1899

The Evolution of Cooking Apparatus With Some Tests With the Aladdin Oven

Hattie Dibble
South Dakota State University

Follow this and additional works at: http://openprairie.sdstate.edu/etd

Recommended Citation

Dibble, Hattie, "The Evolution of Cooking Apparatus With Some Tests With the Aladdin Oven" (1899). Theses and Dissertations. 60. http://openprairie.sdstate.edu/etd/60

This Thesis - Open Access is brought to you for free and open access by Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. For more information, please contact michaelbiondo@sdstate.edu.
The Evolution of Cooking Apparatus

and some tests with the Aladdin oven.
Inventions are not brought forth spontaneously; they are a growth. We cannot conceive of a mind which is capable, without the aid and thoughts of other minds, of inventing any one of the many machines and apparatus which so far exist in lightenine and perfecting manual work.

The most of our inventions are new combinations of other inventions made to serve new purposes.

It will be the endeavor of this paper to show this growth as it is manifested in cooking apparatus, by showing its evolution from the very rudest forms up to its present degree of perfection.

To the primitive man above
were unknown. Most of the North American Indian tribes cooked their food by means of red hot stones, which were dropped one after another into a vessel containing water, and the food to be prepared.

The savage tribes of New Zealand used what is called the "Stone Boiling Process." A round hole was first scooped in the ground and partly filled with dry fuel, which was ignited. Several stones were put in the fire and left until they became red hot, then the unconsumed fuel was raked out and the stones covered with wet green leaves. On these the food was placed and another layer of leaves added. A mat was then thrown on and water poured over this, lastly the whole was covered
with earth. Thus the food was prepared by a half baking, half steaming process. This is better for certain kinds of food than some of the modes of cooking to be found among the more civilized classes, for food cooked in this manner would better retain its flavor than that prepared by some of the modern methods.

The Egyptians, Greeks and Romans used the braziers. This was an open pan of metal, in which charcoal was burned. Among the people of the higher classes it was customary to burn incense in these open fires, and thus obtain a pleasant odor in place of the obnoxious ones, which would otherwise perfume the dwelling. The braziers is still used to some extent for cooking purposes in the continental countries.
In England, from the middle of the fifth to the middle of the eleventh centuries, the principal mode of cooking was by means of a fire built in a pit, dug in the center of the ground floor. There were no chimneys at this time. The smoke made its escape through a hole in the roof directly above the fire.

During the fourteenth century in the dwellings of the higher classes, the fire was made on a hearth underneath a fireplace, which was built against the side wall of the room. The fireplace had taken nearly its present form as early as the beginning of the seventeenth century.

Although chimneys are of such simple structure, they were entirely
unknown to the ancients. It is not accurately known when they were first built; but it is thought that probably not until the early part of the fourteenth century. During the fifteenth century chimneys were used by many of the wealthy people of England, but it was not until some time after this that they came into common use. This was the first great step toward our modern improved methods of cooking.

To the Jews belongs the distinction of having the first regularly constructed oven. It was not long before the Romans established bake houses for their military.

Dr. Franklyn describes the early Holland stove: as a plain iron box with a flue or pipe proceeding from the top. He also mentions the early
German stove as being an iron box with one side open, which sits outside the room. The stove itself projecting through the partition. Smoke and fuel were thus avoided in the room.

One of the first attempts at constructing a stove or closed fireplace was made by Polignant in 1809.

In 1798 Count Rumford invented a cooking range. It was made of cast iron and was lined with soapstone and brick, and had ventilating vents.

The early patterns of cook stoves were the tin plate oval, with the oven above the fire. Next in order came the saddle-bag pattern; the oven being in the middle over the fire. The horse-block stove was then introduced, the rear of which was a step higher than the fire part.
This hinges up to the time of the back. This stove has been termed the parent of the modern cook stove. It burned either fire or wood. The fire was above and the flame was carried around, behind, and below the oven. The opening into the stove pipe being about on a level with the oven floor.

The aim of inventors has been to construct cooking apparatus in such a manner as to secure the thorough combustion of the fuel used, and to the utilization of the maximum amount of heat in the most healthful and agreeable manner. This has been more nearly accomplished in America than in any other country. Some of the European countries which so far outstrip us in other things do not at all rank
with America in this branch of inventions.

New things are constantly being brought forth. The modern kitchen is supplied with a cookstove, range or gaslight stove. The Aladdin Oven and cooking by means of gas and electricity, not only save to lighten household duties, thus, making woman's work a pleasure instead of a drudgery.

Of these modern inventions this thesis is most concerned in the Aladdin Oven. This is a very simple apparatus. It consists of a box so constructed that no heat can escape. The inside of the oven is made of metal. It is ten inches across the front, twelve inches deep and fourteen inches high. There are three movable shelves. The metal door is hung on hinges, and is so arranged that it can be held closely shut.
The outside of the oven is made of paper pulp, a non heat conducting material, this is from one to two inches thick. The front is made of the same material as the rest of the outer oven. This is so made that it fits closely enough to prevent the escape of the heat. In the bottom of the outer oven is a hole, about five inches in diameter. The lamps sit directly beneath this opening, and thus the heat can easily enter the oven. The outside oven is eight inches high.

The oven rests on metallic table legs. There are also eighteen inches in height, and are so constructed that the oven may be lifted from them or encased in them.

A metallic lamp with a round
wick is used. The wick is about two
inches in diameter.

In this cooking apparatus we
have a thorough combustion of the fuel and
one is made of all the heat which is
thus generated.

A woman at work in the kitchen
little realizes what an influence she ex-
erts through her work. Many a home
is made unbearable through the agency
of vilely prepared food. The fact being
known, nothing should be left undone
to bring about a perfect method by which
food may be prepared.

While a great deal depends upon
selecting of foods still this is far from
being all a housewife should know of
her art. The very best foods are often
converted into unwholesome, indigestible
articles through cooking, instead of de-
veloping and retaining all the fine natural
flavor of meat, vegetables, fruit, and other
foods to be cooked. The right method is
one that will prevent the more volatile
portions of the fat and juices being carried
off in bad smells, and which will leave
the food when cooked in a perfectly
nutritious and in a digestible condition.

Upon entering a kitchen furnished
with a range or cook-stove, one can usually
tell at once what is being prepared for
the coming meal, by the odors which
arise there. These are not only disagreeable
to those in the room; but also shows
that there is a waste of flavors and
in most cases a waste of nutritious
properties. I think all will at once
agree that no such waste should take
place, and the nearer any method comes to preventing this waste the nearer it will be a perfect method of cooking.

The above facts were recognized by Edward Atkinson, the inventor of the Aladdin Oven. His thought was to invent an apparatus by means of which good wholesome food could be prepared at the minimum of cost in time and strength as well as in money. He believed that food cooked slowly by an even fire would better retain its nutrition than food which was hurriedly cooked. Mr. Atkinson spared neither time nor money in the experiment for his invention. His labor has been rewarded by his being able to put before the public a money and a labor saving apparatus and neither is it
valuable for these alone, but also for the superior quality of certain foods cooked in this oven than those foods cooked by means of the range or cookstove.

We have made several tests with the Aladdin Oven, but before giving those we will copy a testimony given by Ellen A. Richards of the "New England Kitchen."

"One of the greatest helpers to us in our work was the Aladdin Oven. Our experiments with it were so promising that we had tin lined copper vessels constructed to utilize the entire capacity of the oven. This was our final method for making broth. It had these advantages first, it made possible the preparation of soups according to scientific requirements (that is with long slow heating before the-"
coagulating point was reached), the continuation of cooking at a temperature below the boiling point, long enough to get from the bones and tendons the desirable proportion of gelatine, the retention of full flavor, and broth almost invariably in quality; secondly, the greatest possible amount of broth was obtained from a given quantity of meat and bones, no other process approaching it in this respect; thirdly, the labor involved was very small, consisting simply of placing the vessel in the oven and removing it for straining. Moreover it suited our convenience by enabling us to do the cooking by night, the meal being prepared during the day; and although the light under the oven went out some hours...
before it could be strained, the insulating character of the apparatus kept the heat and prevented any deterioration of the soup.

The cost of fuel was also reduced to a minimum: twenty-five quarts of broth could be made with three pints of kerosene at a cost of less than five cents.

This method, with very slight changes, has been in constant use in the kitchen and has proven very satisfactory. We consider it a most valuable discovery and we hope that it will in time be adopted in large institutions.

Experiments have proven that by preparing broth by this method all the nutritive properties were extracted
from the meat; as a dog being fed on this meat alone grew fat, starving, and would have died if other food had not been given him.

Tests

1- Comparison of fuel burned in common range and Blodgin range.

The lamp used with the oven holds one quart. It kept a steady fire for eight hours, at a cost of $0.0875 or 8.75 cents per gallon. The range in eight hours burned 34 lb. of coal at a cost of $3.00 per ton. At this rate the cost of the coal burned was $1.17, while that of the oil was $1.0375.

2- To determine boiling point.

One gallon of water at 20 degrees Centigrade was placed in a covered granite kettle. In thirty minutes it
rose 55 degrees. At end of one hour to 80 degrees, one hour and twenty minutes 85 degrees, one hour and forty minute 90 degrees, two hours and ten minute 94 degrees, and at the end of two hours and thirty minute had reached 100 degrees Centigrade.

I tried the same experiment another time with nearly the same results. This time it reached the boiling point in two hours and fifteen minutes.

3. Will flavors of different foods mix while cooking?

Cut up a large onion, and put water enough on to boil it in, placed it in the oven. Then prepared a small custard and cooked at at the same time as the onion. Let them remain in the oven for twenty-five
minutes. When done one could not detect the least taint of onion in the custard.

4— Baking Powder Biscuits

1 pint flour.
2 even teaspoons baking powder.
1 heaping tablespoon butter or lard.
1 even teaspoon salt.

Water enough to make dough of the right consistency to be easily rolled. Baked hard under the oven two hours before baking the biscuits. Half of the dough was placed in the Aladdin Oven and half in the oven of the range. It required twenty-eight minutes to bake the biscuits in the Aladdin Oven. When done they compared very favorably with those baked in the range.

5— Muffins or Sally Lunn's

1 pint of flour
1 teaspoon baking powder
1/2 teaspoon salt
1/2 cup water
1/2 cup melted butter
1 egg beaten separately

Both ovens were heated. It required ten minutes to bake half the batter in the range. At this time those in the Aladdin Oven had risen nicely, but had not begun to brown. It required twenty-eight minutes for baking in the Aladdin Oven. Both tests were very good.

Pie

1 cup flour
1 tablespoon lard
1 salt spoon salt
Water.

Made the pie with two crusts, and
filled with grape sauce. I cannot give the time required for baking. It was a success.

Cake

\[ \frac{1}{2} \text{ cup butter} \]

\[ 1 \text{ cup sugar} \]

\[ 1 \text{ cup milk} \]

\[ 3 \text{ eggs beaten separately} \]

\[ 2 \text{ cups flour} \]

\[ 2 \text{ teaspoons baking powder} \]

\[ \frac{1}{2} \text{ teaspoon lemon} \]

Baked part in the range over and part in the Aladdin Oven. It required thirteen minutes to bake in range and twenty-three in the Aladdin Oven. The results were the same.

Loaf Cake

\[ 1 \text{ cup sugar} \]

\[ \frac{1}{2} \text{ cup butter} \]
2 cups flour
1 teaspoon baking powder
1 teaspoon lemon
2 eggs beaten separately
1/2 cup milk

Place the cake on the bottom of the oven. It turned slightly, but this can be easily overcome by placing one of the shelves underneath the cake. It baked in one hour and thirty-five minutes.

Good success. The top was nicely browned.

---

Soft Ginger Cake.

1 egg.
1/2 cup molasses.
1/2 cup butter and lard mixed
1 teaspoon ginger.
1 teaspoon cream tartar.
1/2 teaspoon soda dissolved in
1/2 cup sweet milk.
3/4 teaspoon salt

Flour enough to make quite stiff.

Baked the cake in a granite basin on the upper shelf of the Aladdine at the same time had a large loaf of bread and a three pound roast in the oven. The cake was most excellent. It required two hours for baking.

10. Bread

Two good sized loaves of light dough. Had a roast in the oven at the same time and was obliged to place the bread on the upper grate. After remaining on the upper grate for one hour the bread was changed to the lower grate. It required two and a half hours for baking. The loaf was nicely browned on the bottom and sides. The bread was made with
potato yeast, and the yeast plant de-
veloped so fast that it required a very
quick oven for baking. The became too
light and thus was not as good as
it would have been if baked faster.

Bread set with yeast over night and
baked over night in 'The Aladdin Oven
was a perfect success.

Cinnamon Rolls.
Rolled bread dough until it was
about one half inch thick. Spread this
with butter and sprinkled on sugar and
cinnamon. Rolled it over and over until
it formed a cylinder, with a diameter of
about three inches. This was then
cut cross wise making the slices about
one half inch thick. Placed in tin and
spread butter over the top. Let bake
one and three fourths hour. They were
fairy good.

12 — Rice Pudding

1 cup cooked rice.

1/2 cup sweet milk.

2 eggs.

1/4 cup raisins.

2 table spoon sugar.

1/4 spoon salt.

Placed in granite iron basin and baked three fourths of an hour on the bottom of the oven. It was a success.

13 — Egg Omelet

The yoke of one egg beaten until it was light colored and thick. Added one table spoon milk, one fourth salt spoon salt and one eighth teaspoon pepper.

Beat the white of one egg until stiff and dry. But and folded the white of the
egg into the yoke. Put one half tea-
spoon of butter in a hot bake pan,
rubbing it well around the edge. Placed
the pan in the oven. When the butter
boiled the omelet was quickly poured
in. Closed the oven and let the omelet
cook three minutes, then turned one
half over the other and let cook two
minutes. Next used the same recipe
and cooked on the range. It required
three minutes to cook and when done
was no better than the one cooked in
the Stoddin Oven with the exception of
being a little browner.

Poached Egg

First let one pint of water come to a
boil. This took thirteen minutes. Added
one salt spoon of salt and broke in
an egg. Let this cook one minute. The egg
war then lifted out of the waters and seasoned with butter and pepper. It was as good as eggs cooked by the same method on the range.

15. Boiling Eggs.

An egg in the shell dropped into boiling water and left in the oven three minutes was cooked as hard as if cooked the same length of time on the range.

16. Fried Eggs

One teaspoon butter in a tin. Let this become hot in the oven. Then broke in one egg and seasoned with salt and pepper. Let cook for three minutes. Was good.

17. Boiled Rice.

1/2 cup rice.

1/2 teaspoon salt.
1 cup cold water.

Boiled it on the bottom of the oven for one hour and ten minutes. Did not have to pay any attention to it as there was no danger of its burning.

1/2 cup rice.

1/2 teaspoon salt.

1 cup boiling water.

It took fifty-five minutes to cook this. In both cases the rice was very tender, white, and nice.

18—

To Cook Oatmeal

1/3 cup boiling water

1/4 cup oatmeal

1/2 teaspoon salt

Let cook in the oven one hour, without stirring. It was a success.

19—

Salad Dressing

Lump of butter the size of an egg.
3 eggs.
1 tablespoon mustard.
2 tablespoons sugar.
¾ teaspoon pepper.
1 teaspoon salt.
1 cup vinegar.
½ cup cream added afterward.

Rub mustard, sugar, salt, pepper and butter together. Add beaten yokes of eggs and the vinegar. Cook until thick then beat until smooth and let cool. Then add the cream whipped.

It required twenty-two minutes for cooking in the Aladdin oven and was as well cooked as when prepared in the double boiler on the range.

Costard

1 egg.
1 cup milk.
1/2 tablespoon sugar.
Flavor with lemon.

It took thirty minutes to cook. It was well done.

Boiling Potatoes

One pint of boiling water, two medium sized potatoes, and a little salt. At the end of thirty minutes were well cooked.

To Make Frosting.

3/4 cup sugar.

3 tablespoons water.

Whites of two eggs beaten stiff.

Boiled sugar and water together until it snooped. Then poured slowly over the egg, beating it all the while. It took fifteen minutes for the sugar to snope. The frosting was very even and nice.
Roast Beef

A three pound roast flourished and salted well on both sides. Placed in a baker with a large table spoon of butter. It was first placed on the bottom of the oven for an hour. It was then turned over in the baker and placed on the top grate. At the same time there was a ginger cake and a large loaf of bread in the oven. It took three and a half hours for the meat to roast. It was well cooked and very juicy. A roast in this oven requires little or no attention and is sure to prove satisfactory.

Gravy

After moving the meat of the above test from the baker, two cups of water was put in the dish.
It took one hour and ten minutes to bake the potatoes, twenty-five minutes for the biscuits, and twenty minutes for the pie. The coffee boiled in twenty-five minutes and the meat fried in fifteen minutes.

The result showed that there would be no difficulty in preparing meals in the oven for a family of four or five.

27—

To Bake Beans

Three quarts of dry beans soaked over night, seasoned, placed in the oven and baked thirty-six hours. They are perfectly soft when cooked twelve hours, but are much better when cooked for a longer period. When done the beans are of a rich brown color and resemble "Boston Baked Beans."
As has been shown by the above tests, the oven has been found satisfactory for baking, boiling, roasting, and frying. Our conclusions would be that at least all common dishes can be successfully prepared in this new cooking apparatus, while for certain foods the Aladdin oven cannot be equalled by any other invention. One can scarcely realize how much cooking may add to meat until he has eaten it roasted by this method.

If the cost of manufacturing could be reduced so as to bring the oven within the means of the people no family could afford to be without this time and labor-saving apparatus.