

# Adversity and triumph: the steely resolve of Henry Disston

Mark Harrell looks at the life and achievements of Henry Disston, the man behind the long and fruitful Disston saw legacy



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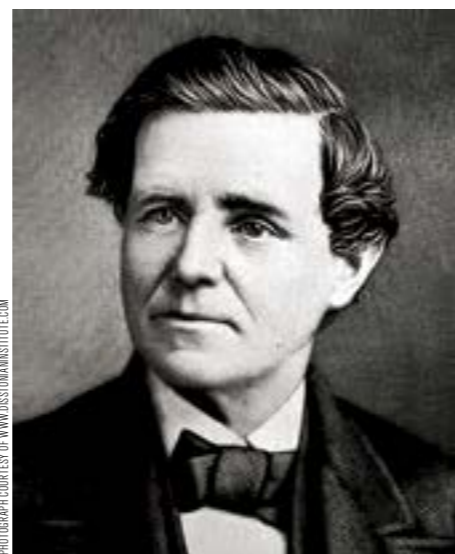
What was a young British boy of 14 from Derby made of as he and his sister watched their father convulse and die of a stroke not three days after their arrival in Philadelphia in 1833 to market a lace machine? Steel. Young Henry Disston – founder and patriarch of the famed Disston & Sons Keystone Saw Works – was made of steel far tougher than any alloy extant today. Henry Disston would go on to become one of America's wealthiest men, a prominent leader of the exploding industrial age and a capitalist visionary whose ruthlessness in business was matched only by his compassion and remarkable loyalty to the workforce he employed and protected.

## Bright spark

Disston's father, Thomas, must have seen something special in his second oldest child, having selected Henry and his older sister

Marianna from his eight children for the 60-day voyage across the Atlantic. There were qualities apart from young Henry's natural mechanical ability, where talent stops and character begins. Perhaps it was the resolve in his steady blue eyes and the way his strong jaw and thick shock of dark brown hair evinced an air of determination. Henry's spirit conveyed resilience, even a ruthless fixation to prevail, his visage yet conveying the temperance of a restless and compassionate soul.

Some children mature early because they have no choice, and such was the lot of young Henry and Marianna. Taken in reluctantly by friends, Henry had to find work while Marianna was groomed for domestic service and expedited marriage. Lives had to get on back in 1833 – they were lived on a far more abbreviated basis than today's medical advances allow.



PHOTOGRAPH COURTESY OF WWW.DISSTONMUSEUM.COM

Henry Disston (1819–1878)

## Discovering steel

Henry found work in a local saw shop – an enterprise owned by the Johnson brothers – a struggling firm beholden to British Sheffield steel because of the strong prejudice against tools made in America at the time. Henry matured into adulthood learning how to operate a fly press to cut teeth and coining them into a proper hammer-set; understanding how pitch, plate gauge and the hang of a handle worked in a harmony of efficiency to sever wood fibre quickly while promoting an aesthetic serving form as well as function. His father, a skilled mechanical engineer, had taught his son well: a good mechanic and businessman will always prosper, as long as he confronts adversity head on, with imagination and a strong drive to persevere.

Henry's masters floundered by the close of the 1830s and by the time he came of age, his severance pay arrived in the form of \$350 worth of materials, jigs and a head churning with ambition. Like other young men seeking their way in the hardscrabble Philadelphia of 1840, Henry was determined to carve his own mark in a world filled with opportunity and someday out-compete the British sawmaking industry in his adopted home.

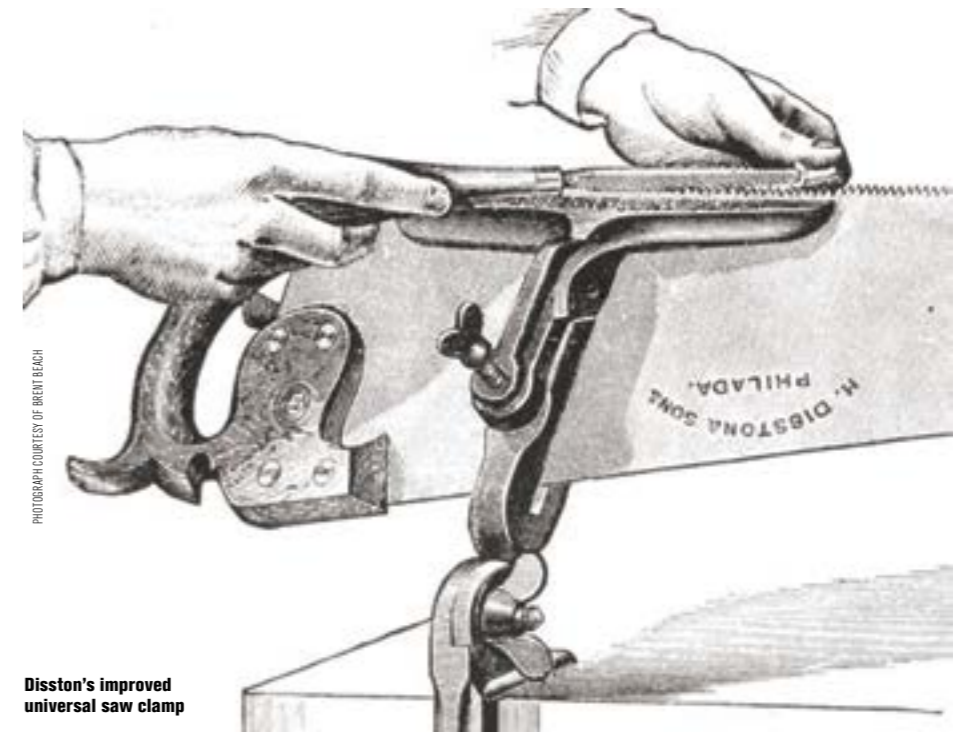
Renting a basement hovel at 21 Bread Street, Henry hand-built a furnace and carted coal from the wharf over a mile away to fire it. He then tempered his own saws, hammer-smithed them into proper tension, ground the plates, cut the teeth, set and filed them razor-sharp. He carved the handles, machined the brass fasteners, folded the sawbacks and tried everything into proper alignment. That Disston was able to produce at all bears testament to his sense of unyielding determination to make it, confronting daily the jungle law struggle of a one-man shop with rent to pay, groceries to buy, coal to cart and materials to source. Despite the kind of odds that turn achievers into quitters, Henry Disston nonetheless brought to market over a dozen handmade saws a week.

## The best saws in Philadelphia

His typical strategy was to cart his wares to a hardware store, ask the proprietor for his best British saw and then proceed to snap it across his knee. Before the aghast store owner could say anything, Henry produced one of his own, claiming: "Try that with mine. You are welcome to it; this is the best saw in Philadelphia." And he was as good as his word.

Courtship, marriage and children follows any man's initial blush of success and the young entrepreneur moved out of his basement flat into his first real shop, while he and his bride Amanda eagerly awaited the arrival of twins, but the twins died shortly after they were born, with Amanda following afterward. And then, his shop burned to the ground. Henry Disston had landed at rock bottom, crushed in spirit and penniless at the age of 23.

Slammed by soul-sucking grief, medical bills and demanding creditors, Henry started all over again on the strength of a \$5 loan



PHOTOGRAPH COURTESY OF BRENT BEACH

Disston's improved universal saw clamp

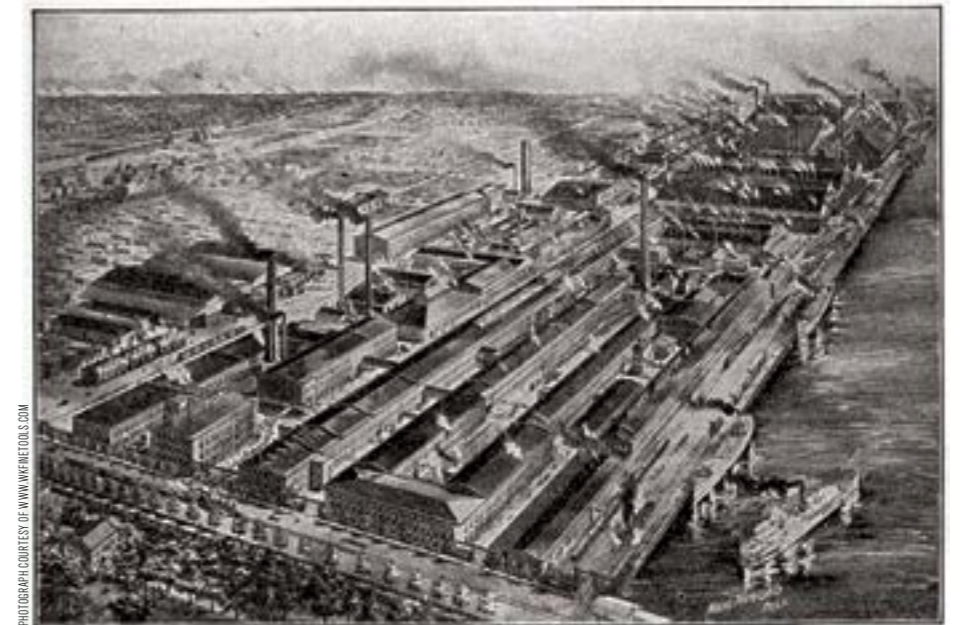
from a friend and went back to work. He spent three days of each week marketing his wares and taking orders, then drove himself mercilessly over the next three days making saws to fill those orders. Deliveries followed on Saturday, whereafter he would collapse in his Bread Street hovel, attend church on Sunday and prepare for the next week. Somewhere in the misery, Henry met his second wife Mary and remarried – a ray of light piercing what had become an abysmally dark decade. He re-established his product line among the Philadelphia hardware stores and life improved. Mary Disston bore a son – Hamilton Disston – and four more sons would follow. But the 1840s were not yet finished with Henry.

Responding to the lure of a steam-powered shop in 1844 and indebting himself to equip it, the speculator posing as the owner of the

property was arrested for fraud. Authorities seized Henry's equipment, selling it for back rent owed by his dishonest landlord. Henry indebted himself yet again, this time with doubled rent, forcing him to move his operation shortly afterward to new premises on Third and Arch Streets. Two years later, he was turned out once more and moved to a third location on Laurel Street. The only good to come out of the last move was the inclusion of steam power for his new shop. Despite the dizzying cycle of relocations, Henry continued making saws, firmly entrenching himself in the Philadelphia market as a tough young businessman with an incredibly steadfast commitment to quality.

## Market domination

By 1846, the war with Mexico was on and demand for saws and other tools bolstered



PHOTOGRAPH COURTESY OF WWW.WKNETOOLS.COM

Reproduction of the plant of Henry Disston & Sons Ltd, the largest saw manufacturing house in the world

▶ the fledgling Henry Disston Keystone Saw Works. Finally flush with success, misfortune dealt Henry yet another blow in 1849 when a boiler explosion blew his shop into smithereens. Miraculously, Henry and his employees escaped unhurt. Now completely fed up with renting, he had the scratch to purchase his own property in a nearby lot close to Laurel Street, where the 1850s ushered in a far more prosperous era. The dark days of the 1840s were behind him. Henry Disston sent for his brothers back in England, who joined him at his Philadelphia plant with some of the best British metalworkers in tow.

Henry had always sought to mix his own alloy, and in 1855 poured the first heat of crucible saw steel produced in America. By now, he not only made saws, but also knives, circular saws for lumbermen and other carpenter tools. By the close of the decade, Henry Disston and his Keystone Saw Works was firmly established as a leading Philadelphia concern making international headway.

By 1861, Henry Disston dominated the American saw market, spurred in part by a tariff on foreign materials with the advent of the Civil War. His oldest boy, Hamilton Disston, volunteered to enlist in the Army, despite Henry's strong opposition and intent to buy his draft replacement. 25 other workmen from Disston Keystone Saw Works joined Hamilton. Throughout the war, Henry profited immensely from fabricating armaments for the Union Army and became one of the wealthiest men in the country. But he wasn't just another robber baron.

Intensely patriotic to his adopted country, Disston paid a sum equal to half their Army pay to workers enlisting, with the promise that their jobs would be waiting for them upon their return from the war. Henry also offered his manufacturing base to the Federal Government, fabricating swords, guns, armoured plate and a multitude of other metal items related to the war effort.

**Explosive growth**

Hamilton Disston miraculously survived the war, returning home a local hero and that was when Henry changed the name of his company from 'Henry Disston' to 'Disston and Son'. During the next several years, Hamilton Disston's four other brothers followed suit. Disston & Sons had become a family dynasty and their progeny would carry the company through the next hundred years.

The 1870s saw explosive growth with Disston & Sons. Disston's zeal for patenting each new technological development was matched only by his utter ruthlessness with the competition. He often sued other companies for patent infringement and bought out those he could. Names such as Jackson, Richardson and Harvey Peace fell under Disston's sway, now a juggernaut as the world's leading sawmaker. With an unquenchable thirst for innovation, he employed a team of metallurgists to experiment with mixes of alloys to field only the best steel and constantly experimented



The 1940 medallion



Hammer-smithing a vintage Disston sawplate back into true



This advertisement highlights the venerable Disston D8, a product as synonymous with the Disston name as the Model T is to Henry Ford



Henry Disston & Sons, Inc. saw blade advertisement in American Machinist, 1920

with saw design, such as the venerable Disston D8 Handsaw. Calling his plant superintendent into his office one day in 1873, Henry chalked out a design for a skew-backed saw designed for lighter weight without sacrificing cutting action and within a matter of days, put into production what is now known as the Disston D8, the most popular and ubiquitous hand saw in the world, thousands of which are still sold on eBay today – a testament to Henry Disston's entrepreneurial vision.

**Leaving a legacy**

But Disston was not just another ruthless, powerful capitalist, milking every dime out of his labour force. He was a very devout man, whose caring, paternal leadership style was underscored by a deep concern for every employee in his company. America had rapidly industrialised and urban living conditions were horrific. Henry cast his eyes on the Tacony district a few miles northeast of Philadelphia. Ever concerned for the



Henry Disston Jr, a direct descendant of the founder of the Disston Saw Company – grandson of Jacob S. Disston Jr



Laurel Hill Cemetery, located on 3822 Ridge Ave, Philadelphia, is home to the mausoleum of the Disston family



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## DESIGN & INSPIRATION

### The great tool makers – Henry Disston

- safety, morale and welfare of his rapidly growing employee base, Henry envisioned a neighbourhood free of brothels, tanneries and saloons – a clean, well-lit place to live and work, where a man could raise his family in a safe environment, where his family could worship in a church representative to their faith, where they could picnic at a park and enrich their lives with a library and cultural centre. Henry Disston brought what many called a 'utopian fantasy' to fruition and broke ground on a six-acre plot in 1871 – which eventually expanded to the district's ultimate size of over 350 acres, 122 employee-owned homes, serviced by proper sewers, a waterworks, public schools, a library and cultural centre.

Henry Disston did not live to see Tacony blossom into full. Like his father before him, he succumbed to a series of strokes in 1878 shortly before turning 59 and passed away. He left behind a legacy of excellence, production and a tradition not just of sound and ethical business practices, but also of the moral responsibility any leader must shoulder for those in their charge, to ensure that the common good promotes good work and sound product.

Visionary entrepreneur. Patriotic industrialist. Ruthless capitalist. Humanitarian leader. These are all qualities Henry Disston evinced every day of his well-lived life, through spirit and through deed. He



Sharpening a Disston D8 from the 1887–1896 era

was truly one of the unsung heroes of the industrial age whose products still cannot be surpassed, as Disston hand saws remain a staple of any 21st-century hand tool

woodshop – tools forged in the crucible of unspeakable adversity and triumph. Tools made of unyielding, unstoppable and uncompromising Disston steel. *F&C*



Disston Star hammer saw set, patented 1876



Disston saw sharpening vise No.3D

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By 1916, Disston & Sons employed over 2,800 men and women on its 64-acre factory plant