

Food, Clothing and Furniture

The second largest group of inventions patented by Iowans was devoted to the necessities and comfort of everyone. Something to eat, something to wear, and furniture for the home were required by all. As a result, 438 patents, or 19.1 per cent of those invented during the thirty years under survey pertained to these basic concerns.

Food

Bees were plentiful and a source of food for any farmer who had a hive and a colony. Hives have always come in a variety of sizes and shapes. Even so, there seemed to be no end of new types and improvements that could be thought up. Fifty-four patents were issued in this category alone.

B. S. and E. H. Haviland of Ft. Dodge developed a hive that would keep a number of colonies within a single box or house. The object was to afford circulation of air through the several hives. Thus a colony of bees weak or few in numbers would be kept in a proper, warm state by heat from the other hives.

Joseph Gould of Grinnell invented a hive that could be adapted to small or large swarms at pleasure. The hive developed by Charles Finn of Des Moines was double-walled.

Many people had at least a cow or two and so a source for cream from which butter could be made. Forty-six invented churns and three, churn dashers. The one Jacob Dodder of Washington patented was designed to force the cream to the bottom of the churn. There it would be agitated and the butter concentrated instead of allowing it to collect in the upper part of the churn.

John Copeland and George P. Martin of Quasqueton had a new arrangement of inclined loops on the inner surfaces of a many-sided tub. This was supposed to circulate the cream so it would turn to butter faster. Nicholas Hospers of Pella connected the churn dasher to the actuator crank with a forked and pivoted connecting rod. This gave a reciprocating and rotary motion to the dasher.

A third source of food was sugar cane. In April 1862 the Burlington *Hawkeye* noted that a considerable amount of land in southern Iowa was being devoted to cultivating cane. On January 28, 1862, O. N. Brainerd of Marion patented his sorghum evaporator. Nearly at once it was being manufactured by McKendrie of Burlington. Brainerd was joined by thirty-two other inventors in developing evaporators, cane mills and other machines. *The Burlington Hawk-Eye Gazette* claimed that the sugar that came from these plants was very good, whiter than New Orleans sugar and equal to it in other respects.

A great variety of kitchen and garden tools and utensils used in food growing and preparation were developed. Hiram Smith of Des Moines patented a cook fork. There was a novel attachment whereby articles of food taken from a cooking vessel could be shoved off the tines of the fork without using the thumb or fingers and without scraping them off at the side of a dish.

I. W. Chesterman of Centralia invented a coffee pot that made good, clear coffee with full flavor in two or three minutes. "Coffee is never good that requires so long to prepare it by any of those inventions for distilling or filtering in the troublesome way."

A culinary boiler was patented by Thomas Dare of Osceola. He placed one vessel inside of another, the inner one being considerably smaller and secured with springs. The outer vessel contained water through which the contents of the inner were heated without danger of being burned.

To carry eggs to market or elsewhere, James R. Asher of Oskaloosa used canvas pockets, being suspended so as to keep the eggs separated. Allen S. Ballard invented an ice cream freezer with inner and outer ice chambers. The milk was between them. He also used scrapers to aid in agitating the milk and keeping it mixed.

David T. Rickey of Marshalltown patented a grape trellis. He lowered the grape vines to the ground in the fall without removing them from

the trellises. They could be covered and protected from the frosts of winter and raised again in the spring.

Honey

Beehives (52): Bear, Toledo; Boyers, Danville; Conwell, Knoxville; Cuplin (4), Iowa Falls; Davis, Newton; Donnel, Davenport; Engledow (2), Cedar Falls; Field, Independence; Finn (2), Des Moines; Frey & Frey, Hook's Point; Glass, Independence; Gould, Grinnell; Gruver, West Union; Gunn & Cain (2), Oskaloosa; Guthrie, Clifton; Harden, Chariton; Harned & Elliott, Boonesborough; Harper, Hillsborough; Haviland & Haviland, Ft. Dodge; Heckman, Brooklyn; Honeywell, Toledo; Klepper, Muscatine; Kline, Kirkville; Kretchmer (2), Pleasant Grove; Kretchmer, Coburg; Loofbourrow, Hillsborough; Mulford, New Providence; Neal, Orleans; Parker, Winterset; Patton, Tipton; Price, Buffalo Grove; Pugh, Fort Plain; Reece, Marion; Reeve, Tipton; Richardson, Webster City; Shaeffer & Shaeffer, Centerville; Shaw, Zionsville; Smith, Decorah; Smith & Reed, Decorah; Smith, Vosburgh, Kramer & Winter, Cedar Rapids; Stump, Adel; Ward, Millville; White, Mt. Pleasant; Wright (2), Oskaloosa.

Beehive portal, mothproof: Beard, Salem.

Bees, trellis for propagating: Simons, Fairfield.

Butter

Churns (46): Aldrich, Anamosa; Barr, Independence; Bartholomew & Dinsmore, Kirkville; Beaton, Grinnell; Beckley, Stiles; Bennett, Mt. Pleasant; Chamberlain (2), Dubuque; Christian & Beach, Hamburg; Cook, Lyons; Copeland & Martin, Quasqueton; Crane, Ottumwa; Dodder, Washington; Edgell, Alexander & Kellogg, Quasqueton; Elarton & Elarton, Hillsborough; Fassauer, Wheeling; Gillilan, Marion; Graham, Lyons; Harper, Hillsborough; Hart, Buffalo Twp., Linn Co.; Goldsmith, Burlington; Hess (2), Lyons City; Hindman & Hiatt, Sidney; Hospers, Pella; Klingenberg & Mau, Davenport; Lee, Oskaloosa; Lewis, Elkport; McCutcheon (2), Washington; McGlothlen, Chariton; McNeil, DeWitt; Montague, Keokuk; Myers, Lyons; Sanborn, Hartwick; Sanborn, Lyons City; Smith, Independence; Smith, Oskaloosa; Stafford, Burlington; Stephens, Washington; Terrell & Hussey, Oskaloosa; Vincent & Leslie, Quasqueton; Weddington, Winterset; Wilcox, Hamburg; Wildasin & Peek, St. Charles; Witmer, Cedar Rapids.

Churn-dasher (3): Belt, Newton; Owen, Council Bluffs; Ridler, Rickardsville.

Sugar

Evaporators, saccharine and sorghum (22): Bartle (2), Independence; Bartle & Putney, Independence; Beach & Day, Independence; Bourne, Peosta; Brainerd, Marion; Cole, Mt. Pleasant; Crowley & Johnson, Marion; Chitister, Chatham; Harter, Independence; Heaton, Kingston; High, Walnut Fork; Ingalls, Independence; Kindley, Oskaloosa; Merrill, Quasqueton; Moss, Waverly; Ninde, Oskaloosa; Stewart, Wapello; Sowin, West Irving; Thompson, Marion; Whisemand, Independence; Woodworth, Iowa Falls.

Sorghum stripper: Huff & Huff, Clinton.

Sugar boilers, preventing incrustation of: Hay, Burlington.

Sugar cane mill (4): Biddle, Knoxville; Briggs, Greencastle; Demarce, Fairfield; Ingalls, Independence.

Sugar cane, cutter for: White, Dubuque.

Sugar centrifugal machine: Hunt, Oskaloosa.

Sugar evaporator furnace: Perry, Tipton.

Sugar from sorghum, manufacture of: Garretson, Pilot Grove.

Sugar, removing foreign substances from: Hoover, Oskaloosa.

Food Processing and Handling

Baking powder: Copping & Weideman, Clinton.

Bread and candy cutter: Quinn, Keokuk.

Bread board and dough tray: Fulton, Pulaski.

Bread toaster: Paine, Dubuque.

Broiler: Willging, Dubuque.

Butter coloring compound: Bogart, Cramer & Lewis, LaPorte City.

Butter excavator: Eaton, Montana.

Cabbage cutter: Aeuer, Muscatine.

Can opener: Reed, Lyons.

Can opener and knife or fork combined: Kenderdine, Lisbon.

Candy cutter: Quinn, Keokuk.

- Coffee and teapot strainer:** Case, Waterloo.
- Coffee pot (3):** Chesterman (2), Centralia; Yates, Dubuque.
- Coffee roaster (2):** Daily & Dougherty, Mt. Pleasant; Petersen, Davenport.
- Cook fork:** Smith, Des Moines.
- Culinary vessel (2):** Dare, Osceola; Johnson, Des Moines.
- Dish heater:** Brand, Burlington.
- Doughboard:** Petterson, McGregor.
- Dough kneader:** Jones, Davenport.
- Dough raising apparatus:** Dodge, DeSoto.
- Drinking vessel cover:** Heuermann, Davenport.
- Egg carriers (3):** Asher, Oskaloosa; Washburn, Burlington; Wells, Oskaloosa.
- Fruit basket (2):** Converse (2), Dubuque.
- Fruit dryer (2):** Fence, Des Moines; Smith, Decorah.
- Fruit jar:** Holcomb, Mt. Pleasant.
- Fruit lifter, pressed:** Raymond, Waterloo.
- Fruit loosener, dried (2):** Holman, Waterloo; Ragan, Waterloo.
- Fruit mill:** Hull, Washington.
- Grape and flower picker:** Delano, Cedar Rapids.
- Ice cream freezer (2):** Ballard, Mt. Pleasant; Tilden, Prairie City.
- Kneading board:** Jones, Davenport.
- Lard boiler:** Branagan, Burlington.
- Meat chopper:** Peters, Ft. Madison.
- Oven (5):** Craine & Bloss, Fairfield; Moore (2), Davenport; Hamner, Newton; Shaver, Cedar Rapids.
- Oven, portable:** Robinson, Oskaloosa.
- Potatoes, keeping sweet:** Davis & Davis, Fairfield.
- Refrigerator:** Giebrich, Ottumwa.
- Trellis, grape (4):** Custer, Davenport; Elliott (2), Cedar Rapids; Rickey, Marshalltown.

Vault for wine, potatoes, etc.: Weed, Muscatine.

Vegetable cutter (2): Bleyley (2), Ottumwa.

Water cooler and refrigerator: Comstock, Keokuk.

Clothing

There were 203 Iowa inventions that were related in some manner to clothing. They covered all phases from raising and processing hemp, flax and cotton to manufacturing and keeping the clothes clean.

As has been noted, John Godden of Pittsburgh was the first Iowan to receive a patent. He added a second vibrating frame of slats similar to those used in other machines. The second frame moved up and down simultaneously with the upper frame but not in the same direction. It was inclined obliquely in the direction in which the hemp moved. Feeding and cleaning were effected by small rollers which revolved about seventy-five times a minute. Three others also patented hemp and flax processing machines.

Strange as it may seem for a non-cotton growing state, D. Hess of West Union patented a cotton cleaning machine in October 1859. In 1865 J. A. Hall of Keokuk patented a combined cotton chopper, cultivator and drill.

The next step was the spinning of the cotton or flax. Fourteen inventions of this type were patented. C. C. Vanderpoll of Osage made a machine in 1869 for doubling and twisting woolen and cotton yarns. He claimed it could do 25 to

50 times as much as any machine then in use. He planned to construct it so as to be attached to the spinning jack. A man who had been manufacturing cloth for 25 years called it "a great improvement, and a labor and expense-saving machine." Even so, it apparently never was developed beyond this early stage.

Looms were necessary after the yarn had been spun. Twenty-eight patents for looms or mechanisms for them were granted to Iowans. John Whitehead of Oskaloosa developed a hand loom on which striped or fancy cloth could be woven rapidly, even by a child. His application for a patent included an affidavit that on July 11, 1866, at the home of W. Goss, he wove $58\frac{1}{2}$ yards of twill between 8 a.m. and 5 p.m. During the evening of the same day he wove $9\frac{1}{2}$ yards in 60 minutes. On July 12 he wove 52 yards and $71\frac{1}{2}$ yards the next day.

Elias Howe, Jr. of Cambridge, Massachusetts, received a patent for a new sewing machine on September 10, 1846. Although this was considered a great stimulus to making clothes, no Iowan received a patent for any improvement until A. R. and C. S. Byrkit of Fairfield did in 1868. Most Iowa contributions to the sewing machine came in the form of attachments to ruffle, embroider, plait and gather the cloth. With only two or three exceptions these were invented between 1870 and 1873.

Few innovations in clothing were made that led to patents for Iowans. Iowa's first woman inventor, Lucinda Humphrey of Tipton, did invent a skirt protector for which she received Patent No. 35,026 on April 22, 1862. It protected the bottom of skirts and dresses from being soiled by contact with the ground in wet weather.

Miss Humphrey used a strip of oiled silk or muslin long enough to extend around the periphery of the skirt. It was also of sufficient width to double over the edges and extend upward on both the inner and outer sides. The material was secured to metal loops which hooked into eyelets on the bottom of the petticoat. It would be worn out of sight on ordinary occasions. When desired, the wearer could tuck the bottom of her dress into the protector and proceed over wet ground without "being compelled to carry it raised in her hands."

Alfred Arnemann of Guttenberg patented a pocketbook protector in 1868. He used a spring catch for retaining pocketbooks and other articles in pockets or on wearing apparel to prevent their being lost or "fraudulently abstracted." C. S. Merriman of Villisca developed an inflatable garment to prevent drownings.

One may conclude that the Iowa pioneer obviously felt strongly about keeping his clothes clean. No less than 72 patents for washing machines were issued to them by 1873.

Ebenezer Gordon of Cedar Rapids claimed his washing machine would thoroughly cleanse clothes. At the same time there was no danger of clogging the machine and preventing its free operation. Tearing off buttons was "effectually obviated," he claimed.

J. A. Hammer and Thomas Chadwick of Newton developed an automatic clothes washer in which dirty water was drawn off and fresh water brought in. In the wash boiler patented by Ore Baldwin of Keokuk water was caused "to circulate violently" through fabrics by the action of heat. John Epeneter and Bernhardt Grahl of Council Bluffs added bristles to a washboard for which they received a patent in 1872.

Soap was an essential too. Francis M. Pleins and James Beach were the owners of the Dubuque Lard-Oil, Soap and Candle Factory, organized in October 1855 as F. M. Pleins and Company. In 1873 Pleins patented his method of making soap. His "soap is claimed to be of a superior quality, is manufactured by an entirely new process . . . and . . . is marketed to jobbers in Dubuque and the West," according to one writer.

Earlier patents for soap were issued to Horatio N. Wilbur of Keokuk and L. H. Van Spanckeren of Muscatine. Wilbur's soap was supposed to be good for removing paints, oils and dirt from clothing of every description. His formula consisted of $1\frac{1}{2}$ gallons soft water; 6 pounds shaving soap; 6

oz. sal-soda; 2 oz. each of turpentine, ammonia, alcohol, and marble dust; 1 oz. each of dissolved camphor, white rosin and dissolved alum; $\frac{1}{4}$ oz. Prussian blue or Chinese vermilion; and $\frac{1}{4}$ oz. of saffron. The mixture was boiled until all ingredients were well dissolved.

Van Spanckeren used entirely different ingredients for his soap— $5\frac{1}{2}$ pounds wood lye, 30° of strength; 3 pounds grease; $1\frac{1}{2}$ pounds potatoes; 6 oz. wheat flour; 2 oz. gum-tragacanth, and the yolk of four eggs. He carefully outlined the soap making process. Boil the potatoes first, then mash and pass them through a sieve; add $1\frac{1}{2}$ pounds of lye and stir thoroughly. Gum-tragacanth should be dissolved in one pound of lye, requiring about one week. Beat the egg yolks well.

Melt the grease; then add the potatoes, then the gum and then the eggs. Keep at a heat a little hotter than the hand can bear. Add the rest of the lye and continue to stir. Flour should be added slowly and the heat increased until all is entirely mixed. Put out fire and continue to stir until the soap becomes thick.

Robert French of Keokuk invented machinery for forming soap into balls in 1861.

A number of sad, flat and fluting irons were patented also. Among the inventors was another woman, Mary F. Potts of Ottumwa, who received two patents for her unusual sad irons in 1870 and 1871.

Cloth Making

Cotton chopper, cultivator and drill: Hall, Keokuk.

Cotton cleaning machine: Hess, West Union.

Flax and hemp breaking and cleaning machine: Godden, Pittsburgh.

Flax-brake and swingler: Cowan, Bloomfield.

Hemp-brake (2): Gillman, Walnut Fork; Witt & Sinn, Davenport.

Loom (21): Carter & Spake, Salem; Fretz, Cono; Garretson, Clay; Garretson (2), Salem; Garretson & Garretson, Mt. Pleasant; Gordon & Frame, Salem; Harsin & Kirkpatrick, Kirksville; Hayes, Salem; Henderson, Keokuk; Henderson & Henderson, Salem; Hodson, Mt. Pleasant; King & King, Salem; McDowell, Wassonville; Mendenhall, Fairfield; Silvis, Birmingham; Walker, Salem; Walker & Hartley, Salem; Wardel, Milton; Whitehead, Oskaloosa.

Looms, mechanisms for (7): Brookfield, Brookfield; Deen, Bolding & Perry, Dayton; Fellows, Harrison & Dyer, Maquoketa; Gordon, Mt. Pleasant; Henderson, Keokuk; Naylor, Manchester; Wareham & Waggoner, Kirksville.

Spinning machine (13): Abel, Vernon; Albright, Oskaloosa; Blaney, Lowell; Byrkit, Fairfield; Eberhard, Sigourney; Evans, Paris; Grant, Mt. Pleasant; Hart, Des Moines; Hart & Reesman, Farmington; Moxley, Muscatine; Silvis, Birmingham; Tetler, Batavia Station; Wolf, South English.

Spinning machine reel: Bradway & Bradley, Maquoketa.

Woven fabric: Richman, Muscatine.

Sewing Machines

Needle setter, threader & cutter: Johnston, Ottumwa.

Needle threader: Stanley, Montezuma.

Sewing machine (4): Byrkit, Fairfield; Hirons & Moore, Grinnell; Rogan, Newton; Steward, Dubuque.

Sewing machine attachments for ruffling, plaiting, embroidering, gathering, etc. (26): A. Johnston (8), Ottumwa; W. Johnston (2), Ottumwa; Johnston & Johnston (2), Ottumwa; Leech, Winterset; Lewis, Manchester; Moore, Grinnell; Rush, Chariton; Stewart (2), Ft. Madison; Toof (4), Ft. Madison; Wells, Webster; Woolworth, Ottumwa.

Sewing machine caster: Plank, Bloomfield.

Tatting shuttle winder (2): Jones, Davenport; Moore, Grinnell.

Apparel

Apparel, safety attachment for pocket of: Arnemann, Guttenberg; Jones, Grand River.

Clothing, submarine: Merriman, Afton.

Life preserving dress: Merriman, Villisca.

Skirt protector: Humphrey, Tipton.

Washing and Ironing

Clothes dryer (2): Gransden, Dubuque; Stowell, Dunlap.

Clothes line holder (2): Browne, Des Moines; Peters & Williams, Keokuk.

Clothes line reel, automatic: Farrah, Des Moines.

Clothes pin: Strain, Des Moines.

Clothes pounder: Morgan, Delhi.

Clothes wringer (4): Cooper, Independence; Fox, Farmersville; Hampton, Mt. Pleasant; Knox, Mt. Pleasant.

Damper for flat-iron heater: Moore, Lyons.

Flat-iron heater (2): Hall, Albia; Moore, Lyons.

Mangle (2): Converse, Dubuque; Gransden, Dubuque.

Sad irons (5): Anderson, Montana; Gulihur, Montana; Potts (2), Ottumwa; Shaw, Lansing.

Sad iron holder: Von Doehren & Reimers, Davenport.

Soap manufacture (4): French, Keokuk; Pleins, Dubuque; Van Spanckeren, Muscatine; Wilbur, Keokuk.

Wash board (2): Cook, Mt. Pleasant; Epeneter & Grahl, Council Bluffs.

Wash boiler (7): Baldwin, Keokuk; Case & Case, Des Moines; Hammer & Chadwick, Newton; Maxson, DeWitt; McDaniel, Dubuque; Wallace, Keokuk; Woodman, Dubuque.

Wash boiler attachment (7): Chapman, Afton; Glanville, Dowville; Reinking, Des Moines; Schloesser, Des Moines; Schramm, Des Moines; Sherman, Corning; Williams, Grinnell.

Wash tub attachment: Baldwin, Keokuk.

Washing machine (72): Adams, Montana; Baldwin, Summitville; Beaton, Grinnell; Beckley, Toledo; Carter (2), Franklin; Clark, Pulaski; Cole, Marshalltown; Connoran & Shafer, Red Oak; Courser, Burlington; Davis, Keokuk; Dennis, Marion; Derosear, Primrose; Dillan, Villisca; Dodder, Washington; Downer, Baldwin; Ehart & Ehart, Ft. Madison; Fiscus & Arney, Albion; Fox, Farmersville; Fox, Oskaloosa; Freed, Sioux City; George, Pulaski; Glines, Postville; Gorden, Cedar Rapids; Gould, Hamburg; Hall & White, Oxford; Hampton, Mt. Pleasant; Hildebrand, Dubuque; Hill, Boone; Hoover, Boonesborough; Horsey, Rome; Ingalls, Muscatine; Johnson, Des Moines; Jones (2), Davenport; King, Hamburg; Knox (2), Mt. Pleasant; Kuhlman, Dubuque; Lamb, Davenport; Lampson, Lyons; Leffingwell, Nevada; Marr & Maughlin (2), Onawa; Martin, Orford; McDaniel, Salem; Milner (2), Des Moines; Mundy & McConaughy, Washington; Myers, Lyons; Nissen, Davenport; Noble (2), Delhi; Oedamer, Muscatine; Pendleton, Iowa City; Reneky & Keiss, Cedar Falls; Richardson, Hopkinton; Seymour, Boone; Shearer, Drakesville; Shearer, West Grove, & Haynes, Centerville; Short, Wallen & Craig, Mt. Pleasant; Shuck, Oskaloosa; Streeter, Smithland; Thompson, Kirksville; Todd, Mechanicsville; Turley, Council Bluffs; Ward, Millville; Wharton, Richland; White, Oxford; Wilcox, Hamburg; Woolsey (2), Bloomfield.

Washing machine, heater for: Pratt, Davenport.

Furniture

Most of the patents for furniture were for bedsteads and springs. Some were folding beds of various types. Others were similar to that of Philander P. Simmons of Davenport. His "spring bed bottom" consisted of a web made of slats woven together with wire. This was used in combination with wooden strips and spiral springs.

Horace G. Williams of Hamilton built a child's cradle so perfectly balanced and regulated that it would rock with greater or less speed as desired.

Weights and balances replaced the hand or foot as the source of power. Isaac S. Goodman of Winterset also patented an automatic cradle. It was operated by clockwork. The weight of the person in the cradle served as a suitable substitute for weights or springs to drive the mechanism.

C. R. Rand of Dubuque combined a trunk with a bureau so they could be closed up like a trunk or extended to form a combined bureau, wardrobe, writing desk and bookcase.

A mosquito canopy was patented by Marshall Bliss of Grinnell. The canopy which enveloped the whole or a portion of the bed was so arranged that it could be brought into position or entirely removed by the person in bed without his changing position.

Bedsteads (incl. bedsprings) (33): Bell, Cedar Falls; Bradway, Maquoketa; Bush, Indianola; Clark, Mt. Pleasant; Clippinger & Pratt, Newton; Crandall, Canton; Dougherty, Mt. Pleasant; Farber, Mt. Pleasant; Faulkner, Mt. Pleasant; Freeman, Burlington; Hampton (2), Mt. Pleasant; Harper, Hillsborough; Howell, Mt. Pleasant; Kenyon, Webster City; Martin, Mt. Pleasant; Morgan, Bloomfield; McDaniel, Dubuque; Noble, Delhi; Odell & Hudson, Iowa Falls; Olds, Cedar Rapids; Osgood (3), Burlington; Osgood, Mt. Pleasant; Patton, Davenport; Potts, Ottumwa; Power, Burlington; Robbins, Dubuque; Simmons, Davenport; Todd, Mechanicsville; Walker & Lapish, Burlington; West, Burlington.

Bedstead and wardrobe combined: Morgan, Bloomfield.

Bedstead fastening: Bradway, Maquoketa.

Clothes and hat rack: Burgess, Decorah.

Clothes press: Nicholson, Anamosa.

Cradle, self-rocking: Williams, Hamilton.

Cradle, automatic: Goodman, Winterset.

Dining table: Garner, Independence.

Extension table (2): Clark, Mt. Pleasant; Hall, Fairfield.

Extension table slide: Garner, Independence.

Furniture, guard for legs of: Hartmann, Charles City.

Mosquito canopy: Bliss, Grinnell.

Sofa: Ciscor, Davenport.

Table leaf support (3): Eberhart, Cedar Falls; Forrest, Moingona; Lemon, Polk City.

Trunk: Rand, Dubuque.

Wardrobe, bedstead and bureau: Davis & Rominger, Bloomfield.