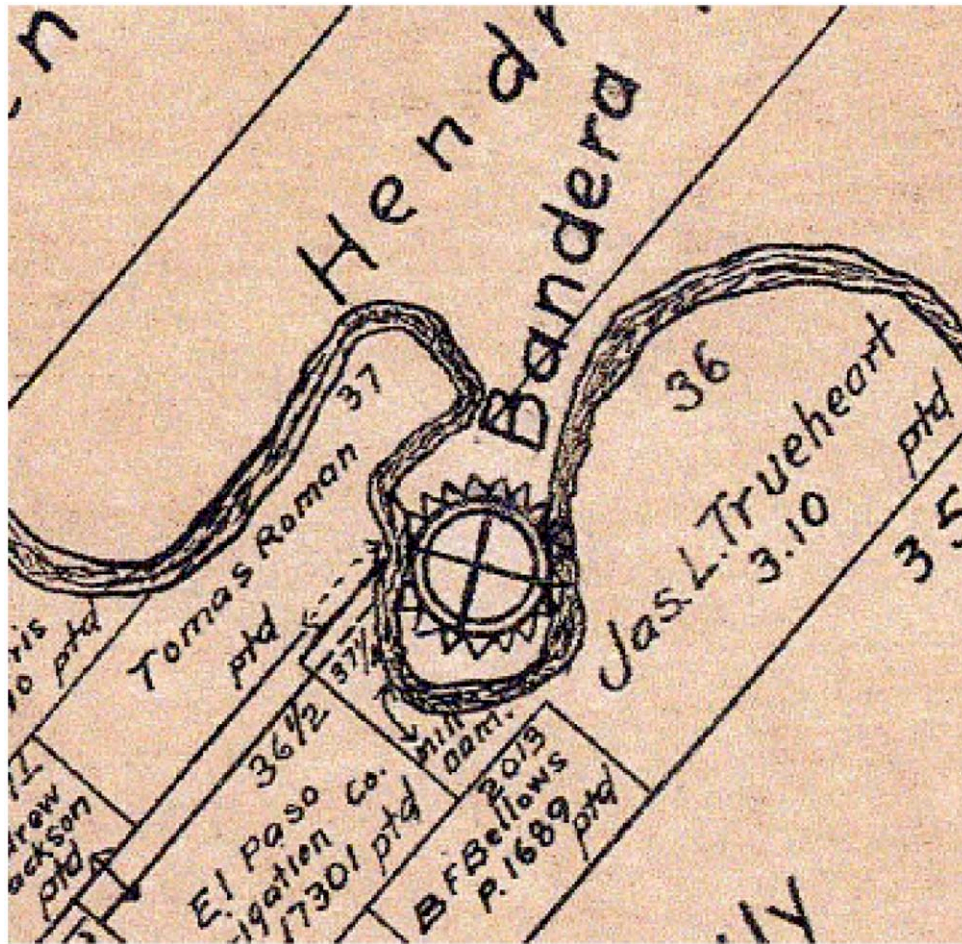


Figure 5: From a 1904 map of Bandera County showing the city and location of the old milldam.

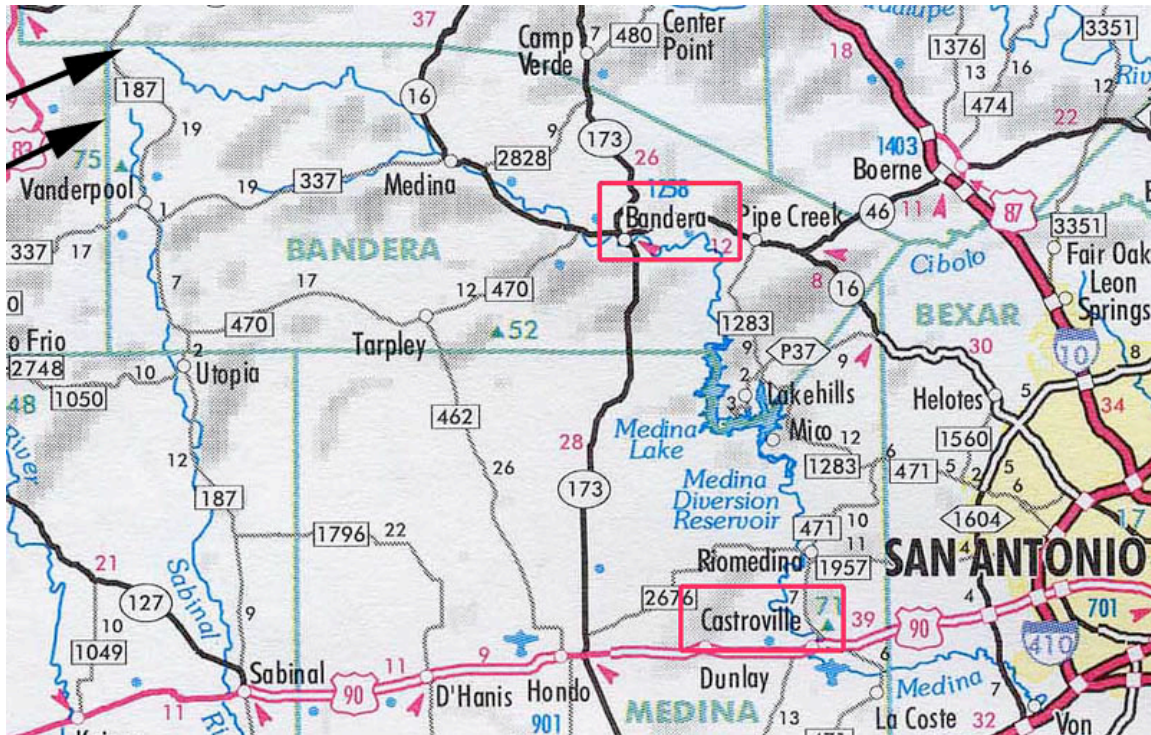


Figure 6: Map showing Bandera and Castroville on the Medina River. The origins of the Medina are indicated with arrows (upper left).

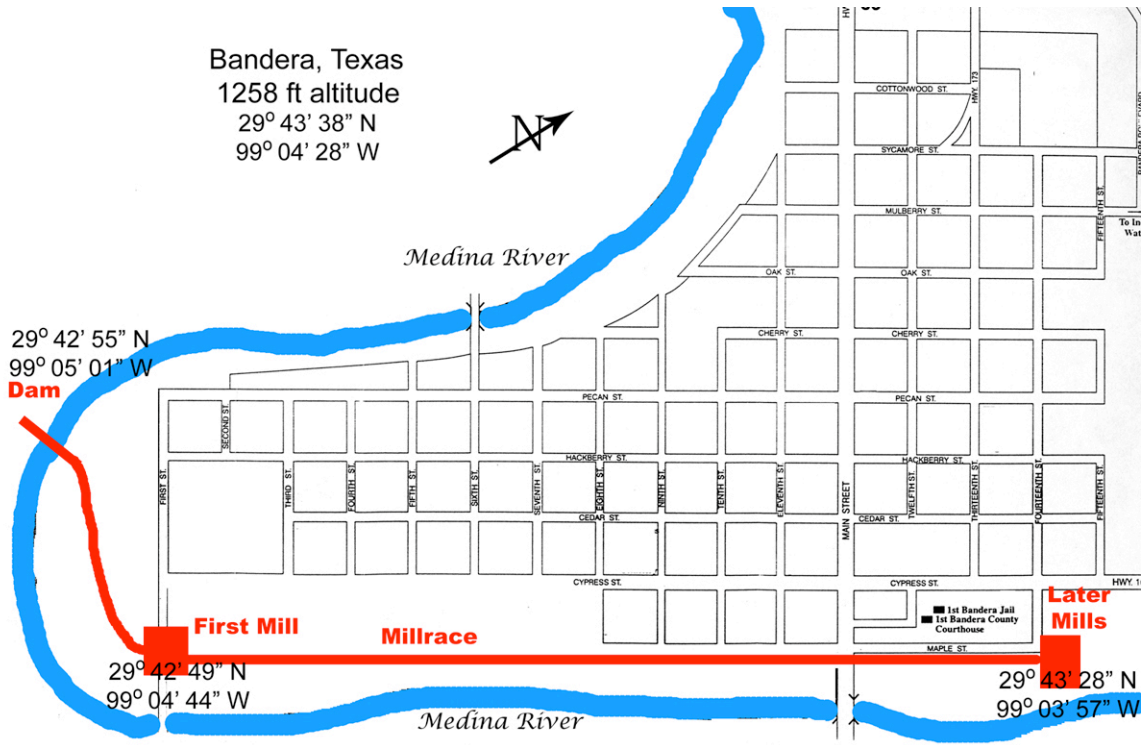


Figure 7: Map showing the dam, millrace and later mills at Fourteenth Street. 18

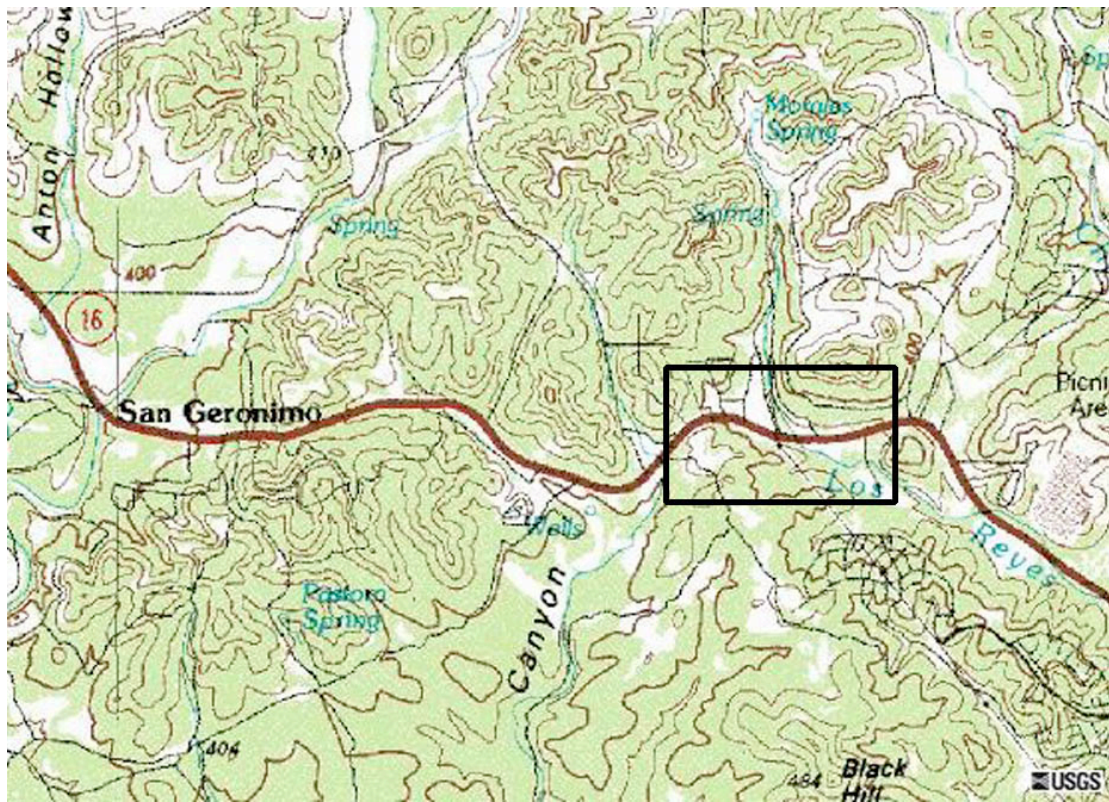


Figure 8: Topographic map showing State Hwy 16 at “slide-off” mountain (box) located between San Geronimo and Helotes. 29° 37' 04” N 98° 44' 01” W



Figure 9: The forts forming the “Comanche Barrier” 9

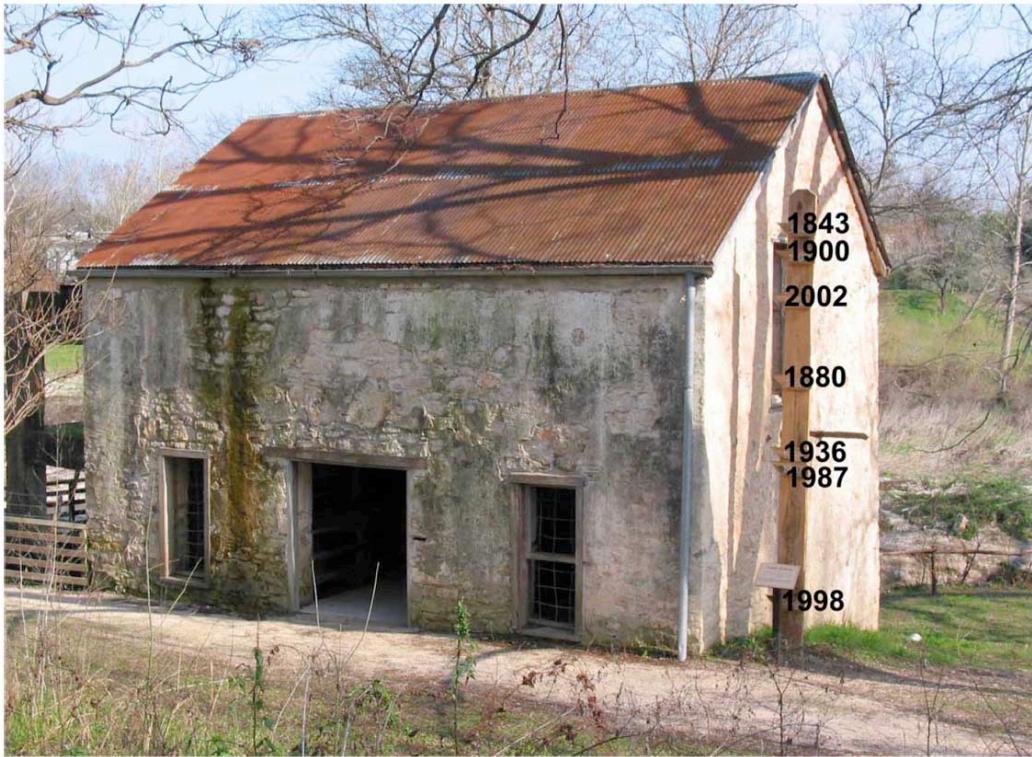


Figure 10a. Markers on the old mill at Castroville correspond to the flood levels of the Medina River. Landmark Inn Museum, Castroville, Texas. Texas State Historic Site. Photo by LA Langford 5/07/2005

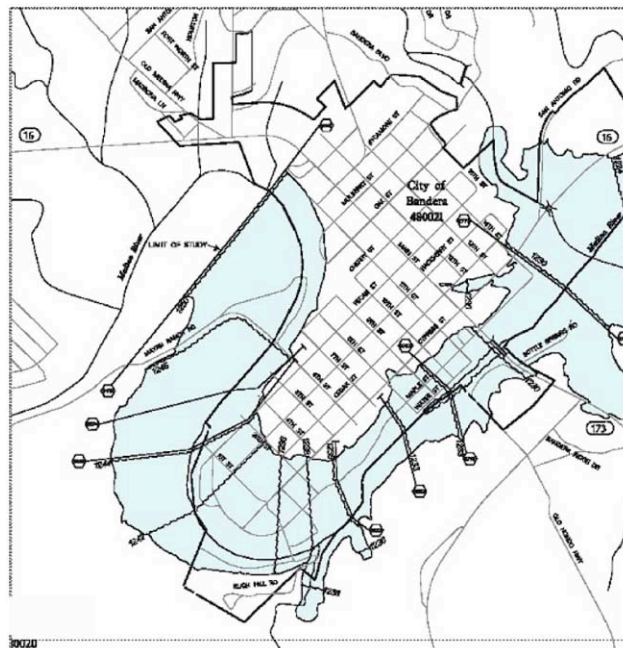


Figure 10b. Flood zone of the Medina River at Bandera in the 2002 flood. 29

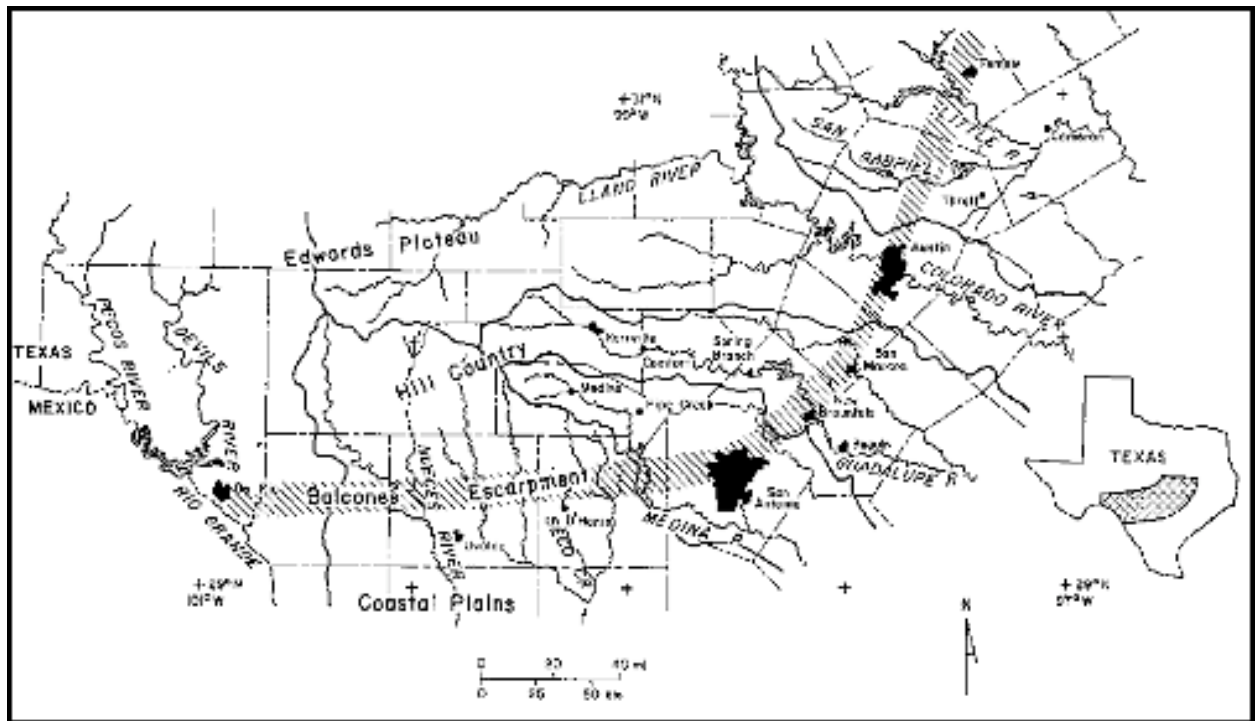


Figure 11: Balcones Escarpment area in Central Texas. ²¹



Figure 12: The approximate site of the original mill built by DeMontel on the hairpin of the Medina River at Bandera. Photo by LA Langford 5/07/2005

C. KEITH WILBUR, M.D.

February 22nd, 2006

Lawson A. Langford, M.D.
5410 Valence Street
Bellair, TX 77401

Dear Dr. Langford,

You have some interesting local history that deserves telling and preserving - good for you! Of course you may use my illustrations and information from my *Homebuilding* book when you apply for a historical marker. And if you need illustrations back-up for displays or exhibits, all that is needed is due provenance credits noted.

So - good luck with your sharing of the town's history with those who follow!

My best,
Keith Wilbur

397 PROSPECT STREET NORTHAMPTON, MASSACHUSETTS 01080
TELEPHONE (413) 584-1440

Figure 14: Authorization letter to use drawings by Dr. C. K Wilbur.

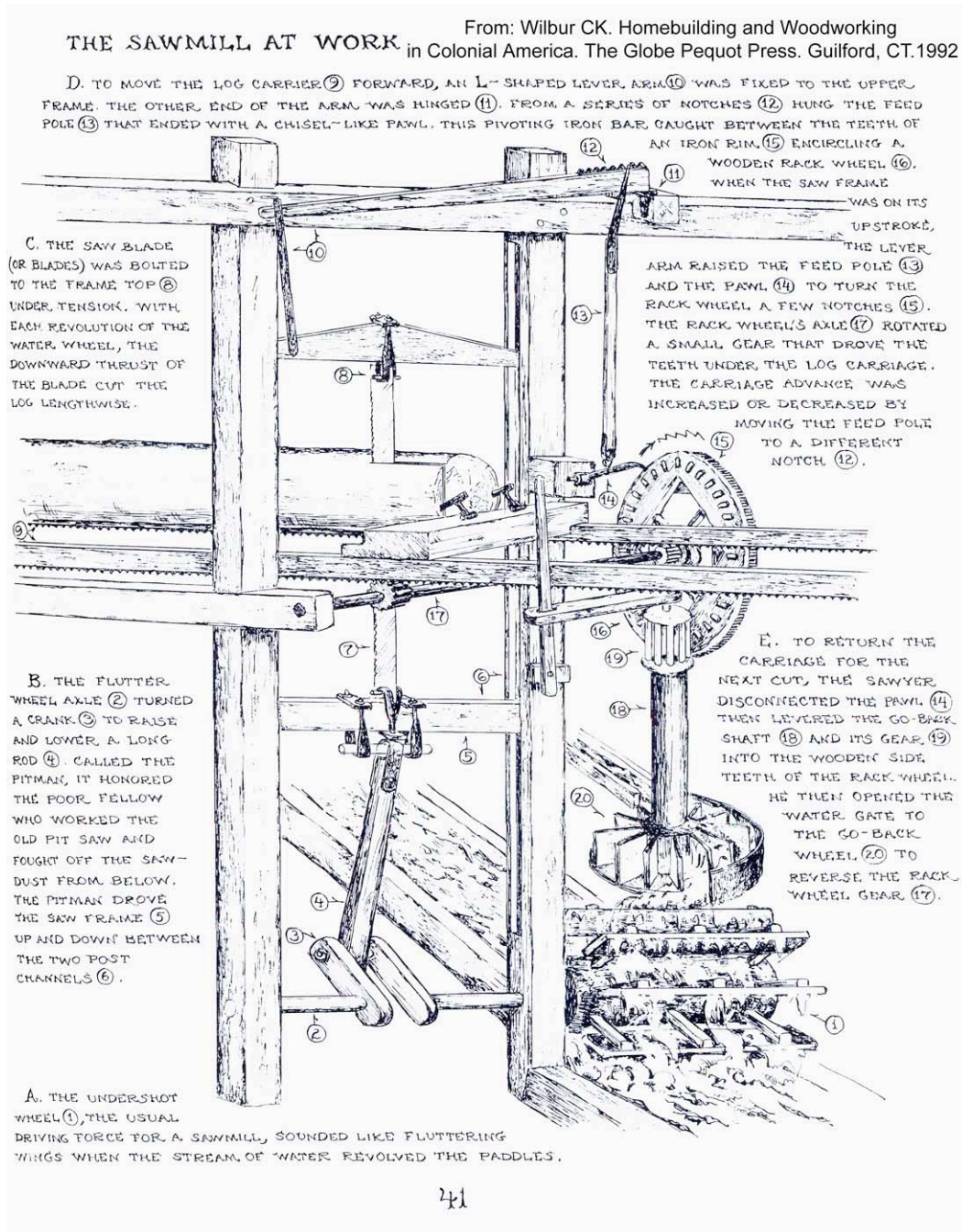


Figure 15: At present, John Delayre, Ph.D., is constructing a working model of this sawmill drawn by Dr. C. K. Wilbur. The model will be displayed in Bandera, Texas.