U.S. Refrigeration and Air Conditioning Patents

PART 1: U.S. Refrigeration Patents

Scope:
This listing was compiled from patent listings published in trade literature such as Electric Refrigeration News, Refrigeration and Air Conditioning News, Ice and Refrigeration, Refrigerating Engineering as well as articles, books, trade literature. In the early 1980’s, the Historical Committee of The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) investigated the possibility of re-creating a patent file that had been assembled by ASHRAE president Glenn Muffley covering the period 1800’s -1930’s. (That file no longer exists) Bernard Nagengast volunteered to research US Air Conditioning and Refrigeration Patents and create a list and obtain copies of the patents. The hard copies of the patents have been deposited in the ASHRAE Library in Atlanta, Georgia. Copies of these patents are available directly from the US Patent Office and can be accessed online at the US Patent Office website. This file does not contain every Refrigeration or Air Conditioning Patent that was issued during the time period, only those that were found in the sources checked. Patents can be issued by the Patent Office under many different classes, making it difficult to locate every single patent on a given subject. Although most of the patents are present in this listing, is probably not complete and additional patents may be added.

Contents:
Part 1 of the list has US Refrigeration Patents listed in numerical order. Reissued patents are listed last. Part 2 of the list has US Air Conditioning Patents. In some case, the same patent is listed in both parts if it pertains to both Refrigeration and Air Conditioning. Patents are listed with the number, inventor, issue date, file date (if present on the patent) and title.

Searching:
The list can be searched using the software of this program. (originally created in Microsoft Word) Note that the titles of the patents may not indicate the scope of the patent, and the word “refrigeration” or “air conditioning” may not be used in the same context as we use the terms today. For example, some early patents use the term refrigeration to refer to what we would call air conditioning now.

PART 1: U.S. Refrigeration Patents

Note: reissue patents are listed at the end of this part.
726  Frederic Tudor     Boston, MA
    May 4, 1838
    Improvement in the method of packing and stowing ice

750  Henry V. Hill     Washington, D.C.
    May 25, 1838
    Improvement in constructing refrigerators

1,240  Joseph E. Manuel    Philadelphia, PA
    July 12, 1839
    Mode of obtaining and securing ice

1,941  Thomas B. Smith    St. Louis, MI
    January 23, 1841
    Method of manufacturing or forming ice

3,080  John Dutton     Aston, PA
    May 8, 1843
    Improvement in accumulating ice

4,086  Thomas H. King     New York, N.Y.
    June 20, 1845
    Refrigerator

6,865  Goldsmith Coffeen Jr.      Warren
    County, OH
    November 13, 1849
    Ice-cream freezer

8,080  John Gorrie     New Orleans, LA
    May 6, 1851
    Improved process for the artificial production of ice

10,221  Alexander C. Twining    Middlebury, VT
    November 8, 1853
    Manufacturing Ice
12,530   John C. Schooley    Cincinnati, OH
March 13, 1855

Process of curing meats

14,510   Azel Storrs Lyman    New York, NY
March 25, 1856

Improved method of cooling and ventilating rooms

17,394   William A. Royce    Newburgh, NY
May 26, 1857   (Reissued December 24, 1872 as #’s 5,201 and 5,202.)

Machinery for compressing gaseous bodies

25,992   Jean Louis Baudelot    Harancourt, France
Assignor to: Henry Migeon
November 1, 1859   (Reissued January 28, 1862 as #’s 1,265; 1,266 and 1,267.)

Apparatus for cooling liquids

28,292   Harris Morse      Columbia, CA
May 15, 1860

Improvement in the treatment of snow or ice to convert it into large blocks

30,201   Ferdinand P. E. Carré    Paris, France
October 2, 1860

Improvement in apparatus for freezing liquids

31,736   Enoch Piper     Camden, ME
March 19, 1861

Improvement in methods of preserving fish

34,018   Alexander C. Twining    New Haven, CT
December 24, 1861

Improvement in apparatus for cooling and freezing

31,993   Alexander C. Twining    New Haven, CT
April 15, 1862

Improvement in apparatus for making ice

35,051   Alexander C. Twining    New Haven, CT

April 22, 1862

Improvement in apparatus for cooling and freezing

46,595   Daniel E. Somes      Washington, D.C.
February 28, 1865

Improvement in cooling and preserving-houses, packing-houses, refrigerators, and other similar structures.

49,601   Nelson W. Clark    Detroit, MI
August 29, 1865

Improvement in buildings for preserving milk, fruit, &c.

50,212   Jean Baptiste Java Mignon & Stanislas Henri Rouart    Paris, France
September 26, 1865

Improved Apparatus for freezing liquids

50,790   S. R. Beckwith    Cleveland, OH
November 7, 1865

Improvement in granaries and fruit-houses

53,101   S. R. Beckwith    Cleveland, OH
March 13, 1866

Improvement in granaries, fruit-houses, &c.

53,682   William Rose    St. Louis, MO
April 3, 1866

Improved apparatus for cooling beer

57,221   Matheus Tschirgi & Louis Kammuller    Dubuque, IA
August 14, 1866

Improved beer-cooler
57,670   James A. Boyer     Greensburg, IN
         September 4, 1866
         Improvement in refrigeration-buildings for preserving fruit, and &c.

57,805   William J. Wilcox    New York, NY
         September 4, 1866
         Improvement in cooling lard

59,396   E. G. Holden      Covington, KY
         November 6, 1866
         Improvement in preserving fruits and vegetables

63,404   Thaddeus S. C. Lowe     New York, NY
         April 2, 1867
         Improvement in apparatus for the manufacturing of ice

63,405   T. S. C. Lowe     New York, NY
         April 2, 1867
         Improved apparatus for condensing carbonic acid, and for drawing off and applying the same for cooling and freezing

68,413   Thaddeus S. C. Lowe     New York, NY
         April 2, 1867
         Improved mode of manufacturing ice

64,288   William B. Coates     Philadelphia, PA
         Assignor to: Thomas Reece & Arthur Clarke
         April 30, 1867
         Improved bags for preserving ice

64,452   Philip Schweikhart    Buffalo, NY
         Assignor to: Daniel Schweikhart
         May 7, 1867
         Improved beer-cooler

66,666   John Rutter     West Chester, PA
July 9, 1867

*Improvement in preserving, storing, and transporting fruits, vegetables, and other perishable items*

68,908 Daniel E. Somes  Washington, D.C.
September 17, 1867

*Improvement in the manufacture of ice, and in air-cooling and other substances*

69,955 Daniel E. Somes  Washington, D.C.
October 15, 1867

*Improved apparatus for cooling, freezing, and heating*

72,431 P. H. Vander Weyde  Philadelphia, PA
December 17, 1867

*Improvement in the manufacture of liquids for making ice, and for other purposes*

73,292 Edwin D. Brainard  Albany, NY
January 14, 1868

*Improved refrigeration and condensing-apparatus for preserving animal and vegetable substance*

78,159 Jean Baptiste Toselli  Paris, France
May 19, 1868

*Improved apparatus for freezing*

80,063 Robert S. Egbert  Colfax, CA
July 21, 1868

*Improvement in the manufacturing of ice*

80,080 John Martin  Philadelphia, PA
July 21, 1868

*Improved refrigerator*

82,076 Wilson Bray  Stockton, NY
September 15, 1868

*Improved refrigerator*
83,099  Louis Schulze  Louisville, KY  
October 13, 1868
*Improved beer-cooler*

85,719  Charles Tellier  Passy, France  
January 5, 1869
*Improved the manufacture of ice and the refrigerating of air liquids &c.*

87,084  P. H. Vander Weyde  Philadelphia, PA  
February 16, 1869
*Improved machine for the manufacturing of ice*

89,901  Asaph Thompson & James Darling  Hudson, OH
North Field Township, OH  
May 11, 1869
*Improvement in milk-coolers*

94,450  A. H. Tait  New York, NY  
August 31, 1869
*Improved mode of cooling and freezing liquids and other substances*

95,347  D.L. Holden  New Orleans, LA  
September 28, 1869
*Improvement in ice machines*

101,682  David K. Tuttle  Baltimore, MD  
April 5, 1870
*Improvement in ice machines*

101,876  D. L. Holden  New Orleans, LA  
April 12, 1870
*Improvement in apparatus for the manufacture of ice*

104,614  William S. Mason  Raleigh, NC  
June 21, 1870
*Improvement in apparatus for cooling building and making ice*
Improvement in refrigerators for condensing vapors from fermenting vats in breweries &c.

Improvement in apparatus for cooling and refrigerating

Improvement in process of forming vacuum in freezing apparatus

Improvement in the manufacture of ice

Improvement in method of cooling beer-worts &c.

Improvement in the manufacture of ice

Improvement in ice machines

Improvement in ice machines
112,654  Archibald B. Tripler     New Orleans, LA
February 28, 1871
Improvement in apparatus for making ice and for refrigerating purposes

112,726  Orazio Lugo &     Baltimore, MD
James B. McPherson
March 14, 1871
Improvement in cooling air and in the manufacture of ice

114,965  Daniel E. Somes &
Frank C. Somes     Washington, D.C.
May 16, 1871
Improvement in apparatus for cooling and preserving milk and other liquids

115,409  Albert Albertson     Jersey City, NJ
May 30, 1871
Improvement in the manufacture of ice

117,013  Samuel Stroock     New York, NY
July 11, 1871
Improvement in ice bags

117,087  Charles P. Leavitt     New York, NY
July 18, 1871
Antedated: July 7, 1871
Improvement in apparatus for making ice

117,572  Benjamin F. Smith     New Orleans, LA
Assignor of one half to: G. L. Laughland
August 1, 1871
Improvement in refrigerating and ventilating apparatus

118,411  Elwyn C. Weld     New York, NY
August 22, 1871
Improvement in apparatus for making ice
118,649  James E. Sears     Waco, TX
August 29, 1871
Improvement in apparatus for the manufacture of ice

199,252  Alexander C. Twining     New Haven, CT
September 26, 1871
Antedated: September 25, 1871
Improvement in apparatus and process for the manufacture of salt

121,402  A. Muhl      San Antonio, TX
November 28, 1871
Improvement in apparatus for the manufacture of ice

121,888  Andrew Muhl     Waco, TX
December 12, 1871
Improvement in ice machines

121,975  Alexander C. Twining     New Haven, CT
December 19, 1871
Antedated: December 9, 1871
Improvement in ice machines using ammonia

123,697  Daniel L. Holden    Covington, KY
February 13, 1872
Improvement in body preservers

126,109  Louis Townsend     Terre Haute, IN
April 23, 1872
Improvement in ice-increasers

126,305  William R. Johnson &
William Whitelaw
Assignors to: John Johnson
April 30, 1872
Improvement in ice machines
127,180  Samuel B. Martin
      John M. Beath
      San Francisco, CA
      May 28, 1872
      Improvement in the manufacture of ice and refrigerating machines

128,448  David Boyle
      Assignor to: John W. Pearson
      San Francisco, CA
      June 25, 1872
      Improvement in ice machines

131,783  Rees Reece
      Llandoilo, Wales
      October 1, 1872
      Improvement in ice machines

135,210  Edward S. Earley
      Philadelphia, PA
      January 28, 1873
      Improvement in corpse-coolers

135,576  Henry Norman &
      Charles F. Dietrich
      New Orleans, LA
      February 4, 1873
      Improvement in ice machines

137,323  Gardner Willard
      New York, NY
      April 1, 1873
      Application filed: March 20, 1873
      Improvement in apparatus for making ice

138,478  James W. Collier
      New York, NY
      May 6, 1873
      Application filed: April 14, 1873
      Improvement in coolers for liquors

140,375  Thomas D. Kingan
      Indianapolis, IN
      July 1, 1873
      Application filed: July 18, 1873
      Improvement in apparatus for cooling air
141,331  Savilla H. Crump    Reading, PA
July 28, 1873
Application filed:  April 30, 1873
Improvement in corpse coolers

142,046  Louis Schulze     Philadelphia, PA
August 19, 1873
Application filed:  August 14, 1873
Improvement in cooling and purifying air in breweries, packinghouses, and other buildings

142,393  John Hoffman     Toledo, OH
September 12, 1873
Application filed:  April 19, 1873
Improvement in corpse coolers

142,533  Frederick N. Troll    Baltimore, MD
September 2, 1873
Application filed:  June 25, 1873
Improvement in corpse coolers

144,577  Augustus H. Tait    Jersey City, NJ
November 11, 1873
Application filed:  July 23, 1873
Improvement in apparatus for the manufacture of ice, cooling buildings &e.

146,267  Andrew Muhl     Waco, TX
January 6, 1874
Application filed:  December 8, 1871
Improvement in the apparatus for cooling the air of buildings

146,620  Alexander C. Twining     New Haven, CT
January 20, 1874
Application filed:  November 22, 1869
Improvement in the method of freezing and cooling

146,621  Alexander C. Twining     New Haven, CT
January 20, 1874
Application filed: June 6, 1872

*Improvement in ice machines*

150,477 Samuel B Martin San Francisco, CA
May 5, 1874
Application filed: October 20, 1873

*Improvement in ice machines*

150,644 John Wilkinson Baltimore, MD
May 5, 1874
Application filed: January 13, 1874

*Improvement in cooling dairies*

152,435 B. Frank Teal Philadelphia, PA
June 23, 1874
Application filed: March 26, 1874

*Improvement in ice machines*

156,056 Francis V. De Coppet New Orleans, LA
Assignor to: J. Ward Gurley, Jr. & R. M. Davis
October 20, 1874
Application filed: December 31, 1873

*Improvement in ice machines*

159,997 Lucien B. Woolfolk Lexington, KY
February 16, 1875
Application filed: November 7, 1874

*Improvement in process in apparatus for cooling liquids*

160,077 Adam Brandt New York, NY
February 23, 1875
Application filed: December 24, 1874

*Improvement in cooling floors for breweries*

161,976 Samuel B. Martin San Francisco, CA
John M. Beath
April 13, 1875
Application filed: July 8, 1873
Improvement in ice manufactures and ice machines

162,397  Samuel B. Martin     San Francisco, CA
April 20, 1875
Application filed

Improvement in the manufacture of ice

162,432  Augustus H. Tait     Jersey City, NJ
April 20, 1875
Application filed:  December 23, 1874

Improvement in ice machines

162,468  Erastus Warren Giddings    Johnston, PA
April 27, 1875
Application filed:  April 12, 1875

Improvement in refrigerators

163,142  David Boyle     Washington, D.C.
May 11, 1875
Application filed:  November 10, 1874

Improvement in ice machines

163,143  David Boyle     Washington, D.C.
May 11, 1875
Application filed:  October 24, 1874

Improvement in ice machines

163,144  David Boyle     Quincy, IL
May 11, 1875
Application filed:  April 14, 1875

Improvement in ice machines

163,376  Walter N. Hill     Newport, RI
May 18, 1875
Application filed:  December 7, 1874

Improvement in machines for making liquid carbonic acid

163,576  George H. Chincock     Brooklyn, NY
May 25, 1875
Application filed: October 26, 1874
Improvement in refrigerating apparatus

168,501  Auguste Jas     New Orleans, LA
October 25, 1875
Application filed: July 1, 1875
Improvement in condensers for ice machines

168,706  John M. Beath    San Francisco, CA
October 11, 1875
Application filed: January 14, 1874
Improvement in ice machines

170,508  John M. Beath     San Francisco, CA
November 30, 1875
Application filed: August 5, 1874
Improvement in ice machines

170,935  Richard Bullymore    Buffalo, NY
December 14, 1875
Application filed: July 24, 1875
Improvement in fining and cooling lard in casks for transportation

173,313  Samuel B. Martin    San Francisco, CA
February 8, 1876
Application filed: January 28, 1876
Improvement in ice machines

173,314  Samuel B. Martin     San Francisco, CA
February 8, 1876
Application filed: May 21, 1874
Improvement in ice machines

173,315  Samuel B, Martin    San Francisco, CA
February 8, 1876
Application filed: April 22, 1874
Improvement in ice machines
173,316  Samuel B. Martin    San Francisco, CA
February 8, 1876
Application filed: November 4, 1873
Improvement in ice-machines

175,291  Samuel D. Lount    Chattanooga, TN
March 28, 1876
Application filed: December 27, 1875
Improvement in refrigerating processes and apparatus

175,498  Thomas L. Rankin    Emporia, KS
March 28, 1876
Application filed: March 4, 1876
Improvement in ice-machines

175,939  John J. Craven     Jersey City, NJ
April 11, 1876
Application filed: March 10, 1876
Improvement in refrigerating chambers

177,717  Bernard Hoppenyan    Hancock, MI
May 23, 1876
Application filed: April 18, 1876
Improvement in methods of making ice

177,845  Auguste Jas     New Orleans, LA
Assignor to one half to: Albert C. Janin
May 23, 1876
Application filed: April 27, 1876
Improvement in ice machines

177,999  John F. Gesner     New York, NY
May 30, 1876
Application filed: September 19, 1874
Improvement in ice machines

178,300  Auguste Jas     New Orleans, LA
June 6, 1876
Application filed: May 27, 1876

*Improvement in ice machines*

183,406  Robert H. Lucas  
San Francisco, CA  
October 17, 1876  
Application filed: July 14, 1876  

*Improvement in processes of refrigeration*

186,581  Theodore Krausch  
New York, NY  
January 28, 1877  
Application filed: November 22, 1876  

*Improvement in methods of preserving ice in icehouses*

187,413  Raoul Pierre Pictet  
Geneva, Switzerland  
February 13, 1877  
Application filed: June 28, 1876  

*Improvement in process of producing artificial cold by means of anhydrous sulphurous oxide*

189,331  Francois Victor Baudelot  
Harancourt, Near Sedan, France  
April 10, 1877  
Application filed: March 12, 1877  

*Improvement in coolers for beer, ale &c.*

189,958  Carroll L. Riker  
New York, NY  
April 24, 1877  
Application filed: November 18, 1876  

*Improvement in refrigerator-buildings*

190,036  Daniel L. Holden  
Covington, KY  
April 24, 1877  
Application filed: January 31, 1877  

*Improvement in ice machines*

191,256  Carroll L. Riker  
New York, NY  
May 29, 1877  
Application filed: February 19, 1876  

*Improvement in the manufacture of ice*
191,638  Alexander T. Ballantine    New York, NY
Assignor to:  US Ice and Refrigerating Company
June 5, 1877
Application filed:  May 28, 1877

*Improvement in ice machines*

194,414  George W. Cornwell    Jersey City, NJ
August 21, 1877
Application filed:  July 20, 1877

*Improvement in refrigeration chambers*

198,831  Albert Albertson    Jersey City, NJ
Assignor to:  Simon Benton Hunt
January 1, 1878
Application filed:  August 6, 1877

*Improvement in ice machines*

202,265  John P. Jones      Gold Hill, NV
April 9, 1878
Application filed:  October 10, 1877

*Improvement in Congealing-plates for ice machines*

202,641  John Enright     Cleveland, OH
April 23, 1878
Application filed:  March 5, 1878

*Improvement in ammoniacal-gas pumps*

202,787  Asa C. Call     Algona, Iowa
April 23, 1878
Application filed:  January 14, 1878

*Improvement in the method of forming ice in separated layers*

202,867  Alonzo C. Rand    Minneapolis, MN
April 23, 1878
Application filed:  March 30, 1878

*Improvement in refrigerators*
204,961  Edward Fixary  New Orleans, LA
June 18, 1878
Application filed:  February 27, 1878

*Improvement in freezing apparatus*

205,119  John Ring  St. Louis, MI
June 25, 1878
Application filed:  April 22, 1878

*Improvement in cooling and freezing apparatus*

205,643  Daniel L. Holden  Philadelphia, PA
July 2, 1878
Application filed:  May 10, 1878

*Improvement in methods and apparatus for producing ice*

206,626  Joshua Siddeley & Frederick N. Mackay  Liverpool, England
July 30, 1878
Application filed:  May 20, 1878
Patented in England:  May 10, 1875

*Improvement in process and apparatus for making ice*

206,627  Joshua Siddeley & Frederick N. Mackay  Liverpool, England
July 20, 1878
Application filed:  May 20, 1878
Patented in England:  May 10, 1875

*Improvement in cells for the tanks of ice machines*

207,278  Daniel L. Holden  Philadelphia, PA
August 20, 1878
Application filed:  May 13, 1878

*Improvement in apparatus for making ice*

207,290  Ernest P. Lorch  New Berne, NC
August 20, 1878
Application filed:  May 17, 1878

*Improvement in the apparatus for making ice*
208,019  John Kyle  Glasgow, North Britain  
Assignor to: Joshua Siddeley &  Liverpool, England  
John Siddeley  
September 17, 1878  
Application filed: May 20, 1878  
Patented in England: September 22, 1874  
*Improvement in process and apparatus for making ice*

208,045  John Siddeley & Frederick N. Mackay  Liverpool, England  
September 17, 1878  
Application filed: May 20, 1878  
Patented in England: January 20, 1869  
*Improvement in ether-meters for refrigerating machines*

208,304  John Gamgee  Chelsea, England  
September 24, 1878  
Application filed: October 18, 1877  
*Improvement in ice machines*

208,305  John Gamgee  Chelsea, England  
September 24, 1878  
Application filed: October 18, 1877  
*Improvement in ice machines*

213,219  Frederick N. Mackay  Liverpool, England  
March 11, 1879  
Application filed: August 17, 1878  
Patented in England: October 17, 1874  
*Improvement in cells for the tanks of ice-making machines*

213,530  Benjamin Rose  Cleveland, OH  
March 25, 1879  
Application filed: September 23, 1878  
*Improvement in refrigerators*

213,794  Henry J. West  Great Suffolk Street, Surrey County, England  
April 1, 1879  
Application filed: October 2, 1878  
*Improvement in apparatus for the refrigeration or freezing of liquids*
215,272  Benjamin W. Gillett  Jersey City, NJ
    Assignor to:  Jerome D. Gillett
    May 13, 1879
    Application filed:  April 5, 1879
    Improvement in refrigerators

217,617  Joshua Siddeley &  Liverpool, England
    Frederick N. Mackay
    July 15, 1879
    Application filed:  May 10, 1875
    Improvement in cells for the tanks of ice-making apparatus

219,621  Henry J. Slee &  Chicago, IL
    Edward K. Goss
    September 2, 1879
    Application filed:  March 11, 1879
    Improvement in modes of preserving, protecting and handling ice

219,131  James A. Whitney  New York, NY
    September 2, 1879
    Application filed:  May 24, 1877
    Improvement in refrigeration apparatus

222,433  William Young  &  Clippens, County
    of
    Alexander Nelson  Renfrew, England
    December 9, 1879
    Application filed:  February 29, 1879
    Patented in England:  December 21, 1877
    Improvement in apparatus for refrigerating liquids

227,703  Cassius C. Palmer  San Francisco, CA
    May 18, 1880
    Application filed:  August 22, 1878
    Ice-Making Apparatus

228,364  Charles P. G. Linde  Munich, Germany
    June 1, 1880
    Application filed:  July 14, 1879
Refrigerating and ice-making apparatus

229,941   Alexander T. Ballantine   Portland, ME
Assignor of one half to: Robert A. Ripley
July 13, 1880
Application filed: March 23, 1880

Congealer for ice-making apparatus

230,025   Oscar Kropff    Nordhausen, Germany
July 13, 1880
Application filed: May 15, 1880
Patented in Germany: April 13, 1879

Apparatus for freeing water from atmospheric air

230,102   Andrew J. Zilker    Austin, TX
July 13, 1880
Application filed: November 13, 1879

Apparatus for the manufacture of ice

230,318   John W. Miller   Whitesborough, NY
July 20, 1880
Application filed: May 15, 1880

Process of and apparatus for making ice

231,824   Benjamin Maillefert    Astoria
NY
Assignor of one half to: Henry Ehlers   New York, NY
August 31, 1880
Application filed: March 11, 1880

Process of and apparatus for refrigerating and making ice

231,886   Leicester Allen   Brooklyn, NY
September 7, 1880
Application filed: June 9, 1879

Process and apparatus for cooling air

234,494   Stanislas H. Rouart    Paris, France
Preparations melting under 32 Degrees Fahrenheit apparatus there for and their application

234,788
Kennard Knott Jr. Holdborn, County of Middlesex, Great Britain
November 23, 1880
Application filed: March 4, 1880
Patented in England: May 21, 1879

235,870
Ezra A. Hyat Patterson, NY
December 28, 1880
Application filed: November 23, 1880
Apparatus for refrigerating rooms

236,471
Franz Windhausen Berlin, Germany
Assignor to: Franz Hermann
January 11, 1881
Application filed: November 4, 1880
Patented in England: April 25, 1878
Patented in Italy: June 30, 1870
Patented in France: April 1, 1878
Patented in Austria: October 23, 1878
Patented in Germany: December 14, 1877
Patented in Spain: August 30, 1879
Patented in England: May 11, 1880
Patented in Belgium: May 14, 1880
Ice-making machine

236,843
Auguste J. Rossi & Leonard F. Beckwith New York, NY
January 18, 1881
Application filed: October 5, 1880
Artificial production of ice and cold

237,236
William P. Bigelow Natick, MA
February 1, 1881
Application filed: July 7, 1879
Air-drying and refrigerating apparatus
237,372   John C. De La Vergne & William M. Mixer New York, NY
February 8, 1881
Application filed: October 30, 1880

Ice-making machinery

237,953   David Boyle Chicago, IL
February 22, 1881
Application filed: November 4, 1879

Refrigerating device

239,343   De Witt C. Sanford St. Louis, MO
March 29, 1881
Application filed: July 27, 1880

Refrigerator and refrigerator house

239,666   Cassius C. Palmer Oakland, CA
April 5, 1881
Application filed: March 22, 1880

Ice-machine

239,979   John W. Nystrom Philadelphia, PA
April 12, 1881
Application filed: January 3, 1881

Process of refrigeration

240,004   Paul H. Bate Brooklyn, NY
Assignor to: The Bate Refrigerating Company
April 12, 1881
Application filed: December 2, 1876

Refrigerator

240,415   Silas A. Hosmer Concord, MA
April 19, 1881
Application filed: August 30, 1880

Refrigerator
240,697   John F. Gesner    San Rafael, CA
Assignor of three fourths: Edward P. Flint    San Francisco, CA
April 26, 1881
Application filed: August 21, 1880
*Apparatus for and process of producing artificial cold by chloride of ethyl*

242,107   David Boyle   Chicago, IL
May 31, 1881
Application filed: December 27, 1878
*Ice and refrigerating machine*

244,236   Ebenezer Hill   South Norwalk, CT
July 12, 1881
Application filed: May 16, 1881
*System or method of supplying dynamic refrigeration and machinery for the same*

244,300   Thomas L. Rankin   New York, NY
Assignor to: The Rankin Ice Manufacturing Company
July 12, 1881
Application filed: May 5, 1881
*Ice-machine*

244,601   Ebenezer Hill   South Norwalk, CT
July 19, 1881
Application filed: May 21, 1881
*Refrigerating apparatus and method of using the same*

244,602   Ebenezer Hill   South Norwalk, CT
July 19, 1881
Application filed: May 21, 1881
*Method of apparatus for cooling refrigerating-cars*

246,013   Ralph S. Jennings   Baltimore, MD
August 23, 1881
Application filed: July 28, 1881
*Air-cooling apparatus*
246,406   Francis M. McMillan   Washington, D.C.
August 30, 1881
Application filed: July 15, 1881

*Apparatus for the manufacture of ice and for other cooling purposes*

247,020   George W. Dietzler   San Francisco, CA
September 13, 1881
Application filed: April 22, 1881

*Combined water-cooler and refrigerator*

247,578   William Plumer   Lexington, MA
September 27, 1881
Application filed: May 11, 1881

*Cooling and condensing apparatus*

247,772   William T. Lyons   Decherd, TN
October 4, 1881
Application filed: February 11, 1881

*Ice-machine*

252,553   Theodore S. Very   Boston, MA
January 17, 1882
Application filed: January 19, 1881

*Method of and apparatus for refrigerating*

252,622   J. Thorton Reed   Boston, MA
January 24, 1882
Application filed: July 20, 1881

*Refrigerating apparatus*

252,766   Ebenezer Hill   South Norwalk, CT
January 24, 1882
Application filed: September 14, 1881

*Dynamic dry-air refrigerating apparatus*

252,921   Leicester Allen   New York, NY
Assignor to: Henry T. Brown, Trustee
January 31, 1882
Application filed: May 25, 1881
Process of and apparatus for dynamic cooling

254,203 Edouard Fixary Paris, France
February 28, 1882
Application filed: January 21, 1882

Ice-machine

256,023 Reuben A. Messervey Medford, MA
Assignor to one half: John M. Watson
Brookline, MA & Samuel V. Johnson
Medford, MA
April 4, 1882
Application filed: January 31, 1882

Refrigerator cooled by ammonia and other volatile liquids

256,350 Charles G. Mayer Nauvoo, IL
Assignor to one half: Leo Rassiuer St. Louis, MO
April 11, 1882
Application filed: February 14, 1882

Refrigerating apparatus

257,505 Francis M. McMillan & Washington, D.C.
Henry C. Johnson
May 9, 1882
Application filed: March 9, 1882

Refrigerating buildings, cars, vessels, and other structures

257,506 Francis M. McMillan & Washington, D.C.
Henry C. Johnson
May 9, 1882
Application filed: March 21, 1882

System of refrigeration for cooling cars, ships, buildings, &c.

258,682 George W. Stevens San Francisco, CA
May 30, 1882
Application filed: December 30, 1881

Ice-machine

259,421 Orin Parker Washington, D.C.
June 13, 1882
Application filed: November 21, 1881

*Method of cooling air for making ice and cooling min general*

259,697 Samuel D. Lount Phoenix, AZ Territory
June 20, 1882
Application filed: December 19, 1881

*Manufacture of ice*

260,706 Orin Parker Washington, D.C.
July 4, 1882
Application filed: November 12, 1881

*Process of and apparatus for preserving food*

261,460 Henry C. Johnson & Washington, D.C.
Francis M. McMillan
July 18, 1882
Application filed: April 22, 1882

*Refrigerating and drying grain*

261,810 Thomas Cook & Philadelphia, PA
Otto Albrecht
July 25, 1882
Application filed: January 3, 1882

*Ice-making apparatus*

263,620 John Sturgeon Westminster County, Middlesex, England
Assignor to: John Wilfred De Villemount Galwey
& George William Bainbridge
Warrington Eng. August 29, 1882
Application filed: December 21, 1877

*Apparatus for cooling, drying, and purifying air*

265,250 John Enright Cleveland, OH
October 3, 1882
Application filed: July 20, 1882

*Refrigerating apparatus*

265,627 Orin Parker Washington, D.C.
October 10, 1882  
Application filed: January 11, 1882  

Refrigerating apparatus

268,196  
John T. Davis  
New York, NY  
Assignor to: Amy M. King  
November 28, 1882  
Application filed: April 12, 1882  

Ice Machine

268,347  
William H. Hood &  
George Richmond  
Brooklyn, NY  
November 28, 1882  
Application filed: September 4, 1882  

Refrigerating and ice machine

274,500  
Joseph C. Kline  
Philadelphia, PA  
March 27, 1883  
Application filed: December 15, 1882  

Ice-Making machine

275,192  
George W. Goodwell  
Beardstown, IL  
April 3, 1883  
Application filed: February 5, 1883  

Process of and apparatus for blocking ice

276,824  
Samuel W. Johnson  
Medford, MA  
May 1, 1883  
Application filed: December 6, 1882  

Marine refrigerator

277,024  
Ossian Guthrie  
Chicago, IL  
May 8, 1883  
Application filed: January 13, 1883  

Aiding the formation of atmospheric or natural ice

281,090  
Hugh Logan  
San Francisco, CA  
July 10, 1883  
Application filed: January 31, 1883
Refrigerating and ice machine

283,054  William M. Wood & Washington, D.C.
William L. Bailie
August 14, 1883
Application filed: June 20, 1883

Ice machine

285,394  Edward Z. Collings & Camden, NJ
Charles F. Pike Philadelphia, PA
September 25, 1883
Application filed: October 20, 1882

Refrigerator car

285,879  Thomas H. Day San Francisco, CA
October 2, 1883
Application filed: January 10, 1882

Machine for making ice and producing cold

285,893  Julius Hess Detroit, MI
October 2, 1883
Application filed: May 10, 1883

Refrigerator room

286,604  George W. Goodell Beardstown, IL
October 16, 1883
Application filed: September 8, 1883

Process of blocking ice

288,063  Samuel Watson Johnson Belmont, MA
November 6, 1883
Application filed: August 21, 1883

Ice Machine

290,600  Cassius C. Palmer New York, NY
December 18, 1883
Application filed: August 15, 1883

Refrigerating car
290,794   Cassius Clay Palmer   Oakland, CA
December 25, 1883
Application filed: December 30, 1882
Patented in England: April 20, 1880
Patent No. 1,752
Patented in France: April 29, 1880
Patent No. 134,416
Patented in Victoria: May 13, 1880
Patent No. 2,828
Patented in New South Wales: June 30, 1880
Patent No. 3,960

Refrigerating apparatus

290,795   Cassius Clay Palmer   Oakland, CA
December 30, 1883
Application filed: December 30, 1882

Refrigerating apparatus

291,914   Samuel Henry Linn   New York, NY
January 15, 1884
Application filed: September 18, 1883

Method of and apparatus for preserving and transporting food

300,133   James C. Rossi   Perth Amboy, NJ
June 10, 1884
Application filed: December 29, 1883

Process of and apparatus for producing cold

300,695   John J. Craven   Patchogue, NY
June 17, 1884
Application filed: April 4, 1884

Refrigerating apparatus for chambers and buildings

301,457   John Patten   New York, NY
July 1, 1884
Application filed: September 8, 1883

Ice-machine

301,539   Oscar Vezin   Elizabeth, NJ
Method or process of uniting sheets of ice

302,294
Julius J. Suckert Ridgewood, NJ
July 22, 1884
Application filed: December 13, 1883
Method of and apparatus for compressing and liquefying gases and producing refrigeration

302,443
Julius J. Suckert Ridgewood, NJ
July 22, 1884
Application filed: January 17, 1884
Process of absorbing heat from rooms or material by use of a liquefied gas

306,724
Timothy C. Eastman New York, NY
October 21, 1884
Application filed: March 6, 1884
Method and apparatus for cooling the air in refrigeration rooms

306,725
Timothy C. Eastman New York, NY
October 21, 1884
Application filed: August 29, 1884
Method of and apparatus for cooling the air in rooms

307,996
David Smith Washington, D.C.
November 11, 1884
Application filed: February 26, 1884
Ice-Making

308,008
Henry Tallichet Austin, TX
November 11, 1884
Application filed: May 12, 1884
Process of and apparatus for refrigerating cars

308,980
Cassius C. Palmer Oakland, CA
December 9, 1884
Application filed: February 15, 1883
Ice making and refrigerating machine

310,616 John Ring St. Louis, MO
January 13, 1885
Application filed: October 13, 1884

Cooling attachment for gas and other machines

311,831 Christian Heintz & Buffalo, NY
George M. Heintz
Andrew Dotterweich & Dunkirk, NY
Said Dotterweich
Assignor to: Said C. and G. M. Heintz
February 3, 1885
Application filed: July 12, 1884

Combined air pressure apparatus and refrigerator

320,305 Julius J. Suckert Ridgewood, NJ
June 16, 1885
Application filed: April 24, 1885

Cooling and separating a lubricating agent from a compressed gas, and liquefaction of gases and production of refrigeration

320,306 Julius J. Suckert Ridgewood, NJ
June 16, 1885
Application filed: April 23, 1885

Process of liquefying gases and producing refrigeration

320,307 Julius J. Suckert Ridgewood, NJ
June 16, 1885
Application filed: April 24, 1885

Method of and apparatus for purifying and liquefying gases and producing refrigeration

320,308 Julius J. Suckert Ridgewood, NJ
June 16, 1885
Application filed: April 23, 1885

Process of separating and cooling a sealing or lubricating liquid in apparatus for producing refrigeration
320,309  Julius J. Suckert  Ridgewood, NJ
June 16, 1885
Application filed: May 18, 1885
Separating and cooling a sealing or lubricating liquid in producing refrigeration

321,669  William H. Wood  New York, NY
July 7, 1885
Application filed: March 12, 1885
Refrigerating and ice machine

323,749  Frederick Stizel  Louisville, KY
Assignor of two thirds: Adolph Reutlinger & Moses Schwartz
August 4, 1885
Application filed: November 3, 1884
Compressor for ice machines

323,767  Franz Windhausen  Berlin, Germany
August 4, 1885
Application filed: November 10, 1884
Refrigerating rooms and liquids and apparatus used therefor

324,278  Johann Stuber 
Jacob Stuber
August 11, 1885
Application filed: June 17, 1885
Refrigerating apparatus for houses

326,027  Henry Albert Fleuss  Newtown, Isle of Wright, England
September 8, 1885
Application filed: December 10, 1884
Patented in England: February 26, 1884
No. 3,978
Patented in France: November 18, 1884
No. 165,443
Patented in Germany: November 25, 1884
No. 31,811
Ice machine

328,624  Oscar Verzin  Elizabeth, NJ
October 20, 1885
Application filed: June 23, 1883

Ice machine

328,686   Henry Clay Johnson  Meadville, PA
October 20, 1885
Application filed: August 10, 1885

Corpse cooler and preserver

328,784   Henry Clay Johnson  Meadville, PA
October 20, 1885
Application filed: August 22, 1885

Refrigerating and dehydrating apparatus for meat and etc.

329,726   Peter Effertz  Chemnitz, Saxony, Germany
November 3, 1885
Application filed: June 29, 1885

Gas compressor

330,884   Edouard Fixary  Paris France
November 24, 1885
Application filed: July 10, 1885
Patented in France: August 23, 1884
No. 163,920

Apparatus for freezing liquids

331,530   Hugo Nehrlich & Adam Neubecker  Berlin, Germany
Assignor to: A. Neubecker  Offenbach-On-The-Main, Hesse, Germany
December 1, 1885
Application filed: March 1, 1885

Refrigerator

332,150   Joseph E. Holmes  Washington, D.C.
December 8, 1885
Application filed: May 29, 1885

Instrument for regulating the flow of gases and liquids in refrigerators and other structures
332,344  Edmund Jungenfeld & Hermann Rassbach  St. Louis, MO
Assignor to:  The Empire Refrigerating Company
December 15, 1885
Application filed:  November 17, 1884

*Oil-drip and separating-tank for ammonia-gas pumps*

336,235  Eli Emory Hendrick  Carbondale, PA
February 16, 1886
Application filed:  January 11, 1886

*Machine for cooling liquids and other articles commonly called “Ice-machines”*

336,952  Albert Schmitz  Essen-on-the-Ruhr
Assignor to:  Wilhelm Raydt  Hanover, Prussia, Germany
March 2, 1886
Application filed:  June 3, 1885
Patented in Belgium:  November 24, 1884
  No. 66,986
Patented in France:  November 19, 1884
  No. 165,545
Patented in England:  November 24, 1884
  No. 15,475
Patented in Germany:  November 25, 1884
  No. 33,166
Patented in Italy:  December 19, 1884
  No. 17,595
Patented in Austria-Hungry:  March 8, 1885
  No. 44,353
Patented in Spain:  March 30, 1885
  No. 4,054

*Production of cold manufacture of ice and apparatus therefor*

343,035  Elias Kauffeld  Pittsburg, PA
June 1, 1886
Application filed:  September 9, 1885

*Cooling and refrigerating apparatus*

343,369  Charles Haffcke  Baltimore, MA
June 8, 1886
Application filed:  March 31, 1885

Cooling air in refrigerators, & c.
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<th>Inventor Name</th>
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<td>Cassius Clay Palmer</td>
<td>New York, NY</td>
<td>June 22, 1886</td>
<td>March 9, 1885</td>
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<td>344,310</td>
<td>Abner Evans Jr.</td>
<td>Philadelphia, PA</td>
<td>June 22, 1886</td>
<td>August 20, 1883</td>
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<td>344,708</td>
<td>Lucien H. Barkdull</td>
<td>Chicago, IL</td>
<td>June 29, 1886</td>
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<td>345,059</td>
<td>Henry C. Johnson</td>
<td>Meadville, PA</td>
<td>July 6, 1886</td>
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<td>Apparatus for cooling beer</td>
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<td>346,184</td>
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<td>July 27, 1886</td>
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<td>348,824</td>
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<td>Boston, MA &amp; Fitchburg, MA</td>
<td>September 7, 1886</td>
<td>March 18, 1886</td>
<td>Method of and means for refrigeration</td>
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<td>356,254</td>
<td>Mathew Leavy</td>
<td>New York, NY</td>
<td>January 18, 1887</td>
<td>July 13, 1886</td>
<td>Method of and means for refrigerating cellars and vaults</td>
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</table>
356,382   David Smith     Washington, D.C.
January 18, 1887
Application filed:  March 5, 1883

*Ice machine*

372,327   Raoul Pierre Pictet   Geneva, Switzerland
November 1, 1887
Application filed:  July 31, 1886
Patented in France:  December 6, 1884
No.  165,743
Patented in England:  December 16, 1884
No.  16,556
Patented in Germany:  December 31, 1884
No.  33,239

*Apparatus for producing cold*

373,319   August Snyder    Pittsburg, PA
November 15, 1887
Application filed:  April 26, 1887

*System of and apparatus for refrigerating*

381,195   Henry Joseph West
116 Southwark Bridge Rd. County of Surrey  England
April 17, 1888
Application filed:  March 5, 1885
Patented in England:  March 16, 1881
No.  1,147
Patented in France:  June 21, 1881
No.  143,520

*Apparatus for the production of transparent ice*

386,447   Victor H. Becker   Chicago, IL
July 24, 1888
Application filed:  January 29, 1887

*Condenser*

388,722   John Ring     St. Louis, MO
August 29, 1888
Application filed:  April 29, 1887

*Ammonia system for cooling rooms, & c.*
390,836   Louis Block    New York, NY
October 9, 1888
Application filed:  March 17, 1887
Gas Compression and refrigerating apparatus

406,775   Charles F. Sautter   Brooklyn, NY
July 9, 1889
Application filed:  October 27, 1888
Thermostatic-valve regulator

436,858   Granville Kimball   Chicago, IL
September 23, 1890
Application filed:  January 10, 1890
Fluid-Pressure Governor

424,747   Frederick W. Wolf   Chicago, IL
April 1, 1890
Application filed:  April 24, 1889
Ice or refrigerating machine

426,781   Mark W. Dewey   Syracuse, NY
Assignor to:  The Dewey Corporation
April 29, 1890
Application filed:  February 10, 1890
Electric Refrigerating apparatus for railway cars

431,244   Hector Von Bayer  Washington, D.C.
Assignor by direct and mesne attachments to:  The Century Ice Machine Company
West Virginia
July 1, 1890
Application filed:  December 3, 1889
Method of cooling and freezing

435,566   George F. Meyer    New York, NY
September 2, 1890
Application filed:  June 8, 1887
Renewed:  March 18, 1890
Art of Making Ice
442,026   Wilson E. Facer   Cleveland, OH
Assignor by mesne assignments to: Facer
Refrigerating and Ice Making Company
New York, NY
December 2, 1890
Application filed: December 6, 1888

Refrigerating apparatus

443,020   Randolph G. Ward    Baltimore, MD
December 16, 1890
Application filed: December 15, 1888

Machine for producing artificial freezing and refrigeration

449,181   Frederick Schneider   New York, NY
March 31, 1891
Application filed: July 5, 1890

Rotary valve

449,615   Samuel B. Clemmens   Springfield, OH
March 31, 1891
Application filed: May 12, 1890

Cooling or refrigerating apparatus

450,575   Charles A. Cox &   Louisville, KY
Charles N. Brockington
Assignors of one fifth to: J. Frank Cox
April 14, 1891
Application filed: March 20, 1890

Refrigerating valve and regulator

452,536   Ehregott Theodore Winkler   Philadelphia, PA
Assignor by mesne assignments to: The
American Ice Machine Company
May 19, 1891
Application filed: September 20, 1887

Ice-making and refrigerating machine

453,651   Charles Frederick Miller &   Lancaster PA
Alexander Whiteside Carlile  
Assignor to: Said Miller 
June 9, 1891  
Application filed: November 29, 1890

Refrigerator

458,226 William E. Eastman Boston, MA  
August 25, 1891  
Application filed: March 2, 1891

Automatic valve-operating mechanism and thermostatic index and controlling device therefor

458,247 Lewis N. Charles Washington, D.C.  
August 25, 1891  
Application filed: May 26, 1890

Automatically governed valve

460,028 Edward A. Quisenberry Lexington, VA  
September 22, 1891  
Application filed: May 20, 1890

Method of and apparatus for manufacturing ice

476,358 Alexander T. Ballantine Cleveland, OH  
Assignor to: Domestifroid Company  
June 7, 1892  
Application filed: April 2, 1891

Portable or domestic refrigerator

478,373 Alexander Shiels Glasgow, Scotland  
July 5, 1892  
Application filed: May 6, 1891

Apparatus for automatically regulating temperature

487,706 Louis Block New York, NY  
December 13, 1892  
Application filed: July 11, 1892

Refrigerating machine

489,335 Alfred Siebert New York, NY
January 3, 1893
Application filed: June 22, 1888
Renewed: November 30, 1892

Refrigerating apparatus

489,212
James Bartlett    Toledo, OH
January 3, 1893
Application filed: August 23, 1892

Temperature-indicator

504,092
Paul I. Schmaltz    Hamburg, Germany
August 29, 1893
Application filed: December 12, 1891

Automatic pressure-regulator for refrigerating-machines

508,141
John Levey, Thomas H. Butler, & Charles A. McDonald    Chicago, IL
Assignors to: Hercules Iron Works
November 7, 1893
Application filed: November 16, 1892

Refrigerating-machine

508,755
Thomas L. Rankin    Chicago, IL
November 14, 1893
Application filed: February 25, 1893

Artificial-ice skating-rink

511,857
William Mild    Hamilton, OH
January 2, 1894
Application filed: December 31, 1892

Refrigerating apparatus

518,541
Louis Block    New York, NY
April 17, 1894
Application filed: July 11, 1891

Refrigerating-machine

519,359
Robert M. Taylor    Melrose, MA
May 8, 1894
Application filed: May 17, 1893

Manufacture of Artificial Ice

523,412   Theodore Scheffler        Paterson
Assignor of one half:  Frederick A. Scheffler
Passaic, NJ

July 24, 1894
Application filed: September 19, 1893

Method of cooling refrigerators

530,526   Daniel L. Holden         New York, NY
Assignor to: Kathryn M. Holden
December 11, 1894
Application filed: April 18, 1892
Renewed: May 5, 1894

Apparatus for manufacturing ice

530,527   Daniel L. Holden &       New York, NY
Lemuel W. Serrell        Plainfield, NJ
Assignors to: Kathryn M. Holden
New York, NY
December 11, 1894
Application filed: June 19, 1893
Renewed: May 5, 1894

Ice-making machine

537,626   Ehregott T. Winkler      Kansas City, MO
Assignor by direct and mesne assignments to: The Winkler Machine Manufacturing Co.
April 16, 1895
Application filed: February 16, 1894
Renewed: March 13, 1895

Refrigerating Machine

549,426   Alexander T. Ballantine  Cleveland, OH
Assignor to: The Domestifroid Company
November 5, 1895
Application filed: December 13, 1894

Ice Machine

551,107   Marcel Audiffearn       Grasse, France
December 10, 1895  
Application filed: February 12, 1895  
Patented in France: May 31, 1894  
No. 238,845  
Patented in Germany: October 31, 1894  
No. 82,314  
Patented in Belgium: November 3, 1894  
No. 112,536  
Patented in England: November 17, 1894  
No. 22,279  
Patented in Italy: December 22, 1894  
No. 37,840  
Patented in Spain: December 29, 1894  
No. 16,809

553,077  
Alexander Shiels  
Glasgow, Scotland  
January 14, 1896  
Application filed: June 11, 1894  
Patented in England: February 11, 1893  
No. 3,057

*Automatic Governor for refrigerating plants*

559,533  
George F. Knox &  
Elie L. Sharpneck  
Chicago, IL  
May 5, 1896  
Application filed: August 29, 1895

*Refrigerating-machine*

559,753  
Elie Sharpneck  
&  
George F. Knox  
Chicago, IL  
May 5, 1896  
Application filed: April 3, 1895

*Refrigerating-Machine*

577,328  
William F. Singer  
New York, NY  
Assignors to: The American Electric Cold-Supply Company  
Maine  
February 16, 1897  
Application filed: January 23, 1897

*Refrigerating apparatus*
578,297   Eliel L. Sharpneck & George F. Knox
            Chicago, IL
March 2, 1897
Application filed: June 10, 1895

Expansion-regulator for refrigerating-machines

578,499   Frederick O. Pierson
            Oshkosh, WI
March 9, 1897
Application filed: July 31, 1895

Compressor for refrigerating-machines

594,440   John Stocker & Harry H. Philper
            St. Louis, MO
November 30, 1897
Application filed: November 13, 1896

Liquid-cooling apparatus

630,715   William F. Singer
            New York, NY
January 18, 1898
Application filed: April 5, 1897

Refrigerating apparatus

601,716   Julius Sedlacek
            Nuremberg, Germany
April 5, 1898
Application filed: February 26, 1897
Patented in France: December 21, 1892
No. 226,556
Patented in Germany: January 13, 1893
No. 72,657
Patented in Italy: March 26, 1893
No. 1,194
Patented in Austria-Hungary: May 6, 1893
No. 1,089
No. 5,637
Also patented in: August 30, 1893
No. 10,239
No. 19,809
Patented in Switzerland: July 22, 1893
No. 7,363
Also patented: June 25, 1894
No. 8,798
Patented in Belgium: August 25, 1894
Condensing-water and air apparatus for refrigerating-machines

602,199
Julius Sedlacek  Nuremberg, Germany
April 12, 1898
Application filed: February 26, 1897
Patented in France: December 21, 1892
No. 226,556
Patented in Germany: February 10, 1893
No. 82,773
Patented in Italy: March 28, 1883
No. 1,194
Patented in Austria-Hungary: May 6, 1893
No. 1,089
No. 5,637
Also patented in: August 30, 1893
No. 10,239
Patented in Switzerland: July 22, 1893
No. 7,363 and June 25, 1894 No. 8,798
Patented in Belgium: August 25, 1894
No. 85,843
Patented in England: May 14, 1895
No. 9,530

Refrigerating Machine

604,162
Julius Sedlacek  Nuremberg, Germany
May 17, 1898
Application filed: September 27, 1897
Patented in France: December 21, 1892
No. 226,556
Patented in Germany: February 10, 1893
No. 82,773
Patented in Italy: March 28, 1883
No. 1,194
Patented in Austria-Hungary: May 6, 1893
No. 1,089
No. 5,637
Also patented in: August 30, 1893
No. 10,239
No. 19,089
Patented in Switzerland: June 25, 1894
No. 8,798
Patented in Belgium: August 25, 1894
Cooling and sealing

617,437
Heywood Cochran
Johnstown, PA
January 10, 1899
Application filed: November 19, 1897

Stop-Valve

625,447
James Humes
New York, NY
May 23, 1899
Application filed: February 2, 1899

Method of and apparatus for making ice

630,616
Albert T. Marshall
Brockton, MA
August 8, 1899
Application filed: June 4, 1897

Automatic Refrigeration apparatus

630,617
Albert T. Marshall
Brockton, MA
August 8, 1899
Application filed: February 11, 1898

Automatic expansion-valve for refrigerating apparatus

630,618
Albert T. Marshall
Brockton, MA
August 8, 1899
Application filed: August 29, 1898

Automatic regulator for electric motors

632,860
Abraham Wilkinson
Lorain, OH
Assignor to: The Cochran Company
September 12, 1899
Application filed: September 30, 1898

Expansion-valve

644,847
Madison Cooper
Minneapolis, MN
March 6, 1900
Application filed: September 25, 1899
Process of preventing formation of frost on refrigerating-surfaces

649,204  Jules Grouvelle &  Henri Arquembourg
          Paris, France
      May 8, 1900
Application filed:  March 7, 1900

Manufacture of coolers or condensers

658,899  Henry D. Pownall
          Cincinnati, OH
      October 2, 1900
Application filed:  December 7, 1899

Cooling and condensing apparatus

673,075  Maurice Ernest Douane
          Paris, France
      April 30, 1901
Application filed:  February 1, 1900

Refrigerating apparatus

674,463  Elijah C. Hall
          Braintree, MA
      May 21, 1901
Application filed:  February 15, 1901

Refrigerating System

683,186  William F. Singer
          New York, NY
Assignor to:  Singer Automatic Ice Machine Co.
             Jersey City, NJ
      September 24, 1901
Application filed:  January 14, 1901

Thermostatic switch

697,029  William F. Singer
          New York, NY
Assignor:  Singer Automatic Ice Machine Co.
             Jersey City, NJ
      April 8, 1902
Application filed:  November 15, 1900

Refrigerating apparatus

707,633  James F. Place
          Glenridge, NJ
August 26, 1902  
Application filed: February 15, 1901  

Art or process of liquefying air or other gases and cooling by means thereof

716,480  
Robert W. Rollins  
Hartford, CT  
December 23, 1902  
Application filed: August 12, 1901  

Regulating apparatus for refrigerating-compartment

740,170  
Eugene F. Osborne  
Chicago, IL  
Assignor by mesne assignments to:  
Said Osborne & J. Motte Martin, Trustees  
September 29, 1903  
Application filed: October 26, 1899  

Automatic expansion-controlling valve

761,701  
Cassius Clay Palmer  
New York, NY  
Assignor to: Railway and Stationary Refrigeration Company  
Delaware  
June 7, 1904  
Application filed: August 22, 1903  

Refrigerating apparatus

764,515  
Marcel Antione Audiffern  
Grasse, France  
July 5, 1904  
Application filed: March 29, 1904  

Oil-Separator for rotary refrigerating appliances

785,265  
Albert T. Marshall  
Swampscott, MA  
Assignor to: Federal Automatic Refrigeration Co.  
New York, NY  
March 21, 1905  
Application filed: March 4, 1904  

Expansion-valve for refrigerating apparatus

793,696  
Gardner T. Voorhees  
Boston, MA  
July 4, 1905  
Application filed: January 28, 1901  

Refrigerating apparatus
793,864   Gardner T. Voorhees   Boston, MA
Assignor to:  William H. Harris, Trustee
New York, NY
July 4, 1905
Application filed:  July 30, 1903
*Multiple-effect compressor*

795,014   Richard Whitaker   New Brunswick, NJ
Assignor to two thirds:  Robert W. Johnson & James W. Johnson
July 18, 1905
Application filed:  January 11, 1904
*Refrigerating apparatus*

795,015   Richard Whitaker   New Brunswick, NJ
Assignor to two thirds:  Robert W. Johnson & James W. Johnson
July 18, 1905
Application filed:  March 28, 1904
*Refrigerating apparatus*

796,969   William C. Hiester   Dayton, OH
August 8, 1905
Application filed:  February 9, 1905
Continuation of application:  May 14, 1903
*Refrigerating apparatus*

806,478   Albert T. Marshall   Brockton, MA
Assignor by mesne assignments to:  The Automatic Refrigerating Co.
December 5, 1905
Application filed:  June 12, 1902
Renewed:  March 13, 1905
*Condenser Valve for refrigerating apparatus*

815,912   Arthur H. Eddy   Windsor, CT
March 20, 1906
Application filed:  July 19, 1905
*Expansion Valve*
821,563  Richard Whitaker  New Brunswick, NJ
Assignor by direct and mesne assignments to:
Brunswick Refrigerating Company  Corp. of, NJ
May 22, 1906
Application filed:  January 11, 1904
Divided and application filed:  January 5, 1905

*Gas-Pump*

834,870  Jacob Chester Chamberlain &  New York
Albert T. Marshall  New Rochelle, NY
Assignors by direct and mesne assignments to:
Automatic Refrigerating Company  Corp. of NJ
October 30, 1906
Application filed:  June 21, 1905

*Automatic controlling means for fluid-pressure systems*

843,864  Louis Herman Brinkman  West Hartford, CT
Assignor to:  Whitlock Coil Pipe Company  Corporation of, CT
February 12, 1907
Application filed:  January 29, 1903

*Cooler*

848,277  Richard Whitaker  New Brunswick, NJ
Assignor by direct and mesne assignments to:
Brunswick Refrigerating Company
March 26, 1907
Application filed:  January 11, 1904

*Gas-pump*

853,503  Arthur H. Eddy  Windsor, CT
Assignor of one half:  Charles E. Shepard  Hartford, CT
May 14, 1907
Application filed:  January 6, 1906

*Expansion-Valve*

853,505  Arthur H. Eddy  Windsor, CT
Assignor of one half:  Charles E. Shepard  Hartford, CT
Automatic Expansion-Valve for refrigerating apparatus

853,541  Arthur H. Eddy  Windsor, CT
Assignor of one half: Charles Shepard  Hartford, CR
May 14, 1907
Application filed: January 26, 1906

Automatic Expansion-Valve

898,400  Marcel Audiffren &  Golbey, France
Henri Albert Singrun  Epinal, France
Said Singrun Assignor to:
Societte des Establissements Singrun
September 8, 1908
Application filed: June 20, 1906

Rotary refrigerating machine

906,508  George P. Carroll  Bridgeport, CT
December 15, 1908
Application filed: January 7, 1907

Automatic expansion-valve

911,635  Richard Whitaker  New Brunswick, NJ
Assignor by direct and mesne assignments
to: Brunswick Refrigeration Company  Corp. of, NJ
February 9, 1909
Application filed: March 3, 1905

Refrigerating apparatus

912,866  Robert F. Massa  Chicago, IL
February 16, 1909
Application filed: May 25, 1906

System of refrigeration

924,964  George P. Carroll  Bridgeport, CT
June 15, 1909
Application filed: March 1, 1907
Divided & application filed: June 5, 1907
Valve and connection

929,151 Robert F. Massa Chicago, IL
July 27, 1909
Application filed: July 9, 1906

Automatic refrigerating apparatus

932,599 Richard Whitaker New Brunswick, NJ
Assignor by mesne and direct applications to: Brunswick Refrigeration Company
August 31, 1909
Application filed: April 27, 1904

Refrigeration-machine

933,682 Gardner Tufts Voohees Boston, MA
September 7, 1909
Application filed: July 3, 1908

Multiple-effect receiver

936,065 Richard Whitaker New Brunswick, NJ
Assignor by direct and mesne applications to: Brunswick Refrigerating Company Corporation of, NJ
October 5, 1909
Application filed: September 16, 1904

Cut-off device for ice machines

938,554 Eugene Carpenter Newton, MA
Assignor to: Automatic Refrigeration Company Corporation of, NJ
November 2, 1909
Application filed: October 5, 1907

Refrigerating-counter

962,704 Ralph W. Emerson & South Bend, IN
Frank Bishop
June 28, 1910
Application filed: October 28, 1908

Refrigerating appliance
971,162  Ehergott T. Winkler  Kansas City, MO
Assignor of one half to: J. W. Roberts
September 27, 1910
Application filed: October 25, 1909

Refrigerating Systems

977,659  Maurice Leblanc  Paris, France
Assignor to: Societe Anonyme Pour L’exploitation des
proce des Westinghouse-Leblanc  Paris, France
December 6, 1910
Application filed: February 24, 1904

Refrigerating-machine

981,840  Eugene Carpenter &  Newton, MA
Fred M. Kimball  Somerville, MA
Assignors to: Automatic Refrigerating Company
Corporation of, NJ
January 17, 1911
Application filed: March 15, 1907

Automatic controlling mechanism for refrigerating systems

982,794  Eugene Carpenter &  Newton, MA
Fred M. Kimball  Somerville, MA
Assignors to: Automatic Refrigerating Company
Corporation of, NJ
January 31, 1911
Application filed: March 15, 1907
Divided and application filed: August 21, 1907

Automatic controlling mechanism for refrigerating systems

985,147  Andrew Clinton Culver  Hartford, CT
Assignor to: Automatic Refrigerating Company
Corporation of, NJ
February 28, 1911
Application filed: August 30, 1910

Automatic water-regulator

1,003,283  Albert T. Marshall  Hartford, CT
Assignor to: Automatic Refrigerating Company
Corporation of, NJ

September 12, 1911
Application filed: July 30, 1910

Multiple feed system

1,005,851 Maurice Leblanc Paris, France
Assignor to: Societe anonyme pour l’exploitation des procedes
Westinghouse-Leblanc Paris, France
October 17, 1911
Application filed: February 15, 1905

Refrigerating-machine

1,013,348 Richard Whitaker New Brunswick, NJ
Assignor to: Brunswick Refrigeration Company
January 2, 1912
Application filed: July 1, 1907

Gas-pump

1,050,910 Frank Bishop South Bend, IN
Assignor to: Auto-Electric Refrigerating Company
Chicago, IL
Corporation of, SD
January 21, 1913
Application filed: January 22, 1912

Automatic control device for refrigerating apparatus

1,064,272 Linus Wolf Zurich, Switzerland
June 10, 1913
Application filed: July 14, 1909

Apparatus for making ice

1,088,206 Confucius Chase & Warren A. Chase Boston, MA
Assignors to: Willard E. Robinson Winchester, MA
February 24, 1914
Application filed: October 7, 1907

Refrigerating Apparatus
<table>
<thead>
<tr>
<th>Patent Number</th>
<th>Inventor(s)</th>
<th>Location</th>
<th>Assignee(s)</th>
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<td>William A. Owen</td>
<td>Johnson City, TN</td>
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<td>February 24, 1914</td>
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<td>1,103,885</td>
<td>George Knox</td>
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<td>1,117,786</td>
<td>Carl A. V. Carlsson</td>
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<td>November 17, 1914</td>
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<td>1,152,708</td>
<td>Clyde J. Coleman</td>
<td>New York, NY</td>
<td>Virginia Refrigerator Corporation</td>
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<td>James J. Wood</td>
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<td>General Electric Company Corporation of, NY</td>
<td>December 14, 1915</td>
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<td>Fred W. Wolf Jr. &amp;</td>
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<td>January 4, 1916</td>
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<td>James D. Ross</td>
<td>Seattle, WA</td>
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<td>Howard H. Carpenter</td>
<td>Altadena, CA</td>
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1,214,255   Edmund Altenkirch & Bernhard Tenchkoff  
Berlin, Germany  
January 30, 1917  
Application filed: January 6, 1912  
*Heating Plant utilizing the waste heat of refrigerating-machine of the compression or absorption type*

1,222,170   Fred W. Wolf  
Chicago, IL  
Assignor by mesne assignments to: Isko, Incorporated  
Detroit, MI  
April 10, 1917  
Application filed: May 9, 1914  
Renewed: June 9, 1916  
*Refrigerating apparatus*

1,225,453   Gustave F. Maisch  
Chicago, IL  
May 8, 1917  
Application filed: October 2, 1916  
*Refrigerating Apparatus*

1,253,026   Victor J. Goetz  
Philadelphia, PA  
January 8, 1918  
Application filed: June 10, 1915  
*Centrifugal refrigerating-machine*

1,256,730   William A. Richter & Ernest S. H. Baars  
Milwaukee, WI  
Assignor to: Said Richter  
February 19, 1918  
Application filed: December 29, 1916  
*Refrigerating apparatus*

1,263,633   Heinrich Zoelly  
Zurich, Switzerland  
April 23, 1918  
Application filed: June 13, 1917  
*Electric Driven refrigerating Machine*

1,272,735   Orie E. Ves Sells  
Detroit, MI  
July 16, 1918  
Application filed: July 16, 1917
Refrigerating apparatus

1,276,450 Milton Tibbetts Detroit, MI
Assignor by mesne assignments to:
Isko Company Chicago, IL
Corporation of, DE
August 20, 1918
Application filed: July 28, 1916

Refrigerating apparatus

1,273,653 Clark Orr Fort Wayne, IN
Assignor to: General Electric Company
Corporation of, NY
July 23, 1918
Application filed: September 15, 1916

Rotary refrigerating machine

1,276,612 Reuben E. Bechtold & Fort Wayne, IN
Alfred W. Mellowes Detroit, MI
Assignors to: Guardian Refrigerator Company
Corporation of, MI
August 20, 1918
Application filed: June 10, 1916

Cooling Apparatus

1,279,608 McKinnon Summers Weldon, IL
& William R. Viles Clinton, IL
Said Viles assignor to: Said Summers
September 24, 1918
Application filed: October 20, 1915

Refrigerating and cooling device

1,280,765 Gustav A. Kramer New York, NY
Assignor by mesne assignments to: The Frigidor
Corporation Corporation of, VA
October 8, 1918
Application filed: February 19, 1915

Refrigeration apparatus

1,281,027 Gustav A. Kramer New York, NY
Assignor to: Frigidor Corporation
Corporation of, VA
October 8, 1918
Application filed: January 4, 1917

Refrigerating apparatus

1,281,820  Clark Orr  Fort Wayne, IN
Assignor to: General Electric Company
Corporation of, NY
October 15, 1918
Application filed: November 28, 1917

Rotary refrigerating Machine

1,281,821  Clark Orr  Fort Wayne, IN
Assignor to: General Electric Company
Corporation of, NY
October 15, 1918
Application filed: November 28, 1917

Rotary Refrigerating-machine

1,291,334  Fred W. Wolf  Chicago, IL
Assignor by mesne assignments to:
Isko Company  Corporation of, DE
January 14, 1919
Application filed: April 8, 1916

Process of and apparatus for refrigeration

1,312,600  Edward T. Williams  New York, NY
August 12, 1919
Application filed: September 15, 1915
Renewed: January 17, 1919

Refrigeration Machine

1,314,234  Fred W. Wolf  Chicago, IL
Assignor by mesne assignments to:
Isko Company  Corporation of, DE
August 26, 1919
Application filed: September 11, 1914

Expansion-Valve
1,326,686  Clark Orr       Fort Wayne, IN
Assignor to: General Electric Company
Corporation of, NY
December 30, 1919
Application filed: February 24, 1919

*Rotary refrigeration machine*

1,329,348  Edmund J. Copeland Detroit, MI
Assignor to: Kelvinator Corporation Wilmington, DE
Corporation of, DE
January 27, 1920
Application filed: January 31, 1918

*Refrigerating apparatus*

1,331,600  Nathaniel B. Wales New York, NY
Assignor to: George Lewis
February 24, 1920
Application filed: December 20, 1918

*Combined refrigerating and hot-water storage apparatus*

1,337,175  Fred W. Wolf     Chicago, IL
Assignor by mesne assignments to: Isko Company
Chicago, IL
Corporation of, DE
April 13, 1920
Application filed: December 23, 1913
Renewed: December 1, 1916

*Process of and apparatus for refrigerating*

1,350,453  Fred J. Heideman Detroit, MI
Assignor by direct and mesne assignments to:
Household Utilities Corporation
August 24, 1920
Application filed: April 16, 1919

*Refrigeration Tank*

1,362,757  Douglas Henry Stokes Cremorne, near Sydney,
New South Wales
Australia
December 21, 1920
Application filed: July 7, 1916
Refrigerating apparatus

1,373,174   Jay Grant De Remer   Washington, D.C.
March 29, 1921
Application filed: January 16, 1918

Refrigerating apparatus

1,373,175   Jay Grant De Remer   San Francisco, CA
March 29, 1921
Application filed: January 16, 1918
Divided & application filed: December 9, 1919

Compressor

1,375,836   Ernest F. Fisher   Essington, PA
April 26, 1921
Application filed: January 17, 1919

Refrigerating apparatus

1,419,097   Frank W. Andrews   Wapakoneta, OH
Assignor by mesne assignments to: Superior
Refrigerating Company
June 6, 1922
Application filed: May 14, 1917

Refrigerating apparatus

1,425,265   Albert T. Marshall   Hartford, CT
Assignor to: Automatic Refrigerating Company
Corporation of, NJ
August 8, 1922
Application filed: October 29, 1919

Refrigerating apparatus

1,436,815   Albert T. Marshall   Hartford, CT
Assignor to: Automatic Refrigerating Company
Corporation of, NJ
November 28, 1922
Application filed: February 25, 1922

Refrigerating apparatus
Method of and apparatus for chilling materials such as meat

Refrigerating food cabinet

Means for varying the temperature of the atmosphere in chamber

Artificial-refrigerating apparatus

Cold-storage

Method of Refrigeration
Assignor to: Security Trust Company, Trustee
Corporation of, MI
March 24, 1925
Application filed: September 22, 1921

Vaporizer and refrigerating systems

1,537,937   Jay Grant De Remer   Greenwich, CT
Assignor to: Savage-De Remer Corporation
Corporation of, NY
May 19, 1925
Application filed: February 23, 1921
Renewed: July 23, 1924

Refrigerating apparatus

1,556,689   Harry B. Hull    Dayton, OH
Assignor to: Delco-Light Company
Corporation of, DE
October 13, 1925
Application filed: October 23, 1923

Refrigeration apparatus

1,559,883   Alfred D. Karr &   Newark, NJ
Karl D. Perkins   New York, NY
November 3, 1925
Application filed: March 23, 1923

Air-cooled refrigerating machine

1,568,102   Elihu Thomson  Swampscott, MA
Assignor of one third to: John A. McManus
Lynn, MA
Assignor of one third to: James R. Graham
Newtonville, MA
January 5, 1926
Application filed: July 23, 1923

Refrigerating apparatus

1,570,144   Fred J. Heideman  Detroit, MI
Assignor to: Freezerator Company
Corporation of, MI
January 19, 1926
Application filed: February 21, 1923
Pressure-controlled temperature regulator for artificial refrigerators

1,589,373  Jay Grant De Remer  San Francisco, CA
Assignor to: Savage-De Remer Corporation
Corporation of, NY
June 22, 1926
Application filed: November 11, 1919

Refrigerating apparatus

1,609,334  Baltzar Carl von Platen &  Stockholm, Sweden
Carl Georg Munters
Assignors to: Electrolux Servel corporation New York, NY
Corporation of, DE
December 7, 1926
Application filed: August 18, 1926

Refrigeration

1,613,627  Baltzar Carl von Platen &  Stockholm, Sweden
Carl Georg Munters
Assignors to: Electrolux Servel Corporation New York, NY
Corporation of, DE
January 11, 1927
Application filed: November 21, 1925
Patented in Sweden: May 3, 1924
Renewed: November 5, 1926

Refrigerator

1,613,628  Baltzar Carl von Platen &  Stockholm, Sweden
Carl Georg Munters
Assignors to: Electrolux Servel Corporation New York, NY
Corporation of, DE
January 11, 1927
Application filed: November 21, 1925
Patented in Sweden: May 3, 1924
Divided and application filed: June 5, 1926

Refrigerator

1,642,942  Willis H. Carrier  Essex Fells, NJ
Assignor to: Carrier Engineering Corporation Newark, NJ
September 20, 1927
Application filed: April 23, 1923

Substance and process for using the same for refrigerating purposes

1,645,198 Andrew A. Kucher Chester, PA
October 11, 1927
Application filed: April 7, 1922
Divided and application filed: February 8, 1923
Renewed: April 27, 1927

Working fluid for refrigeration

1,648,178 Harry B. Hull Dayton, OH
Assignor to: Delco-light Company Corporation of, DE
November 8, 1927
Application filed: October 3, 1923
Divided and application filed: April 30, 1924

Refrigerating apparatus

1,651,826 Frederick B. MacLaren Jamaica, NY
Assignor to: MacLaren Electric Appliance Corporation New York, NY
Corporation of, DE
December 6, 1927
Application filed: June 13, 1922

Refrigeration Machinery

1,656,917 Andrew A. Kucher Chester, PA
January 24, 1928
Application filed: April 7, 1922

Refrigeration

1,656,918 Andrew A. Kucher Chester, PA
January 24, 1928
Application filed: June 4, 1923

Refrigerator

1,658,209 John R. Replogle Detroit, MI
Assignor by mesne assignments to: Electric Refrigeration Corporation
February 7, 1928
Application filed: November 9, 1923
Refrigerated food cabinet

1,658,340  Jesse G. King  Dayton, OH
Assignor to:  Delco-Light Company  Dayton, OH
Corporation of, DE
February 7, 1928
Application filed:  November 15, 1923

Refrigerating apparatus

1,658,341  Jesse G. King  Dayton, OH
Assignor to:  Delco-Light Company  Dayton, OH
Corporation of, DE
February 7, 1928
Application filed:  November 26, 1923

Refrigerating apparatus

1,659,163  Eduard Ruegger  Zurich, Switzerland
February 14, 1928
Application filed:  December 21, 1923
Patented in Switzerland:  December 23, 1922

Automatic refrigerating machine

1,666,907  Arthur B. Modine  Racine, WI
April 24, 1928
Application filed:  April 7, 1923

Heating Unit

1,669,141  Clark Orr  Fort Wayne, IN
Assignor to:  General Electric Company  Corporation of, NY
May 8, 1928
Application filed:  February 2, 1926

Refrigerating Machine

1,674,162  James H. Dennedy  Detroit, MI
Assignor by mesne assignments to:  Servel, Inc.  New York, NY
Corporation of, DE
June 19, 1928
Application filed:  August 18, 1921

Artificial Refrigeration Apparatus
1,675,599  Lloyd G. Copeman     Flint, MI
July 3, 1928
Application filed:  May 3, 1928

*Sharp-freezing container for mechanical refrigerators*

1,685,270  Harry W. Bundy     Detroit, MI
September 25, 1928
Application filed:  July 14, 1937

*Method of making finned tubing*

1,702,529  Clarence Warner &  Dayton, OH
Harry B. Hull
Assignors by mesne assignments to:  Frigidaire
Corporation
February 19, 1929
Application filed:  November 6, 1924
Renewed:  November 27, 1926

*Refrigerating apparatus*

1,709,176  Rollin M. Hyde     Detroit, MI
Assignor to:  McCord Radiator & MFG CO.
Corporation of, MA
April 16, 1929
Application filed:  December 13, 1926

*Condenser for refrigerating machines*

1,710,579  Percival P. Henshall Philadelphia, PA
Assignor to:  John J. Nesbitt Inc.
Corporation of, NJ
April 23, 1929
Application filed:  January 25, 1927

*Reversible heating or cooling radiator*

1,716,150  John R. Replogle     Detroit, MI
Assignor by mesne assignments to:  Kelvinator
Corporation
June 4, 1929
Application filed:  August 25, 1924

*Refrigerated food cabinet*
1,719,634  Matson C. Terry    Mansfield, OH
Assignor to: Westinghouse Electric & Manufacturing
Company
July 2, 1929
Application filed: July 4, 1923
Renewed: December 10, 1926
Refrigerator

1,719,808  Andrew A. Kucher     Chester, PA
Assignor to: Westinghouse Electric and Manufacturing
Company
July 2, 1929
Application filed: July 10, 1923
Refrigerator

1,719,810  Andrew A. Kucher     Chester, PA
Assignor to: Westinghouse Electric and Manufacturing
Company
July 2, 1929
Application filed: December 28, 1923
Refrigerating machine

1,719,820  Andrew A. Kucher     Chester, PA
Assignor to: Westinghouse Electric and Manufacturing
Company
July 2, 1929
Application filed: June 4, 1923
Renewed: November 23, 1926
Refrigerator

1,725,472  Clark Orr     Fort Wayne, IN
Assignor to: General Electric Company
Corporation of, NY
August 20, 1929
Application filed: December 16, 1924
Refrigerating machine

1,731,009  Jesse G. King     Dayton, OH
Assignor by mesne assignments to: Frigidiare Corporation
Corporation of, DE
October 8, 1929
Application filed:  April 30, 1923

Refrigeration apparatus

1,736,635  Christian Steenstrup  Schenectady, NY
Assignor to: General Electric Company
November 19, 1929
Application filed:  February 5, 1927

Refrigeration Machine

1,736,973  Jesse G. King  Dayton, OH
Assignor to: General Motors Research Corporation
Corporation of, DE
November 26, 1929
Application filed:  July 19, 1920

Pump for refrigeration systems

1,740,737  David Forbes Keith  Toronto, Ontario, Canada
December 24, 1929
Application filed:  June 27, 1927

Refrigerating device

1,742,062  William B. Day  Lexington, KY
Assignor of one half to: Kathryn W. Benick Winchester, KY
December 31, 1929
Application filed:  December 15, 1927

Electric Defroster for refrigerating coils

1,744,969  Arthur J. Kercher  Berkley, CA
January 28, 1930
Application filed:  August 26, 1925

Refrigerating Apparatus

1,745,544  John Karmazin  Detroit, MI
February 4, 1930
Application filed:  April 14, 1927

Series condenser for refrigerant cooling

1,747,958  Harry E. Thompson  Detroit, MI
Assignor to: Universal Cooler Corporation  Corporation of, MI
February 18, 1930
Application filed: August 24, 1927

*Thermostatic control for automatic refrigerating systems*

1,751,209  Andrew A. Kucher  Chester, PA
Assignor to: Westinghouse Electric & Manufacturing Company
March 18, 1930
Application filed: July 10, 1923

*Refrigerator*

1,753,951  Charles C. Spreen  Detroit, MI
Assignor to: Kelvinator Corporation
April 8, 1930
Application filed: June 4, 1927

*Condenser for refrigerating apparatus*

1,753,953  Charles C. Spreen  Detroit, MI
Assignor to: Kelvinator Corporation
April 8, 1930
Application filed: August 31, 1927

*Condenser*

1,760,038  Harry W. Bundy  Detroit, MI
Assignor by mesne assignments to: Bundy Tubing Company
May 27, 1930
Application filed: July 14, 1927

*Finned tube*

1,760,621  Swan F. Anderson  Rockford, IL
May 27, 1930
Application filed: July 13, 1925

*Refrigerating apparatus*

1,761,981  Harry W. Bundy  Detroit, MI
Assignor by mesne assignments to: Bundy Tubing Company
June 3, 1930
Application filed: July 5, 1927

Finned tube

1,763,162 Andrew A. Kucher Chester, PA
Assignor to: Westinghouse Electric & Manufacturing Company
June 10, 1930
Application filed: October 13, 1925

Refrigerator – motor – lubricating – system

1,763,281 Harry R. Van Deventer New York, NY
Assignor to: Westinghouse Electric & Manufacturing Company
Corporation of, PA
June 10, 1930
Application filed: September 28, 1923

Refrigerating system

1,770,852 Charles A. Hill Port Huron, MI
Assignor to: Mueller Brass Co.
Corporation of, MI
July 15, 1930
Application filed: November 12, 1928

Connecting means

1,773,081 Clarence Birdseye Gloucester, MA
Assignor by mesne assignments to: Frosted Foods Company, Inc.
Dover, DE
August 12, 1930
Application filed: June 18, 1927
Divided and application filed: July 7, 1928

Refrigerating apparatus

1,773,249 Henry M. Yeager Buffalo, NY
Assignor to: Fedders Manufacturing Company, Inc.
August 19, 1930
Application filed: August 21, 1928

Condenser

1,776,235 Lester U. Larkin Atlanta, GA
September 16, 1930
Application filed: June 28, 1928
Refrigeration method and apparatus

1,777,782  Harry W. Bundy  Detroit, MI
Assignor to: Bundy Tubing Company
October 7, 1930
Application filed: February 11, 1929

Externally and internally finned tube and method therefore

1,781,082  Eduard Ruegger  Zurich, Switzerland
Assignor to: Firm Aktiengesellschaft Der Maschinenfabriken
Escher Wyss & Cie.
November 11, 1930
Application filed: May 19, 1927
In Switzerland: May 28, 1926

Electrically – actuated refrigerating machine

1,781,541  Albert Einstein &  Berlin, Germany
Leo Szilard  Berlin-Wilmersdorf, Germany
Assignors to: Electrolux Servel Corporation New York, NY
Corporation of, DE
November 11, 1930
Application filed: December 16, 1927
In Germany: December 16, 1926

Refrigeration

1,785,860  John Ralph Fehr  Dayton, OH
Assignor to: Frigidaire Corporation
Corporation of, OH
December 23, 1930
Application filed: March 31, 1928

Refrigerating apparatus

1,793,853  Harry B. Hull  Dayton, OH
Assignor by mesne assignments to: Frigidaire Corporation
Corporation of, DE
February 24, 1931
Application filed: October 3, 1923

Refrigerating apparatus

1,794,692  Rollin M. Hyde  Detroit, MI
March 3, 1931
Application filed: June 14, 1928
Condenser

1,797,287 Andrew A. Kucher Jersey City, NJ
Assignor to: Westinghouse Electric & Manufacturing Company
March 24, 1931
Application filed: October 22, 1921
Refrigerating machine

1,797,803 Charles C. Spreen Detroit, MI
March 24, 1931
Application filed: April 18, 1927
Compressor

1,798,684 Andrew A. Kucher Chester, PA
Assignor to: Westinghouse Electric & Manufacturing Company
March 31, 1931
Application filed: October 13, 1925
Refrigerator

1,802,369 Clarence Birdseye Gloucester, MA
Assignor by mesne assignments to: Frosted Foods Company, Inc.
April 28, 1931
Application filed: July 2, 1929
Refrigerating apparatus

1,802,485 Harry F. Smith & Elmer L. Hurlacher Dayton, OH
Assignors to: Frigidaire Corporation Dayton, OH
Corporation of, DE
April 28, 1931
Application filed: November 30, 1928
Refrigerating apparatus

1,805,701 Jesse G. King Dayton, OH
Assignor by mesne assignments to: Frigidaire Corporation
Corporation of, DE
May 19, 1931
Application filed: July 22, 1926

Refrigerating apparatus

1,807,774  Jay G. De Remer  Greenwich, CT
Assignor by mesne assignments to: J. G. DeRemer
Research Corporation  Jersey City, NJ
June 2, 1931
Application filed: June 8, 1926

Automatic refrigeration

1,807,871  Osborne I. Price  Frederick, MA
Assignor to: John M. McCarthy  Weehawken, NJ
June 2, 1931
Application filed: April 20, 1925

Refrigerating apparatus

1,807,872  Osborne J. Price  Frederick, MA
Assignor to: John M. McCarthy  Weehawken, NJ
June 2, 1931
Application filed: October 20, 1931
Divided and application filed: January 16, 1931

Refrigeration apparatus

1,811,523  Russell T. Smith  Cincinnati, OH
Assignor to: Crosley Radio Corporation
June 23, 1931
Application filed: February 20, 1930

Refrigeration Unit

1,813,979  Frank R. West  Detroit, MI
Assignor to: Rice Products, Inc.
July 14, 1931
Application filed: July 6, 1926

Flow control for refrigerating systems

1,817,890  Clarence Birdseye  Gloucester, MA
Assignor by mesne assignments to: Frosted Foods Company
Dover, DE
August 4, 1931
Application filed: July 1, 1925
Refrigerating apparatus and method of refrigerating food products

1,819,979  Otto M. Summers    Dayton, OH
Assignor to:  Frigidaire Corporation    Dayton, OH
Corporation of, DE
August 18, 1931
Application filed:  May 30, 1928
Renewed:  May 5, 1931
Refrigerating apparatus switch control

1,822,077  Clarence Birdseye    Gloucester, MA
Assignor by mesne assignments to: Frosted Foods Company
Dover, DE
September 8, 1931
Application filed:  February 6, 1929
Refrigerating apparatus

1,823,002  John R. Replogle    Detroit, MI
Assignor by mesne assignments to:  Kelvinator Corporation
September 15, 1931
Application filed:  June 6, 1921
Refrigerating unit

1,823,004  John R. Replogle    Detroit, MI
Assignor by mesne assignments to:  Kelvinator Corporation
September 15, 1931
Application filed:  June 6, 1921
In Canada:  February 11, 1922
Divided and application filed:  June 10, 1927
Refrigerating unit

1,823,124  John R. Replogle    Detroit, MI
Assignor by mesne assignments to:  Kelvinator Corporation
September 15, 1931
Application filed:  June 6, 1921
In Canada:  February 11, 1922
Divided and application filed:  October 10, 1927
Refrigerating unit
1,827,410  Virgil P. Warren  Atlanta, GA
October 13, 1931
Application filed: April 18, 1930
*Defrosting refrigeration system*

1,828,559  Christian Dantsizen  Schenectady, NY
Assignor to: General Electric Company
October 20, 1931
Application filed: May 21, 1929
*Refrigerant*

1,833,847  Thomas Midgley,  Worthington, OH
Albert L. Henne &  Columbus, OH
Robert R. McNary  Dayton, OH
Assignors to: Frigidaire Corporation  Dayton, OH
Corporation of, DE
November 24, 1931
Application filed: February 3, 1930
*Heat transfer*

1,854,984  Christian Dantsizen  Schenectady, NY
Assignor to: General Electric Company
April 19, 1932
Application filed: September 19, 1930
*Refrigerant*

1,856,334  John F. Hoffman  Omaha, NE
Assignor to: Baker Ice Machine co. Inc.
May 3, 1932
Application filed: April 21, 1928
*Temperature responsive regulating valve*

1,863,427  Virgil P. Warren  Atlanta, GA
June 14, 1932
Application filed: January 19, 1931
*Defrosting refrigeration system*

1,883,920  Harry B. Hull  Dayton, OH
Assignor by mesne assignments to: Frigidaire Corporation
Corporation of, DE

October 25, 1932
Application filed: April 13, 1927

Refrigerating apparatus

1,902,518
Clark Orr
Assignor to: General Electric Company
Fort Wayne, IN

March 21, 1923
Application filed: July 3, 1920

Refrigerating machine

1,909,992
Harry M. Williams
Assignor to: Frigidaire Corporation
Dayton, OH

May 23, 1933
Application filed: June 30, 1927
Divided and application filed: January 31, 1930

Method of detecting leaks in refrigerating systems

1,910,077
Harry M. Williams
Assignor by mesne assignments to: Frigidaire Corporation
Dayton, OH

May 23, 1933
Application filed: June 30, 1927

Refrigeration

1,915,965
Harry M. Williams
Assignor to: Frigidaire Corporation
Dayton, OH

June 27, 1933
Application filed: May 23, 1931

Method and composition for detecting leaks in refrigerating systems

1,919,500
Thomas E. Carpenter
Assignor by mesne assignments of two-thirds to: Issac L. Rice, Jr.
Assignor by mesne assignments of one-third to: Stuart C. Barnes
Detroit, MI

July 25, 1933
Application filed: July 9, 1926
Apparatus for controlling the flow of refrigerant in refrigerating apparatus

1,930,129  Thomas Midgley, Jr., Albert L. Henne & Robert R. McNary
Assignors to: Frigidaire Corporation
October 10, 1933
Application filed: April 5, 1930

Manufacture of aliphatic fluoro compounds

1,964,391  Albert R. Thomas
Assignor to: Electrolux Servel Corporation
June 26, 1934
Application filed: September 18, 1931

Refrigerating system

1,968,049  Thomas Midgley, Jr., Albert L. Henne & Robert R. McNary
Assignors by mesne assignments to: General Motors Corporation
July 31, 1934
Application filed: February 8, 1930
Dividend and application filed: November 19, 1931

Heat transfer and refrigeration

1,968,050  Thomas Midgley, Jr., Albert L. Henne & Robert R. McNary
Assignors by mesne assignments to: General Motors Corporation
July 31, 1934
Application filed: November 19, 1931
Divided and application filed: April 30, 1934

Heat transfer and refrigeration

1,969,102  Francis Shenton & Milton W. Garland
Waynesboro, PA
Assignors to: Frick Company
August 7, 1934
Application filed: October 6, 1930

*Refrigerant control for refrigerating systems*

1,985,931 Andrew A. Kucher Dayton, OH
Assignor to: Frigidaire Corporation Corporation of, DE
January 1, 1935
Application filed: March 16, 1932

*Refrigerating apparatus*

1,998,575 Isaiah G. Furnas Chicago, IL
April 23, 1935
Application filed: March 21, 1932
Renewed: July 12, 1934

*Apparatus for defrosting refrigerating coils*

2,007,208 Thomas Midgley, Jr., Worthington, OH
Albert L. Henne & Columbus, OH
Robert R. McNary Dayton, OH
Assignors by mesne assignments to: General Motors Corporation
Corporation of, DE
July 9, 1935
Application filed: February 24, 1931

*Manufacture of halo-fluoro derivative of aliphatic hydrocarbons*

2,008,663 Earnest J. Dillman Detroit, MI
Assignor to: Detroit Lubricator Company
Corporation of, MI
July 23, 1935
Application filed: October 14, 1931

*Apparatus and method for controlling refrigeration*

2,011,078 John R. Replogle Detroit, MI
Assignor by mesne assignments to: Copeland Refrigeration
Corporation
Mount Clemens, MI
Corporation of, MI
August 13, 1935
Application filed: March 10, 1932

*Rearwardly removable refrigerator unit*
2,013,062  Thomas Midgley, Jr.,
Albert L. Henne &
Robert R. McNary
Assignors to: Frigidaire Corporation
Corporation of, DE

Worthington, OH
Columbus, OH
Dayton, OH
Dayton, OH

September 3, 1935
Application filed: February 26, 1931
Renewed: June 27, 1934

Preparation of aliphatic halo-fluoro compounds

2,022,774  Andrew A. Kucher
Assignor to: General Motors Corporation
Corporation of, DE

Dayton, OH

December 3, 1935
Application filed: December 29, 1934

Refrigerating apparatus

2,049,625  Siegfried Ruppricht
August 4, 1936
Application filed: December 16, 1930

New York, NY

Automatic defrosting device

2,050,994  John E. Dube
August 11, 1936
Application filed: August 18, 1933

Chicago, IL

Refrigerative system

2,056,401  Anthony F. Hosel
October 6, 1936
Application filed: September 11, 1935

Chicago, IL

Refrigerating system

2,059,822  Christian Steenstrup
Assignor to: General Electric Company
Corporation of, NY

Schenectady, NY

November 3, 1936
Application filed: March 22, 1935

Method of making fabricated piston and crosshead assemblies
2,063,745  Andrew A. Kucher  Dayton, OH
Assignor by mesne assignments to: General Motors Corporation
Corporation of, DE
December 8, 1936
Application filed: January 28, 1933
Refrigeration

2,072,567  Thomas I. Potter  Buffalo, NY
March 2, 1937
Application filed: February 14, 1934
Refrigerator

2,093,811  Andrew A. Kucher  Dayton, OH
Assignor by mesne assignments to: General Motors Corporation
Corporation of, DE
September 21, 1937
Compressor unloader

2,104,882  Thomas Midgley, Jr.,  Worthington, OH
Albert L. Henne & Columbus, OH
Robert R. McNary  Dayton, OH
Assignors by mesne assignments to: General Motors Corporation
Corporation of, DE
January 11, 1938
Application filed: November 19, 1931
Divided and application filed: May 1, 1934
Heat transfer and refrigeration

2,121,049  Osborne I. Price  Frederick, MD
Assignor by mesne assignments to: General Motors Corporation
Dayton, OH
Corporation of, DE
June 21, 1938
Application filed: April 20, 1925
Divided and application filed: March 31, 1931
Renewed: August 20, 1934
Refrigeration apparatus

2,130,349  Andrew A. Kucher  Dayton, OH
Assignor by mesne assignments to: General Motors
Corporation of, DE
September 20, 1938
Application filed: September 30, 1932
Renewed: April 21, 1937

Motor-compressor unit for refrigeration

2,130,862 Christian Steenstrup Schenectady, NY
Assignor to: General Electric Company Corporation of, NY

Motor-compressor unit for a refrigerating machine

2,133,875 Carl H. Steenstrup Schenectady, NY
Assignor to: General Electric Company Corporation of, NY

October 18, 1938
Application filed: February 17, 1937

Refrigerating machine

2,145,692 Walter Jones Princeton, NJ
Assignor to: Carrier Corporation Newark, NJ
Corporation of, DE

Refrigerating method and apparatus

2,158,716 John G. Bergdoll York, PA
Assignor to: York Ice Machinery Corporation York, PA
Corporation of, DE

Refrigeration

2,179,268 Charles R. Neeson Dayton, OH
Assignor by mesne assignments to: Chrysler Corporation Highland Park, MI
Corporation of, DE

November 7, 1939
Application filed: December 16, 1937
Two-cylinder compressor

2,200,222  Frederic L. Tarleton  Dayton, OH
Assignor to:  General Motors Corporation  Dayton, OH
Corporation of, DE
May 7, 1940
Application filed:  December 30, 1936

Refrigerating apparatus

2,200,241  William J. McGoldrick &  Minneapolis, MN
Alwin B. Newton
Assignors to:  Minneapolis-Honeywell Regulator Company  Minneapolis, MN
Corporation of, DE
May 14, 1940
Application filed:  January 7, 1939

Temperature control system

2,243,464  Andrew A. Kucher  Dayton, OH
Assignor to:  General Motors Corporation  Dayton, OH
Corporation of, DE
May 27, 1941
Divided and application filed:  April 30, 1937

Method of making motor-compressor unit for refrigeration

2,289,847  Logan L. Mallard  Norfolk, VA
Assignor of one-half to:  H. Clay Hofheimer II  July 14, 1942
Application filed:  November 9, 1938

Ice cube tray

2,294,037  Andrew A. Kucher  Dayton, OH
Assignor to:  General Motors Corporation  Dayton, OH
Corporation of, DE
Application filed:  April 30, 1937
Divided and application filed:  June 28, 1939

Method of making motor-compressor units for refrigeration
2,303,857  Joseph A. Numero &                      Minneapolis, MN
Frederick M. Jones
Assignors to: U.S. Thermo Control Company and association
composed of Joseph A. Numero and M. Green
December 1, 1942
Application filed: November 16, 1939

*Air conditioner for vehicles*

2,314,402  Walter Jones                           Princeton, NJ
Assignor to: Carrier Corporation
Syracuse, NY
Corporation of, DE
March 23, 1943
Application filed: June 20, 1940

*Refrigeration*

2,336,735  Frederick M. Jones                    Minneapolis, MN
Assignor to: U.S. Thermo Control Company, a partner-
ship composed of Joseph A. Numero and M. Green
December 14, 1943
Application filed: July 30, 1941

*Removable cooling unit for compartments*

2,475,841  Frederick M. Jones                    Minneapolis, MN
Assignor by mesne assignments to: U.S. Thermo
Control Co.
Minneapolis, MN
Corporation of, MN
July 12, 1949
Application filed: June 15, 1944

*Air conditioning unit*

2,479,259  Winston Harrison Reed &               Syracuse, NY
William Alvin Pennington
Fayetteville, NY
Assignors to: Carrier Corporation
Syracuse, NY
Corporation of, DE
August 16, 1949
Application filed: May 10, 1946

*Process for producing increased refrigeration*
REISSUED REFRIGERATION PATENTS:

Re. 1,265  Henry Migeon  Wolcottville, CT
Assignee of: Jean Louis Baudelot  Harancourt, France
January 28, 1862
(see patent No. 25,992 dated November 1, 1859)
*Improvement in process of cooling beer and other liquids*

Re. 1,960  Benjamin M. Nyce  Cleveland, OH
May 16, 1865
(see patent No. 21,977 dated November 2, 1858)
*Improvement in preserving fruits and other perishable substances*

Re. 2,036  Benjamin M. Nyce  Cleveland, OH
July 25, 1865
(see patent No. 31,977 dated November 2, 1858)
*Improvement in houses for preserving fruit, & c.*

Re. 2,037  Benjamin M. Nyce  Cleveland, OH
July 25, 1865
(see patent No. 21,977 dated November 2, 1858)
*Improvement in preserving fruits and other perishable substances*

Re. 4,437  Edwin D. Brainard  Albany, NY
June 27, 1871
(see patent No. 73,292 dated January 14, 1868)
*Improvement in the construction of ice-chambers, refrigerating-chambers, & c.*

Re. 4,806  Joel A. H. Ellis  Springfield, VT
March 12, 1872
(see patent No. 108,574 dated October 25, 1870)
*Improvement in steam and gas engines*

Re. 4,992  Samuel B. Martin &  San Francisco, CA
John M. Beath
July 16, 1872
(see patent No. 127,180 dated May 28, 1872)

Improvement in ice-machines

Re. 5,201  William A. Royce    Newburg, NY
December 24, 1872
(see patent No. 17,394 dated May 26, 1857)

Improvement in machinery for compressing gaseous bodies

Re. 5,202  William A. Royce    Newburg, NY
December 24, 1872
(see patent No. 17,394 dated May 26, 1857)

Improvement in machinery for compressing gaseous bodies

Re. 5,288  Ferdinand Philippe Edouard Carre  St. Pierre Les Nemours
Assignor of part interest to:  Jean B. J. Mignon &
Henri S. Rouart    Paris, France
February 18, 1873
(see patent No. 30,201 dated October 2, 1860)

Improvement in the manufacture of ice

Re. 5,772  Benjamin M. Nyce    Cleveland, OH
February 24, 1874
Application filed:  September 29, 1873
(see patent No. 21,977 dated November 2, 1858)

Improvement in refrigerator-buildings

Re. 5,786  Azel S. Lyman    New York, NY
Assignor by mesne assignments to:  Stephen Cutter
March 10, 1874
Application filed:  July 15, 1872
(see patent No. 14,510 dated March 25, 1856)

Improvement in methods of cooling and ventilating rooms

Re. 7,383  David Smith    San Francisco, CA
Assignor of part interest to:  C. W. M. Smith
November 7, 1876
Application filed:  April 26, 1876
Improvement in ice-machines

Re. 8,109
John L. Alberger  Buffalo, NY
February 26, 1878
Application filed: March 22, 1877
(see patent No. 39,456 dated August 11, 1863)

Improvement in refrigerating apparatus

Re. 8,455
Albert Albertson  Jersey City, NJ
Assignor by mesne assignment to: himself, Simon
B. Hunt, & Francis E. Pinto
October 15, 1878
Application filed: September 25, 1878
(see patent No. 115,409 dated May 30, 1871)

Improvement in methods of and apparatus for manufacturing ice

Re. 8,919
Francis V. De Coppet  New Orleans, LA
September 30, 1879
Application filed: May 31, 1878
(see patent No. 156,056 dated October 20, 1874)

Improvement in processes and apparatus for making ice

Re. 10,221
Raoul Pierre Pictet  Geneva, Switzerland
Assignor to: Pictet Artificial Ice Company, (Limited)
New York
October 24, 1882
Application filed: October 2, 1882
(see patent No. 187,413 dated February 13, 1877)

Process of producing artificial cold by means of anhydrous sulphurous oxide

Re. 10,283
Ossian Guthrie  Chicago, IL
February 6, 1883
Application filed: January 15, 1883
(see patent No. 250,235 dated November 29, 1881)

Facilitating the congelation of water, & c.

Re. 10,522
Charles P. G. Linde  Wiesbaden, Prussia, Germany
Assignor to: Frederick W. Wolf  Chicago, IL
September 16, 1884
Refrigerating and ice-making apparatus

Re. 15,591
Jay Grant De Remer
Greenwich, CT
May 1, 1923
Application filed: March 23, 1923
(see patent No. 1,373,174 dated March 29, 1921)

Refrigerating apparatus

Re. 19,008
Constance Lane West
Detroit, MI
Assignor by mesne assignments to: Crosley Radio Corporation
Cincinnati, OH
Corporation of, OH
November 21, 1933
Application filed: September 21, 1933
(see patent No. 1,898,922 dated February 21, 1933)

Refrigerating unit

Re. 19,265
Thomas Midgley, Jr.,
Worthington, OH
Albert L. Henne &
Columbus, OH
Robert R. McNary
Dayton, OH
August 7, 1934
Application filed: May 28, 1934
(see patent No. 1,833,847 dated November 24, 1931)

Heat transfer