

Science AND Invention

Gas poisoning from gas engines has become so common that German authorities urge that cylinders of oxygen be kept near, and that engineers be taught to apply inhalations to resuscitate victims.

Experiment has shown that an electric arc can be employed under water for fusing metal. The intense heat turns the water surrounding the arc into steam, thus forming an insulating cushion of vapor. It has been suggested that with proper apparatus the electric arc could be employed by divers for quickly cutting through large chain cables or iron plates under water.

The "axle-light" system is in use on the trains of the Atchison, Topeka and Santa Fe railroad on an extensive scale. Each car has its own storage batteries supplied with electricity generated by the axles of the wheels, and the locomotive headlights derive their illumination from the same source. It is estimated that each full train, exclusive of the locomotive, develops nearly 500 candle-power light.

Within the past few years the eucalyptus has been introduced in Florida, and its kindly growth there is believed to indicate that it might be extensively cultivated in the southern parts of that State. The eucalyptus is of very rapid growth, but it cannot withstand frosts. It was planted in California from Australia many years ago, and now flourishes so abundantly on the Pacific coast that its wood is extensively employed for fuel, posts and lumber.

The production of oxygen and hydrogen on an industrial scale by the decomposition of water with electrolytic apparatus in Germany has led to the suggestion that hydrogen thus produced may find a wide field of employment as a lighting agent. It is now used for inflating military balloons. For lighting purposes it is compressed in steel cylinders. With a proper burner it is said to be a cheaper illuminant than acetylene, the relative cost for equal illuminating power being 25 for hydrogen to 50 for acetylene.

Everybody who has used a microscope has no doubt regretted the difficulty of seeing small insects, and other living objects not of mere microscopic dimensions, magnified while alive and moving freely in the field of view. A recently invented English instrument, called the vitascope, is said to supply a desideratum in this respect. It is shaped like a telescope, a foot long when closed, and an inch and a half in diameter. The lenses are so combined that an object 20 inches away may be magnified 12 diameters. At a distance of 5 inches the magnification is 60 diameters.

BOAT HAS EXPRESS SPEED.

Western Designers Expect Their New Craft to Beat All Records.

A craft with the speed of an express train has long been the dream of several motor-boat enthusiasts along the upper Mississippi River and several designers have been working together with the result that they have produced a boat with which they expect to shatter all the present records, says the New York World.

Frank Titus of Fountain City, Wis., formerly owned the fastest boat on the river in the famous Bat, the small craft which attained a speed of nearly twenty miles an hour with a nine-horse power engine and for three seasons held the speed record on the upper river. The Bat has been sold to a physician at Cassville, Wis., and her engines will be used in another craft.

Until the advent of the Chief of Record, formerly owned by A. Gardner of Winona, the Bat outclassed all boats on the river, large and small, and could leave the fastest steamboats in the stern waves.

Gardner's boat, 25 feet long, with a nine-horse-power engine and 4-foot beam, was, until the middle of the season, the fastest boat in that territory. At Wabasha on July 4, in the motor-boat races, the Chief of Record outran the Bat and other boats entered and finished nearly a half-mile in the lead in a six-mile course. The Chief of Record attained a speed of twenty miles an hour and for the horse-power installed was considered the fastest boat between St. Louis and St. Paul.

Late in July the Skip, owned by Eugene P. Gleason, of LaCrosse, was launched at Red Wing and clearly outclassed other water racers. The Skip is 32 feet long, with a 4-foot beam and is equipped with a twelve-horse-power motor in three cylinders. The Skip has attained as high as twenty-two and a half miles an hour, but through failure to provide a sufficient cooling apparatus for the engine is unable to maintain this pace indefinitely.

The Skip now holds the speed record on that part of the river with the exception of a boat of the same design, which is 35 feet long and is

equipped with a sixteen-horse-power three cylinder motor. The new boat, however, has not entered into competition with the speed records, although she is said to run nearly a mile an hour faster than the Skip.

A remarkable feature of motor boating on the Mississippi is the speed attained by boats with little horse power. While the crafts on the Atlantic coast and the lakes require from fifty to seventy-five horse power before a speed of twenty miles an hour can be attained, none of the fastest boats on the river has more than sixteen horse power and few of them have over ten. Many of the engines used in the river craft are of light design, and while the horse power is small they attain a speed of from 800 to 1,000 revolutions per minute.

Motor boating on the Mississippi has taken a remarkable advance in popularity in the last season. Motor-boat clubs have been organized at all of the smaller towns along the river, as well as at the cities, and there is now a movement on between the clubs looking toward the organization of a Mississippi River motor-boat association, to include all of the smaller organizations.

Where a couple of years ago there were a dozen launches in LaCrosse waters there are now more than 150, ranging from the sixteen-foot hunting scow to the magnificent fifty-foot cruisers of the more wealthy boatmen.

ABOUT THE TAMALES HUSKS.

New Industry Developed by the Demand for the "Hot Things."

"Do you know," said the tamale fiend to a Kansas City Times man, "that a good part of the profit in the tamale trade goes to the farmers of Johnson County, Kansas?"

"Oh, shucks!" returned the other. "Yes, that's just it: The farmers out there supply the Kansas City market with the corn husks the tamales are wrapped in, and it would surprise you to learn the extent of the business. Any old corn husk won't do for the business, either. If you'll look at these you'll see the texture is very close, the surface smooth and that the lengths are uniform. Only the inner husk is used, the fine white covering that grows next to the ear. The proper length is about nine inches, to allow for the ends being folded over the tamale when it is steamed, as you see them now."

"Why, who'd go to all that bother for a dinky little business like this?" asked the listener incredulously.

"Bother? Dinky? Say, do you know these corn husks are shipped in here in 500-pound bales? That's quite a respectable sized industry, I take it. At any rate, the Kansas farmers have found it profitable enough to go to the expense of buying presses to bale the product and a large agricultural supply house in Kansas City finds it worth while to carry it in stock and cater to the trade of the tamale men."

"What is the particular advantage of using corn husks for this purpose?" asked the listener. "Isn't there anything else that would do?"

"Nothing that would answer as many purposes. The corn husk holds the tamale while it is cooked and at the same time imparts a flavor to it. It also holds the heat as, nothing else would."

"Well, it beats me!" said the other man, as they went on. "I never gave it much thought, but always supposed the tamale men bought up all the old mattresses to get their corn husks."

Woes of the Amateur.



Wiley—I wonder why the grass doesn't come up?

Hubby—I'm sure I can't tell. You don't suppose you planted the seeds upside down, do you?

Ha! Ha! So Funny.

"A firm uptown," said Joakley, "has got up something new to enable you to pick your teeth."

"A new sort of toothpick?" queried Coakley.

"Well, it's a catalogue showing photographs of the handsome false sets they manufacture." — Philadelphia Press.

As a man gets older, he realizes that a good deal of his youthful wit was nothing more than impudence.

Ragtime, Alonzo, isn't necessarily the time to chew the rag.

SHEAR NONSENSE

"What is the capacity of your church?" "About 300 spring hats."—Life.

Jeweler—Shall I engrave the bride's initials on the inside? Fiance—Better say, "For my best beloved."—Fliegende Blaetter.

Miss Millyuns (rather aged)—Will you love me when I'm old? Brighton Early (absently)—Well, what do you think I'm doing now?

The Professor's Wife—You haven't kissed me for a week. The Professor (absently)—Are you sure? Then who is it I have been kissing?—Life.

Maggie (calling upstairs)—The gas stove went out, mum. Mistress—Well, light it! Maggie—It went out through the roof, mum.—Success Magazine.

De Quiz—Have you heard a robin yet? De Whiz—No, but I've seen a woman with her head tied up in a towel beating a carpet in the back yard.—Judge.

Walter (who has just served up some soup)—Looks uncommonly like rain, sir. Diner—Yes, by Jove, and tastes like it, too! Bring me some thick soup.—London Tatler.

"Bilger eloped with his cook, the unfeeling wretch!" "Well, I don't know. Why shouldn't he if he wanted to?" "But his wife was just going to give a dinner party."—Life.

"The corporation has resolved at last to lay out a park for the benefit of the poor." "Have the preparations begun?" "Rather! All the 'Keep Off the Grass' boards have arrived already."—Tit-Bits.

"Going to make a garden?" "Not much." "I thought you were so enthusiastic on the subject last summer." "Won't you allow a man to learn anything by experience?" — Nashville American.

Wink—He didn't use to dodge his rich relatives, but he does now. Bink—Does, eh? And as poor as he is? Wink—Sure! All his rich relatives have bought automobiles. — Chicago Daily News.

Bill—I see in a favorable wind a fox can scent a man at a distance of one-quarter of a mile. Jill—Of course, he could scent him farther if the man happened to be in an automobile.—Yonkers Statesman.

"Beware!" whispered the fortune teller; "your bitterest enemy will shortly cross your path—" "Hooray!" cried the man, delightedly; "my new motor car won't do a thing to him."—Philadelphia Press.

Boston Bill—I'm getting weary of this blase, nomadic, peripatetic existence, aren't you, pal? Omaha Red (after recovering)—Why—er, yer see, Bill, it never struck me in dat light before. Is it really as bad as all dat? —Puck.

"Excuse me for not stopping," exclaimed Little. "I'm in a hurry to get home." "That's rather unusual," said Large, "what's the trouble?" "My wife has a cold," explained Little, "and she can't speak above a whisper."—The Bohemian.

"The Swelltons seem to keep up an imposing establishment," remarked the canned goods drummer. "You bet they do," replied the groceryman, with a sigh long drawn out, "and I'm one of the fellows they impose on."—Chicago Daily News.

"Mamma, is the old black hen going to be sent away for the summer?" "No Tommy, but why do you ask?" "Well I heard papa tell the new governess that he would take her out riding when he sent the old hen away for the summer."—Harper's Weekly.

"Confound it," cried the angry husband, "any old thing appeals to you if it's only cheap!" His bargain-hunting wife grimly smiled. "Don't forget," she sarcastically remarked, "that you yourself are one of my characteristic investments."—Cleveland Plain Dealer.

"What brought you here, my poor man?" inquired the prison visitor. "Well, lady," replied the prisoner, "I guess my trouble started in attendin' too many weddin's." "Ah! You learned to drink there, or steal, perhaps?" "No, lady; I was always the bridegroom."—Tit-Bits.

"Have you fixed up my will just the way I told you?" asked the sick man, who was the possessor of many needy relatives and some well-to-do but grasping ones. "I have," asserted the lawyer. "Just as strong and tight as you can make it, eh?" asked his client. The lawyer nodded. "All right," said the sick man, "Now I want to ask you one thing—not professionally—who do you think stands the best chance of getting the property when I'm gone?"—Youth's Companion.

FARMS AND FARMERS

Farm Labor.

One of the greatest problems confronting agriculture is competent farm help that can be secured at a compensation proportionate to the net earnings for the farmer. Manufacturers, mining and railroads furnish employment to a vast number of workers who are under trained foremen and their wages are graduated according to the amount of product they can turn out. Manufacturers and transportation corporations are capitalized and the investment is required to earn a fixed dividend for the stockholders. The earnings are expected to exceed the dividends, operating expenses and fixed charges to create a surplus fund to conduct affairs in emergencies and during panics without stopping dividends.

The farmer is compelled to compete in the open market for help to conduct his agricultural operations. While the farmer is delighted if his investment returns a reasonable profit, he has no recourse if the season's results are conducted at a loss. The manufacturer in times of financial stringency to protect stockholders discharges a part of his force, reduces their wages or runs his plant on shorter hours. The farmer can only protect himself from exorbitant wages by the purchase of costly labor-saving machinery.

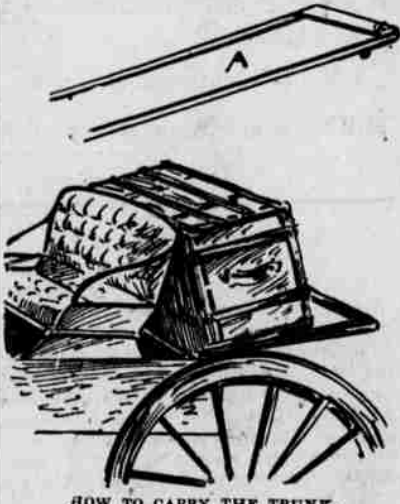
The world moves forward and the higher cost of living, the increase in price of farm lands and the higher prices of agricultural products will not soon revert to old low standards. The farmer will not find cheap labor offered in the market except by inefficient employees.

Agriculture is annually becoming more of a business proposition and the standard of labor advanced on the farm. The farm laborer must understand modern agricultural machinery and how to operate it to obtain employment. Machinery is too expensive to be trusted with inexperienced operators, and the man who can skillfully handle modern farm implements is in demand on the farm at a wage scale that will compare favorably with the employes in industrial enterprises.

Farmers are now practical business men and the majority of them keep books on farm operations and know the amount of their profit and loss annually. Farming as a profession is becoming more attractive and diversified and labor needs to be more skilled to meet new conditions of agriculture. The inducements are potential for young men to qualify as farm laborers and the field offers as brilliant prospects as any other profession. The farmer is not so much in quest of cheap labor as efficient help and is willing to pay a wage scale proportionate to the ability and proficiency of the laborer as an up-to-date farm hand.—Goodall's Farmer.

Carrying a Trunk in Buggy.

To carry a trunk or any bulky article in a small buggy, make a frame out of two pieces of one and one-half by two-inch scantlings eight feet long. Nail a board across the ends as shown



HOW TO CARRY THE TRUNK.

In A of the accompanying illustration. Place the free ends beneath the seat and under the foot rest in front, letting the frame extend behind the buggy. The trunk or box, explains Prairie Farmer, can then be placed on the end of the frame behind the seat of the buggy. It should be tied on.

Eggs Various Preserved.

Eggs are preserved in many other ways besides cold storage. Often the preservative is effected by excluding the air by coating, covering or immersing the eggs, some material or solution being used which may or may not be a germicide. An old domestic method is to pack the eggs in oats, bran or salt; another consists in covering the eggs with lime water, which may or may not contain salt. In Germany sterilization is effected by placing in boiling water from twelve to fifteen seconds. Sometimes they are treated to a

solution of alum or salicylic acid. Other methods consist in varnishing with a solution of permanganate of potash, varnishing with collodion or shellac; packing in peat dust, preserving in wood ashes, treating with a solution of boric acid and water glass, varnishing with vaseline, preserving in lime water, preserving in a solution of water glass. The last three methods have proved most successful. Infertile eggs will keep much better than fertile eggs by any manner of preservation.

New Farm Products.

Alfalfa was an unknown crop a few years ago. Now it is one of the most reliable and profitable of Texas crops. It has not been long since the onion was produced only in a few short rows for family use. Now the onion crop is one of Texas' best advertisements. The effort to raise for the market medicinal plants began with one enterprising citizen of Grayson County only a few years ago. Now this line is being taken up and will be carried on for all it is worth. The list is growing longer, and the prices of cotton and other farm products are better than they used to be, and the man with the hoe is growing more independent. The sugar beet is now being tested. Colorado holds first place in the production of beet sugar in the United States, with 422,732,530 pounds of sugar from 138,366,366 acres, while Michigan and California are closely matched for second place, producing 165,000,000 and 164,000,000 pounds, respectively. The sugar beet crop in this country last year brought \$4,500,000.

The present year will be an important season for experiments with the sugar beet in Texas. Let the tests be made under as good conditions as possible. There is really no doubt as to the results in localities where the soil is of the right density and quality. Lands that produce fine crops of beets of the ordinary variety or the "biggest turnips in the world" are quite sure to break a few records in sugar beets if given a fair test.—Galveston News.

Improved Chicken Coop.

The diagram shows a convenient way to make a coop for the poultry yard, of which the special feature is its door. Procure a box of the right dimensions and saw a hole, d, in one end. Then strengthen the box with narrow strips of wood, b c, on each side of the hole.



HINGELESS DOOR FOR A COOP.

b c. This acts as a groove for the door, a, to slide in. Thus you have a sliding door, which opens and shuts with the greatest ease. The front of the coop is inclosed with lath, or narrow strips, placed 2 1/2 to 3 inches apart. The top should be covered with a good grade of roofing paper to make it waterproof. A coop of this sort should be 2 to 2 1/2 feet long, 16 inches deep and not less than 20 inches high, while 2 feet would be better.—Richard Moncre, in Farm and Home.

Farm Hints.

The horse is man's best friend, therefore he is deserving of a friend's treatment.

Don't forget that the barnyard manure is the best all-round fertilizer you can obtain.

Pasture makes the cheapest hog feed on the farm and clover makes the best hog pasture.

Don't let money act as a padlock on your heart and shut in all the kindness and happiness.

The animal that has a full, bright eye is apt to be healthy. And a moist nose is another indication of health.

Talk over with the good housewife all the undertakings of the farm. She will have some good advice to offer.

The burning of straw and stalks, except in special cases, is a wasteful practice and has no place in judicious farming.

Every farm should have a pair of scales. It is the only way for the farmer to know exactly where he stands in his buying and selling.

Farm machinery put in repair before the busy season opens means money in the pocket. When it is put away in the fall is a better time for repairing.

The man who keeps his troubles to himself is better thought of than he who burdens his neighbors with them. The neighbors have their own troubles to think about.

Little things on the farm amount to as much in the end as they do in any other business, yet the farmer as a rule does not pay as much attention to details as does the city business man.