ELECTROLUX
Leader of
A CENTURY OF PROGRESS
IN AUTOMATIC
REFRIGERATION

1833-1933

ELECTROLUX REFRIGERATOR SALES INC.
EVANSVILLE, INDIANA

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Automatic Refrigeration

YESTERDAY . . . a scientist’s dream
TODAY . . . the mark of a modern home

A WAY back in prehistoric times, man discovered how to make heat. But not until less than two hundred years ago did he learn how to make “cold”.

Even after the first steps were achieved, automatic refrigeration for the home continued to be only a scientist’s dream. And most young people can easily remember when automatic refrigerators first appeared in their communities.

However, once automatic refrigeration passed from the experimental to the practical stage, its economic advantages were so obvious that a new industry came into being almost overnight.

Modern economy—saving money
by spending money

People were quick to realize that this new method of protecting and preserving foods effects savings which quickly offset the cost of the...
refrigerator. Coupled with these savings were other factors of convenience and comfort, which increased the demand for automatic refrigerators to the point where manufacturers were hard pressed to meet it.

**Why automatic refrigeration has won universal acceptance**

Today, only a few years after the first practical automatic refrigerators for the home were introduced, the whole world acknowledges the value of automatic refrigeration.

Particularly in America, the automatic refrigerator has become the mark of the modern home. Its amazingly quick acceptance is due to sound economic reasons.

**Promotes good health**

Of first importance is the contribution which an automatic refrigerator in the home makes to good health. Food is subject to spoilage not only in summer but all year round, unless kept at a cool temperature. Milk and other foods for the children are especially susceptible. Automatic refrigeration assures that food for all the family will be kept pure and wholesome.

**Lightens housework**

Former difficulties in protecting foods are eliminated. There is no more fuss and bother and no more dirt and muss. The automatic refrigerator works day and night, 365 days a year, with less attention than almost any other piece of household equipment.

**Pays for itself in savings**

With all its advantages, the automatic refrigerator is not expensive. In fact, it quickly repays its cost through savings effected by preventing food spoilage. It also permits buying vegetables and other foods in larger quantities at cheaper prices, since they can be kept safely until they are needed.

Finally, the automatic refrigerator adds to the family menu many new dainties, such as chilled desserts which can be prepared with very slight trouble and at very low cost.

All these advantages have combined to make the scientist’s dream of yesterday an accomplished fact of today. Automatic refrigeration in the home is a fitting climax to a century of progress.
The Beginning of Automatic Refrigeration

178 YEARS AGO

AUTOMATIC REFRIGERATION is very definitely an achievement of the last one hundred years—one of the achievements that justify the appellation, “A Century of Progress.”

This great development was foreshadowed in the eighteenth century, when Dr. William Cullen succeeded in making ice—178 years ago, in 1755. Fifty-five years later, in 1810, another inventor, Leslie, also produced artificial ice, and in 1823 Sir Humphry Davy and Michael Faraday demonstrated ice making in England.

Not until well on in the present century of progress was the development of automatic refrigeration begun commercially. In 1834, Jacob Perkins, of Massachusetts, produced ice mechanically for commercial use. In 1850, the first American patent for the making of ice mechanically was issued to Dr. John Gorrie of Florida.

How nature produces cold

Man’s attempts to “make cold” very naturally began with a study of the process by which nature produces it. The fact was established that cold is the absence of heat, and that it is produced by withdrawing heat from the objects that are to be made cold. If enough heat is withdrawn from water, the water congeals and becomes ice. Nature, it was found, withdraws heat by evaporation.

To prove this, pour a little alcohol on the back of your hand and notice how cold that part of your hand becomes. The alcohol absorbs from your hand the heat needed for evaporation, thus reducing the temperature of the hand so that it feels cold.

Applying nature’s principle for producing cold

Science has discovered fluids that are still more efficient in producing cold. These have been put to work in achieving automatic refrigeration.

It was determined that the most efficient way to use these fluids, or refrigerants, as they came to be called, was to circulate them through a coil of pipe enclosed in an insulated space, in which were stored the foods or fluids to be made cold. The refrigerant within the pipe draws off the heat from the food and other articles and is turned into a vapor as it does so. In this form, it passes from the cooling chamber.
Making ice by machinery became an important industry in 1890, when the United States experienced the worst shortage of natural ice in its history.

After absorbing heat from the food and being turned to vapor, the refrigerant might be allowed to escape into the air. But this would be wasteful. Instead, the vapor is piped to another point where it is condensed and thus reduced to a liquid again. The liquid is then circulated through the cooling chamber once more, drawing off more heat from the food.

A small quantity of refrigerant thus is sufficient. It works in an endless cycle. First, it vaporizes and withdraws heat from articles around the pipes in which it is enclosed. Then, it is condensed, ready to circulate again through the pipes in the cooling chamber.

**First steps toward automatic refrigeration**

Various forms of machinery were developed to cause the refrigerant to circulate and to condense it after it had vaporized.

At first, the cost of the machinery confined its use to large industries, but here it made rapid progress.

One use to which it was soon put was in the making of artificial ice for distribution to homes. It was chiefly through this medium that automatic refrigeration came to the attention of the general public.

The desirability of adapting automatic refrigeration to the home was apparent from the first. But developing a practical automatic refrigerator for the home was by no means easy. When other obstacles were conquered, there still remained the serious objection to noise, due to the machinery and moving parts.

**The world awakens to its advantages**

Despite this obstacle, the automatic refrigerator for the home made steady headway. Then, suddenly, the world seemed to awake to the advantages of this new method of protecting and preserving food. The automatic refrigerator became an essential in every modern home. In this stage, broad allowance was made for its shortcomings. But gradually buyers became more critical.

They demanded advancement and progress in this field, just as in automobiles and other equipment. The way was open for a new type of automatic refrigerator for the home—one that was far simpler than all previous designs and that, above all, was quiet.
The discoverers of the Electrolux principle of refrigeration—
Baltzar von Platen and Carl G. Munters

SCIENCE LEARNS

The Secret of Silence
in Automatic Refrigeration

WHILE manufacturers were striving to minimize the noise of early
types of automatic refrigerators, two students—Baltzar von
Platen and Carl G. Munters—at the Royal Institute of Technology,
Stockholm, Sweden, were experimenting with an entirely new type.
They hoped not to minimize the noise but to eliminate it entirely by
eliminating the moving parts that caused it.

A tiny gas flame replaces moving parts

It seemed to them that a refrigerant could be made to circulate,
vaporize, and condense through the use of heat rather than machinery.

Their experiments soon proved that their theory was correct. For mov-
ing parts, they substituted a tiny flame as silent as a candle’s.
Their work soon passed from the field of experiment into practical
application, and Electrolux, the gas refrigerator, was born seven years
ago—a new type of refrigerator in which a tiny, silent gas flame makes
possible efficient refrigeration without machinery.

Electrolux brings silent automatic refrigeration to the home

Here was a new method of automatic refrigeration, as simple as
nature’s method of freezing, and thoroughly dependable. There was no
sound. There was no friction, vibration, or wear. The refrigerant was
hermetically sealed in rigid steel, and so needed no renewal. The gas
flame was completely protected by an automatic shut-off.

And there was no starting or stopping in this new refrigerator. The
chilling action was continuous.

Yet, with all these advantages, the cost of production was found

The Royal Institute of Technology, Stockholm, Sweden, where the Electrolux
principle of automatic refrigeration was developed
to be no more than for outmoded types of automatic refrigeration, while operation cost was lower than in older types, the tiny gas flame needed for operation costing but a few pennies a day.

The new refrigerator was perfected in other ways. It was simplified so as to require a minimum of attention; it was designed for attractive appearance and efficient use; and it was constructed with painstaking care.

After adequate testing in actual home use, the Electrolux was introduced to America. It scored an immediate success with a public awake to the advantages of automatic refrigeration yet aware of the shortcomings of earlier types of refrigerators.

"The old order changeth...yielding place to new"

The advertising which introduced Electrolux, the gas refrigerator, dramatically expressed the wonderful change that had been effected.

It took as its theme the poet Tennyson’s lines: “The old order changeth, yielding place to new”, and showed that this was true of refrigeration no less than of other fields.

“Moving parts no longer needed in an automatic refrigerator—Electrolux works without any at all.”

“Now the kind of automatic refrigerator to have is the silent, modern, machinery-free Electrolux.”

Such were the messages to which America instantly responded, sweeping Electrolux to a leadership that has never been challenged.

The demonstrated superiority of the Electrolux did not blind its makers to the fact that there was still possibility for advancement. A constant study was made to determine ways in which automatic refrigeration could be made still more efficient and still more economical.

This resulted in the introduction of a new Electrolux in 1933—a fitting climax to a century of progress.

Uses no water

In the earlier Electrolux, a small amount of water was used in the cooling process. The new Electrolux uses no water. It is air cooled—simpler in construction and more economical to operate.

Engineers and others familiar with the development of automatic refrigeration hail this as the greatest advance in the history of the industry. It carries automatic refrigeration to the ultimate in simplicity.

Silent as nature herself

There are no moving parts in the new Air-Cooled Electrolux and, consequently, no noise. A tiny gas flame costing but a few pennies a day silently carries on the work of refrigeration. At last, man makes ice and cold as silently as nature herself.

The operation of the new Air-Cooled Electrolux is constant. There is no stopping and starting but a steady crisp cold that protects food every minute of the day and night. It does not even stop for defrosting. A twist of a dial allows the temperature to rise just enough to defrost, without interruption of the cooling process.
The temperature can also be regulated to speed up the freezing of ice cubes and frozen desserts.

**Trigger trays that release instantly**

No longer is it necessary to struggle with the ice cube tray. Instead, a trigger is provided. When pushed, it releases the tray from contact with the cooling chamber so that it can be pulled out without effort.

Split shelves, which permit storing tall bottles or a whole chicken; a porcelain interior, easy to clean because there are no seams or corners where dirt can collect; and a convenient flat top for extra shelf space are other features.

Combined with silence and economy and with the finest grade of materials and workmanship, they assure still greater success for the new Air-Cooled Electrolux.

**Automatic refrigeration beyond the gas mains**

The advantages of the new Air-Cooled Electrolux may be enjoyed even by people who live where no gas is available. Electrolux models are made which operate efficiently on "bottled gas", which is now available at small cost in many parts of the country. Installation is just as simple as in city homes.

**Symbol of a century of progress**

Compare conditions today with those of a century ago. No longer are you dependent on the whim of nature for a plentiful supply of ice. Now, right in your own home, a tiny gas flame will not only keep foods cool and safe but will furnish an endless supply of clear, sparkling ice cubes to cool your favorite beverages.

The new Air-Cooled Electrolux with its many refinements stands as a fitting symbol of a century of progress in automatic refrigeration.
Opening a New Era
of convenience and economy
for the American home

Not merely to reveal the wonders of modern science but to lead to their adoption as benefits in every home—such is the purpose of the Century of Progress Exposition. This book has been prepared in the same spirit. While it sets forth the history and principles of automatic refrigeration, its chief emphasis is on the economy, comfort, and convenience that a new Air-Cooled Electrolux will bring to your home. Additional information will gladly be supplied on request.

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