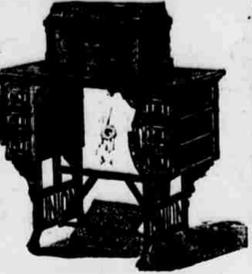


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IN THE ELECTRICAL FIELD.

A Novel Alarm Apparatus Now Attracting Attention.

AN ELECTRICAL STRATAGEM.

A Pilot Engine—Railway Enterprise—Reduction in Telegraph Rates all Over the Country—A Talk on Tramways.

Novel Alarm Apparatus.

Electrical World: Among the novelties lately designed is an electric door spring. A brass tube fits into one end and projects from the barrel three-eighths of an inch. The tube is made with closed ends, the sides being longitudinally slotted, forming springs which bear elastically against the inner sides of the barrel. A brass screw with beveled head on its side rests nominally against a correspondingly tapered bottom in the tube. The screw passes through a threaded opening in an insulated plug of hard rubber, which is screwed into the opposite end of the barrel. A spiral spring of phosphor bronze surrounds but does not touch the screw, but fits the barrel, abutting at one end against the insulating plug and at the other against a washer of vulcanized fibre. One of the battery wires is secured beneath the flange, connected to the barrel, the other wire is fastened between the two nuts on the screw, making an electric contact with it. When the door is closed it pushes the tube into the barrel, which moves the bottom of the tube away from the head of the screw, thus breaking the electric circuit. When a door is opened the spiral spring pushes the tube outward until its end meets the head of the screw, thereby closing the connection. The tube in its movement rubs against the barrel and thus always maintains a good contact with the latter.

The construction of the electric floor push is substantially the same as the push just described, except that the sliding tube is reversed so that contact is made with the screw head when the tube is pushed in or down, and the circuit is broken when the tube is pushed up. A washer of vulcanized fibre is located between the end of the plug and end of the tube, so as to prevent the admission of dust when the plug is removed.

The door push is placed in connection with a burglar alarm, but in order to obtain a continuous ringing when the door is opened and closed, the automatic drop is employed. This is constructed so that the magnets within the case cause the ball, normally held in a vertical position, to fall. This cuts out the magnets and allows the current to flow directly over the line into the bell, which continues to ring until the ball is raised again.

An Electrical Stratagem.

According to the Electrical Review, when the electric telegraph was first introduced into Chili, a stratagem was resorted to in order to guard the posts and wires against damage on the part of the Araucanian Indians and maintain the connection between the strongholds on the frontier. There were at the time between forty and fifty captive Indians in the Chilean camp. General Pinto called them together, and, pointing to the telegraph wires, he said: "Do you see these wires?" "Yes, general." "Very good. I want you to remember not to go near nor touch them; for if you do your hands will be held, and you will be unable to get away." The Indians smiled incredulously. Then the general made them each in succession take hold of the wires at both ends of an electric battery in full operation. After which he exclaimed: "I command

you to let go the wire!" "I can't, my hands are benumbed," said the Indian. The battery was then stopped, and the man released. Not long afterwards the general restored them to liberty, giving them strict injunctions to keep the secret, and not to betray it to their countrymen on any account. This had the desired effect, for, as might be expected, the experiment was related in the "strictest confidence" to every man of the tribe, and the telegraph has ever since remained unmolested.

An Electrical Pilot-Engine.

Electrician: An Austrian Heutenannt named Giesle, of Brunn, is said to have developed an idea which is, perhaps, more strikingly original than practically useful. He proposes that every railway train should be preceded by an aviator in the shape of an electrical pilot-engine—attached, we presume, by wires to the advancing train. We do not doubt that this can be done, but we shall be astonished if railway engineers will be at all thankful for the suggestion.

Electric Railway Enterprises.

Electric World: So well pleased is Scranton with its electric road that another is being added, while all through Pennsylvania the success and economy of the road have set on foot dozens of electric railway enterprises, many of which will soon be carried out. Down south a number of electric railway plans are maturing, and out west there are indications of great activity in the same line of work. California is a particularly inviting field, and promises soon to have more electric roads than any other state. Coming nearer home we find Brooklyn with an electric road, six miles long, just gone into operation, and with plans under agitation going on for half a dozen more. Altogether the outlook in this department is very bright.

Electricity as an Amulet.

The electricity fanatic is abroad and dropped in at the office of the Boston Traveler to remark that "a good way for a person to secure a trip is to dip a fine linen handkerchief in which hazel" (the hazel, by the way, of the true divining rod) "and bind it tightly over the eyes with a white silk handkerchief. The silk is an electric—insulating quality, and thus prevents the electricity from passing to the eyes." What amulets are to Arabs, that is electricity to many Americans.

New Solder for Telegraph Wires.

Mining Journal: A new and rapid method of soldering these wires has recently been introduced and is now to be generally adopted in Russia. Its principal advantage consists in the saving of time required for the work, and in the avoidance of any "scraping," which would to some extent reduce the strength of the wire. The two ends of the wire—already embraced by the binding wire—are slipped into a vessel holding a considerable quantity of melted solder, on the top of which there is sufficient powdered sal ammoniac to leave a thick layer of liquid salt. The ends of the wire pressed into this vessel are quickly joined, however dirty they may be.

Reduction in Rates.

The Western Union Telegraph company has announced the following reductions in telegraph rates, taking effect December 1. First: The maximum rate east of and including Montana, Utah, New Mexico and Texas reduced from \$1 to 75 cents. Second: Within the section east of the Mississippi river and north of Tennessee and North Carolina the maximum rate reduced from 75 cents to 50 cents. Third: Within the section south and including Virginia and Tennessee and east of the Mississippi river the maximum rate reduced from 60 cents to 50 cents.

A New Carbon Telephone Button.

Electrical World: We have had our attention called to a new microphone button. It is said to be the result of a considerable number of experiments

aiming to produce an article superior to that ordinarily used in transmitters. The essential qualities of the carbon are its extreme hardness, which is sufficient to scratch glass, its homogeneity, its smoothness of surface, and its imperviousness to atmospheric influences.

The carbon button is fastened to its support by electroplating, as it need never be removed since the surface is so hard that the platinum has no effect upon it. It is claimed that this form of button is far superior to the one ordinarily in use, especially for long telephone lines.

A Talk on Tramways.

Electrical World: At the meeting of the New York Electrical society, held on November 30, Mr. Holroyd Smith, of London, gave a "Talk on Tramways," in which he treated the subject of street railroads, first in a general way and then with special reference to the electrical method. In beginning his address Mr. Smith said that too much attention cannot be given to the fact that electricity occupies the second place to the engineer, and that the past failures in electrical railroading have been due to the fact that electricians, pure and simple, have gone into the domain of engineering without sufficient knowledge to guide them. In other words, the electrician must not expect to succeed in working tramways unless he studies the engineering problems as well. Mr. Smith, in taking up the subject generally, drew attention to the fact that American railroads or tramways, were the necessary outcome of the generally bad ordinary roads, whereas in England the roads are uniformly good. In discussing the question from the electrical standpoint, Mr. Smith drew attention to three essential points that have to be considered: 1. Safety to the public. 2. Efficiency. 3. Economy.

Taking up the storage battery first, Mr. Smith held the position that even if the battery could be successfully worked, it would cost one-third more to equip and run a line on this system than to put down a conduit, and especially would this be the case where traffic is very heavy. Mr. Smith was of the opinion that of the various systems the overhead system was the best, taking all into consideration; but the great danger in its use lay in the tendency to slipshod work. The difficulties met with at crossings and switches in railway work where conductors of opposite poles meet in a horizontal plane are overcome by placing the conductors in a vertical plane, so that even if contact does occur it can only happen between two positive or two negative conductors. Mr. Smith finally described a new method of his own which was designed to overcome all the objections to both the overhead and underground circuits, and which, without the use of the storage battery, is arranged to supply the motor on the car with electricity. This system, which was only hinted at by the speaker, will no doubt attract some attention in the future.

Electric Brevities.

The great opera house in Vienna had to be closed recently because of a breakdown in the electric light apparatus, caused by the cracking of the plates in the boilers, which were of Austrian manufacture. A complex new plant of boilers, amounting to 750 horse power, has been ordered of the Glasgow house of the Babcock and Wilcox company, and it is expected that they will be ready for service in two weeks from the date of the order, which, if accomplished will be remarkably quick work.

A neat idea in the application of electricity to warfare is found in the use of incandescent lamps of about one hundred candle power placed on poles submerged to a depth of about twenty feet in the sea, and carried by launches. These lights illuminate the sea within a radius of 150 feet, and thus help to

detect submarine mines, torpedo lines, etc.

The official documents of the proposed international exhibition at Brussels, to be given under the special patronage of King Leopold of Belgium in 1888 have just been issued. The exhibition is of a general nature, but special attention is to be paid to electricity. An appeal is addressed to electricians to participate, and an elaborate classification is made of electrical apparatus to be included. A Swiss watchmaker has invented an electric illuminator for watch dials. A small electric lamp is fitted in the watch case, where it will light up the dial when, by touching the case with the charm, connection is made through the chain with a small battery carried in the waistcoat pocket.

While a dancing party was in progress in Port Huron, Mich., the janitor of the hall mounted a step-ladder with a poker in his hand and attempted to adjust an electric light. The poker came in contact with an exposed section of wire and the shock threw him to the floor, injuring him severely.

At St. John's colliery, Normanton, England, a set of pumps is now being worked by an electric motor of the Imhoff type which receives its current from a dynamo on the surface. The pumps deliver thirty-nine gallons per minute to a heat of 530 feet, that is, they exert a net power of 6.3 horses.

The largest electric light in the world is in the lighthouse at Sydney, Australia. It has the power of 180,000 candles, and can be seen at sea fifty miles distant. America's largest light, 24,000 candle power, is at San Jose, Cal.

Many of the electric light accidents being put down in the streets of New York were the invention of David Brooks, now electrician of the Pennsylvania railroad, who sold the patent to the Western Union Telegraph company for \$60,000.

The efforts of the telephone company of Austria to get the Bell patent cancelled have at last been successful. The electric road at San Jose, to be operated under the Fisher system, will soon be completed and in running order.

Mr. M. M. Shelley has recently brought out in New York city an invention which is worked either by electricity or by hand, and which, in case of a fire, rings a bell in car stables, opens the doors, unhitches the horses, and, by severing distinguished officers of the London Stock exchange grants Mr. Gould leave to withdraw his application to have Western Union listed.

Bruce's Balloon Signals in Belgium.

London Electrician: On the 23rd ult. some trials of Mr. E. Bruce's system of transmitting military signals at night took place at Antwerp, before General Pontus, the Belgian war minister, and several distinguished officers of the Belgian army. This arrangement (which has been adopted in the English army) consists merely of putting some incandescent lamps inside a small balloon which is allowed to float at a moderate height, and then flashing signals by means of a Morse key with carbon contacts. The system is so simple and practically certain in its operation that it scarcely needs any preliminary trial, and we need hardly say that the scheme at Antwerp gave perfect satisfaction to all concerned. The signals were easily read at a distance of 3,000 meters, but observers were also stationed on the cathedral tower at Mechlin, and on the church at Wilrysch, distant about twenty miles. Their reports had not been published, but owing to the fact that the balloon only attained a height of 100 meters, it was not thought probable that the signals could have been seen so far. There is little doubt that the arrangement will become common in the European armies.

WHERE IS WOMAN'S SPHERE?

Is It in the Home, or Before the Public.

ELLA WHEELER WILCOX'S ANSWER

Women Who Long for the Praises of the World—Stingy Husbands Often the Cause of Women Seeking Public Life.

(Written for the Bee—Copyrighted.)

According to my creed a woman's place is wherever circumstances beyond her control have situated her.

If she feels a constant and never-ceasing rebellion against her environments, and craves a change of conditions, the change will come. We may whine and complain at Fate all our lives, without ever accomplishing anything. But the soul that looks steadily in the face of its desire, makes no complaint, recognizes no ill-fortune, but demands from life the thing it craves, and believes it will be given—that soul will obtain its wish so sure as the sun shines.

There are no circumstances which can overthrow or circumvent the passionate resolve of a noble, earnest soul. I believe we are denied the things we crave, in order to test the strength of our desire. There are no accidents of birth or fortune. A mighty Intelligence directs it all, and grants to each soul its wish, if that soul never swerves from the intensity of desire.

The reason so few of us obtain what we want is because so few of us are persistent and patient.

If any woman is placed in a situation where she is deprived of the comforts and the appreciation so necessary to our happiness, and she longs ardently for a better condition, the way will be opened for her, and it will be right and wise for her to walk therein.

I cannot understand how a woman who has been accorded that greatest of all gifts from heaven, a happy home, can desire any career which interferes with it. The result of my observation does not lead me to believe that women who are sheltered with love and protection and appreciation, do long for the praises of the world.

A great deal is said and written of the young girl or worshipped wife who neglects kind parents or a devoted husband to pursue a career. If you will take pains to investigate the unwritten history of such cases, you will find in almost every instance a skeleton whose rattling bones drove that daughter or wife from her home into public life.

Men are given to making sarcastic remarks concerning the great horde of women lecturers, actors, readers, and performers of all kinds before the public. Our daily papers teem with paragraphs of ridicule or advice to women to stay at home and attend to their families.

If every man who takes upon himself the voluntary obligations of matrimony performed his whole duty as husband and father, there would be fewer women before the public to-day. The girl or wife who has to tease, beg, or pout in order to obtain a few dollars for her own use, naturally lies awake nights planning some method of earning money.

I knew the daughter of a man whose riches were counted among the hundreds of thousands, and yet she was obliged to resort to petty ruses and humiliating scenes to get a dollar of pin money. She was allowed to run large bills, which her father scanned and anatomized item by item each month, but he did not consider the female members of his household competent to carry a purse. When the daughter ran away, and went on the

stage as a third-class actress, the world was shocked that she should leave her elegant home and devoted parents for the glare of the footlights.

I overheard a well-dressed and fine-looking man recently, in a railroad car, scolding his wife for an extravagant purchase. She showed him the sample of a new dress she had purchased, and asked with a timid look if he thought it was pretty.

"How much did you pay for it?" he asked, and her answer, given with a deprecating glance, brought forth such a growl and sneer that the poor wife's pleasure in her purchase must have been instantly ruined. I am quite sure I should have put the dress up at auction, and present Sir Growler with the proceeds of the sale, and then I would have joined a circus or a minstrel troop, if I could find no better method of earning a dress for myself.

Two women who are working outside of homes for a livelihood, told me recently with tears in their eyes, that they would consider themselves the most blessed of mortals to be shut within the walls of some humble cottage, where only faint echoes from the world could reach them. Both women were driven from their homes by the skeleton of poverty. As yet I have heard of one of these women commented on severely as "a bold seeker after notoriety." She is simply doing what she is compelled to do to keep the wolf from the door.

There is occasionally born into the world a woman whose whole nature rushes like the tide of a mighty ocean toward the shore of some special career. Rosa Bonheur was one of these, the first Mrs. Siddons was another. Anna Dickinson was another. In each of these women the force of her peculiar genius was so great that no perfection of home life, no opulence of wealth could keep her from fulfilling her destiny. They did not choose a career, a career choice was added to the list, yet such richly and remarkably endowed women are the exception.

The rule is, that the women who pursue the hard path of a public career, which deprives them of a quiet domestic life, are women who have been driven into it by stern necessity. To be born of a happy home, loved and appreciated by a kind husband and little children, to live only for their approval and respect, surely this is the grandest and truest sphere possible for woman. It is the only genuine happiness which earth affords, all else is mere imitation. In no reform can woman do a work so beneficial to mankind as increasing the number of happy homes in the land.

But this work is not given every woman to do. Good husbands, who will love, respect, appreciate, and support their wives and daughters, do not stand on every threshold ready to lead all women into this earthly Paradise. And therefore it is every woman's duty to be prepared to meet the world single-handed.

If we are blessed with a daughter, I should teach her some method of self-support as religiously as I should teach her to love God. But my daily prayer would be that she might never go forth from the shelter of the parental roof, save as the queen of a good husband's home.

ELLA WHEELER WILCOX.

JEFFERSON DAVIS.

Singular Story of His Arrest On Suspicion of Treason—Scaling.

Anniston, (Ala.) Correspondence of the Globe-Democrat: Jefferson Davis has had a good many narrow escapes, but one of them has never been told in print, and the chief actor in the affair has never cared to talk about it.

Some time ago in the 50s the Nobles, an English family residing in Pennsylvania, decided to move southward. They selected Rome, Ga., as their objective point, and started on their journey, after making the neces-

sary disposition of their goods and chattels.

The Nobles had some family jewels and about \$4,000 in cash. How to carry these valuables safely bothered them not a little, but they packed the money and jewels in an old-fashioned English hand-chest and took them along. The travelers landed at Charleston, and took the next train for their destination. Some extra fare was demanded, and in paying it they had to open their chest and expose their treasure. Sharp eyes were on the watch, and the glitter of the contents of the chest attracted attention.

As a matter of precaution, the chest was dressed up to Miss Mary Noble, who sat in a secluded section of the car with her back to the door. At Branchville, S. C., two gentlemen boarded the train. One was a young, wiry-looking man, and the other was tall and slender, past the meridian of life, and of distinguished appearance.

When Augusta was reached the two strangers went on to Atlanta and the Nobles discovered that their precious chest was missing. The conductor was clamorously appealed to, and he instantly gave it as his opinion that "the one-eyed man had stolen it."

"He is a bad-looking fellow," said the conductor.

The chest had evidently been snatched out of the rear window of the car, as the suspected man took his departure at a moment when Miss Noble's attention was fixed in some other direction.

After a consultation it was decided that Miss Noble and Miss Mary should proceed to Atlanta and cause the arrest of the supposed thief while Mr. Noble and the others remained in Augusta, awaiting not very confidently the result.

Mrs. Noble succeeded in tracing the two men to their stopping place in Atlanta and identified them as soon as she saw them. At her request they were arrested and carried to headquarters, where the astonishing discovery was made that the "one-eyed man" was President Pierce's secretary of war, Jefferson Davis, and his private secretary.

Mr. Davis was in a good humor, and of course the two gentlemen were at once released with many apologies.

But before leaving Mr. Davis told Mrs. Noble and her daughter that he regretted their loss, and he tendered them a \$200 bill as an evidence of his sympathy. Mrs. Noble declined to accept the gift, but Miss Mary spoke up and said:

"Yes, take it. That is some of our money that the old rascal took!"

Mr. Davis smiled and pressed the money upon Mrs. Noble, who finally took it, and carried to her husband in Augusta.

Suspicion was then directed to the conductor, but his sudden death in the course of a few days stopped further investigation.

After the election of Mr. Davis to the presidency of the Southern Confederacy Mr. Noble, then the prosperous contractor, visited him at Montgomery, and talked with him about manufacturing cannon. Mr. Davis asked him several questions, and then referred to the loss of the chest. He then introduced Mr. Noble to Mrs. Davis, and told the story of the arrest. Mrs. Davis laughed heartily over the incident, and, with her husband, took quite an interest in the Nobles from that time.

Noble went to work and made hundreds of cannon for the confederacy. Later, he founded and built up the flourishing city of Anniston, in Alabama. In the midst of his prosperity he is still devoted to the "one-eyed man" who was once supposed to be the author of his greatest misfortune.

A London cable says that England is promised cheap and quick telegraphing with the continent by the present and newly proposed submarine cables expires shortly, and the British postoffice has resolved to refuse all future concessions. The government will either buy out existing lines or lay new ones.

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