

THE ICE HARVEST



The men and machine



On the night of October 22, 1921, as ice dealer Hugh Smith and his wife enjoyed a choral performance at Cedar Falls' Cotton Theater, a raging fire consumed

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Smith's place of business in less than an hour. Lost in the flames were six horses, a variety of tools and equipment, the wooden ice house, and most of the fifty tons of ice stored within it. The unfortunate Smith had only two thousand dollars of insurance to cover a loss estimated at between eight and ten thousand dol-

Hugh Smith.

Indeed, sixty years ago the cutting of natural ice was big business in the United States. Nearly every American community of more than a few thousand people boasted at least one ice house, built of double-walled wood or brick and insulated with hay and sawdust. Ice houses varied in size, but they were often as long as five hundred feet. The buildings were frequently so large that clouds formed and rain fell within their cavernous rooms. Beginning around New Year's Day, local harvesting crews aided by itinerant ice cutters walked out onto the frozen surfaces of nearby rivers and lakes to saw countless numbers of uniform ice blocks from the chilly expanse. It was arduous work, but consumer demand for ice meant big profits for the enterprising merchant. Certainly the volume of production bespoke fortunes in the making. At times in nineteenth century America, the nation's shipping industry — on the coasts and on inland waterways — handled more tonnage of ice than any other commodity except cotton.

J. M. Overman built the community's first ice house in about 1858. The people of Cedar Falls depended on him and distributor George Clark to fulfill their need for ice. Once Overman and Clark demonstrated the potential of the local market, several other dealers competed for the Cedar Falls trade as well. By 1893, John Riley dominated the community's ice business; his three large ice houses held four thousand frigid tons. Riley's market must have extended beyond the city limits, for he needed just 1,600 tons to fill his orders in Cedar Falls each year. By 1917, Hugh Smith had emerged as the industry leader in Cedar Falls. Indeed, in the early Twenties, Smith's Cedar Falls Ice and Fuel Company had no competitors. The monopolistic aspects of this situation apparently bothered no one; or, rather, bothered no one until the fire of October 22 destroyed the



Iceery of a forgotten industry

by Stephen Volk

lars. Worse, the Smith ice house was the only supplier of refrigeration for Cedar Falls' fifteen hundred households. Though some of the ice was salvaged in the rubble, local residents faced a serious problem. In the days before electrical refrigeration, there were few alternatives to the services of icemen like



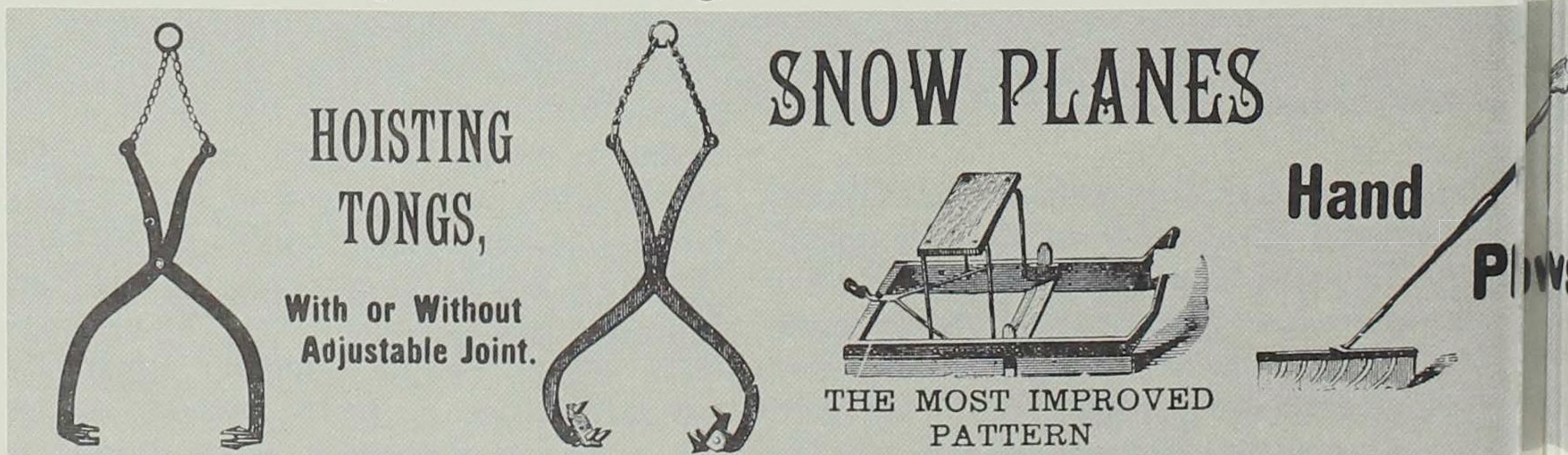
The ice harvest begins: surveyors have marked boundary lines and now horse-drawn ice cutters trace a grid pattern on the river's frozen surface. Deep cutters and ice plows will follow. (courtesy Cedar Falls Historical Society)

community's sole source of ice.

Sympathy and self-interest brought the people of Cedar Falls to Smith's aid even before the charred remains of the ice house had cooled. Two hundred volunteers helped the iceman clear the rubble in the days following the fire. Almost immediately, an expert building engineer was summoned from Chicago to help Smith draw up plans for a structure to replace the gutted frame. Less than a week after the burning of the old building,

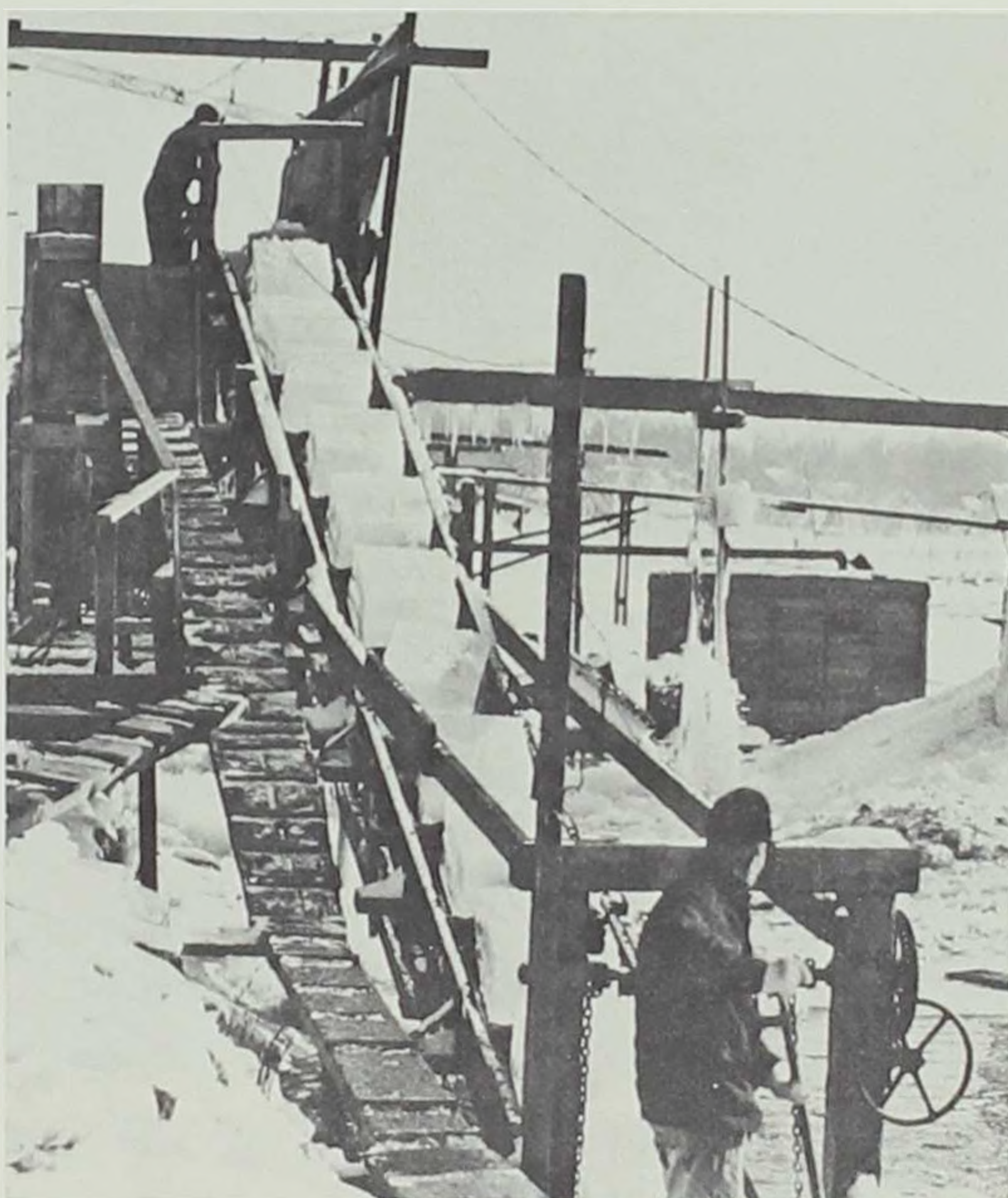
workers had poured footings for a new ice house. The new circular building was to be constructed of the finest vitrified hollow tile reinforced with steel ties. It was to be one hundred feet in diameter and would rise thirty feet above the ground, large enough to hold six thousand tons of ice.

Speed was essential in reconstructing Hugh Smith's ice house, for the harvesting season was just a few months away. By the first of the year, ice on the Cedar River was



already eight to ten inches thick, and zero-degree weather added constantly to its thickness. A few more days of bitter cold weather would make it right for cutting and storing. Smith had been busy since the fire, however, and it began to look like the new ice house would be finished on time. On January 5, only minor details remained before the plant could commence operations. People in Cedar Falls felt more confident about avoiding an ice famine in the coming summer.

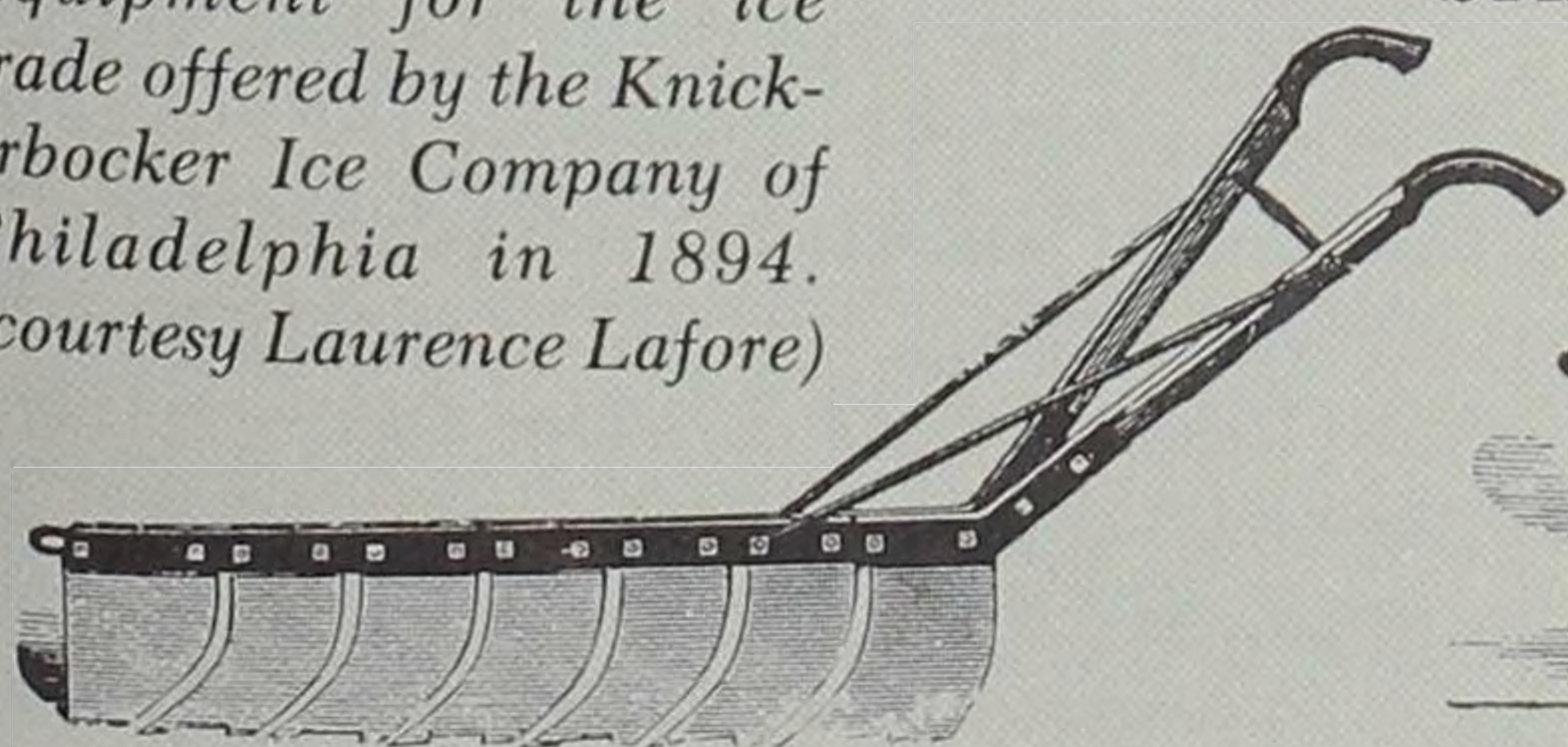
On January 10, preliminary work began. Work crews scraped snow from the river's frozen surface with a horse-drawn snow plane. Next, the icemen surveyed the area to be harvested and marked boundary lines with a hand cutter. Methods for extracting ice varied from company to company and changed over time. In the industry's early years, harvesters commonly used a cutter with two runners about two feet apart, with one blade a guide plane, the other a large-toothed edge penetrating two inches into the ice. This implement criss-crossed the river's frozen surface, tracing a grid pattern on the ice. Another twin-bladed cutter followed, this one cutting more deeply and preparing the way for an iron ice plow with blades reaching to within inches of the bottom of the ice. Final cutting was done with long-bladed saws, spades, and fork bars like the ones pictured on page 90. In later years, motor-driven saws replaced the hand tools in the harvesters' armory.



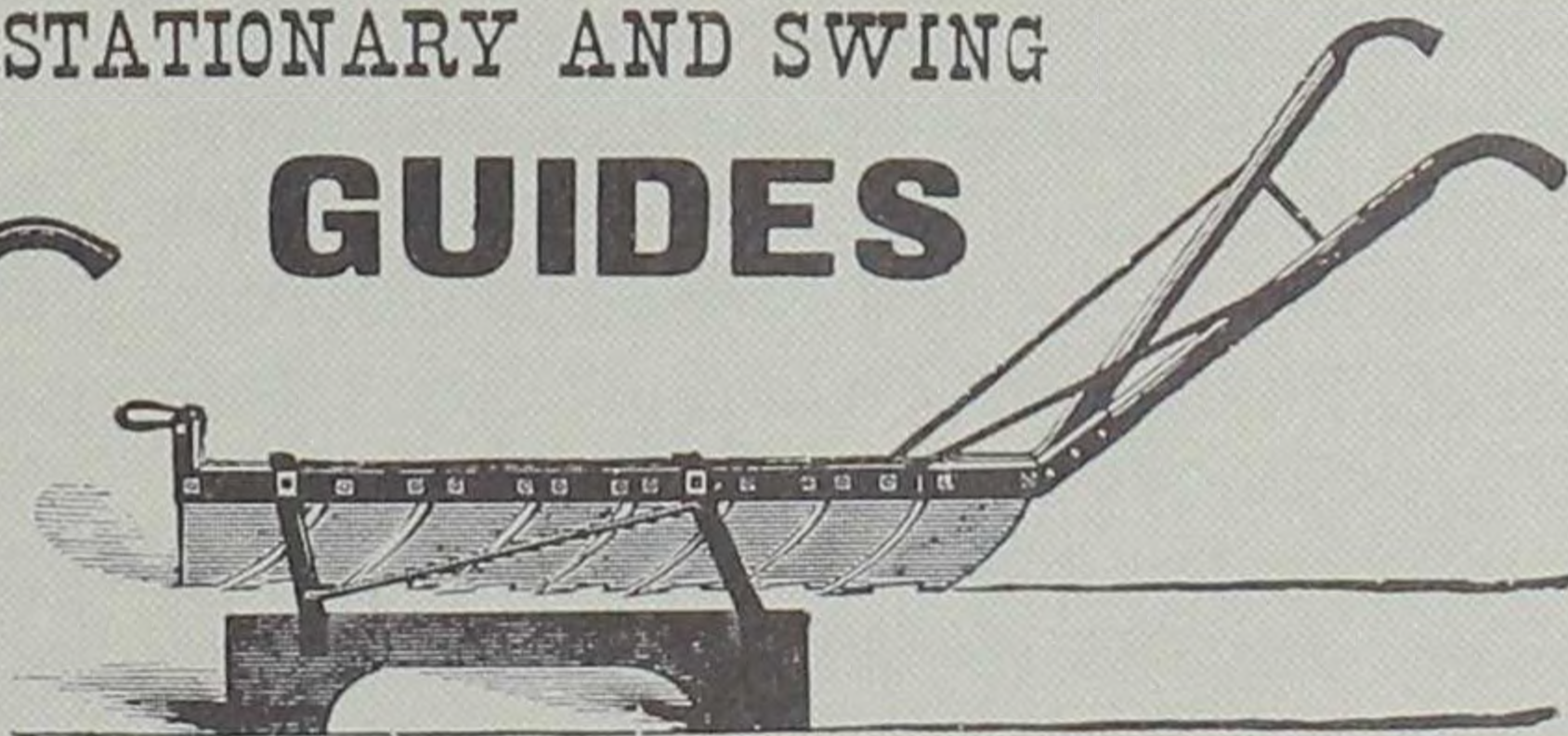
A chain-driven elevator lifts ice blocks from the river to the door of the ice house. (SHSI)

After a week of cutting, Hugh Smith's business appeared to be back to normal. The iceman expected to be stowing the cakes in his new ice house within days, as soon as his rebuilt hoisting machinery was in place. The ice his crews had cut appeared to be of very good quality, not too thick but adequate for the consumer market. Ice blocks typically measured twenty-two by about thirty-four inches and weighed between two and three hundred pounds each. As always, Smith

Equipment for the ice trade offered by the Knickerbocker Ice Company of Philadelphia in 1894. (courtesy Laurence Lafore)



STATIONARY AND SWING GUIDES



CAN BE ATTACHED TO PLOWS.



The ice wagon makes a summertime delivery in Cedar Falls, date uncertain. (courtesy Cedar Falls Historical Society)

watched the weather closely during the harvest, for suddenly-rising temperatures could make a slippery mess of his company's labors. The weather had grown increasingly mild in the week the men had worked, but there was no cause for alarm. The ice would be safely stowed before such intermittent thaws could cause his blocks any real harm.

On January 16, with the uncut ice about a foot thick and machinery "of the latest type" in fine working order, an expanded crew of Smith's men gathered on the ice early in the morning to begin the annual ice harvest in earnest. Sawing during the previous several days had yielded hundreds of hefty blocks of ice, which now rode up the chain-conveyor elevator connecting the river's frozen surface and Smith's imposing new storage building. Though this ice house was much larger than the one destroyed by fire three months earlier, the iceman's new cutting and hoisting apparatus enabled the harvesters to fill the massive circular building in about the same amount of time it had taken to fill the old ice

house. Their rapid progress was interrupted briefly on January 19, when the company's motor-driven saw broke. The mishap forced Smith to turn to a horse-driven saw of ancient vintage and dubious efficiency until another power saw could be delivered. Luckily, the ice house was already half-filled with foot-thick ice of exceptionally good quality. Thereafter, the harvest proceeded without interruption. When the ice house was completely filled, construction workers laid the structure's enormous circular roof in place while standing on the top layer of ice.

In his recollections, Robert A. Drollet, who worked in the ice business in those years, recalled that harvesting and deliveries to customers constituted only part of the work necessary to keep a large firm like the Cedar Falls Ice and Fuel Company in operation. "Around October first each year," he remembered, "the demand for ice to be delivered to homes was at a low point. The eight routes required in the summer season fell to

where two routes could meet the demand. The drivers from the excess routes were sent to the ice house to carefully inspect all things and to make repairs."

Inspectors looked especially closely at the "adjustable," a hand-operated gallery that bore the load of harvested ice on its way to storage. Often as long as 250 feet, the adjustable hung on cables at the doors of the ice house and was connected to gearing mechanisms by means of a rope and pulley assembly. The adjustable permitted harvesting crews to alter the grade of the hoisting operation according to the height of the ice already stored inside the cavernous chamber. Once they had correctly positioned the adjustable, harvesters relied on the force of gravity to carry each frozen block to its place in the stack.

Drollet noted that during the harvest, five men worked inside the ice house. Using ice tongs, two "switchers" (also called setters) pulled blocks of ice off the adjustable's run and stacked them in the appropriate place. Each switcher had the help of a "backer" (or piker), who aligned the stacked blocks as precisely as possible. Hay or sawdust was used to cover the piles of ice blocks after stacking. Finally, a "bar man" made sure that the rows and columns of stacked ice blocks were firm and even, shaving or smoothing the layers as necessary to maintain a level surface.

Outside the building, elevators powered by electric motors or gas engines carried ice



Monroe's stoneware-lined refrigerator, advertised in Harper's New Monthly Magazine, June 1887 (SHSI)

blocks to the adjustable gallery at the door of the ice house. Resting on removable rails, the elevator was an "adjustable" too — it could be raised or lowered to match the gallery's changing position during the course of the harvest. Sawed ice blocks floating in the chilly water were nudged into position at the foot of the chain-driven elevator. Here one of the elevator's wooden steps scooped up the block and carried it upward toward the gallery. Attached to the elevator at intervals of five feet, the wooden steps hoisted ice at a rate of about twenty cakes per minute. Needless to say, switchers inside the ice house moved quickly to keep up with the elevator's rapid movement.


Once the ice house was filled, usually no longer than a week after the harvest began, workers closed the doors and tamped sawdust into the cracks to keep out drafts. All openings remained tightly sealed and locked until deliveries began in warm weather. While veterans such as Drollet enjoyed their

Note on Sources

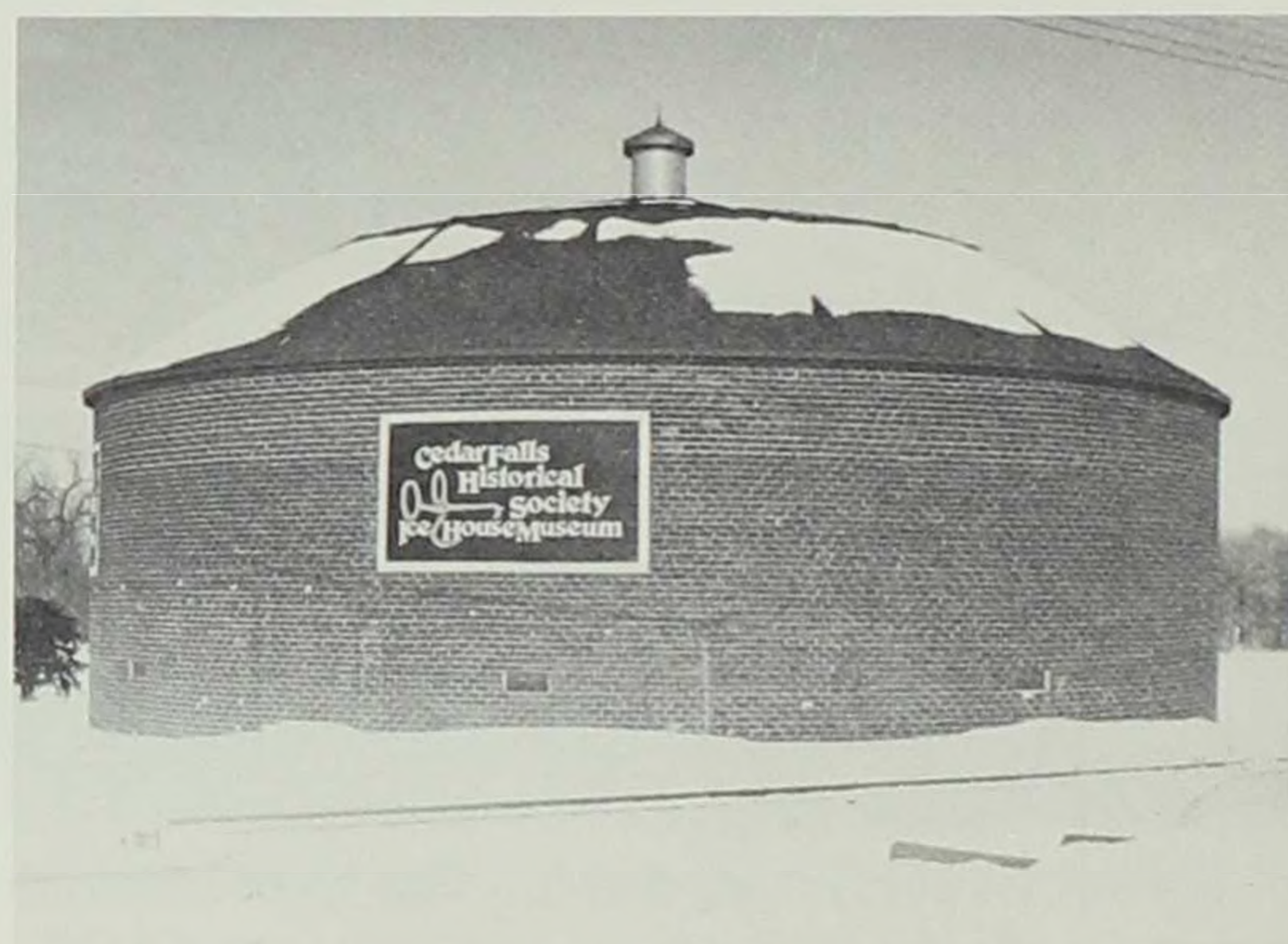
This article is based on information gathered from a variety of sources located at the Cedar Falls Historical Society and at the State Historical Society in Iowa City. Of particular importance were the reminiscences of Robert A. Drollett, Sr., selected issues of the Cedar Falls *Daily Record* dating back to the 1920s, a number of histories of Cedar Falls and Black Hawk County, and several oral histories on file at the Cedar Falls Historical Society.

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work in the ice trade, they admit it carried many risks. "It was a profitable business," he conceded, "but had many 'ifs' attached. The biggest 'if' was if you did not get the harvest needed for the coming summer. But the profit could be \$30,000 or \$35,000, as compared to the \$3,500 cost of filling the buildings. For the man intending to stay in the ice business in future years, he had to know the importance of building up a reserve in the good years to be able to ride out the lean years." Of course, in any year, there were physical dangers as well. Filling the ice house was strenuous work. Imagine wrestling with cold, slippery blocks weighing two hundred pounds or more and coming at you at the rate of twenty blocks per minute!

 Modern refrigeration eventually killed the natural ice business, as it did the family ice house in rural areas. In Cedar Falls, Hugh Smith's circular ice house continued to serve the city's needs until 1934. The building's utility did not end with the passing of the industry it served, however. In 1977 the building — one of the few surviving ice houses in the Midwest — was placed on the National Register of Historic Places. As

the Ice House Museum, its mammoth interior is available for public exploration. The horses that pulled the plows, planes, and cutters are gone, but the building itself and the equipment displayed there offer visitors a rare chance to step back into a bygone technological era. □



The round tile building erected in Cedar Falls by Hugh Smith in the winter of 1921-1922 has become the Ice House Museum. The museum welcomes visitors on Wednesday, Saturday, and Sunday afternoons (2-4:30 PM) from May 1 through October 31. Group tours may be arranged for other hours by calling the museum at (319) 266-5149. (photo courtesy Cedar Falls Historical Society)

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