

Trades, Crafts, Manufacturing

Not all Iowans gained their livelihood from farming in the mid-nineteenth century. Various trades and crafts were followed. The builder constructed homes and stores; the printer produced books and newspapers; the shoemaker made and repaired shoes; others were responsible in additional ways for providing people with the necessities and pleasures they needed and wanted.

There were also many manufacturing processes being developed and used at this time. Each craft and each type of factory led to the development of new ideas and methods which could be, and were, patentable.

Blacksmithing

Inventions to aid the blacksmith were of three types: first, there were those relating to horseshoes; second, putting iron tires on wagon wheels; and third, the bellows, forges, tuyeres and tools used by the blacksmith. Four of these patents were received by C. Weitman, a German emigrant who settled first in Hazleton and later lived in Independence. Since he was a blacksmith, it was only natural that his inventions followed this line.

Augustus Weitman of West Union patented two horseshoes. His object was to secure the shoe

to the hoof without using nails. At the same time it would prevent the animal from becoming hoof-bound. He constructed his shoes in two equal parts connected with a pivot.

M. B. Wills of Humboldt developed a horse-shoe cork sharpener in 1869 that would enable every man to sharpen the shoes of his own horse. He could "thereby save a large blacksmith bill in the course of a year." However, it was never patented and probably never placed on the market, at least very extensively.

Animal shoeing stock: Sinclair, Davenport.

Bellows, blacksmith's (2): Hemmingsen, Marshalltown; Miller & Faris, Red Rock.

Blacksmith's tool: Forbes, Marshalltown.

Forge, blacksmith's: Scott, Fairfield.

Horseshoes (6): Ladd, Ottumwa; Moore, Bloomfield; Pleyel, Adel; Weitman (2), West Union; Weitman, Hazleton.

Horseshoe calk sharpener (6): Butler, Dunham & Wann, Marshalltown; Crocker, Marshalltown; Close, Chariton; Duncan, Vinton; Hays, Duncan & Bowen, Vinton; Kline, Marshalltown.

Horseshoe jack: Shimer, Scranton Station.

Horseshoe nail clincher: Rapp, Waterloo.

Horseshoe, securing: Weitman, Hazleton.

Pump, bellows: Wallis & Swearingen, Milton.

Tire bender (2): Scott, Fairfield; Tomlinson, Onslow.

Tire heater: Ingalls, Independence.

Tire, securing on wheels: Barnes, Albia.

Tire setter: Cawthorne, Lyons.

Tire setting and cooling machine (2): Guy, Postville; Courtleyou, Chariton.

TRADES, CRAFTS, MANUFACTURING 437

Tire shrinking device (3): Weitman, Independence; Weitman, Hazleton; Scott, Fairfield.

Tire upsetting machine (2): Badley, Afton; Ingalls, Independence.

Tuyere (2): Cain, Moravia; Raines & Owens, Oskaloosa.

Brewing

Most of the brewers of Dubuque, such as Peaslee's Ale Brewery, Anton Gehrig and Anton Heeb of the Dubuque Brewery, and Ignatz Seeger's Key City Brewery, seemed to have little interest in inventions. An exception was M. Tschirgi, a native of Switzerland who came to Dubuque in 1846. He worked with Gehrig at the Dubuque Brewery from 1846 to 1847. For the next eight years he brewed beers at various locations. In 1855 he and J. Schwind organized the Western Brewery, one of the largest and most complete in the state. Based on his extensive experience he invented beer reservoirs and coolers for which he received patents in 1865 and 1866.

Aging alcoholic liquor: Purdy, Burlington.

Beer cooler: Tschirgi & Kammüller, Dubuque.

Reservoir for beers and wines: Tschirgi, Dubuque.

Spirits, manufacture of: Purdy, Burlington.

Stills, worm tub for: Johnston, Farmington.

Wine filter: Schmidt, Davenport.

Wine press (2): Davenport & Case, Davenport; Scholer, Burlington.

Building Construction

Carpenters, masons, bricklayers and painters were aided by 80 patents. Some dealt with im-

proved methods of construction such as building an arch by Frank Alsip of North McGregor, a portable fire wall by J. F. Bishop of Afton, and building walls by M.P. Turner of Des Moines.

Others such as E.K. Wood and R.W. Henry of DeWitt, J.C. and C.M. Bills of Ottumwa, and Marshall Turley of Council Bluffs developed new paints and stains.

Many Iowa inventors were concerned with developing machines for tenoning, dovetailing, mitering, and sawing lumber preparatory to building. H. Littlefield who came to Lewis in 1856 received two patents for improvements in scaffolds.

Eighteen men patented brick molds or presses. The need for building materials was great in an expanding state. The earliest patent was by H.J. Hughes of Davenport on February 5, 1856. A year later R.R. Harbour of Oskaloosa patented his machine which exerted powerful and gradual pressure in the formation of the brick by use of levers on a circle. It took only a small amount of power to operate it.

M. B. Wills of Humboldt had a machine that manufactured 16 bricks with each revolution of the wheel. "Its capacity is to manufacture 25,000 perfectly compressed and uniform-sized bricks a day," said the *Dubuque Times*. It was built by Wills and Johnson of Iowa Falls, but probably not patented.

Bernard Zwart of Keokuk was one of two who patented lime kilns. He improved the form of the smokestack, added a diversion wall whereby two fireplaces were created, and improved the construction of hot-air conductors in combination with draft flues.

In addition to inventing furnaces and car couplings David Hargar of Des Moines developed a new roofing composition. He used three parts of coal tar (not boiled), three parts sand, three parts quicklime, 1/90 part sulphate of zinc, and 1/90 part flour of sulphur, thoroughly mixed. The Des Moines *Register* had no doubt that it was certain to supersede "all roofing of the pitch, 'plastic slate,' 'crystal rock,' 'crushed limestone', and other sorts. It can be put on felting, wood, sheet iron, tin or stone." Tin on which it was placed could be heated red hot without igniting the mixture.

The *Register* writer said he had been shown a piece of tin that had been covered for eight or ten days. "It has probably been bent and twisted a thousand times, without making a crack or break in it." He concluded that he could "heartily endorse it as a big thing."

Arch, construction of: Alsip, North McGregor.

Brick mold or press (18): Alsip, North McGregor; Berrian, Clinton; Bisbee, Ames; Evans, Davenport; Garretson, Richland; Gould, Independence; Harbour, Oskaloosa; Hess, Des Moines; Hughes, Davenport; Jones, Ft. Madison; Lowery, Tabor; Mills, Des Moines; Mitchell,

Dunlap; Newell, Des Moines; Newlove, Burlington; Schuffenecker (2), Keokuk; Williams, Dakota.

Clapboards, gage for holding: Cummings & Babcock, Boonesborough.

Dovetailing machine: Wolf, Burlington.

Lath machine: Meigs, Dubuque.

Lime kiln (2): Randall, Mason City; Zwart, Keokuk.

Log rossing machine: Nichols, Clinton.

Lumber tonguing and grooving cutter: Perrin, McGregor.

Lumber trimming machine: Lamb & Frazier, Clinton.

Mitering machine (2): Loetscher, Dubuque; Rosecrans, Marshalltown.

Oil for mixing paint: Wood & Henry, DeWitt.

Paint for roofing, wood & metal: Bills, Ottumwa, & Bills, Albia.

Planes, arrangement of parts in rotary: Kramer, Marion.

Plane, splint: Drake & Drummond, McGregor.

Planing machines (3): Climer, Muscatine; Snow, Dubuque; Tostevin, Council Bluffs.

Roofing (11): Chaffee, Des Moines; Foster, Burlington; Green, Christiansburgh; Hargar, Des Moines; Hogue, Oskaloosa; Van Dyke & Eastwick, Keokuk; Van Pappelendam, Charleston; Thompson (2), Kirksville; Weed, Muscatine; White, Dubuque.

Saw mill (3): Richardson & Richardson, Martinsburgh; Trunick, Muscatine; Woodard & Snyder, Missouri Valley.

Sawing machine (9): Bliss, Hamburg; Harreld, Washington; Meyer, Council Bluffs; Miller, Fairfield; Morehouse, Washington; Ringstad, Decorah; Schamweber, Davenport; Washburne, Burlington; Wilson, Council Bluffs.

Scaffold (3): Chatten, Marion; Littlefield (2), Lewis.

Shingle machines (5): Auld, Brighton; Bitzer, Muscatine; Craine (2), Fairfield; Dexter, Clinton.

Siding gage: Lewis, Princeton.

Tenoning machine (2): Curnan, Lyons; Witter, Sherrill's Mount.

Tinner's firepot: Cary, Millersburgh.

TRADES, CRAFTS, MANUFACTURING 441

Wall for buildings: Turner, Des Moines.

Wall, portable fire: Bishop, Afton.

Weatherboard gage (2): Newlove, Burlington; Tinsley, Blakesburgh.

Weatherboard scribe: Miller & Faris, Red Rock Twp., Marion Co.

Weather strip (4): Case, Des Moines; Corbit, Bethlehem; Dodder, Washington; Patton, Hamburg.

Wood, composition for staining: Turley, Council Bluffs.

Dry Goods and Groceries

Among the 25 patents which were of use in dry goods stores and groceries, two may be noted as having unusual interest. George H. Smith of Glenwood combined a spring balance and knife. He used a balance such as that used by butchers and retail dealers when articles were sold by weight. By inserting it in the handle of the knife, articles could be cut and weighed by one and the same instrument. According to Smith's patent application the work was done just as accurately and far more expeditiously than by the usual method of cutting off the piece or article and placing it on an ordinary scales or balance.

Sol Kuh of Jefferson patented an advertising lantern in 1872. On each of its four sides he placed rows of varicolored glass. Upon these, words were attached or printed. The lantern was attached to a padded headrest and had a light inside of it. It could then be carried through the streets at night, advertising the enterprising merchant's products.

Bag holder (5): Darling, Davenport; McPhail, Charles City; Smith, Des Moines; Striker, Iowa Falls; Turner, Cedar Rapids.

Counter, show: Beardsley, Mt. Zion.

Filter and cooler: Woodman, Dubuque.

Lantern, advertising (2): Kuh (2), Jefferson.

Liquid cooler and ice water stand: Giebrich, Burlington.

Measuring appliance: Smith, Lansing.

Measuring cloth (2): Beaton, Grinnell; Crocker, Port Allen.

Refrigerator and soda apparatus (2): Cohen, Bloomfield; Johnson, Ft. Madison.

Ribbon case: Woolston, Marshalltown.

Scales (4): Bell, Cedar Falls; Budge & Russell, Cedar Falls; Lawrence, Cedar Falls; McDonald, Dubuque.

Scales combined with knife: Smith, Glenwood.

Showcase, revolving: Melendy, Delhi.

Showcase, wallpaper: Odell & Hudson, Iowa Falls.

Soda fountain: Hamilton, Cedar Falls.

Spool thread case: Parsons, Burlington.

Mining and Stonework

A few patents were related to mining and stonework. N.D. Clark of Bentonsport invented a gold washer which he proposed calling "Gold-Hunter." F.W. Crosby of Toledo invented an improved ore roasting oven in 1868. Shortly after receiving his patent, he went to North Carolina to prospect for gold.

The *Register*, in reporting this invention, said Crosby was also the inventor of a fountain pen "much in use" and was now "'figuring' at something by which he thinks electricity can be applied to the working of breaks [sic] on railway cars."

Amalgamator, gold and silver: Bolthoff, Burlington.

Auger mining: Hobart, Dubuque.

Gold digging apparatus: Tisdale, Des Moines.

Gold washer (2): Canfield, Sabula; Clark, Bentonsport.

Ore roaster: Crosby, Toledo.

Ores, reduction of: Hay, Burlington.

Rock drill (2): White & Baumgardner, Davenport; White, Davenport.

Stone drilling machine: Frizell, Keokuk.

Stone sawing mill: Mills, Dubuque.

Printing

Although only eleven patents related to the printing industry, some were important in the spread of information in a frontier state. In 1858 Henry Harger of Delhi patented his mechanical typographer. It could be used either for printing on paper or for making an impression in wax so as to form molds or matrices for electrotyping.

Two years later he invented a typesetter. It consisted of an arrangement of machinery in connection with the type case. By this means type was fed to the composing stick. Levers and fingers readily took the type from the case and set it in line on the stick.

That versatile Council Bluffs inventor, Marshall Turley, received two patents for printer's ink. He developed one with Benjamin F. Thomas. They used pitch from a pine tree or pine tree rosin which they heated to about 800° F. This vaporized the more volatile portion and produced an inflammable gas.

The liquid pitch, together with the vapor thus generated, was discharged through a tube 50 to 100 feet long. The gas was ignited and burned at the end of the tube. The liquid was collected and coloring matter consisting of charcoal from soft wood was mixed with it. One pound of white lead was added to each 20 pounds of the mixture.

Ink, printer's (2): Turley, Council Bluffs; Turley & Thomas, Council Bluffs.

Photographic plateholder: Averill, Decorah.

Photographic printing press: Hamilton, Sioux City.

Printer's galley: Snyder, Burlington.

Printing, inking appliance for color: Biddle, Knoxville.

Type case: Aldrich, Marshalltown.

Typesetting (2): Harger, Delhi; Neff & Scruggs, Monroe.

Typographer, mechanical: Harger, Delhi.

Writing and printing machine: Peeler, Webster City.

Shoemaking and Leatherwork

Mid-nineteenth century shoemaking was done on an individual basis. Patents received by Iowans dealt principally with making boot and shoe patterns, improving tools, and tanning leather.

James N. Sturtevant and Harvey E. Jones of McGregor patented a new formula for tanning hides. They mixed one-half barrel of water, eight pounds of common salt and one-half pound of sulphuric acid, stirring it well before placing the hides in the barrel.

The hide was soaked for six hours to two weeks, depending upon its thickness. Then it was

removed, rinsed, and scoured with a stiff brush, removing all salt and acid. It was now ready to make into shoes and boots.

Boot and shoe shank and toe laster: Graves, Osage.

Boot blacking case: Carter, Keokuk.

Boot crimper: Marcy, Keokuk.

Boot leg: Haviland, Ft. Dodge.

Boot patterns (3): Augustine, Dubuque; Burnett, Keokuk; Forrist & Wheeler, Mt. Vernon.

Currier's slicker (2): Peters & Pauly, Keokuk; Peters & Williams, Keokuk.

Edging tool for boot soles: Smiley, Albia.

Heel, boot and shoe: Engledow, Cedar Falls.

Hide and leather dressing machine: Baumgardner & White, Davenport.

Hides in tanning, apparatus for handling: Haviland & Phillips, Ft. Dodge.

Laster, shank: Cain & Cain, Dubuque.

Leather cutting machine: Crocker, Marshalltown.

Leather rolling machine: Monson, Upton.

Leather splitting gage: Baird, Bloomfield.

Peg cutter, boot and shoe: Sellers, Keokuk.

Sewing horse: Mills, DeWitt.

Shoe fastening (2): Coppock, Earlham; Hart, Buffalo Twp., Linn Co.

Shoe lining, removable: Everts, Cedar Falls.

Shoemaker's tool (2): Clippinger, Newton; Wilson & Foster, Chariton.

Sole, boot: Van Ausdall, Keokuk.

Strap cutter: Crocker, Marshalltown.

Tanning process (8): Crane & Baldwin, Anamosa; Hill (2), Dubuque; Hisey, Tama City; Needham, Oskaloosa; Pierce & Beardsley, Castle Grove; Sturtevant & Jones, McGregor; Wilcox, Percival.

Watchmaking

Only four inventions were patented for this craft. One, Waldin's watchmaker's lathe chuck, has already been mentioned.

Another sounds very modern in nature. S.P. LaDue of Rockford invented a calendar clock in 1859. He marked the wheels of the clock with figures and letters. He then arranged them so that they would move in proper sequence before an opening in the lower part of the clock case. The seconds, minutes, hours, days of the week, and the month would be indicated without the aid of movable hands.

Chuck, watchmaker's lathe: Waldin, Burlington.

Clock, calendar: LaDue, Rockford.

Watch case calendar: Moore, Grinnell.

Watch case spring attachment: Eason, Des Moines.

Metal Manufacturing Processes

A.T. Hay, proprietor of Hay's Steel Works in Burlington, was a native of Pennsylvania. He came to Iowa in 1851 for the Illinois and Missouri Telegraph Company. In 1854 he went to Minneapolis as agent of the United States Land Office. After having been in real estate and law in Burlington from 1857 to 1866, Hay turned his attention to scientific and metallurgic investigations.

Although he was self-educated and trained in his father's trade of blacksmith, he invented the Hay Steel Process. He also patented a process for

TRADES, CRAFTS, MANUFACTURING 447

reducing ores, providing an electrical protection for boilers, and a process for preventing incrustation of steam boilers and sugar boilers.

Corrugating machine, sheet metal: Moore, Lyons.

Cultivator teeth, rolled steel plates for making: Skinner & Skinner, Des Moines.

Cutting, punching and upsetting, tool for: Kent, Lyons.

Eave troughs, machine for making: Yates, Clarence.

Edge tools, grinding: McLelland, McGregor.

Hub boring machine (5): Jonas, Burlington; Murphy, Dubuque; Owens, Oskaloosa; Roberts & Daily, Waverly; Walters, Riceville.

Hubs, device for securing boxing in: Turley, Council Bluffs.

Iron and steel, manufacture of (2): Hay, Burlington; Usher, Iowa Falls.

Iron with a harder metal, mode of coating wrought: Rigg, Iowa Falls.

Metal cutting and punching machine: Hastings, Horton.

Metal shearing machine: Kent, Lyons.

Metal, composition for covering: Green, Christiansburgh.

Pan former: Finn, Decorah.

Plow, composition metal for: Smith, Waterloo.

Plows, manufacture of (3): Barnes, Franklin Twp., Story Co.; Howell & Browning, Webster City; Skinner, Davenport.

Punch and shearing machine: Swanson, Newton.

Scouring box: Langdon, New Hampton.

Screws, molding female: Lamb & Wood, Keokuk.

Shearing tool: Sandgren, Lyons City.

Sheet metal boilers, construction of: Moore, Lyons.

Sheet metal cutting machine (5): Hall, Dubuque; Low (3), Waukon; Stevens, Decorah.

Sieve bodies, construction of (4): Mann (4), Burlington.

Spouts, machine for making: Woodworth, Iowa Falls.

Upsetting, combination machine for: Hunt, Oskaloosa.

Wheel teeth, machine for cutting: Underwood, Muscatine.

Wooden Manufacturing Processes

Ephraim Parker patented a machine for making clothespins in 1856. He attached a cutter to a common lathe used for turning out parts of chairs. The cutter extended the whole length of the timber to be turned. A wheel and a saw to slot and finish the clothespin were connected to the cutter.

The machine would take a square piece of timber from a spout and convert it into cylinders and clothespins in a single operation.

Barrelhead cutting machine (2): Bevard, Muscatine; Young, Muscatine.

Clothespins, machine for making: Parker, Burlington.

Lathe for turning fancy handles: Wentworth, Burlington.

Lathes to turn tapering shafts, tool for adjusting: Berkeley, Cedar Rapids.

Plane for making blind slats (3): Andresen, Davenport; Bess & Hagny, Keokuk; Miller, Oskaloosa.

Stave machine (4): Clark (2), Bentonsport; Dibble, Farmington; Hurlbut, Muscatine.

Other Manufacturing Processes

One does not think of Iowa as being well-known for its cigars. In the 1870's it was apparently a thriving business. H.F. Moeller and H.P. Brandt of Davenport patented a tool for boring cigar molds in 1871. Cigar-making machines were invented by Theodore Ernst of Fort Madison and H.E. Tylander of Keokuk in 1873.

When so much emphasis is being placed today on nicotine in tobacco, it is interesting to note

Patent No. 127,939. This was issued to Marshall Turley and Mary Jane Innes, Iowa's third woman inventor, both of Council Bluffs, for a cigar mouthpiece. They made the tapered mouthpiece of cornstalk or other pithy vegetation. It was claimed that this would absorb nicotine, allowing a free draft through the cigar while still being pleasant to the taste.

William Paggett Allen of Dubuque and W. Baustian of Davenport patented formulas for making friction matches, while Burhans of Burlington invented a machine to make the match splints.

Allen used one part of sandarac and two parts of shellac which he dissolved in alcohol, producing a paste the consistency of honey. He then added one part of phosphorous and two parts of the paste. He obtained friction matches which were not affected by moisture. They were, therefore, useful to seamen, miners and others who wished to keep or use them in damp places.

Bleaching straw goods: Rosburgh, Panora.

Cigar: Turley & Innes, Council Bluffs.

Cigar machine (2): Ernst, Ft. Madison; Tylander, Keokuk.

Cigar molds, tool for boring: Moeller & Brandt, Davenport.

Match splints, machine for making: Burhans, Burlington.

Matches, manufacture of friction (2): Allen, Dubuque; Baustian, Davenport.

Mineral water, manufacture of: Maloney, Des Moines.

Pasteboard cutting machine: Burhans, Burlington.

Plastic article, composition for molding: Legg, Malcolm.

Vinegar, appliance for manufacture of (2): Michael, Des Moines;
Tiffany, Davenport.

HOMER CALKIN—CORRINE CALKIN

PATENTS ISSUED BY U.S. PATENT OFFICE
1843 - 1873

<i>Year</i>	<i>Issued To Iowans</i>	<i>Total Issued</i>	<i>Year</i>	<i>Issued To Iowans</i>	<i>Total Issued</i>
1843	1	494	1859	39	4,160
1844	0	478	1860	50	4,357
1845	0	473	1861	51	3,020
1846	1	566	1862	70	3,214
1847	0	495	1863	88	3,773
1848	0	583	1864	95	4,630
1849	2	984	1865	104	6,088
1850	2	883	1866	176	8,863
1851	2	752	1867	247	12,277
1852	3	885	1868	227	12,526
1853	2	846	1869	231	12,931
1854	3	1,755	1870	201	12,137
1855	8	1,881	1871	216	11,659
1856	7	2,302	1872	224	12,180
1857	12	2,674	1873	230	11,616
1858	34	3,455			