FOUR SCORE YEARS AND ONE

Anniversary of the Birth of United Germany's Grand Old Man.

A "MADCAP" WHO TURNED STATESMAN

Review of Bismarck's Career by One Who Has Met Him—His Strong Religious Feeling and His Years of Retirement.

(Copyright, 1896, by S. S. McClure, Limited.)

On Wednesday next, the 1st day of April, the family, friends, tenants, neighbors, and, indeed, the whole of Germany, will celebrate the eighty-first birthday of Prince Otto von Bismarck, the unifier of the Faderland. This grizzled veteran of statesmanship, diplomacy and war, though forced into retirement six years ago by a headstrong sovereign, whose very throne was in a great measure of Bismarck's making, continues to be, and will continue to be, so long as he lives, the most interesting figure in Germany. For that matter, he is the most powerful and interesting figure in German history, notwithstanding the intervening kings and emperors, since Frederick the Great. So large have been the achievements of this man that the interest in him is not confined to Germany alone, even in this time of his old age and retirement. In America this interest is particularly keen by reason of our great German population and on account of Bismarck's services to us in our time of civil strife, and his warm friendship for several eminent Americans.

BISMARCK IN 1851.

As a Prussian, Bismarck was anything but a republican, since he believed with unwavering firmness in the divine right of the Hohenzollerns to rule in that land; but he acknowledged that a constitutional and limited monarchy, where the sovereign was but as the cupola of the house, was the best government for England, and that a pure democracy was the best kind of government for the United States. When, therefore, most of the nobles and royalties were anxiously hoping for the overthrow of the American republic, Bismarck exerted, quietly but powerfully, his great influence in favor of nonintervention, which was in effect a declaration in favor of the union.

Even European statesmen of high position thirty-five years ago had but a limited understanding of the nature of our government and of its suitableness for the American people. But Bismarck had had the advantage of a close intercourse and warm friendship with one of the most accomplished men this country has produced. It was at the university of Gottingen that Otto von Bismarck and John Lothrop Motley met, and there as youths they contracted a friendship which lasted through life. From Motley's letters we get some of the most intimate glimpses of Bismarck's domestic life; it was from him, too, no doubt, that Bismarck had introduction to American literature. This introduction made the great German acquainted with two writers who have always remained favorites with him—Whittier and Holmes. He liked Whittier's war poems; he enjoyed the "Autocrat of the Breakfast Table," and esteemed it a masterpiece of humor and kindly wisdom.

HIS LIKING FOR WHITTIER'S POEMS.

It will strike most persons, no doubt, as curious that this unbending man of "blood and iron" should care so much for the gentle Whittier, and I am unable to account for it, save on the hypothesis that in his religion Bismarck is more nearly a Quaker than anything else, and in the summons to arms by another Quaker he found solace for an apparent inconsistency. Bismarck has always been a religious man of deep feelings, and this idea that his theological theories approach more nearly to Quakerism than anything else is not mine, but has been expressed by those who have studied his life very closely and have examined his expressions of faith with minute care. It is undoubtedly true, however, that in the moments of depression, which have now and again come on this robust man, moments in which hatred of his enemies appeared exaggerated in importance and when the sufferings caused by the wars for the unification and preservation of Germany seemed to outweigh the good that they secured, he has read the patriotic poems of the gentle American Quaker to much advantage and has found in them a grateful consolation.

When Bismarck developed this religious bent it is not hard to see. In his youth he was so wild and reckless that he became known in the army where he served as the "Mad Bismarck," and he kept up this reputation when he had returned to his ancestral home at Schoenhausen to become a country 'squire and cultivate the estate he had inherited from his father, the retired captain of dragoons. His mad pranks were held in such disesteem by his neighbors that he was not thought to be a mate match for Fraulien Von Puttkamer when in 1847 he sought her to be his wife. The country 'squire, by methods similar to those of the chancellor of a quarter of a century later, beat down the opposition and married the lady, of whom, in 1878, he said to the Italian premier, Signor Crispi: "You little know what this woman has done for me."

BISMARCK IN 1866.

One of the things she did was to awaken in him his dormant religious feelings, and we find him writing to her in 1851, that if it were not for his faith in God, his love for her and the thoughts of the children at home he would give up all ideas of public duty and return to his home and his farming. The idea through the whole of Bismarck's life seems to have been that in serving his king he was serving God and his country. In his mind the king was the anointed one, and the people had but one duty, and that duty was to obey.

It was in 1851, by the way, that Bismarck's public career in any large sense began, though previous to that he had been a member of the Prussian Diet, and had championed the rights of the throne as against those of the people. In that year he went to Frankfort as the Prussian member of the German Diet, which managed the foreign relations of the kingdom, the various principalities and the free cities. He was then 36 years old, and there was much wonder that so important a post should have been given to so untried a man, a man who had only one decoration, that given to him for saving the life of his soldier servant when he was a lieutenant in the army. Even the prince of Prussia, afterward Emperor William I, by the grace of Bismarck's genius and resolution, expressed surprise and felt much doubt.

BISMARCK TOLD THE TRUTH.

But Bismarck soon justified himself and introduced the old world diplomats to tactics they were a long time in comprehending. He told them the plain truth whenever he spoke at all, and he was always remarkable rather for candor than reticence—and they were entirely baffled. His reports to his minister in Berlin during the eight years he remained in Frankfort were complete and graphic histories of all the happenings. The idea of German unity as at this time advocated at the instance of Austria he did not consider to the interests of the Prussian throne, and he opposed it with all his might. It even seemed at this time that he was opposed to any kind of unity, but that was not so; his idea was that Prussia should form and be the center of that union, and his foresight enabled him to see, even then, how that could be brought about.

In one of Motley's letters there is a little picture of Bismarck's home life at his home in Frankfort. He said: "The Bismarcks are as kind as ever. It is one of those houses where every one does what he likes. The show apartments, where they receive formal company, are on the front of the house. Their living rooms, however, are a salon and dining room at the back, opening upon the garden. Here there are young and old, grandparents and children and dogs all at once; eating, drinking, smoking, piano playing and pistol firing (in the garden), all going on at the same time. It is one of those establishments where every earthly thing that can be eaten or drunk is offered you—porter, soda water, small beer, champagne, burgundy or claret—are about all the time, and everybody is smoking the best Havana cigars every minute."

PREPARATIONS FOR GERMAN UNITY.

This is the kind of life Bismarck has lived up to this time, and even in his old age he has continued to be as much of a trencherman as his physician will permit. He used to say: "If I am to work well, I must be well fed," and most healthy and sensible people will heartily say amen to such a doctrine. Bismarck stayed in Frankfort till 1859, when he was sent to St. Petersburg as minister. To use his own expression, he was "put on ice." He was a great favorite of the czar and became a personal friend of the famous and powerful Gortchakoff. When King William, in 1861, succeeded his brother it was thought that he would ask Bismarck to be minister, but he was irresolute, while Bismarck was indifferent. When, however, in 1862, the king found himself in trouble with his Parliament, he asked Bismarck to be parliament tamer and accept the presidency of the ministry. But Bismarck declined, pleading bad health. However, he accepted the mission to France. While at this post he went to the international exhibition in London, and it has been related that in a company, of which Disraeli was one, Bismarck said:

"I shall shortly be compelled to undertake the presidency of the Prussian government. My first care will be to reorganize the army with or without the help of the diet. With the army placed in position to enforce respect I shall seize upon the first pretext to declare war against Austria breaking up the German federation, subjecting the minor states, and giving Germany national unity under Prussia's guidance. I have come here to tell the queen's ministers."

Disraeli, it is said, remarked: "Take care of that man, he means what he says."

AN INTERVIEW WITH BISMARCK.

I have no doubt that Bismarck did say this or something like it. It sounds like him. Then I have some personal testimony on this point. In 1878, after the congress of Berlin, I was a veritan fourualist looking about Europe for something to write about. Why not interview Bismarck? I asked myself. No sooner asked than done, for I hastened to Berlin and did interview the great German chancellor at his house in the Wilhelmstrasse. How I secured an audience was told long ago, so I may skip that, though I am quite sure that eighteen years later and with a better furnished mind I could never have done what I then so gaily set about. At any rate, I saw him and he treated me most kindly, amused, no doubt, at my unconscious presumption in seeking an audience. He answered my questions when he thought them sufficiently sensible and put the others by with a frank courtesy and a smile that had no apparent sarcasm in it.

Among other things I asked him if he had made this announcement of his intentions as to Austria in 1862. To this he declined to reply directly, but remarked, as by way of parenthesis, that about great movements there were always legends more or less true which it were better not to disturb. A very similar remark to this was made to the gentleman who asked him whether it were true or not that he had suppressed a part of the dispatch which told of the refusal of the Prussian king to see the French ambassador at Ems. This refusal, it will be recalled, was regarded by the French as an insult to the nation, and so soon as the dispatch was published in Paris the cry was heard on every side "On to Berlin." When I saw Bismarck he was 63 years old and was a splendidly preserved, well proportioned giant. He was at the very height of his power and seemed to hold the destinies of Europe in the hollow of his hand. At the congress of Berlin he had had his own way and had succeeded in pleasing the representatives of the other powers—sending, for instance, Disraeli and Salisbury home to England, empty handed, but half tickled to death that they had brought back "peace with honor." And so he continued for twelve years longer and until the present emperor dismissed him from office with as scant courtesy as an angry parvenu would show to an offending butler.

DEBT OF THE HOHENZOLLERNS TO BISMARCK.

In recalling this sad episode it is well also to remember what the Hohenzollern house owes to Bismarck. When Bismarck returned from his Paris embassy in 1862 to take the ministry under William I, that monarch was in what seemed to him inextricable trouble. The Chamber had refused to provide money for the army, and without the army, the king thought there would surely be anarchy. When Bismarck went to him he found that the king had written and signed his abdication, feeling that the only safety to the throne was in leaving it.

Bismarck assured the monarch that he was willing to manage matters without a budget, and the abdication was destroyed. It was about this time that Bismarck won the title of "The man of blood and iron." To the budget committee of the chamber he said that the great questions of the time were not determined by speeches or parliamentary majorities, "but by blood and iron." He brought about the reorganization of the army without a budget, and when opportunity arose four years later, still without a budget, he saw this army humble Austria at the battle of Sadowa. This battle won popularity for Bismarck for the first time, and thereafter the Prussian chamber gave him the budget for the army.

King William was most unwilling to go into this war with Austria, a war which absolutely thrust glory upon him and his house. When the king and Bismarck returned to Berlin the joy bells that greeted them also rang the death knell of Louis Napoleon. I need not tell, even to a new generation of readers of the war with France and of the crowning of William as Emperor at Versailles. We all know that it was Bismarck's work. But less than twenty years later the grandson of the first emperor and the wearer of the crown Bismarck had bestowed, cast that veteran from him with an ingratitude which may be characteristic of kings and at the same time show that kings are not quite human.

BISMARCK SINCE HIS DISMISSAL.

After his dismissal in 1890 Bismarck retired to Friedrichsruh, an estate given to the prince by the emperor after the war with France. This estate of something like 20,000 acres is near to Hamburg and has continued to be the ex-chancellor's home. It has been described so often by American correspondents that I shall just now refrain. He has not left there often. Once he went to Austria to the wedding of his son, Herbert, and during that trip I have always thought Bismarck made of himself the only sorry spectacle in his whole career. He quarreled with all existing things political and exhibited his sores to all who had the indelicacy to express sympathy. I am sure that at this time the strong man was weakened by illness and was not entirely responsible for the unwisdom of his utterances, which were in a way characteristic of him, for they no doubt expressed but what he felt at the time. But bluntness of criticism and frankness of avowal are not the same in a fallen man as they are in one in full power. The next year he was very ill in Kissingen and all the world was prepared to hear of his death. His illness appealed to the emperor, who made advances for a reconciliation. This was effected the next year when Bismarck, for the first time since he left Berlin, in 1890, donned his uniform as a cuirassier and went to visit the emperor. He was greeted in the streets of Berlin as a returned conqueror and was unaffectedly pleased by all that happened.

BISMARCK IN 1894.

At Friedrichsruh he lives the life of a country gentleman, but has a great deal of company. He is as hospitable at home now as he was when Motley visited him in 1851 at Frankfort. A friend who visited him this year supplies me with this description of him: "He is still so erect that he has lost none of his great height—6 feet 1 in his stockings. He is careful in his diet, which is controlled by Dr. Schewinniger, and keeps his weight below 200 pounds. If unrestrained it would quickly go to 230. His mustache and eyebrows are perfectly white, as also the fringe of hair which remains to him. His shoulders are broad, and his arms and chest look muscular. His carriage is still that of a soldier. In his face there is the look of peace and content which ennobles old age even without a career of distinction behind it. He has surely outlived the vexation which worried him for a year or so after his retirement."

On his birthdays hitherto, and doubtless it will be so in 1896 as well, he has received presents from his admirers all over the world. There are also festivites at Friedrichsruh and a gathering of his family—a family which has ranked among the German nobility for 400 years, but which was never great till Otto, the madcap, turned statesman and regenerated and reunited the Faderland.

JOHN GILMER SPEED.

WHENCE THEY COME.

Written for The Omaha Sunday Bee.

Whence come the birds of early spring,
With rapturous choral song?
Whence come the clouds of feathered plume,
Hurrying the day along?

Whence come the breezes of the night,
Luring the heart in love?
Whence come the stars of the vaulted deep,
Bidding us look above?

Whence comes those dreams of fitful time,
Launching the soul away?
Whence come those moments when the thoughts
In speculation play?

Whence come those notes of Siren's song,
Whisperings so still,
Borne by unknown messengers
The musing heart to fill?

From beings unbeknown they come,
Spirits of light are they,
Preparing the muses' thoughts in rhyme,
To store them in song away.

W. HARNES LOWER.

OMAHA, March, 1896.

THE FIELD OF ELECTRICITY

Domain of the Steam Locomotive Steadily Encroached Upon.

UTILIZING POWER OF ARTESIAN WELLS

Varied and Marvelous Applications of Electricity in All Branches of Housekeeping—Devices for Heating and Cooking.

There are evidences of the early adoption of electric locomotives for elevated railroads and for long-distance lines. At the Baldwin works in Philadelphia the Ledger of that city reports that the trucks for eight electric locomotives have been turned out for the Lake Street Elevated railroad in Chicago. Six of these will be supplied with electric motors and appliances by the General Electric company and two by the Walker Electric company. These locomotives will be of a class to supply the place of steam locomotives, and will be capable of hauling elevated railroad trains of four or five cars. The Baldwin works supply only the trucks. The business arrangements between the Baldwin works and the Westinghouse Electric company do not prevent the former from supplying trucks for electric locomotives to any other electric company.

The high speed electric railroad between Baltimore and Washington is now in process of construction, and work is being done in grading the roadbed on both ends of the line. It is expected that a speed of sixty miles an hour will be made. The exact character of the equipment has not yet been decided upon, but it is probable that the trains will be composed of a single motor car. The high speed at which these cars will run introduces some conditions different from those obtaining on steam roads. For instance, an obstruction on the track which would damage only the locomotive of a steam train might prove disastrous to the occupants of a single motor car. The tracks are to be built of the heaviest steel rails, and the running gear is expected to be the equal of any steam equipment.

The power plant has already been contracted for with the Westinghouse Electric company. There will be two power stations, one located about ten miles from the Baltimore terminal, and the other about the same distance from the Washington terminal. The amount of power equipment already contracted for is equal to about 6,000-horse power, consisting of eight 600-kilowatt generators, three 300-kilowatt "boosters," and necessary switchboards and other electrical appliances. As the specifications for the cars have not yet been decided upon, it is not certain what company will supply their electric equipment or their running gear. The success of its road, about which there does not seem to be any doubt by its projectors, will be a great stimulus to the building of similar roads any of desired length between large cities for passenger traffic. It is expected that, while it will, to some extent, cut into the business of the steam lines, a large proportion of the traffic will be new, and will be developed by the greater frequency of the trains as well as by their high speed.

The trucks for the three locomotives for use at the Westinghouse works have been shipped to Pittsburg, and the first of the three has been equipped, and is now in daily service in the extensive yards of the works, hauling material and supplies. It runs on the "button" track of the Westinghouse company, and has no overhead wire, but takes its current from the rails, which are energized by the automatic connection of the rails to the feeders by the weight of the engine. No regular test has yet been made of the capacity of the locomotive.

A COMBINATION LOCOMOTIVE.

The combination steam and electric locomotive designed by L. E. Walkins of Boston for the Ohio River, Madison & Central Electric railway in Ohio, does not receive much, if any, more favorable criticism in the technical papers than did the famous Heilmann locomotive, built in France, which it resembles greatly. The Ohio road has yet to be built, as has the locomotive for that matter, and is to be a double-track line, running from Cincinnati to Madison, Ind. The locomotive is to resemble a baggage car in outward appearance, except that a cab for the engineer will be built at the front end. The boiler is to be of locomotive type, and will furnish steam to a direct connected Westinghouse engine, driving two 400-horse power electric dynamos. The current from these dynamos is to be used by two motors of 350-horse power, connected with two pair of driving wheels, six and one-half feet in diameter, and by a reserve motor of 200-horse power, used in case of an emergency to drive the small wheels of a trailing truck under the rear of the locomotive. Storage batteries will be carried in the engineer's cab to furnish current for a short run in case the main apparatus breaks down. "We are sorry," says Engineering News in commenting on the Watkins engine, "that the French are not to have a monopoly of this idea. The plan of combining in a single machine a boiler, engine, dynamo, storage battery and electric motor, with the numerous operating and controlling devices which each requires, and all for the purpose of propelling a car along a railway track, is one which harmonizes better with the French mechanic's penchant for complication than with the American practice of choosing the simplest and most direct means of reaching a desired end.

ARTESIAN WELL POWER.

An interesting example of the persistence with which the installation of electric plants is now followed up under new conditions is afforded in the electric light plant at Chamberlain, S. D., which is operated by artesian well power. Chamberlain is situated in the great subterranean water course district known as the artesian well basin of South Dakota. Throughout this region, which is said to embrace over 20,000 square miles in the central portion of the state, a constant flow of water averaging about 1,000 gallons a minute can be obtained by boring into the earth to a depth varying in different places, but averaging about 1,000 feet. The value of such a source of water supply for irrigating purposes is seen in the fact that a well flowing 800 gallons per minute will cover a square mile of land one inch deep every fifteen days, or more than two feet deep in one year. The soil of this district is fertile, and a steady supply of moisture insures abundant crops. The thirty artesian wells already sunk in Brule county are estimated to give a flow of 70,000,000 gallons every twenty-four hours. Hardly less important than the part the artesian well will play in the future prosperity of South Dakota in the fertilization of its soil is its new application to the generation of electricity. The Chamberlain plant is the first electrical installation in the country driven by artesian well power. The well is 675 feet deep and eight inches in diameter. The entire body of the eight-inch flow goes up twelve and one-half feet from the mouth of the well, while, if reduced to a two and one-quarter-inch stream by a nozzle, the water shoots up to a height of 162 feet. The flow is 4,430 gallons per minute at a pressure of 110 pounds to the square inch, and the effective energy of the moving water is estimated as equal to 100 horse-power constantly exerted. Regulation is easily effected. By simply lowering the nozzle which throws a three-inch stream on the buckets of a Pelton water wheel, the water will go entirely through the buckets, and run away through the waste pipe. At present only 500 lights are supplied from the dynamo, but it is proposed to run other manufacturing plants with the large amount of power that is now going to waste. The location of Chamberlain on the edge of one of the greatest cattle and sheep ranges in the country makes it an exceptionally favorable point for the establishment of a creamery, a woolen mill or a tannery, as well as for many other industries. For a creamery the well power would be specially adapted on account of the steadiness with which it would run the separators, and the business men of the city are already taking steps to develop the cream industry. It is said that a guarantee of 1,000 cows can be secured without any difficulty in the vicinity, and substations can be established across the Missouri river and in towns east of the city, as well as north and south.

ELECTRIC HEATING AND COOKERY.

The recent introduction of electric heating at the Vaudeville theater in London, in competition with low-pressure steam heating, marks a decided advance in the practice of heating by electrical methods. There are twelve heaters, each two feet long and one foot wide, arranged around the walls, and twelve heaters in the partition in front of the orchestra. There are in addition four large portable heaters, with flexible attachments, for use either in the center or around the sides of the theater, as necessity requires, although it has been found that they are rarely required. The advantages of electrical heating are especially marked in the case of theaters, where pure warm air, without powerful currents or draughts, is desired. The cost of heating the theater for four hours is found to be about $2.88.

In this country the largest installations of electric heating applied to buildings are in the office building of the Cataract Construction company, at Niagara Falls, and the Carmelite Monastery, also located at Niagara Falls.

The simplicity of the means and the apparatus required for producing heat electrically, which consists in the mere passage of a current of electricity through a wire of some high resistance material, such as German silver, or iron, together with its manifest advantages of requiring no more attention than an ordinary incandescent lamp; that it can be instantly applied; does not require several hours' previous heating, as in the case of heating buildings by hot water or steam; freedom from odors, dirt and dust, are constantly enlarging its already extensive sphere.

Electrically propelled street cars all over the country are rapidly adopting electric heaters, even though heating in this manner costs about four times as much as heat obtained by burning coal or oil in stoves. The cost of heating cars electrically in temperate climates, like our own, is about 2¼ cents per hour, or 40 cents per day of eighteen hours. This increased cost is compensated for by the greater cleanliness of the cars, the fact that electric heaters do not occupy useful space, and that the heat is more uniformly distributed in the car and near the floor, where warmth is most agreeable.

Electric heaters are now supplied for cooking purposes, for heating glue pots in large bookbinding establishments; sad-irons in linen factories, for the welding of spokes and tires of wheels, the welding of cables, bars, propeller shafts, etc.; pipe bending apparatus, for the welding of car tracks into a continuous whole, thus doing away with bonding, and in many forms of electric furnaces employed in the industrial arts for the production of carborundum, calcium, carbide, aluminium alloys, and in many other processes requiring a very great degree of heat.

HOUSEKEEPING BY ELECTRICITY.

A great electrician and inventor was once known to remark that before many years had passed electricity would constitute the backbone of industry.

The time is now almost ripe when the truth of this prophecy will become apparent to even the most unlearned in the arts.

A casual glance through the voluminous records of the United States patent office, says a writer in the St. Louis Republic, discloses the fact that our great inventors have not overlooked the trials and cares of the housekeeper in their researches, but have provided for her every want in their prefected electric heat, light, and power producers.

In a modern house equipped with only a very small number of these electric devices the use of coal and gas is altogether obviated, and the house is heated and lighted and the cooking done by means of the mysterious electric fluid. In this house you see no apparent heating means, and yet there is a diffused warmth evenly distributed throughout all the rooms. This heat is produced by the heavy electric carpets or rugs with which the rooms and halls are provided. Each of these carpets is made of ordinary material, but is provided on its under side with two loose layers of asbestos. A composition composed of powdered clay and plumbago is applied between the two layers of asbestos. Suitable contact plates to which wires of an electric circuit are connected are embedded in the composition at opposite ends of the carpet. The electric current in passing through the plumbago in the composition is resisted by the clay, and a gentle heat is thus generated over the entire area of the carpet, heating all parts of the room equally. Each carpet is connected to an independent circuit, so that the rooms may be heated to different temperatures, as desired, and the degree of heat in each may be regulated by a simple rheostat connection. In such rooms or places where it is not desirable to use the rugs, electric bracket heaters may be employed. Each of these heaters consists of separated carbon bars that form one continuous zigzag circuit. These bars are encased in a simple ornamental open work bracket adapted to be hung on the wall. The carbons are connected in circuit by hidden circuit wires.

Hot water is supplied for the whole house by a tubular electric boiler. Each water tube of this boiler is wound with wire resistance coils, and when the current is passed through the coils by the turning of a switch the water very soon begins to boil because of the heat generated by the resistance to the electric fluid. Along one side of the room is arranged a polished wood bench, upon which the electric cooking stove and electric pots and pans are placed. Above this bench is arranged a smoke trap, provided with an electric fan for creating a suction to draw all the smoke from the room and discharge it into the chimney.

The electric stove is heated by a plate of separated resistance bars. This plate can be raised or lowered in the stove to or from the cooking article to give a greater or less amount of heat. The top of the stove is provided with a window, and an incandescent light illuminates the interior so that the cooking article is in plain sight at all times. The stove is started and stopped by the simple turning of a switch. The degree of heat in the oven is regulated in the same manner as in the electric carpet.

Next to the stove stands an electric broiler. This is composed of two hinged frames provided with hollow-spaced bars and a pan beneath the same to catch the drip. Electric resistance wires are passed through the hollow bars and connected to an electric circuit. When the current is turned through this device the bars become heated and thoroughly broil the meat between them. The electric frying pans, coffee pots, gridirons and like cooking utensils cover the remainder of the bench and are each heated separately by electric resistance coils applied on their under sides. These articles are all detachably connected to the circuit wires that pass along to the rear of the bench, so that they may be disconnected and carried about. There is no smut or dirt about any of the devices or any part of the kitchen for the obvious reason that there is no fire or coal to create the same.

In one corner of the kitchen stands the electric dishwasher. Rotable shelves are mounted in this washer, and are adapted to receive the dishes. Flexible stationary wipers are arranged over the shelves to wash the dishes as they are carried about by the rotating shelves. The shelves are rotated by a small electric motor, and hot water is supplied from the electric boiler.

In the bedrooms electrically heated mattresses are used on all the beds. These each comprise flexible resistance wires, embedded in asbestos covering, which are placed in the mattress proper. These mattresses each diffuse a mild, gentle heat, which can be instantly stopped when so desired by turning the electric current out of the mattress by a suitable switch. The blankets are also heated in the same manner by electric resistances. All the towels are also heated to a gentle warmth by flexible resistance wires embedded in them, and flexibly connected to the electric circuit. The combs and brushes are also electrical, and are each provided with their own batteries for generating the current. The bristles of the brush are of flexible metal, and are connected alternately to the positive and negative elements forming the battery in the back of the brush. The use of this brush invigorates the scalp and prevents falling of the hair and like complaints.

If the baby should complain during the night it would only be necessary to put him in the electric cradle, which is operated by a small electric motor. The movement of the cradle by the motor also operates a fan, so that on hot summer nights baby can be rocked to sleep and fanned at the same time without inconvenience to any one. All the rocking chairs throughout the house are operated by the small electric motors arranged under the seats.

In the dining room the center of the table is kept constantly revolving by an electric motor arranged under the same, and thus the different dishes are brought successively before each person, so that he may help himself to what he likes. The front door of the house is provided with an electric lock, that may be operated to open the door from any of the rooms in the upper stories.