

Oil Little Used in Russia.
Notwithstanding the large production of petroleum in Russia the use of illuminating oil in the country is small. It has been limited by a tax on refined oil. Recently the Baku refiners have petitioned the government to abolish this tax on refined oil for home consumption and to substitute for it a tax on all crude oil produced.

About the Wedding Dress.
A host of superstitions center about the wedding dress. Some stitches should be set in it by the bride herself on her wedding day—she should "sew her own joy in it." But the groom should never be allowed to see the bride in her wedding dress until he meets her at the altar.

Trap Gun Kills Man.
A. E. Chambers was killed at Santa Rosa, Cal., by a load of salt tird from a spring gun the owner of a cabin had placed at his door for the purpose of discouraging the visits of burglars.

Money Versus Experience.
What do you care if you haven't any money? You are rich in experience.

Good News for All.
Bradford, Tenn., Nov. 21.—(Special.)—Scientific research shows Kidney Trouble to be the father of so many diseases that news of a discovery of a sure cure for it cannot fail to be welcomed all over the country. And according to Mr. J. A. Davis of this place just such a cure is found in Dodd's Kidney Pills. Mr. Davis says:

"Dodd's Kidney Pills are all that is claimed for them. They have done me more good than anything I have ever taken. I had Kidney Trouble very bad, and after taking a few boxes of Dodd's Kidney Pills I am completely cured. I cannot praise them too much."

Kidney Complaint develops into Bright's Disease, Dropsy, Diabetes, Rheumatism, and other painful and fatal diseases. The safeguard is to cure your kidneys with Dodd's Kidney Pills when they show the first symptom of disease.

Men With Feminine Tastes.
Whenever a man is found to have tastes commonly considered feminine, he is almost sure to be a distinguished personage. For instance, Sir Walter Scott, Mohammed, Dr. Woisey, Richefleur, Montaigne, Pierre Loti and the poet Gray were all excessively fond of cats.

Every housekeeper should know that if they will buy Defiance Cold Water Starch for laundry use they will save not only time, because it never sticks to the iron, but because each package contains 16 oz.—one full pound—while all other Cold Water Starches are put up in 8-oz. packages, and the price is the same, 10 cents. Then again because Defiance Starch is free from all injurious chemicals. If your grocer tries to sell you a 12-oz. package it is because he has a stock on hand which he wishes to dispose of before he puts in Defiance. He knows that Defiance Starch has printed on every package in large letters and figures "16 ozs." Demand Defiance and save much time and money and the annoyance of the iron sticking. Defiance never sticks.

Irish eggs are richest of all, better than English or Danish, and British pastrycooks always try to buy them, as they go further.

Insist on Getting It.
Some grocers say they don't keep Defiance Starch. This is because they have a stock on hand of other brands containing only 12 oz. in a package, which they won't be able to sell first, because Defiance contains 16 oz. for the same money.

Do you want 16 oz. instead of 12 oz. for same money? Then buy Defiance Starch. Requires no cooking.

Londoners are singularly well cared for in the matter of recreation. They have fifty-three theaters and forty-three music halls.

You never hear any one complain about "Defiance Starch." There is none to equal it in quality and quantity, 16 ounces, 10 cents. Try it now and save your money.

Small men do not gain great truths and great men do not retain them.

Mrs. Winslow's Soothing Syrup.
For children, teething, softens the gums, reduces inflammation, cures wind colic. See a bottle.

More enemies have been slain by mercy than by malice.

FITS permanently cured. No fits or nervousness after first day's use of Dr. Kline's Great Nerve Restorer. Send for FREE TRIAL BOTTLE and treatment. Dr. J. C. Kline, Ltd., 361 Arch Street, Philadelphia, Pa.

A man's title to glory does not depend on the glory of his title here.

Write MURINE EYE REMEDY Co., Chicago, if your eyes are sore or inflamed, and get oculist's advice and free sample MURINE. Cures all eye-ills.

Men who are always on the make never make much of anything.

Defiance Starch is guaranteed biggest and best or money refunded, 16 ounces, 10 cents. Try it now.

He has made no great gains who has never lost anything.

Dr. David Kennedy's Favorite Remedy.
Removes all kinds of skin troubles. Sold everywhere. Dr. David Kennedy, N. J. Boston 31-32.

Chance is one of the most profane words in our language.

Important to Mothers.
Examine carefully every bottle of CASTORIA, a safe and sure remedy for infants and children, and see that it

Bears the Signature of *Wm. L. Chas. H. Pitcher*
In Use For Over 30 Years.
The Kid You Have Always Bought.

An open denial of God may be better than an empty definition of Him.

SCIENCE AND INVENTION

New Musical Instrument.
It is rather strange that of the numerous devices patented so far relate to musical instruments, and this particularly so as the piano, violin, guitar, banjo and mandolin are so old that they have grown common and as yet no other instruments to fill their places have been introduced. A new musical instrument suitable for parlor entertainment is shown here. It is made of wood and the inventor claims that it will give forth sounds differing from those produced by any instrument in the nature of a horn, flute or whistle, being very simple and easy to learn.

Most of the novelties that have heretofore been introduced have been suitable mostly for outdoor use, but this one can be played in the house without jarring on the nerves and ear as much as a beginner's work does on the piano. The body of this instrument is a thin metal tube formed with the sound opening having a feather edge, so that when the player blows into the mouthpiece the body vibrates and produces pleasing tones, the length of the vibrations being determined by the position of a piston rod, which can be moved to make any note within the range of the instrument. In using the instrument the player grasps the mouthpiece with one



Plays Like a Trombone.
hand and presses the end against the lips, while with the other hand he grasps the handle which operates the piston and at the same time supports the body.

Frank H. Fairchild of Detroit, Mich., is the patentee.

Combine Telephone and Telegraph.
A new complication of the telephone and telegraph with a new complication of their names is the idea of an Italian electrician, E. Malcotti, who makes a triple proud boast of his invention; firstly, that the apparatus is susceptible of being used on any existing telephone lines without any previous alteration of the latter; secondly, that secrecy is warranted of any communication; and, thirdly, that the construction is simple and the price of the instrument low. The distinctive feature of the apparatus is the fact that there is no necessity of installing any special exchanges and special lines, but that any existing telephone plant is ready for the telegraph, for thus the telephonic innovation has been christened. The apparatus is worked by currents analogous in every respect to telephone currents, and, therefore, in no way interfering with the ordinary telephone service. The secrecy of the dispatch is warranted by a device allowing of any two apparatus being timed for a figure established beforehand, so as to keep the telephone secret throughout the line as well as at the receiving station, the messages arriving as ciphered telegrams. The receiving apparatus may be caused to decipher automatically the dispatch, either after reception or during the same. The number of ciphers the apparatus is susceptible of is upwards of 6,000,000,000, which is practically infinite.

Expect Valuable Discoveries.
A good deal of secrecy has been observed as to just what of scientific value was learned by the recent voyage of the British ship Discovery into the antarctic regions. The geographical results of the exploration are well known, but the scientific results will take a long time to work out. It is said, however, that a secret has been brought back which will shake the foundations of many a scientific belief. Certain fossils have been found which prove beyond doubt that once—no one yet can tell how long ago—mammals, and perhaps even men, lived upon the land where now are utter desolation and life-destroying ice and snow. These treasures were packed into tin boxes and brought to London under special escort to the British museum, where they will await inquiry by specialists. In speaking of the matter Sir Clements Markham was most guarded. Still, he admitted that the fossils must in any case mean much. They may upset all the theories as to the polar system and the geographical origin and age of the world.

Rapid Track Layer.
A new railway track layer, with a crew of forty men, will lay two miles of track a day. The track layer has a huge crane, sixty feet long, which projects forward over the road and hauls behind it a train of sixteen flatcars loaded with ties and rails. A continuous line of the latter move constantly over rollers and carry the ties with it. Both rails and ties are seized at the proper time by machinery and placed on the road in front of the train, where they shortly form part of the track over which it passes. This device is said to be the most expeditious as well as economical track layer in the world.

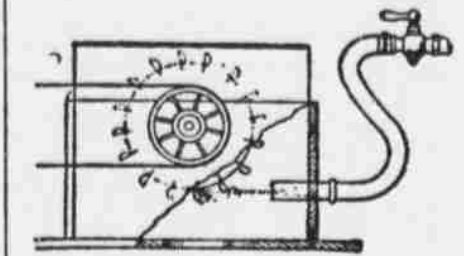
POWER FROM WATER TAP.

Will Furnish Motion for Many Experimental Purposes.

A source of power lies in the town and city water service which can furnish motion for a multitude of experimental purposes. The impulse wheel here described develops 0.28 brake horsepower, and 1,000 revolutions, on a pressure of fifty pounds. But little water is consumed, since the jet is of only 3.16-inch diameter. The cost of materials is \$1.05.

Cut a flat sheet of 1 16-inch brass into a circle 10 inches diameter, and in the center bore a 1/2-inch hole for the shaft. With a hack-saw cut in the circumference 16 radial slits 3/8 inch deep. Take sixteen pieces of brass 1 1/2 inches by 2 1/2 inches, and on the thickness of the hack-saw, each making one cup. Shaping the cups is easy. A piece of broom-stick, with the tip rounded, serves for half the die, while a piece of iron pipe of 1 inch inside diameter serves as the other half. Lay one end of a brass strip on the pipe and hammer the rounded end of the stick into it (see drawing), whereupon the cup is formed. Trim to shape indicated in the drawings, and hammer out any irregularities by fitting again upon the broom-stick. Solder the cups in the radial slits, best done over a Bunsen burner. The bowls of the cups must come tight against the wheel, and also run in good alignment.

The wheel is attached to the shaft by clamping between pulley collars. Get the size for a 1/2-inch shaft, by special order if necessary. Let the shaft be 1/2-inch in diameter and 10 inches long. Polish with emery



Home-Made Water Motor.
cloth. Slip it through the wheel and mount a collar on each side, pressing them tight together, and fastening with the set-screws in the collars. A pulley can be mounted on either end of the shaft.

In making the jet, fill a piece of 1/2-inch galvanized pipe, 3 1/2 inches long, with Babbitt metal. When cold, bore a 3.16-inch hole through the center lengthwise. Make this hole conical, tapering from 3.16-inch to the full 1/2-inch.

The box is made in two parts. The lower carries the wheel, the bearings and the jet, the upper serves to protect against spray. Use seasoned 3/4-inch stuff. The outside dimensions are 17 inches long, 11 inches high, 5 inches wide. Screw securely and brace with cast-iron angles. The box has no top nor bottom.

Midway on each side, with its center 3 inches from the top, bore a 1 1/2 inch hole for the Babbitt box, and from the upper edge of the box bore with a 1/4-inch bit down through the larger holes well into the wood below. To prepare for casting the bearings first wrap the shaft with two thick



Section of the Water Wheel.
nesses of tissue paper, serving ultimately to give a little play between the bearing surfaces, then run it through the holes, centering it carefully. The shaft is held in place and the holes are covered to permit casting, by mounting the pulley collars and shoving them tight against the wood on the inside, and by snugly fitting cardboard to the shaft and tacking it on the outside. The metal is poured through the 1/4-inch hole in one steady stream until it overflows. When the shaft is withdrawn and the cards and tissue paper removed, an excellent bearing will be found. From the top bore out 1/4-inch oil holes. Mount the wheel, and oil the bearings, when, if the shaft is true, it will run easily and smoothly.

In the end of the box bore a hole with its center 2 3/4 inches from the lower edge, and 2 1/2 inches from each side. The diameter of this hole should be such as just to permit the jet to be hammered in. The stream of water will thus hit the upper quarter of the lowest cup, when directly beneath the shaft, and the center of the cup next following. As the jet is apt not to be absolutely true, slight adjustment can



be made by turning it upon its long axis.

Screw the box to a stout plank, having a 3-inch hole directly under the center of the wheel. The board should be long enough to reach the length of the sink and be attached to the woodwork at each end. This is simple and firm. The joint can be made watertight by a wash of thin sheet rubber. If the wheel is used to drive a dynamo, both may be attached to the same base-board.

The spray guard is separate for convenience in casting the Babbitt boxes and subsequently for oiling. It is constructed of zinc, 6 inches high, and long and wide enough to slip snugly into the lower section for about 1 inch. Four screws will keep it in place. The machine is now complete.—H. F. Swartz, in Scientific American Supplement.

POULTRY



Geese.

In common geese the males and females differ in plumage, but this is not the case with the pure-bred geese. In their case the males and females are alike. The largest geese are the Toulouse, and these are popular with men that have a fancy for large fowls. If a man wants layers, however, he will choose the China. Those that raise the geese largely for feathers will choose the Embden, because their feathers are pure white, and hence the market value of them is greater than with those geese whose feathers are multi-colored. If a man merely wants to produce birds that can be marketed to good advantage he will find a cross of the Toulouse with the Embden give good results.

Where geese have access to a pond or a river they will derive much of their subsistence from the water. The writer knew of a man that lived on the banks of a river and had a large flock of geese. Across the shallow river was a starch factory, and from this a large amount of soaked corn daily ran from the sluices into the river. The geese made their living off this corn, which they fished up out of the water. It made a perfect food so far as softness and digestibility were concerned. They balanced their ration with the semi-aquatic plants growing in the river and along its margin. There are many like situations where a flock of geese would save what would otherwise go to waste.

Shallow ponds in summer teem with fish, water beetles, worms and other forms of life. A flock of geese shows great enjoyment in hunting their own food in such places. Geese are also consumers of some of the bugs that disturb the peace of the farmer. One man told the writer how he used to use them for the destruction of potato bugs. The geese would travel down the rows, darting their heads now to this side and now to that. They consumed in the course of a day a very large number of bugs. The fault to be found with them was that they did not do their work perfectly, but left colonies of bugs here and there, which later had to be destroyed by other agencies.

The goose lays from twenty-five to fifty eggs and if she could be bred up to lay more would become more popular on the farm. Perhaps it is possible to ultimately develop geese to lay as many eggs as hens, but that result is a long way in the future at the present time.

Freshness of Eggs.

There are many old ways of testing the freshness of eggs. Some of them may be of little value. Here is one that is going the rounds, but for which we cannot vouch. It may be all right: Eggs are placed in a pan of water, giving each room enough so that its motions will not be interfered with by the others. The air in the egg will be governed according to the age of the egg. If the egg has been kept in a moderately warm state. If the eggs are just laid they will be motionless. If they are more than a week old they will partly stand on the little end. This is because the air chamber is in the other end of the egg. This air chamber grows larger as the egg becomes older and the moisture in it evaporates. When the eggs get still older they will stand up straight in the water and when very old will float.

This test of course would be of no value in the case of pickled eggs or of eggs kept in cold storage where the temperature was so low that the evaporation of moisture from the eggs would be very small.

Fowls for Market.

The farmer should not wait till he is ready to market his hens and roosters before separating them from the rest of the flock. Those that are to be so disposed of should be separated from the rest at this time. If they are to be sold for the Thanksgiving market they should be placed on fattening food at this time. Chickens for market should be made as fat as possible, as the buyers want them that way. The fat is not indeed eaten, but it in some way makes the flesh of the fowls tenderer and the buyers realize that. Moreover, they are willing to pay for the tenderness that comes from the fattening process. The birds will also be tender because they have been deprived of exercise. Fowls that exercise are naturally tougher than those that do not. Four weeks feeding will sometimes add two pounds each to fowls and this makes quite a difference with them when they are marketed.

Don't Market Unfattened Stock.

We have seen the traveling buyer of chickens drive up to the farm house and ask for poultry. We have seen the farmer get out a pan of corn and toll the hens and roosters about him, then draw them into the henyard and the work of selecting begin. The cockerets were sold without an hour of fitting. They were gaunt and lean shanked. They weighed light when put on the scales or hung on the steelyards. The farmer got out of them very little for the care he had bestowed on them. These birds should not have been sold without being fitted. Shut them up and give them at least three weeks of good feeding.

As a general thing the grape vineyard should be given clean cultivation every year.



The Prairie Dog Nuisance.

Prairie dogs have been declared to be a nuisance by the laws of Nebraska and other states. The Nebraska law goes so far as to declare that any one having land infested by prairie dogs and not getting rid of them is maintaining a nuisance. The harbinger of these animals is made liable for damages committed on other land. Highway commissioners are instructed to see that the law is enforced. In the discharge of his duty connected with the extermination of prairie dogs the commissioner is allowed \$3.00 per day and expenses and instructed to add the amount to the taxes of the land where the work of exterminating prairie dogs is done.

This makes it necessary for the owner of land to be vigilant in the extermination of the nuisance. The quickest and cheapest way to get rid of the dogs is to poison them, and this is generally resorted to. In making up the poison three ounces of strychnine and half a pound of potassium cyanide are put into one quart of boiling water. To this two quarts of molasses and a teaspoonful of oil of anise are added. Then a bushel of wheat is placed in a tight receptacle and the mixture is poured over it. It is then stirred, while four pounds of finely ground corn meal is poured into it. The molasses makes the liquid adhesive, so it will stick to the grains of wheat. The object of using the corn meal is to absorb the superfluous liquid or syrup and thus enable the grains of wheat to carry a larger amount of the poison. This poisoned grain is sown about the places inhabited by the dogs. They eat it and die in large numbers.

There is, however, a decided sentiment against the use of the poison. Ranchmen and farmers hate to handle it and birds are frequently poisoned as well as the dogs. There is also some danger to live stock and children. Carbon bisulphide has been used for many years in the extermination of burrowing animals. It is costly, but it is effective and is still being quite generally employed. It has the advantage of reaching all of the animals; for there are always some prairie dogs that will not eat the poisoned grain. The chemical mentioned is put into the burrows and changes to a gas that kills the animals.

The Soy Bean in the North.

The soy bean is being more extensively grown in the North now than ever before. It is found that it will do well further north than the cow pea, and, in fact, that it can be grown as far north as dent corn thrives. The farmers of Maine who grow largely only flint varieties of corn also raise the soy bean in a small way. It is believed that this can be made one of the principal crops of the North. Its value for the feeding of cattle is unquestioned, as it is very rich in nitrogen.

In the growing of this crop success is possible only when the soil contains the bacteria that form the nodules on the roots. In that case the land will only need to have potash and phosphorus added to it, if it needs any fertilizers at all. The Medium Early is found to be one of the best varieties for forage. The land should be thoroughly prepared before the crop is sown and the soil should be kept cultivated. Drilling is of course necessary if the crop is to be cultivated. Under such methods a crop is regarded as about eight tons.

The forage may be fed green, made into hay or used in the form of silage. The silage is preferred by sheep over corn silage. It is not probable, however, that it will ever take the place of corn in the making of silage, as it can be advantageously used as a hay. In some places where both cow peas and soy beans are being raised the soy beans are preferred for the reason that they are much easier to be made into hay.

In the West, as in the East, the great need of the farm is to have a cheap source of protein. Where a man has hogs that need a protein feed in winter it is easy to believe that the silage made from soy beans would be better than the silage made from corn, as it would contain more of the protein so necessary to build up the muscular system of the swine. The soy bean has been less advertised than the cow pea and is therefore being grown less extensively. It seems, however, that it has a wider range of growth, at least towards the north, than has the cow pea. It will be wise for our farmers to try a small plot of soy beans next spring.

Farm buildings should be given a "going over" before the cold of the winter comes. Too many cracks in the barn may give abundant ventilation, but they give more—too many drafts. Ventilation is health, but drafts are the opposite. It does not cost much to stop up cracks, and if one kind of material cannot be secured for this work another can.

There are now innumerable varieties of potatoes and they are increasing in number every year. Withal, there is an improvement, but it is difficult to say how long this improvement will go on.

If potatoes are planted on land containing much humus there will be little occasion for the application of nitrogen. This is why new land is frequently very good for potatoes.

Traits of Future Typical American. Patriotic, religious, devoted, poetical, industrious, artistic, literary, honest, enduring. From the Irish, patriotism; from the Scotch, religious fervor; from the Jew, family devotion; from the Scandinavian, industry; from the Italian, art; from the German, honesty; from the French, quickness; from the Indian, endurance.—Chicago Journal.

"Meanest Man" Again.
A man of Wexham, England, was given \$5 wherewith to buy a wreath for the funeral of a friend of the person who had given the \$5. Instead of buying a wreath, the fellow went out to a cemetery, stole a wreath there, left it with the mourners and pocketed the \$5. But his act was discovered later.

Decides Bridal Question.
The important question, When does a bride cease to be a bride? is decided by the London Queen, which says she becomes a "wife" at the expiration of six weeks after the wedding.

Indian Never Forgives.
The Indian never makes up after falling out with any one. He may speak to an enemy as he passes, but sies with the hatred in his heart.

Of the 467 savings banks in Japan only one is foreign. Of the 1,799 ordinary banks only four are foreign.

One hundred million bushels of grain are sent every year to the mills of Duluth and Minneapolis.

"WHACKS"

And What They Mean.

When Old Mother Nature gives you a "whack" remember "there's a reason," so try and say "thank you," then set about finding what you have done to demand the rebuke, and try and get back into line, for that's the happy place after all.

Curious how many highly organized people fail to appreciate and heed the first little, gentle "whacks" of the good old Dame, but go right along with the habit whatever it may be, that causes her disapproval. Whiskey, Tobacco, Coffee, Tea or other unnatural treatment of the body, until chronic illness sets in or some serious disease.

Some people seem to get on very well with those things for a while, and Mother Nature apparently cares but little what they do.

Perhaps she has no particular plans for them and thinks it little use to waste time in their training.

There are people, however, who seem to be selected by Nature to "do things." The old Mother expects them to carry out some department of her great work. A portion of these selected ones oft and again seek to stimulate and then deaden the tool (the body) by some one or more of the drugs—Whiskey, Tobacco, Coffee, Tea, Morphine, etc.

You know all of these throw down the same class of alkaloids in Chemical analysis. They stimulate and then depress. They take from man or woman the power to do his or her best work.

After these people have drugged for a time, they get a hint, or mild "whack" to remind them that they have work to do, a mission to perform, and should be about the business, but are loafing along the wayside and become unfitted for the fame and fortune that waits for them if they but stick to the course and keep the body clear of obstructions so it can carry out the behests of the mind.

Sickness is a call to "come up higher." These hints come in various forms. It may be stomach trouble or bowels, heart, eyes, kidneys or general nervous prostration. You may depend upon it when a "whack" comes it's a warning to quit some abuse and do the right and fair thing with the body.

Perhaps it is coffee drinking that offends. That is one of the greatest causes of human disorder among Americans.

Now, then, if Mother Nature is gentle with you and only gives light, little "whacks" at first to attract attention, don't abuse her consideration, or she will soon hit you harder, sure.

And you may be sure she will hit you very, very hard if you insist on following the way you have been going.

It seems hard work to give up a habit, and we try all sorts of plans to charge our ill feelings to some other cause than the real one.

Coffee drinkers when ill will attribute the trouble to bad food, malaria, overwork and what not, but they keep on being sick and gradually getting worse until they are finally forced to quit entirely, even the "only one cup a day." Then they begin to get better, and unless they have gone long enough to set up some fixed organic disease, they generally get entirely well.

It is easy to quit coffee at once and for all, by having well made Postum, with its rich, deep seal brown color which comes to the beautiful golden brown when good cream is added, and the crisp snap of good, mild Java is there if the Postum has been boiled long enough to bring it out.

It pays to be well and happy for good old Mother Nature then sends us her blessings of many and various kinds and helps us to gain fame and fortune.

Strip off the handicaps, leave out the deadening habits, heed Mother Nature's hints, quit being a loser and become a winner. She will help you sure if you cut out the things that keep you back.

"There's a reason" and a profound one.

Look in each package for a copy of the famous little book, "The Road to Wellville."