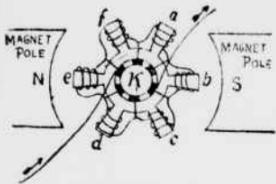
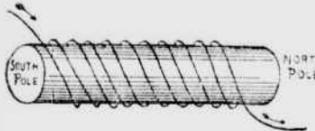


**SCIENCE AND PROGRESS.**

**One Small Fact Explains the Production of Motion by Electricity.**

Every one has seen a magnet attract and pick up a needle. This same attraction is what propels a street car. The simple fact that magnets attract and repel magnets is the one that explains how electricity produces motion. If we take a piece of iron and coil some wire around it and then pass an electric current through this wire, the iron piece becomes a strong magnet. On the current ceasing the magnetism disappears. If



MAGNET AND MOTOR.

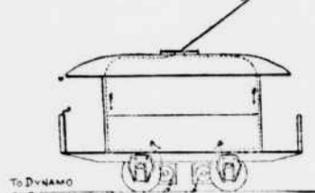
we reverse the direction of flow of the current, we cause the former north magnet pole to become the south pole, and vice versa.

Now, similar magnet poles repel and dissimilar magnet poles attract. In the second figure there is shown a form of motor generally used as a toy. On each side are the poles of a magnet marked N and S. In the center is the revolving part or armature with the projecting arms. Around each arm is wound a coil of wire, thus making each a magnet when an electric current flows through the wire. The wire is connected at intervals to the little black sections (K), representing metal segments, which are arranged in a circle and separated from one another by pieces of insulating material, represented by white spaces. Pieces of metal called brushes on opposite sides of this, rubbing on the metal strips, convey in this way an electric current from the connecting wires.

Let a current flow in, as indicated by the arrows, and the projecting ends, a, b, c, etc., all become magnet poles from the current flowing through the wires around them. The poles a and b are made north magnet poles and are drawn over toward the magnet S, while c becomes a south magnet pole and is repelled from S. Similarly on the other side d and e become south magnet poles and are attracted toward N, while f becomes a north magnet pole and is repelled from N. The result, it is readily seen, gives a revolving motion to the right in the direction that the hands of the clock move.

As this star piece revolves the black or metal segments rub against the contact pieces or brushes shown on each side. In the position shown these brushes are just about to leave the metal segments between b, c, e and f and slide over on to the following ones. As soon as this is done the direction of the current around b and e is changed, and the magnetism of these poles is reversed, and they are then repelled from S and N, and so the motion is kept up.

For good reasons the form of electric motor generally used differs somewhat from the one just described, says Dixie in an illustrated explanation of how



ELECTRICITY APPLIED TO CAR.

electric street cars run, here given in brief. The application of such motion to propelling cars is of course obvious. The current flows from the wire overhead down the trolley pole and along the circuits to the motors beneath the car, then through the wheels to the track, and thus back to the generating station.

**Doesn't Believe in High Tension.**

Thomas A. Edison is not to be numbered with the adherents of the lately heralded method of producing light by the use of high tension currents. This is the current of which Nikola Tesla is the strongest advocate. We must expect, according to this theory, a wonderful revolution in the lighting of our houses during the next decade. It will come from invisible sources, and the rooms will be in a glow of light, an essentially modern condition.

"I do not think people would use it," says Mr. Edison, as quoted by the New York Press, "because it does away with some very essential qualities which a good light should possess. The human eye is adapted by nature to encounter red and yellow rays in light with which it comes in contact. We have these in the sun, in gas, in the incandescent

light, in the candle, etc. When we reduce the amount of energy per candle power, we lose these red and ultra yellow rays. The glowworm produces a light, but without any of these red and yellow rays to which we are accustomed. The energy is very small. It is the same with these high tension currents. Now, no one would want a sepulchral light—the light we are accustomed to connect with graves and vaults. No. The eyes are built for very ultra violet or reddish rays, for a compound ray light, not a one ray light. Nature is against it."

A house well built of first class brick will outlast one constructed of granite.

**THE HOUSEHOLD.**

**An Ingenious Diversion Full of Fun For a Merry Holiday Party.**

As tag is not considered a decorous parlor game for adults and Little Sallie Waters fails to stir the blood of the middle aged with her pathetic tale of love lost and replaced, ingenuity is taxed to provide games for mixed parties. We may have outgrown our frocks and our nursery jungles, but our love of being amused is as strong as when we clambered up into mother's lap and asked for a story.

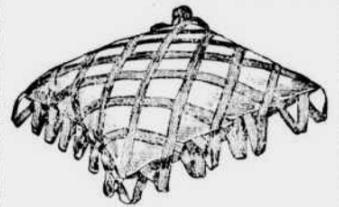
To meet the need a new game is suggested by a certain ingenious entertainer. After all the guests are assembled they present themselves to the hostess or her aids and allow a card to be affixed to their backs. This card bears the name of a well known character in fiction or history, but it must not be seen by the person wearing it.

The object of the game is to guess the name of the character whose name you bear. As you cannot see your card, your clues must be gained entirely from pertinent conversation with your fellows, who, of course, are in possession of the information you desire. As turn about is one of the canons of fair play, you must be equally ready to talk with your companions concerning their identity, taking care never to mention the name itself, only the peculiarities of character or circumstance always associated with it. Thus, should the name on a man's back be Beau Brummel, one could talk to him of the latest fashions in men's apparel, and also of the kingly "fat friend."

The first correct guessers report to the hostess, and later, when all have finished, trifling prizes are given. The game described by Harper's Bazar is inexpensive and simple to manage.

**Effective Cushion Covers.**

An effective cushion cover is made in denim of a deep yellow or other bright color and the top overlaid with a network of black tape about an inch wide, stitched on by machine in diagonal strips that cross each other three



NOVEL CUSHION COVER.

inches apart. At the sides the tape is fastened in loops, which gives the appearance of a 3 inch ruffle, extra ones being sewed in at the corners. Another striking cover described for The Ladies' Home Companion is of bright hued denim, outlined with rope silk, in black, in a bold conventional design, and on the 4 inch full ruffle around the cushion are three rows of very narrow black tape.

**Plum Pudding.**

Less dismaying to the average housewife than the ordinary English and French recipes for Christmas plum pudding, with their long lists of rich ingredients, is the following for a plainer but still excellent pudding: Ingredients—a cupful of sugar, one-quarter of a pound of raisins, a cupful of butter, a half pound of currants, 3 1/2 cupfuls of flour, a little citron sliced, 4 eggs, the whites and yolks beaten separately. Put in a teaspoonful of saleratus, with one-half cupful of cream. Flour the raisins, currants and citron before adding to the mixture. Boil it three hours in a floured cloth. Serve with brandy sauce. Deck the pudding with holly and serve in a flame made by pouring brandy over and lighting it just before entering the dining room.

**Mutton Pie With Turnips.**

This is a very savory way of using up the remains of a leg of mutton: Fill a pie dish three parts full of minced mutton which has been soaked in a good gravy, thickened with a very little flour and flavored with grated lemon peel and a little salt and pepper. Cook some turnips, cut small, in milk and water, pass through a sieve, squeeze out all superfluous water or wring in a cloth. Then mix in cream, pepper and salt and fill up the pie dish with the turnip pulp. Scatter browned bread crumbs thickly over the turnips and bake in hot oven until thoroughly warmed through. Nice little entrees can be made in this way by scooping out the contents of small bread rolls and filling them up as above, leaving an opening as big as a half crown, through which the fried bread crumbs should rise in a pyramid.

**One Way to Serve Oranges.**

Boil a pound of sugar in 1 1/2 pints of water with the peel of 8 oranges cut very thin for nearly 20 minutes, removing the scum as it rises. After the oranges are peeled remove all the white pith without breaking the inner skin, divide them into quarters and put them into the sirup and let them simmer for five or six minutes. Then take them out carefully with a skimmer or spoon and arrange them in the center of a glass dish, piled one on the other, with the skin side downward. Boil the sirup until thick, and when cool pour it carefully over the orange quarters and set them into a cold place until ready to serve.

**Turkey Stuffing.**

There is an infinite variety of recipes for stuffing a turkey. A plain dressing, which is the basis of all kinds, is made with bread crumbs mixed with butter, pepper, salt and thyme, or sweet marjoram. The bread should be soaked in cold water and squeezed dry in a towel. The excellence of all stuffing will depend upon the skill of the cook in seasoning. If you have any other soup than oyster, an oyster or celery stuffing is very nice. Use as much of the oyster liquor as may be necessary to moisten the bread and about two dozen small oysters to a ten pound turkey. In this case an oyster sauce must be served.

**THE REIGN OF THE BICYCLE.**

**The Present Passion For the Wheel Is Not Likely to Die Out Ever.**

What may be called not improperly the bicycle passion has full possession of several leading countries of the world. England and France, notably those parts of them in and about London and Paris, have been so given over to it for some time that a large proportion of their population come and go on their errands of business or pleasure on a wheel. Americans who have recently traveled abroad have been astonished at the general use of the bicycle there and have been still more astonished on returning to their own country during the past year to discover what headway the passion had made here. It is said to be a conservative estimate by competent authorities that during the year now closing 250,000 bicycles have been sold in this country, and that the number of riders approaches 1,000,000. There are said to be over 50,000 in New York and its neighborhood and fully half that number in and about Boston. The latter city caught the passion from Europe some time before New York did and has a larger proportion of its population, male and female, regularly devoted to it.

Observers of the phenomenon are wondering whether it is merely a passing whim or whether it has come to stay, whether those who have taken it up will continue it after the novelty has worn off or whether they will drop it for the next new fad that shall come along. There are many reasons for thinking that its stay will be permanent. Undoubtedly many of those who take it up because of its vogue will tire of it after awhile, but these will not constitute a large proportion of the whole number. The great body of riders find in the bicycle a new pleasure in life, a means for seeing more of the world, a source of better health through open air exercise, a bond of comradeship, a method of rapid locomotion either for business or pleasure and many other enjoyments and advantages which they will not relinquish. The bicycle has, in fact, become a necessary part of modern life and could not be abandoned without turning the social progress of the world backward. Few who have used it for a tour through the country would think for a moment of giving it up and returning to pedestrianism instead. Aside from the exhilarating joy of riding, which every bicycle devotee will assure you is the nearest approach to flying at present possible to man, there is the opportunity of seeing a constantly changing landscape.

The bicycle is indeed the great leveler. It puts the poor man on a level with the rich, enabling him to "sing the song of the open road" as freely as the millionaire and to widen his knowledge by visiting the regions near to or far from his home, observing how other men live. He could not afford a railway journey and sojourn in these places, and he could not walk through them without tiring sufficiently to destroy in a measure the pleasure which he sought. But he can ride through 20, 30, 50, even 70 miles of country in a day without serious fatigue and with no expense save his board and lodging. To thousands of men and women the longing of years to travel a little as soon as they could afford it is thus gratified, virtually without a limit, for a "little journey in the world" can be made on every recurring holiday or vacation.—Century.

**No Exception.**

Wynham (taking a walk in the country)—C-c-can I f-f-find my way t t-through these w-w-woods?  
Man Accosted—Not if it is true that the man who h-h-hesitates is lost.—Harlem Life.

**What He Thought About It.**

She—I'm sorry I married you.  
He—You ought to be. You cut some nice girl out of a mighty good husband.—Life.

Awarded Highest Honors—World's Fair. DR. **PRICE'S CREAM BAKING POWDER** MOST PERFECT MADE. A pure Grape Cream of Tartar Powder. Free from Ammonia, Alum or any other adulterant. 40 YEARS THE STANDARD.

**E. E. BURLINGAME'S ASSAY OFFICE & CHEMICAL LABORATORY** Established in Colorado, 1890. Samples by mail or express will receive prompt and careful attention. Gold & Silver Bullion Refined, Melted and Assayed, or Purchased. Address, 1736 & 1738 Lawrence St., Denver, Colo.

OUR first assorted car of fall stock and holiday goods has arrived. LATEST designs in Fancy Rockers, Parlor Chairs, Leather Goods, Secretaries, Book Cases, Chairs, Tables, and Folding Beds. SEND to them before buying. They have the finest and cheapest stock in the state. CHAUVIN-FANT FURNITURE CO. 47 W. Broadway Butte, Mont.

**FARRELL & VARNEY** Range from Meadow Creek to Henry's lake on both sides of Madison river. Brand as shown in cut. Cattle branded on left ribs, same brand. Down cut duplax. Post office address, Virginia City, Montana.

**Alex. Metzler.** P. O. address, Puller Springs, Montana. Cattle and Horse brand circle A on left shoulder. Thoroughbred cattle and American horses are branded J on left jaw. Vent, same brand on left thigh. Cattle mark, down-cut dewlap in brislet. Range, upper Ruby valley, from lower upper canyon, including all tributaries. \$200 Reward For the apprehension of and sufficient evidence to convict any person or persons guilty of stealing one or more cattle or horses belonging to me. ALEX. METZLER.

**Metzler Live-Stock Co.** President and Manager.....ALEX. METZLER. Secretary and Treasurer.....F. S. METZLER. Foreman.....W. O. METZLER. P. O. address, Puller Springs, Montana. Cattle brand as shown in cut; horses same brand on left thigh. Vent for cattle same on left thigh; for horses, same under mane. Cattle cropped on right ear, and with down-cut dewlap on brislet. Range, upper Ruby valley, from lower to upper canyon, including all tributaries.

**John Donegan.** P. O. address, Puller Springs, Montana. Cattle, H on left ribs; round under-bit in left ear. American horses, small H under half-circle on left cheek; cayuses H on left shoulder. Range, Upper Ruby valley. JOHN DONEGAN.

**Jack Taylor.** P. O. address, Virginia City, Montana. Horse brand, circle T on left shoulder. Cattle brand as shown in cut. Range, Madison divide. JACK TAYLOR.

**A. K. PRESCOTT.** Dealer in **MARBLE** and **GRANITE MONUMENTS** and **HEADSTONES.** Helena, Montana.

**W. L. DOUGLAS \$3 SHOE** IS THE BEST. NO SQUEAKING. **FRANK CORDOVAN**, FRENCH & ENAMELLED CALF. \$4.50 FINE CALF & KANGAROO. \$2.50 POLICE, 3 SOLES. \$2.50 WORKINGMENS EXTRA FINE. \$2.175 BOYS SCHOOL SHOES. LADIES. \$3.25-3.125 BEST DONGOLA. SEND FOR CATALOGUE. **W. L. DOUGLAS, BROCKTON, MASS.** You can save money by purchasing W. L. Douglas Shoes. Because we are the largest manufacturers of advertised shoes in the world, and guarantee the value by stamping the name and price on the bottom, which protects you against high prices and the middleman's profits. Our shoes equal custom work in style, easy fitting and wearing qualities. We have them sold everywhere at lower prices for the value given than any other make. Take no substitute. If your dealer cannot supply you, we can. Sold by Dealers whose name will shortly appear here. Agent wanted Apply at once.

**J. E. WALCOTT.** Agent for... THE WORLD RENOWNED **SINGER SEWING MACHINE.** Headquarters at Dillon. Repairs and machine parts kept in stock. Mail orders promptly filled.

**Term of Court.** The regular term of the District Court of the Fifth Judicial District, of Montana, in and for the County of Madison, is fixed as follows: Third Monday of February, May, August and November. **FRANK SHOWERS, Judge.**

**THE MADISON,** VIRGINIA CITY, MONT. Reopened December 15, '93. First-class in all its appointments. T. F. POLLARD, Proprietor.

**Bucklen's Arnica Salve.** The Best Salve in the world for Cuts, Bruises, Sores, Ulcers, Salt Rheum, Fever Sores, Tetter, Chapped Hands, Chilblains, Corns, and all Skin Eruptions, and positively cures Piles, or no pay required. It is guaranteed to give perfect satisfaction, or money refunded. Price 25 cents per box. For sale by C. W. Rank & Co.

**FRED RICK KRAEMER** The cheapest Saddlery House in the State. Harness, Saddles, Bridles, Ropes, Whips, & Blankets. F. KRAEMER VIRGINIA CITY, MONT.

**HALL & BENNETT, BANKERS,** Virginia City, Montana. Do a general banking business. Draw exchange on all the principal cities of the world. The highest rates paid for Gold Dust, Gold and Silver Bullion, and County and Territorial securities. Collections carefully and promptly attended to.