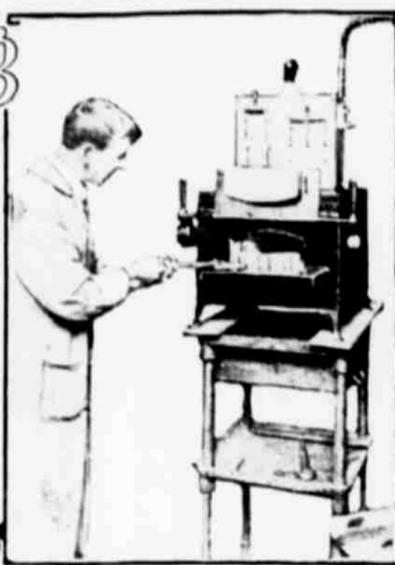
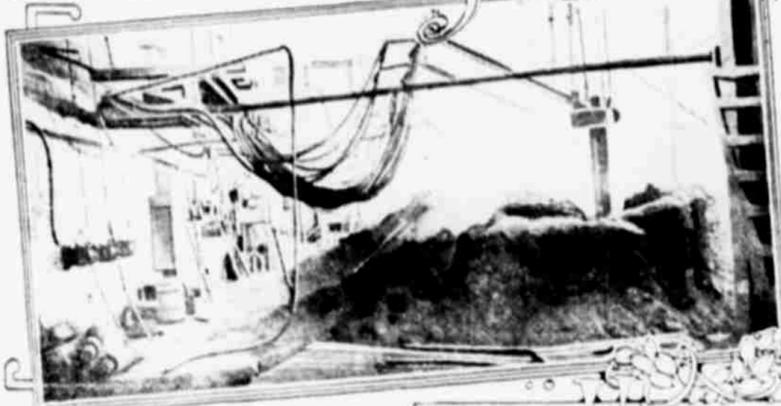


Electrical Heating in Industry



ELECTRIC HEATING IN INDUSTRY

In the past few years, the public has become more and more interested in the possibilities of electrical heating. This interest has been stimulated by the fact that electrical heating is now being used in many of the most important industries of the world. It is being used for the heating of buildings, for the drying of clothes, for the cooking of food, and for the heating of water. It is also being used for the heating of industrial processes, such as the melting of metal, the annealing of steel, and the curing of rubber. The use of electrical heating in industry is increasing rapidly, and it is expected that it will continue to do so for many years to come.

As the demand for electrical heating increases, it is necessary to develop more efficient methods of producing electricity. One of the most efficient methods of producing electricity is by the use of hydroelectric power. This is a method of producing electricity by the use of the energy of flowing water. It is a clean and efficient method of producing electricity, and it is becoming more and more popular in many parts of the world. Another method of producing electricity is by the use of wind power. This is a method of producing electricity by the use of the energy of the wind. It is also a clean and efficient method of producing electricity, and it is becoming more and more popular in many parts of the world.

The use of electrical heating in industry is increasing rapidly, and it is expected that it will continue to do so for many years to come. This is because electrical heating is a clean and efficient method of heating, and it is becoming more and more popular in many parts of the world. It is also becoming more and more economical, and it is expected that it will continue to do so for many years to come. The use of electrical heating in industry is a great advance, and it is expected that it will continue to be a great advance for many years to come.

With the enormous amount of undeveloped hydroelectric power in the country, it is not easy to predict where the final stopping point will be. It is likely that the final stopping point will be reached when the cost of electrical energy is equal to the cost of fuel. At present, the cost of electrical energy is much higher than the cost of fuel, and this is why electrical heating is not used in many industries. However, as the cost of electrical energy decreases, it is expected that electrical heating will become more and more popular in many industries.

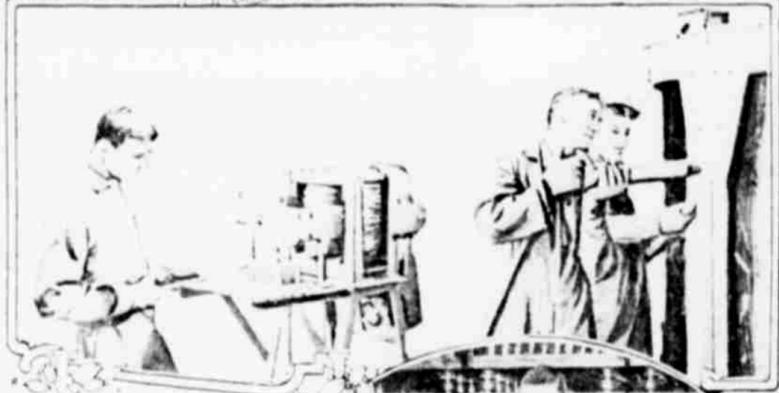
With electrical heat, temperatures that are impossible to fuel-generated heat are reached quickly, economically and without any consequent defilement of the surrounding atmosphere. Along the same line of conservation, manufacturers are beginning to realize that the elimination of spoiled and unfit products, whether rendered so by inefficient and unreliable methods of heating, or by careless employees is just as much conservation as anything else. Also the elimination of unnecessary labor, and the establishment of cleaner, safer working conditions, tend toward the attainment of the rapid rate of production which is the paramount demand of the present industrial era.

Thus the variety of processes to which electric heat is applicable has given rise to many devices for its use, ranging all the way from a metal-melting furnace, whose production is 18,000 pounds a day, through the oven field, to small metal melting pots with a capacity of 25 pounds of metal. In the domestic field 25,000 electric ranges and an uncounted number of small household appliances are in use. All furnaces, ovens, etc., claim economy and perfection of their finished products.

To take the brass furnace as a typical example of what can be done by the application of electric heat, in overcoming the difficulties of specialized operation, in the fuel-heated brass furnace, one of the greatest drawbacks is the loss of zinc through volatilization and oxidation due to the high temperature of the applied heat, as well as the atmospheric conditions surrounding the bath.

In the electrically-heated brass furnace both these conditions are absolutely under the control of the operator. There are several types of brass furnaces in use today: the arc type, which has no automatic control but a low first cost; the induction which just like a field where productions can be placed on a 24-hour basis; the carbon resistor, best for temperatures not exceeding 1,000 C., and the muffled type, more expensive, but the only one that can be operated automatically.

This furnace can be operated at higher temperature than the carbon resistor type, and at the same time can be regulated to operate at lower temperatures economically, but with the additional feature of automatic control. The electric furnace, in actual use, has reached the temperature of 3,500 C. Recent experiments in a research laboratory have, however, developed



ELECTRIC HEATING IN INDUSTRY

A furnace which gives a temperature of 4,500 C.—enough to melt iron. A comparison of these temperatures with that of the sun, which is estimated at 5,000 C., gives a striking idea of what can be accomplished in handling refractory materials with electric heat.

There are other types of electric furnaces, which, although simple in construction, are capable of doing in one operation things which formerly took several heatings. In making steels, for example, for large caliber guns, it is necessary to expose different sections of the same steel to different degrees of heat. With an electric furnace this is done by simply insulating heat units of varying resistance according to the degree of heat desired in the same furnace.

The war was responsible for many new devices designed with a view to increasing production quickly. One of the things the government needed most was ships—lots of them, and in building ships an enormous amount of rivets have to be heated, and that quickly. The usual method of heating these rivets was in a forge, usually burning coke or oil as fuel, which was after a careful survey, found to be awfully inefficient. The attendance was large, requiring a blower man as well as a passer; large quantities of rivets were burned, welded together, or insufficiently heated in the forge, and when it had to be taken into the hold of the ship for use, the difficulties of operation were only exceeded by the stinkiness of the atmosphere resulting from the fumes of the forge.

The result was the electric rivet heater. Rivets are now heated by inserting them between two copper bars carrying a heavy current, supplied by a transformer. Since the iron of the rivets themselves is a material of high resistance, they are heated thoroughly and quickly. The bars are operated by a foot pedal, so that when the rivets are removed, or are being placed in position to be heated, the current ceases to flow. The whole apparatus is easily portable.

It was found that this simple machine heated the rivets throughout; that, inasmuch as the energy was used only when the rivets were actually being heated, there was no waste of heat; that there were no noxious fumes or spoiled and wasted rivets, and that the machine was nearly fool-proof. The attendance was reduced to a minimum, and there was no necessity of supplying fuel, with the consequent trouble in disposing of the ashes when it was being operated in more or less inaccessible parts of a ship. It has a capacity of 800 1/2-inch rivets, 1 inch long per hour, which is enough under ordinary conditions for a gang of gun riveters.

The place where electric heat has found its greatest application, from the standpoint of number of installations at least, is in the electrically-heated oven, or air-drying and baking apparatus, as one prefers. It is surprising how many products that are necessities of our everyday life require an oven treatment somewhere in the course of their manufacture.

Electric ovens are used more in the automobile industry than in any other field. Here 100,000 KW are used in baking the Japan on 3,000 automobile bodies every day. In a few years the automobile whose japanned parts are not baked in an electric oven will be a rarity. Other large users of electric ovens are foundries, for baking cores; telephone and typewriter manufacturers; manufacturers of iron and bed frames, and chemical manufacturers of various sorts.

Oven processes include baking, air tempering, drying and sherardizing. Of these four the first is the most used, the other two are quite common, and the last is a process for protecting exposed iron parts from corrosion.

In many of these processes, accurate regulation of heat, and automatic control are absolutely necessary, because many materials are irrevocably ruined by a slight change in the temperature of the oven. And here again manufacturers have found that the saving in material which was spoiled by the vagaries of the fuel-heated furnace has more than paid for the increased expense of installing and operating a bank of electric ovens.

Of these three classes of ovens, those installed for baking are the most numerous. The work they do varies: baking Japan on various articles,

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Must I Endure Forever the Torturous Itching?
The skin is fed from the blood, and upon the condition of the blood depends whether or not your skin will be healthy and free from boils, pimples, scaly irritations, red eruptions and other disfiguring and unsightly disorders. The sensible treatment that will show real results is a remedy that will cleanse the blood thoroughly and kill the germs that cause the trouble. And for this purpose no remedy ever made can approach the record of S. S. S., which cleanses the blood of the disease germs, at the same time building up the general health.

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SHOE POLISH
Try a 10c box of EZ Oil Shoe Polish. All colors and white. It saves the leather and prevents cracking. *Don't risk cheap polish.* To open box just lift the latch.

ITCH!

HERE is an offer backed by one of your personal friends—a man whom you have known for a long time, and in whose honesty you have implicit confidence. The man is your local druggist. He will tell you that he has been using Hunt's Salve, formerly called Hunt's Cure ever since he has been in business, under the strict guarantee to promptly refund the purchase price to any dissatisfied user.

He will say to you: "Take home a box of Hunt's Salve and if it is not successful in the treatment of itching skin diseases, I will promptly refund to you your 75 cents."

Hunt's Salve is especially recommended for the treatment of Itch, Eczema, Ringworm, Tetter, and other itching skin diseases.

The General Manager of the Life Valley Railway Co., Goldsfield, Nevada, A. D. Goodenough, writes: "At one time I had a very bad case of Eczema, which troubled me for seven or eight years, and although I tried all kinds of medicines and several doctors, I got no relief until I used Hunt's Salve. It finally cured me."

Thousands of such letters have been received, testifying as to the curative merits of this wonderful remedy.

Don't fail to ask your druggist about Hunt's Salve, formerly called Hunt's Cure. Show him this ad, and ask him if the statements herein made are not correct.

Sold by all reputable druggists everywhere at 75 cents per box, or sent direct on receipt of stamps or money order.

A. B. RICHARDS MEDICINE CO., Sherman, Texas

LITTLE CHANGE IN PHYSIQUE CLOSE STUDENTS OF NATURE

Report That Average Stature of American Men Was Affected by War—Declared Untrue.

The wholesale clothing manufacturer says that there has not been any change in the size of their garments since the war. They are manufacturing more garments, but the proportion of larger sizes is no greater now than it was three years ago. In short, their size patterns have not changed. Yet changes would be necessary if the stature of American men had been affected in any appreciable way by the war and a half of two years of military training.

Manufacturers of ready-to-wear shirts and undershirts agree with the clothing manufacturers that there has been no change in their size patterns despite the reports of numerous individuals who take "a size larger" today than they did before the war. As one manufacturer put it, the proportion of soldiers who need larger sizes in shirts or suits today than they did two years ago is so small that it has no effect on wholesalers. Salesmen naturally remember certain individual cases of increased chest development, but, taking the country by and large, there has been no appreciable change in the physique of the male portion of the population, at least as far as their clothing is concerned.

Good for Business.
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"She heard the boarders were going on a hunger strike."

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Its rich coffee-like flavor satisfies and its freedom from any harmful ingredient, such as the coffee drug caffeine, makes it a better drink for young and old.

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