

Head of Scottish Rite Masonry in Nebraska

Recent Progress in the Field of Electricity

Seeking Water Power. The city of Keokuk, Ia. has an ambitious scheme on hand. It is proposed to create an electric power plant second only to Niagara by harnessing the rapids of the Mississippi and set its forces to turn shafting in Keokuk and adjacent towns and develop 60,000 horse power in electrical current.

The proposition goes to congress for approval before work can begin, as the plan calls for a dam across the river. The dam is to be twenty-two feet high and approximately a mile long. It is to be built at the foot of the Des Moines rapids, opposite the center of the city of Keokuk and the city of Hamilton, Ill.

These rapids have a fall of twenty-four feet in twelve miles, and formerly were an impassable obstruction. For years a portage of twelve miles was made by mule-drawn lighters, and twenty years ago the government spent \$3,000,000 for a canal with three locks through which steamboats now pass. This canal runs along the Iowa shore.

The head of water behind the dam will overflow territory above and the basin will cover twenty-five square miles; but here the river runs through a gorge and the bluffs are close to the banks. The cost of the masonry damages from overflows will be little in ratio to the cost of construction of the dam itself.

Within the radius of economical power transmission of forty miles are a score of cities, seven in Iowa, three in Missouri and ten in Illinois; and in these cities, the largest being Hannibal, Mo., fifty-five miles away.

Outside the forty-mile radius but within the radius of probable power transmission in a few years are several cities, the largest being Hannibal, Mo., fifty-five miles away.

Chemical Electricity Power. Apart from the street railway and lighting companies in Buffalo, three groups of customers are being served with power from Niagara Falls. One, numbering thirty-six, includes manufacturers who formerly used steam, but deliberately abandoned their old power plants in order to secure the advantages of electricity. A second class includes thirteen companies or firms which were organized to start entirely new enterprises. Finally, there were twenty-four consumers who moved from other places to Buffalo in order to improve the opportunity which was offered to them there. Altogether, they now use upward of 15,000 horsepower annually, and what is the most significant fact of all is that none of them have gone back again to steam.

Economy is the chief though not the sole consideration in preferring electricity to steam power. The charge for current is a combination of a "flat" rate and a "meter" rate. A patron whose consumption fluctuates a great deal pays more than one who uses about the same quantity, but whose demand is uniform. A man who occasionally requires 100 horsepower, but does not average over 50, would be obliged to pay \$30 a year per horsepower. Another, whose maximum requirements never rise above 50 horsepower, but who really uses as much as the first one in a month, would get off with \$27 a year. There are a few places where steam power costs less than \$35 or \$40 a year, and many manufacturers pay nearly double that amount for it. Twenty-seven dollars is certainly a bargain.—New York Tribune.

Mysteries of Electricity. A generator is a producer of electricity and a motor is a consumer of the same and it is perhaps one of the most freakish traits about the most freakish physical

agent—electricity—that the generator and motor may be duplicate machines, identical in every detail of construction, and can be used for either purpose.

An electric car can be stopped at any point on the road, raised clear of the track, and its wheels turned rapidly by any available method. Its motors then become generators and will throw a powerful electric current back into the conducting wires instead of absorbing it.

Although the technicalities surrounding electrical industries are appalling to the average man, the principle of producing the current and adapting its energy to the various requirements of driving machinery and cars and of creating light is simple. Take a small rod of soft iron, wind around it a number of turns of fine insulated copper wire and connect the end of the wire to the two plates of an electric battery, and you have a primitive electric plant. The little rod of iron becomes an electromagnet and attracts steel or iron as a common horseshoe magnet does. If a second rod is prepared in the same way and placed opposite the first, the mutual attraction will be strong, but if the wires connecting to the battery be changed about the direction of the current is changed and the magnets repel instead of attracting each other.

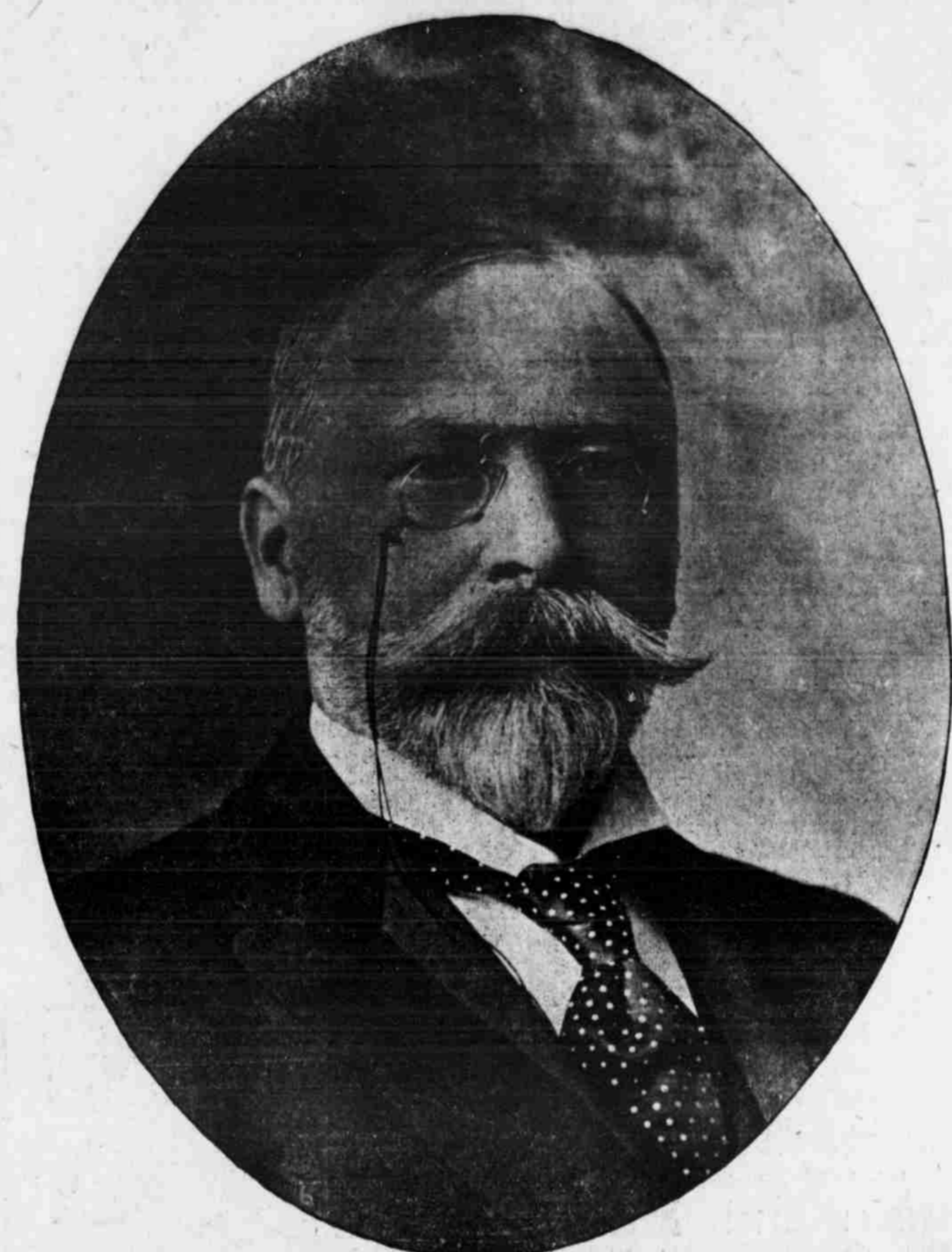
Suspend them so that they can move freely and arrange to change the current regularly and at the proper times and these rods will alternately attract and repel each other and there is motion and force in an infinitesimal degree. Technically, it is a power plant, consisting of a chemical generator connected to an alternating current motor.

Up to this point the greatest scientist knows no more about the causes of this motion than any man who is able to read these lines. Why the chemical bath produces the electric current, what the current is and how it instantly transforms the iron into a magnet are mysteries which not even a Faraday, an Edison or a Thomson attempt to explain.

For many years efforts were made to obtain motion and power in the above manner which would be of practical use. Electro-magnets of large size were arranged in groups, similarly to the spokes of a wheel, to revolve rapidly past each other; but the large consumption of expensive chemicals in the batteries, with a correspondingly insignificant result in power, gave no encouragement from a commercial point of view, and it was not until the discovery that the battery could be entirely eliminated that the possibilities of electricity as a factor in the great industrial world appeared.

Some time in the 60s Prof. Henry gave his little son, for a plaything, one of these experimental electro-magnetic machines which had been discarded as useless. No battery or chemicals accompanied the gift, so the little chap amused himself by twirling the contrivance by hand. Tiring of this he reached out for other toys, and surreptitiously securing a galvanometer, one of the little instruments used by the professor for measuring current, he hooked on the wires in the way he had seen his father do, and continued his twirling. While he was engaged in this he arrived at, and gazing at the galvanometer, was astonished to see indications of an electric current. Taking a hand in the twirling, he found unmistakable evidence of rapid twirling of the magnets in front of each other, and a quantity of considerable energy was produced without the agency of any electric battery. The true generator had been found, and the dawn of the electrical age, with all its marvelous wealth of scientific and commercial exploitation, was opening.

As an instance of the scientific phraseology which confronts a student it may be noted that this simple discovery by a playful boy is diagnosed by Faraday as the law of electro-magnetic induction—that the electrical pressure generated in a coil of wire, by relative motion between it and a magnetic field, is directly proportional to the rate of change of inter-linkages of turns and lines of force.



GUSTAVE ANDERSON—Thirty-Third Degree.

of electro-magnetic induction—that the electrical pressure generated in a coil of wire, by relative motion between it and a magnetic field, is directly proportional to the rate of change of inter-linkages of turns and lines of force.

"So," as Mr. Dooley says, "there ye are." Crude and clumsy apparatus was quickly designed and built, and, on being belted to a steam engine, gave an amount of current which no instrument then in use could measure.

These early generators were called dynamos and were used exclusively to produce arc lights. A few years later the discovery was made that if a duplicate generator was carried to any desired distance and connected by wires to the first a corresponding rotation was obtained. The current generated in the first machine went

over the wire to the second machine and operated it. This was another surprise. That its value was instantly appreciated is shown by the fact that in Cleveland in 1884, without waiting to build new machines, two Brush arc light dynamos which had done service for several years were obtained. One was connected to an engine in a convenient building, the other was attached to the axle of an old horse car. A wire was strung along the track and the first electric car was commercially introduced, and electric traction and electric power were before a wondering world.

Upon this simple principle of one electro-magnet passing rapidly before another are built all electric light dynamos, great power generators and motors of every description, from the tiny fan motor to the great 1,300 horsepower railroad motors. The details of the larger machines are

most complex, and the highest type of scientific and mathematical knowledge has been engaged in determining the most efficient methods of winding the magnets and designing the machines to produce the quality and quantity of current required. For lighting purposes a current of moderate flow but very high intensity, or voltage, is needed; for power purposes a current of ample flow but of moderate intensity is desirable.

Electrical engineers are meeting all these shades of requirements with marvelous skill and ingenuity, but underlying it all is the mystery of the nature of the current. They can evoke the giant, can direct its energy into a hundred channels, can control it with masterpieces of scientific and mechanical achievement, can destroy it. But what it is remains unsolved. It is still the great unknown!—New York Press.

People Who Draw Large Salaries

IT is estimated that there are fully a thousand persons in this country who draw large salaries. This does not include the United States, but only those persons who are working on regular stipulated salaries. Neither does the list include the income of lawyers, although there are a number of millionaires from investments or the earnings of those in business for themselves, but only those persons who are working on regular stipulated salaries.

Neither does the list include the income of lawyers, although there are a number of millionaires from investments or the earnings of those in business for themselves, but only those persons who are working on regular stipulated salaries. James B. Hill is said to have received a fee of \$100,000 for settling the suit between Andrew Carnegie and H. C. Frick. W. D. Guthrie is also understood to have received a fee of \$100,000 for breaking the will of the late Henry Bradley Plant. These are believed to be the largest single fees ever paid lawyers in this country.

The largest salary paid any bank president in New York is understood to be \$50,000. The presidents of several of the large Wall street banks and trust companies are known to receive this salary. There is also one bank president in Chicago who receives a salary of \$50,000 a year. As a rule, however, the presidents of the large Wall street banks are wealthy, and their salaries form only a small part of their annual income.

Men of sufficient ability to gain the controlling position in prominent Wall street banks are sought for as directors in trust companies and other financial institutions, to say nothing of the number of incorporation committees on which they are asked to serve. James Stillman, the president of the National City bank, is a director in more than forty different corporations. All of these positions pay well and take up but little time, being in most instances of an advisory nature, and without onerous duties. In this way the annual income of the presidents of the prominent Wall street banks are largely increased.

Newly Dedicated German Lutheran Church

THE new German church of the German Evangelical association was dedicated with considerable ceremony Sunday. The new brick house of worship at Eighteenth and Cuming streets was filled with the members of the new congregation and their friends and several prominent men from out of town lent their services to the glad occasion. Among these was President Kirkhof of the Northwestern college and the latter was the original body of the church in Omaha. It was founded about fifteen years ago and now has a story and a half frame and brick church. But the congregation was not very strong and the building was a long way south for the members of the burned church, so it was decided to put up a new building about midway between the old houses of worship.



NEW GERMEN CHURCH AND PARSONAGE OF THE GERMAN EVANGELICAL CONFERENCE, DEDICATED LAST SUNDAY.—Photo by a Staff Artist.

The new church also means a new congregation. It will be the union of the people of Immanuel church of the association located at Twenty-sixth and Marcy street, and of the burned Zion church on Sprague street. The latter congregation lost its building about two years ago by lightning, which caused a fire that ruined the church. The north side church was an offshoot of Immanuel church, however, and the latter was the original body of the church in Omaha. It was founded about fifteen years ago and now has a story and a half frame and brick church. But the congregation was not very strong and the building was a long way south for the members of the burned church, so it was decided to put up a new building about midway between the old houses of worship.

The new congregation will be at least sixty strong. Rev. Mr. Jansen, who has been pastor of the south side church for almost two years, will become the head of the united congregation. He will move in a few days to the new parsonage built just north of the new church. The church and parsonage together represent an outlay of something more than \$12,000. It has meant considerable work to gather this money, but by New Year's the building will be debt free. The conference helped toward the work and the Sunday collection was more than \$200. The new church and parsonage are of brick. The church seats 300 and has a class room at the west, which connects with it by rolling partitions. It is not quite finished inside, but will be shortly so with hard wood. The ceiling will be of plaster and the walls will be frescoed. The parsonage is an eight-room house, fitted with modern conveniences. John Harte was the contractor and work was begun last August.

Gossip and Stories About Prominent People

JUDGE GUSTAVE ANDERSON was born in Sweden September 25, 1842. He was educated in the common schools there and graduated from the Royal Agricultural college of his native country. On coming to America he located at Omaha and has resided here since. He was admitted to the practice of law in 1875 and was appointed United States commissioner the same year, which position he still holds. He was elected judge of the city court in 1877 and held the office for seven years. He was made a Mason in 1869 and exalted to the Royal Arch degree in 1876 and royal and select master the same year. He was knighted in Mount Calvary commandery No. 1 in 1878 and consecrated to the Order of High Priesthood in 1881. He has held many places of trust and honor in the fraternity, having served as master of his lodge, high priest of his chapter and eminent commander for three terms of his commandery. He received the Scottish Rite degree up to and including the thirty-second degree from Illustrious Potentate Albert Fria. He was coronator and inspector general honorary in 1887 and crowned an active member of the supreme council in 1889. He held for many years the office of treasurer of the Scottish Rite bodies of Omaha. He is a member of the Nebraska Masonic Veterans' association and grand representative of several grand jurisdictions near the grand Masonic bodies of Nebraska. Brother Anderson procured the charter for and instituted Tangier Temple, A. O. N. M. S., and was its first and second potentate. On December 14, he was elected grand master of the grand council of Royal Select and Super Excellent masters of Nebraska.

Vanity of a King. Edwin E. A. Abbey has almost finished his picture of the gorgeous coronation scene in Westminster abbey. The final strokes were deferred in a curious way. King Edward had seen the great canvas and was much pleased. About that time a courtier whispered in the royal ear that the coronation robe hid the royal legs from view. His majesty, who is very of the human, bit at the bait and Mr. Abbey was asked to readjust the robe in such a way as to reveal one of his majesty's legs. The leg was painted from a model with handsome limbs. When the king saw the picture again he was delighted. The firm, graceful line of the calf, curving so elegantly in white silk hose, stirred the royal imagination. He insisted that both legs should be shown. This, of course, necessitated a more serious change in the arrangement of the robe, the key of the whole scheme of coronation, and the modification of the general tone of the picture.

The Astor and Oregon. The interesting fact comes out that the manager of the Lewis and Clark exposition in Portland, Ore., have tried in vain to arouse the interest of the New York Astor family in the show. They have repeatedly written to John Jacob in New York and to William Waldorf in London, but have received no answers. The Astors are dumb and their pocket-books are closed. The Oregon people vainly imagined that the part the original old-time Astor played in the fur trade of the northwest, and later in the colonization of the Columbia river region, would arouse the family pride in the coming exposition. The truth is, that the original John Jacob had \$4,000,000 in the Oregon venture, and his got out of it was to have the town of Astoria named after him. And that does not arouse the Astor family's enthusiasm.

Reminiscence of Ben Butler. Bishop McVicker of Rhodo Island told the members of the Boston Episcopalian club at their dinner the other night one of the best of the Butler stories. Butler was on his way to Boston to try a case before Judge Shaw. A young friend met him on the train and he asked if he might look at the notes on the case. Butler acquiesced. The young man, to his astonishment, saw written in pencil at the top of the first page: "Insult the judge." "You see," said Butler, "I first got Judge Shaw's bill by insulting him in some way. Later in the case he will have decisions to make for or against me. As he is an exceedingly just man and as I have insulted him, he will lean to my side, for fear of letting his personal feeling against me sway his decision the opposite way."

Baby of the Tribe. Sir John Richard Robinson in his "Fifty Years of Fleet Street" tells of an amusing incident during the visit of the Swastik deputation from the Transvaal to England at the close of 1894. "The Swastik deputation went to Windsor and had an audience of her majesty Queen Victoria. They were very graciously received. One of their number began to speak, and an interpreter followed him phrase by phrase. 'We come, Oh great mother, to take him, Oh mother, to thy knees; fold him to thy breast.' Here the queen, half frightened, exclaimed, 'But where is the child? I don't see him. Where is he?' 'Here, Oh mother,' said the Swastik, gravely, at the same time bringing forward a big black about six feet high and weighing well over 200 pounds. 'He is here.'"

Last of a Famous Jury. The Beecher-Tilton trial is recalled by the death a day or two ago of William H. Davis, the last of the twelve men who made up the jury which sat in the trial. All the time which has elapsed since the statement of his relatives, has never told how he voted on the jury, nor expressed an opinion in regard to the guilt or innocence of Mr. Beecher. After the jury returned to the courtroom and reported a disagreement it was discharged. The individual members were asked for expressions of opinion in regard to the case. None of the twelve men would consent to say anything and it was agreed that before the verdict was brought in all had agreed never to divulge what had taken place in the jury-room, even to their own families. It is believed that with the death of Mr. Davis the last chance that the proceedings of the jury would become known has vanished.

Surprising Knowledge. When Joseph H. Choate, present ambassador to Great Britain, was a young man and during his early legal experience he was engaged as counsel for the defense in a case where "affairs seemed very one-sided, his being the right side. The jury of the good men and true at the conclusion of the testimony took but a few minutes to come to a decision. The evidence had been so conclusive and the decision so quickly reached that Mr. Choate was perfectly dumfounded to hear their verdict, which was against him. "Wait," said he, turning to his client, "this proves it. If there be anything in the world which surpasses the knowledge of the Almighty it is the finding of a petty jury."

The Lost Chord. Sir Arthur Sullivan was at one time greatly worried about what appeared to him to be bad inconsistency in "The Lost Chord." Sir John Robinson tells the story: "The words are: 'I struck one chord of mistle like a violin, of a great voice. Now amen is a word of two syllables, so that there must have been two chords. He did not notice this, he said, until after the song had been sung in public and he was terribly afraid it would get laughed at for it. Sir Arthur's body ever seemed to have found it out.'"

Definition of a Lady. LONDON cabman had brought suit against a woman for not paying a legal fare, and his counsel remarked was, "She ain't a lady." "Do you know a lady when you see one?" asked the judge. "I do, your honor. Last week a lady gave me a sov'n'r instead of a shillin', and I called 'Beg pardon, madam, I've got a sov'n'r instead of a shillin', and also abouts back! Well, you old fool keep the change and get drunk with it!' That's wot I call a lady!"

A Case of Conscience. Twelve years ago Lavinia, daughter of Kansas City, then a little girl, now a married woman, lost 5 cents while playing at the village school. The other day she received a letter from a woman now of California, who was to this effect: "You will find enclosed 25 cents. You lost 5 cents at school one time. I found and kept it. When you told me that some one saw me find it, I denied it. This was a long time ago, and I had covered it all up, but God arrested and troubled me on account of the sin."

Fleck of an Injured Man. Joseph Maurer, a plucky resident of Canal township, Venango county, Pa., while driving his horse team hitched to a log of wood was struck by the log, breaking his leg in two places. After vainly trying for help until he nearly perished with the cold he crawled to the horses, drove them to the side of a stump, pulled himself with his broken leg to the top of the stump and then to the back of one of his horses and in this way succeeded in getting home and securing the services of a surgeon.

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