

THE ELECTRICAL WORLD

OPEN DOORS BY ELECTRICITY

Motor Operated and Set in Motion by Attendant Pressing Button—Operates Very Smoothly.

In some buildings of a semi-public nature in which revolving doors are installed, as hotels and stores, they keep a man at the entrance to help operate the door for the greater convenience and comfort of persons entering and leaving the building. This man starts the door in motion, thus making it easier for the person entering to push the rest of the way.

But the attendant, according to his natural strength or his mood at the moment, may start the door swiftly or slowly, thus hurrying or retarding the incoming. And then on a personally operated door one man in the door, impatient, may push the door fast and bang the leaf in front of himself against the heels of the man in the compartment ahead, making him peevish. All these variations and uncertainties in the movements of the door are eliminated by operating it with an electric motor.

The electrically operated revolving door has a motor attached to the upper end of the shaft from which the leaves extend. The motor is quite out of sight above the horizontal sheathing at the top of the doorway. From the motor and also quite out of sight wiring extends to a push button set in the wall at the side of the doorway within the building, where the door attendant stands.

With a door thus equipped there is no reaching out and grabbing a leaf and pushing or pulling on it to start it. The attendant simply presses the button and so turns the current into the motor, and the motor does the rest, starting the door gently and then keeping it going with a motion that is steady and uniform.

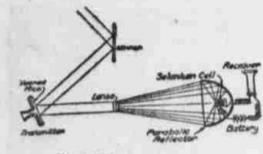
WIRELESS TELEPHONE IS OLD

Instrument Was Devised and Operated by Inventor Bell Thirty-One Years Ago.

In 1876, long before the day of the Hertzian waves and modern wireless telegraphy, Alexander Graham Bell devised and operated a "wireless telephone." Starting with Clerk Maxwell's electro-magnetic theory of light, he undertook to impress phonetic disturbances upon the light waves and reproduce them in a telephone receiver by means of a bit of selenium, which has the remarkable property of changing its resistance to an electric current when under the influence of light, says Popular Electricity. A coil made of two narrow strips of annealed selenium attached to a block of brass alters its resistance from 300 to 150 ohms when brought from darkness into the sunlight.

A beam of bright light was directed upon the surface of a silvered mica diaphragm which reflected it to a parabolic mirror at the receiving station. Here the light was again reflected by the inner surface of the mirror so that it covered through a lens upon a small selenium cell at the focus of the mirror, and in series with a battery and the telephone receiver.

As the voice waves of the sender impinged upon the silvered diaphragm it vibrated and from it the amount of reflected light according as it became convex or concave toward the receiver. With each variation of the intensity of the transmitted light the selenium cell or "detector" offered a corresponding variation in its resist-



First Wireless Telephone.

ance to the receiver current; and since each variation of current causes a sound in the telephone, the voice of the sender was accurately reproduced.

At first the apparatus was called a "photophone," but it was afterwards found that when a black solution of iodine in carbon bisulphate was placed in the path of the beam of light the instrument would still work, for though the solution is quite opaque to all light visible to the eye the long, invisible infra-red rays pass through unchanged. From this circumstance the name was changed to "radio-phon."

Of course with the old arrangement speech could not be transmitted over any considerable distance, but that is because the wave length used was too short to penetrate many obstacles and too refrangible to maintain its individuality in the presence of interference.

Electric Wireless Cooker.

In a combination of wireless cooker and electric stove, electric current is used to give the first heating and start the cooking, and the hot food completes the process on standing. The holding dishes are of aluminum placed one on top of another, the electric stove is beneath, and a snugly-fitting insulating hood covers all. The process is claimed to be safe and effective. Little electricity is necessary, and meals can be prepared at less than the ordinary cost.

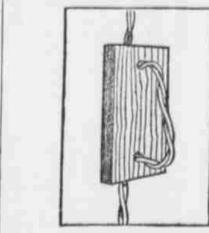
Electric Automatic Typewriter.

The electric automatic typewriter of the Berlin police has added to the strenuousness of the burglar's profession. By means of this instrument a robbery at one station can be followed up within two or three minutes by the printing and posting up at all stations in the city and suburbs of notices describing the thieves or giving such information as may be available.

ADJUSTER FOR DROP LIGHTS

Useful Article Is Easily Made From Small Piece of Wood—Illustration Explains Working.

The adjuster is made from a piece of wood three-eighths inch thick, two inches wide and three inches long, says Popular Mechanics. Bore a one-quarter-inch hole one-half inch from each end. Put the flexible lamp cord through the holes as shown in the illustration. The size hole will accom-



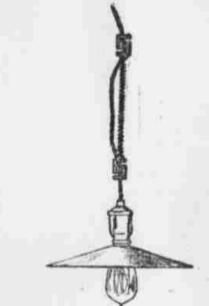
Drop Light Adjuster.

modate the standard gauge of flexible cord, but holes can be bored to fit any size wire. The length can be adjusted by pulling the cord through the holes as shown.

SHOCK ABSORBER IS SIMPLE

Effective Device Made of Spiral Wire Spring, Arranged at Both Ends With Metal.

A simple but effective shock absorber for tungsten lamps is shown in this



Spring Shock Absorber.

drawing, says Popular Mechanics. It is a spiral wire spring, provided at both ends with a metal device that engages with the flexible wire.

HARNESSING FOR WIND POWER

English Scientist Lost Energy Blowing Over London Equal to Half-Million Horsepower.

An English scientist estimates that if the wind blowing over London to a height of 500 feet could be harnessed, it would do work equivalent to that of a steam engine of half a million horsepower, working day and night. Wind turbines can be used for many purposes, are simple to erect, and do not usually require towers more than 50 feet high. In Germany a wind-power electric generating equipment has been brought out. No attention is needed except to reduce the sail area of the wind wheel in storms. A storage battery holds the excess current from the dynamo until needed, and a special regulator automatically keeps at constant pressure the current supplied for house lighting or driving small farm or other machines.

For Purifying Air.

An ozone-producing electric fan now being made in Vienna utilizes Dr. Fraus Fischer's novel discovery that when air is much heated and then suddenly cooled ozone is produced. A combination of small fly wheel and air fan is driven by an electric motor, and sucks in air and sends it through a kind of funnel to a Nernst radiator, giving a heat of 2,000 degrees C. The heated current is cooled by mixing with the air, into which it is then forced. Of the oxygen passed through about four per cent. is ozonized, and this proportion cannot be exceeded, as there is no risk of an excessive production of ozone. A single piece of apparatus, weighing not more than thirty pounds and needing but a small amount of power, is sufficient to purify the air of a large hall.

Tarsus Has Electric Lights.

Tarsus, the ancient city of Asia Minor, where the Apostle Paul was born, is now illuminated by electricity. The power is taken from the Cydnus river. There are now in Tarsus 60 electric street lights and about 60 incandescent lights for private use.

ELECTRICAL NOTES.

The National Electric Light association has attained a membership of nearly 4,000.

Carborundum, the product of the electric furnace, is the hardest substance known.

Germany now leads the world in the number of electric furnaces for smelting, refining and casting.

The government posts and telegraph administration controls all wireless telegraph stations in France.

Weighing less than fifty pounds, an electrically-driven machine has been invented for scrubbing floors.

Ranking next to the sun's rays in stimulating and germicidal effects are the rays from electric lights.

To take up the strain more evenly a Swedish inventor has produced electric cables with hempen cores.

Coal is so scarce in Siam that gas is not used for illumination, and the only city using electricity is Bangkok.

In the canal zone it is the custom to keep electric lights burning inside planes to prevent the wires rusting.

Ten huge searchlights, to cost \$139,000, are to be installed on the fortifications at the entrance to Manila bay.

Wireless telegraphy has driven carrier pigeons from the ships of the French navy after many years of service.

English telephone subscribers do not look for any betterment of the service when the government takes possession next year.

New News of Yesterday

by E. J. Edwards

Little Boy Who Loved Flowers

Charles C. Clarke's Delightful Reminiscences of the Childhood of David B. Hill, Former Governor of New York.

It may be that the last of the original group of men who were associated intimately with Commodore Vanderbilt in the building up of his great railroad system. This was Charles C. Clarke, who as auditor, treasurer and first vice-president of the commodore's railroad, was his employer's financial right-hand man for years. For more than half a century Mr. Clarke was a public character, first as a state employe and a banker, and from 1854 until his retirement, as a railroad man. In that period he came to meet most of the big men of his state, and his recollections of Millard Fillmore and Commodore Vanderbilt were particularly vivid. Yet what he called the most surprising experience in his long business life had nothing to do with either of these great men yesterday.

"When I was assistant deputy treasurer of New York state at the time Millard Fillmore was comptroller," said Mr. Clarke, "I made the acquaintance of a number of men engaged in important business undertakings in western New York. One of these men was establishing a bank in the town of Havana; he asked me to take executive charge of it and I accepted his offer. That was in the year 1852.

Soon after I went to Havana it became necessary to make some important changes in the bank building and offices, and to do this work I employed a local carpenter, a very worthy man, who did honest work. One day he brought with him to the job a bright-eyed little fellow, who was, I should say, about nine years old. The youngster attracted my attention and I asked him if he went to school. He said he did, and then I asked him what he wanted to do when he became a man. He replied that he wanted to own a newspaper.

"The next day the little fellow again accompanied his father to work. He bore a bunch of violets in his hand which he diffidently held out to me, while smiling quaintly. 'You want to put them in a pitcher with some water,' he cautioned. 'A day or two later the little fellow came again to the bank, this time bringing with him a bunch of daffodils. I took him between my knees, and after thanking him for his gift

asked him if he was fond of flowers. 'Yes,' he answered, 'but I like the flowers that grow in the woods best and I know most of them.'

"As the season passed from spring to summer the boy marked the progress of the year by bringing to my office the seasonable flowers; and one day, when hot weather was on in dead earnest, he came bearing very proudly a bunch of pond lilies which he said he had gathered especially for me.

"Thus I was showered with the blooms of the seasons until the carpenter moved away from Havana—at least, I lost sight of him and the boy. Two years later I entered railroad life and myself moved away from Havana.

"More than 30 years passed. Then one day I found myself in Albany for a call upon the governor of the state in connection with some important business for my railroad company. As I entered the executive offices a gentleman, with every evidence of real pleasure showing in his face, came up to me and extended his hand. 'Why, how do you do, Mr. Clarke?' he exclaimed, heartily. 'I am very glad to

He Made Up With Jackson

Thomas H. Benton Could Not Afford to Remain Estranged From General After Latter's Praise of Henry Clay.

One very warm evening in July, 1851, several members of President Garfield's cabinet went from the White House to the lawn and stood a while in such a position that they were able to catch the cooling breeze that came from the Potomac. There were two or three friends with them, and all were in a happier frame of mind than they had been for some time, for the physicians had reported but a short while before that the president was in a more comfortable condition than at any time since he had been shot.

As they stood thus, enjoying the cool breeze, Mr. Blaine, the secretary of state, who wore a very thin and somewhat frayed alpaca coat and a stray lock which had certainly seen service for several summers, turned to his companions.

"This afternoon, as I stood before the fireplace in the president's room, there came to my mind for the first

time in years an anecdote—or, rather, two anecdotes—of Andrew Jackson that I heard on good authority when I first came to Washington," he began.

"But before I tell them to you as they were told to me I shall remind you of the fact that an intense animosity characterized the relations that existed between Jackson and Henry Clay. It was one of the rare cases in which Clay permitted himself to have a personal animosity, though frequently, as we all know, he would be a man's political enemy to the full limit of his powers.

"Well, one day, a friend, calling upon President Jackson, remarked in the course of the conversation: 'Henry Clay is not only a moral coward; he is a physical coward, as well.'

"Thereupon Jackson got up, knocked the ashes out of his cornucopia pipe into the presidential fireplace, straightened up to his full height, and reported:

"By God, you wrong him! The d—d scoundrel is as brave as a lion. I know his weakness and his strength."

"Now, for many years Thomas H. Benton, for thirty successive years senator from Missouri, beginning in 1820, and Andrew Jackson had been bitter enemies, although they were of the same party. They had not spoken since 1812, I believe, when Benton was thrown downstairs at the time when his brother put a bullet through Jackson's shoulder down in North Carolina. At any rate, Benton had not visited the white house since Jackson had been his chief occupant. But it so happened that a day or two after President Jackson had paid his characteristic tribute to Clay's bravery, the man to whom Jackson had delivered the tribute met Benton and told him of the incident. Benton, clearly astonished for an instant, eagerly asked if his informant was sure that Jackson had made the remark as quoted, and the reply was that there was no doubt about it.

"Then I will call upon him myself," said Benton, with grim determination.

"Sure enough, a day or two later the senior senator from Missouri presented himself at the white house and his name was taken into his old enemy. In a moment he was admitted to the president's private office. Jackson was standing before the fireplace. He looked searchingly at Benton, who remained standing upon the threshold. At last Jackson spoke. 'Is it to be war or peace?' he asked.

"For answer, Benton, with both hands outstretched, went across the room, the next moment the difference of years were healed, and the friendship thus unexpectedly and suddenly re-established remained unbroken until Jackson's death.

"But to my mind," concluded Mr. Blaine, "the best part of the reconciliation of those two great characters lay in the reply that Benton gave to his friends when they asked him how he came to put aside his enmity toward Andrew Jackson. 'I could not afford to remain estranged from a man who was brave enough to pay such a tribute to an enemy as Andrew Jackson did to Henry Clay when he declared he was as brave as a lion,' said Senator Benton."

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Prophecy That Was Fulfilled

General Garfield's Veiled Prediction of His Own Nomination for Presidency Just Before Starting to the Convention.

The late John H. Starin, who might have been governor of New York had he been willing to accept a nomination in the late 30s, and who was for some years a member of congress from one of the New York districts, was esteemed by business men as one of the ablest of American men of affairs. He accumulated a very large fortune, was prominent in civic affairs, and to him the city of New York owes a debt of gratitude for his services in aiding to establish the subway rapid transit system.

"During a part of the time that I was in congress," said Mr. Starin to me several years before his death, which occurred in 1909, "my seat in the house of representatives adjoined that of James A. Garfield. We became very warm friends, and I conceived so great an admiration of his ability that a year or two before the presidential conventions of 1880 I had come to hold the opinion that General Garfield was in many respects the most available candidate for the west for the Republicans to nominate for the presidency. Of course, later on, as the delegate from my own state to the Republican convention, I was bound to support the nomination of General Grant. But I had a lurking feeling that if we could not nominate Grant, Garfield would be our man.

"It so happened that both General Garfield and I planned independently to go from Washington to Chicago to attend the convention by the same train. Garfield was chairman of the Ohio delegation, which had been instructed to support the nomination of John Sherman. We were greatly pleased when we discovered that we were to take the same train.

"We both were in the house of rep-

resentatives the morning of the day we were to leave for Chicago, and late in the afternoon Garfield turned to me, and said: 'Starin, it is time for us to start. My gripack is in the cloak room, and I suppose yours is also. Let's go together from the capitol to the railway station, and we'll keep company all the way to Chicago.'

"As I was taking my hat and my gripack from the attendant in the cloak room, I heard some one say to Garfield—I do not now remember who it was, except that it was a Democrat: 'Garfield, whom are you going to nominate for president at the convention? You don't expect to nominate Sherman, do you? And we Democrats figure that Blaine and Grant will neutralize each other's votes.'

"In reply Garfield said: 'I am to nominate Sherman in behalf of the state of Ohio. Of course we all hope that he will be nominated by the convention.'

"But whom are you going to nominate, Garfield?" persisted the Democrat.

"I remember perfectly how Garfield looked when that question was repeated to him. He turned half around, there was a cordial smile upon his face—one that was characteristic of him—and then he said: 'I don't know. It's very likely to be some one not now named. It is just as likely to be myself as anybody else.'

"I was mightily impressed by that reply. It confirmed my own impression that Garfield might be our candidate; I had already said to one or two friends: 'We can't nominate Grant, Blaine cannot be nominated, and in my opinion Garfield will be the man.' And I am satisfied that at the time Garfield left Washington for Chicago in my company he had reasoned the situation out exactly as I had done."

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Hedgehogs Are Good Pets

Cliff Climber's Narrow Escape. The peril of cliff climbing were instanced the other day by the remarkable escape of a young man named Frank Egan who, while scaling the steep cliffs just beyond the Bailey Lighthouse on the Irish coast, got to a perpendicular part, and being unable to get another hold could neither get up nor down, and was practically suspended by his fingers some seventy feet above the sea. Egan's companion, seeing his position, at the risk of his own neck scrambled down the face of the cliff, and gave the alarm. Coastguards promptly arrived on the scene, and one was lowered by a rope to the edge of the cliff, but owing to its overhanging nature he was unable to get a glimpse of the man. The roaring of the waves made it impossible to get an answer to repeated shouts. One man managed to get on to a projecting bank, and was just in time to see Egan sliding and slipping down the side of the rocks. Beyond a few scratches and exhaustion, and a severe shock, Egan escaped injury.

English Woman Says One Carried in the Purse Pocket Is Sure Safeguard Against Thieves.

Few wild creatures make more interesting and useful pets than the hedgehog, says the Lady's Pictorial. In country houses one or two are often kept in the wine cellars. This is owing to the hedgehog's fondness for black beetles and other insects which they hunt and eat in large quantities.

Many people, especially women, make pets of the creature, keeping it in smart hutchies and during the day allowing it to roam about the sitting rooms and carrying its young ones about with it in its pockets. One Englishwoman says that there is no better safeguard against the pickpocket than to carry a baby hedgehog in the pocket in which you also carry your purse.

She adds, however, that care must be taken not to forget that the little

creature is in the pocket and suddenly thrust your hand into it.

The hedgehog must be fed on bread and milk, grass, worms and all the insects that can be caught. Both the young and the old, and especially the former, are most interesting and amusing. Indeed, there is no prettier sight than a family of baby hedgehogs at play.

They can be taught to come and feed out of the hand and to drink milk from a spoon. They can also be taught to perform simple tricks. Another charm of the hedgehog as a pet is that if kept out of doors in a cold cellar it will hibernate during very cold weather when ladies and children might find it inconvenient.

The Successful Man. The man who would succeed in the man who was never discouraged by failures. He turns his failures to good account by studying and analyzing them.

NOTES FROM MEADOWBROOK FARM

By William Pitt



The sows that are usually most prolific and that are also usually the best mothers are those that have long, deep bodies on each side; that are quiet and kindly disposed, but that are possessed of enough nervous energy to induce them to take plenty of exercise by rustling around when they are given the run of a pasture.

Especially when soft feed is fed, a broad, smooth board will be found very convenient in feeding chickens either young or old. It is so readily cleaned that all things considered it will be found much more convenient than feeding on the dirty ground, which is inviting disease to your flock.

It is just as sensible to expect to make a crop of potatoes without any attention, as it is to expect the hen to lay eggs in the winter while they are being cared for on the "let-alone" system.

There are instances on record where sheep have produced profitable fleeces of wool and one or two lambs each season for from four to ten years, and as a general rule when a ewe gets to be five years of age she is very likely to prove unprofitable.

Anyone who has had any experience with nursing brood sows knows that while nursing their young pig, they naturally lose in weight and condition even with the best care and feeding bestowed them.

It is generally appreciated among flock owners that in order to obtain the most profit from sheep husbandry a maximum quality and quantity of both wool and mutton.

Pumpkins make a splendid feed, and how cheap they are! Nothing will fatten shoats quicker, in connection with a bit of soft corn, and nothing will so thoroughly and efficaciously rid them of worms.

Dairymen who have town or city milk routes, and market gardeners who retail their produce, have exceptional opportunities for marketing fresh eggs and poultry at the highest prices.

A careful record of what the chickens are doing should be kept. This is the only way to determine the profits from the poultry; in fact it is the only way to carry on any line of farming.

The man who has a uniform bunch of lambs to go to market with in the fall is assured of a better price than if his crop possessed a wide variation.

Brood sows expected to produce two litters of pigs a year must not only be fed liberally while they are nursing the pigs, but must also be well fed while they are pregnant.

A Nebraska farm paper says: "The \$75 milk cow is with us." Please tell us about it. In Iowa the \$75 cow is a rare bargain especially if she is of dairy breeding.

In dairying there is usually a large quantity of skim milk or butter milk which may be utilized to furnish a considerable part of the poultry ration.

The farmer with a new buggy used to be the envied man of the neighborhood, but now the one with the automobile isn't so important.

Turkeys hatched and raised by artificial means at the Washington station weighed 13 to 19 pounds each at five and a half months.

Scrape up the road dust and apply about the roots of your plants during the hot, drouthy weather and keep the moisture in the soil.

Before bed weather comes gather a barrel of road dust and store in a dry place to make the fowls' dust baths this winter.

Giving milk is the natural function of the dairy cow, but this function can be stimulated only by proper feed and care.

It is unwise to spend money for better chickens and then give them such poor care that they cannot do well.

An alfalfa patch gives hens and chickens plenty of eating. If you cannot grow alfalfa give alfalfa meal.

Don't plant too many early varieties of apples unless near a good market where they may be sold at once.

At the best, haying is hard work, and no matter how much improved labor-saving machinery we employ it requires muscle and good judgment. The barn should be equipped with a good horse fork, there should be a good mowing machine, rake, tedder, wagons and hand forks and where there is a large haying there should be a self-loader.

Ordinary farming, as formerly and even now generally carried on, and scientific market gardening are so unlike that experience in the former would help but a little in a general way, but would by no means fit one for a successful market gardener without a long special training in that specific kind of farming.

When a horse's neck or back becomes sore, do not be content with rubbing on a salve, but look for the cause of the trouble in a wrongly adjusted harness. Remove the cause and this will help greatly to prevent the result.

Alfalfa is making good in the east, and farmers are realizing that it is comparatively easy to get a stand, by the use of lime and plenty of stable manure. This is ideal pasture for swine and no harm will be done the crop if pastured lightly.

To read about the care of fowls in detail makes it seem quite a lot of work, but when once you get started and give your poultry the same care you do other stock there is nothing on the farm that will pay as well for the money invested.

Ducks are nervous creatures and will often lose much flesh on account of their nervousness at night. If one becomes frightened he soon starts the entire pen into a stampede. Avoid this by keeping a lantern burning at night.

If you have running water in the house, and the garden is near, in drouthy seasons you can save yourself much lugging of water by simply connecting a few lead pipes in the garden with the house main.

A sow's condition should not be fat like that of hog fed for the butcher's market when she is due to farrow, but she should be sleek, well rounded out and in a condition of perfect thrift and health.

Of the various shed making materials which those who live inland can easily procure one of the best is old mortar or plaster, but any of these things should not, on any account, be mixed with the food.

One of the most difficult and trying problems which the poultry keeper has to meet is that of keeping his poultry houses and stock reasonably free from lice, mites, and other external parasites.

It is a significant fact that the finest hogs brought to the stock yards are consigned by the dairymen. This means something when hogs are worth over eight dollar per hundred weight.

There is a general unanimity of opinion amongst experienced poultrymen that poultry do best upon some form of green or succulent food during the winter months.

In keeping a poultry plant free from lice there are two points of attack: One, the birds themselves; the other, the houses, nest boxes, roosting boards, etc.

Brood sows will nose through three inches of snow to get the green bits, and will range about on their feet for hours, which is in fact the main object.

The drop apple from an average orchard will maintain quite a bunch of shoats, and will put them in market condition at a minimum expense if the orchard is sown with rape.

In preserving eggs in water glass or any other favorite method remember that every egg so used must be strictly fresh. One spoiled egg will contaminate a whole batch.

The introduction of strange birds into a flock often serves to bring fresh starts of all kinds of vermin to a perfectly clean flock.

The pigs soon learn to find a trough and will be found waiting there for their feeds when feeding time comes around.

Frequent change to fresh pasture is one of the best ways to stimulate the growth of both the grass and the pigs.

Turkeys will do very well without any other feed than that which they pick up on the range, but they will do better if regularly fed.

The feeding of young ducks has been reduced to a science by these engaged extensively in the business.

Wheat screenings, having more protein, are superior to the plump grals for laying hens, and when they are good and clean are very much cheaper than good wheat.

A great many make the mistake of not taking care of the sow and boar during the breeding season. They should be well fed and sheltered.

The mudhole is not a necessary adjunct to the best hog pasture. The sanitary yellow that disinfects the luge is the logical thing.

The man who can raise hogs profitably without pasture can increase his profits many fold by using pasture.

The rules for feeding incubator-hatched chicks are the same as those for feeding hen-hatched chicks.

Rather than have the poultry house overcrowded you had better eat some of the less desirable broods.

Feed given to the growing colt brings greater returns than if fed to any other stock on the farm.