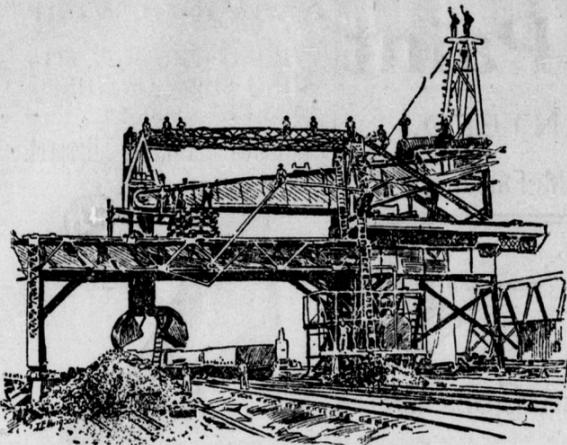


**MOST WONDERFUL OF MACHINES.**



**AUTOMATIC ORE UNLOADER AT CONNEAUT, OHIO.**

The most wonderful machine on the chain of great lakes will be in operation the coming season on the Carnegie docks at Conneaut, Ohio. With its introduction at all lake ports there will be little demand for unskilled labor. The shovelers at Conneaut, realizing this fact, regard the new machine with awe and displeasure. During its construction it was deemed prudent to guard it at night for a time under the glare of several arc lights to insure its completion. With the new machine six men can unload a vessel in the same time that it requires a force of 100 to do the same work. The weight of the new machine is 400 tons. Its height is more than fifty feet. Equipped with many swivel and hinge joints its movements are almost human. In the same period of time that one laborer can sink his shovel into the ore in a vessel's hold and lift a few pounds, the scoop of this machine grasps ten tons.

**California's Giant Trees Are Saved.**

The United States Government Has Acquired the Famous Redwoods.

CALIFORNIA'S grove of the Calaveras mammoth redwood trees has been saved from the hands of the vandal. At the opening of the United States Senate's session, on March 6, Mr. Hansbrough, of North Dakota, reported the House joint resolution directing the Secretary of the Interior to place under bond the "Mammoth Tree Grove" and the "South Park Grove of Big Trees," in Calaveras and Tuolumne Counties, Califor-



THE "GRIZZLY GIANT"—93 FEET CIRCUMFERENCE.

nia, and the resolution was adopted, and the Government acquires the groves. Some months ago a lumberman bought an option on the ground for the purpose of cutting down the big trees and sawing them into lumber. A cry went up in California from the snows of Mount Shasta to the orange groves of Los Angeles, to save these mammoths of the forest. By the efforts of the women of California the matter was brought before Congress with the above result. These are the "sequoia giganteas," or redwoods that first gave California her reputation for having the biggest trees on earth. Through one of them a Concord stage coach may be driven. The stump of another, thirty feet in diameter, is used as a dancing pavilion. Redwoods like these tower up 200 feet without a limb, and then burst out into a crown of foliage, rising 100 to 200 feet higher.



GOVERNMENT GUARDIAN'S CABIN, MARIPOSA GROVE.

Some scientists say they are 1300 years old. Others insist that they must be 6000 years old—older than Christianity, older than the Mosaic law. These trees have outlived the natural age or cycle in which they be-

longed. The climate and surroundings of to-day are not congenial and they are slowly dropping their limbs and wearing away with age and weather.

Some of these groves of trees were offered for sale recently at ridiculously low prices—\$20 an acre for large tracts that have in some places six or



YOSEMITE STAGE COACH ON THE "FALLEN MONARCH."

seven of the great trees upon each acre. It is difficult to realize that but for the prompt action of Congress, for a few dollars one could have bought a tree so old that our entire civilization has lasted for a time which is only the fraction of its age. People of California have been accustomed to look upon them as the deities of that land. No wonder a summer day spent in the Sierra Nevadas under the redwoods is one never to be forgotten. The wind may blow if it will, but so faintly does sound descend that it seems more like the rolling of a distant ocean. Sound and silence alike are majestic and impressive in those surroundings.

Here Bret Hart located one of his most fascinating stories, with an Indian lover living in a spacious hall within a hollow tree. Here he hides and shields from danger of outlaws his paleface sweetheart. What more romantic place in which to unfold the love of a wild, passionate child of nature?

Many of the hollow trees in the grove have served the more prosaic purpose of homes for miners and prospectors. In 1853 one of the largest trees in the Calaveras grove was cut down and the trunk smoothed off. Five men were busy over three weeks felling it by means of burning and the use of pump augers. The stump is twenty-four and a half by twenty-three feet, and Professor Whitney counted 1255 annular rings, which, making allowance for the core of the tree, indicates an age of about 1300 years.

That a vast difference exists between the ages of these trees is now generally accepted as a fact, and this tree was evidently of the younger

Upon the fallen tree itself was maintained a tenpin alley and a reception room.

The Baptist Church in Santa Rosa was, with the exception of the arches, built entirely of lumber secured from one redwood, and but half of the tree was used at that. The age of this giant was estimated at 1200 years.

When one of these big trees gives up the ghost and falls under a stress of wind, it goes down like an avalanche of the Sierras. The ground trembles and the crash and ruin in its path mark a tragedy of nature.

The "Father of the Forest" in the Calaveras grove, which fell not long ago, had seen a thousand years when the great majority of its present associates were either non-existent or literally but little larger than mustard seeds. Its first limbs are 100 feet from the base, and with a diameter of six feet, compare favorably with the largest trees of the country east of the Rockies. There are 125 trees in the lower and upper groves over forty feet in circumference. In the Yosemite National Park, in a belt about two and a half miles long by two miles wide is the next largest grove of redwood trees. Here are some 600 trees which would be considered too large as shade trees for the broadest avenue. The largest has a circumference of eighty-one feet three feet above the earth. It is in many ways the greatest and grandest forest on the globe.

The big trees are generally wearing away with time and weather, and seem to have outlived the age in which they belonged, so that they will drop their limbs and topple themselves all too soon without the vandal's axe to bring them down. Many of them show signs of decay, and some are hollow at the base, though still living, with the heart gone. In the hollows of those woodland giants there is frequently plenty of space for a comfortable house of three or four rooms, and in one of them seventeen horses

have been sheltered at the same time from a storm.

The gigantea is wont to play jokes on travelers, and they are elephantine enough to be serious. The camper is never tempted to seek rest in the grasses and ferns and shrubs at its base, for he is liable to be bombarded with cones, and as they are about the size and weight of eggs, a drop of several hundred feet gives them surprising force. But the real danger lies in the limbs, which frequently fall, though the tree may apparently have none to spare.

In the Mariposa grove there are



THE ROADWAY RUNS THROUGH THE TREE

standing 365 large sequoias—one for every day in the year. This grove was donated by Congress to California in trust at the same time (1864) and by the same act as the Yosemite Valley, and is managed by the same board of commissioners. A troop of cavalry guards the domain.

Wherein Woman is Superior to Man.

In three things only are women superior to men; they are superior to men as nurses, as teachers of young children, and no man can trim a hat equal to a woman. In all other respects men are the superiors of women. The best cooks are men; the best housekeepers are men. Although nearly every girl takes piano lessons and studies music, all of the great piano-players and musicians are men. These facts have been demonstrated by thousands of years of experience. Women who are trying to become lawyers, and who imagine that they can divide up the world's material rewards with men, should remember that they carry a serious handicap; nature intended that women should travel in certain paths, and will not reward them in other directions. Women are natural nurses and natural teachers. They should be natural housekeepers and cooks; they would be if they didn't fritter away so much of their time in running after foolish things.—Acheson Globe.

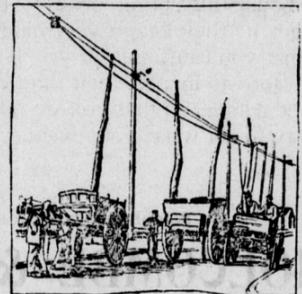
The tramways, omnibuses and underground railway in and around London, within a radius of five miles, carry each year, it is calculated, about 453,000,000 passengers.

**TROLLEY AND AUTOMOBILE.**  
The Features of Both Combined in One Vehicle.



EFFORTS to combine the principles of the automobile and the trolley have resulted in an experiment being made by a French inventor, M. Lombard-Gerin, and a test line, one-half mile long, has been laid down along the Seine just outside of Paris. This inventor's scheme is to equip the "trolley," that is, the support which runs on the trolley wire, with an individual motor, in addition to the motor driving the vehicles, so that it is self-propelling and has an independent movement of its own, irrespective of the movement of the vehicle on the ground, though dependent upon and proportional to the speed of such movement.

Briefly the outfit consists of a



AUTOMOBILE AND TROLLEY COMBINED.

double trolley wire, suspended about twelve inches apart, on brackets supported on poles along the side of the roadway; a "trolley," consisting of two bearing wheels, an electric motor for their operation; a long flexible cable connecting the trolley with the vehicle running on the street, by means of which current is supplied to the series motor which propels it. This unique arrangement gives great freedom in the operation of the vehicle, as it can be operated on the side close to, or away from, the trolley wires. The wagon can turn out for teams without interfering with its operation or placing undue strain on the trolley wires, and go backward or forward at will, ascend or descend hills or steep grade, and, in fact, execute any manoeuvre that would be expected of a vehicle pulled by horses along a thoroughfare.

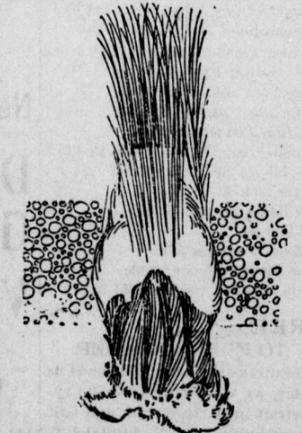
The flexible cable, twenty-five or thirty feet long, which does duty for the ordinary trolley pole, is connected to the vehicle at the top of a standard some thirteen feet above the level of the ground, additional cable being wound on a drum, if it is required.

While the trolley wires may make sharp turns, following curves or bends in the roadway, it is evident that two vehicles operated from the same trolley wires could not pass each other going in opposite direction. This is overcome, however, by arranging the connections of the flexible cables so that they can instantly be transferred from one vehicle to another, all the fittings being interchangeable. Thus, if two automobiles met while going in opposite directions, it would only be necessary for them to exchange trolleys, by exchanging cable connections, when they could continue on their respective ways.

Slaughter of Herons.

The battle waged by the Audubon Society against the fashion of wearing bird's feathers and particularly the egret has been so effective as to seriously influence the sale of these bits of millinery. With a view of meeting the objection of women to purchasing these plumes those interested in their sale have been very successful in their efforts in circulating the story that the herons, from which the egrets are taken, are no longer slaughtered, but they are regularly farmed for the purpose and the egret gathered up when cast by the birds.

In all cases which have been investigated by the American Ornithologists' Union Committee on Bird Protection there is absolutely no truth in the reports.



SCALP OF HERON CONTAINING EGRET

The latest advices from collecting grounds in tropical America state positively that the birds are being shot wherever found.

The accompanying cut shows the scalp of a heron killed for the purpose of securing the bird's head feathers. Seneca, when tired writing his treatises on morals, found amusement in going over his accounts and calculating how much interest was due him.

**FOR FARM AND GARDEN.**

Soy Bean Meal for Cows.

With dairy cows, soy bean meal takes the place of linseed meal, being somewhat richer in protein, a laxative feed, and softening the butter fat. Not over three pounds per day should be fed to a cow, and the softening effect on the butter may be overcome by giving feeds having the opposite tendency, such as corn, kaffir corn and cottonseed meal.

The Advantage of Dwarf Trees.

Dwarf fruit trees are stated to have certain advantages over high trees: (1) A large number can be grown in very limited space; (2) the cultivation of vegetables and flowers near them can be accomplished without fear of shade; (3) they produce beautiful and excellent fruits; (4) they are an ornament to the vegetable garden; (5) they have the advantage of resisting the winds of autumn which cause the fruit of high trees to fall before maturity.

The Damage to Foliage.

During the droughts and hot days of the past parching summer much damage to foliage was caused upon certain crops and trees, notably sugar beets, cauliflowers, cherries and maples. The leaves of the sugar beets went down as though struck by blight or similar disease, the young cauliflower plants lost many of their unfolding tender blades through parching and death of their margins, and cherries and maples in certain localities stood denuded long before time for foliage to fall. These injuries occurred soon after days in late summer when the drought had been long continued and when hot parching winds made a sudden demand on the plants for more moisture. That the injury was due to this cause, excessive transpiration, and not either to lack of water due to drought, or to disease, has been demonstrated by the New York agricultural experiment station.

Giving Medicine to Horses.

To give the horse a drench or bolus requires both skill and patience with exceeding gentleness. All solid medicines should be at first reduced to powder and then rolled in some viscid material to form a paste in an oblong cylinder mass about two and one-half inches long. "Place the right hand flat over the bones of the animal's nose, grasping each side, thus to steady the head, while with the left hand the operator seizes the tongue, drawing it outward to the side, the fingers resting on the lower jaw for support. This will secure the tongue from being drawn out too far. The bolus should be grasped between the first, second and third finger tips of the right hand and carried over the tongue to the back of the mouth." Withdraw the right hand quickly and also release the tongue, instantly closing the horse's mouth and holding his jaws together. In giving a draught or drench, which is the liquid form of administering medicine, use a horn, or a perfectly clean tin bottle. Stand on the off side of the horse and "insert the fingers of the left hand within the angle of the mouth," drawing away the animal's cheek in order to form a suitable pouch into which the fluid is poured "in small and successive doses as the creature permits it to pass down the gullet. The neck of the bottle, therefore, does not enter the mouth and injuries from that source are entirely avoided. The tongue must be left quite free, as it is a most effective agent in carrying fluids onward to the gullet, and its action greatly facilitates the operation of drenching."—Our Animal Friends.

Points on Buttermaking.

In the first place good cows are a necessity. A scrub which gives indifferent milk half the year is one of the great leaks on many farms. Next, cows must be well-sheltered, well-fed and kindly treated, this last being far more essential than most people think. Cows which are stabled should be well brushed and the udder wiped with a damp cloth to prevent the fine dust of the barn falling into the pail. This is one cause of bitter milk in winter. A wire strainer with a fine thin cloth over it keeps everything else out of the milk. Tin pans are easier kept sweet, lighter to handle and I think the cream rises better in them than crocks.

The milk should not be covered until the animal warmth is out of it. The sooner it cools the more cream rises. In summer the pans can be set in cold water and the water drawn off when warm and renewed. A shallow zinc box, like the top of a sink, only large enough to accommodate all the milk of one milking, is handy. The box should be as deep as the pans, with a spout to let the water off. One bucket of water would be sufficient to cool the milk. The pans can be left here until next milking or when cool set flat on the cellar floor. A frame of lath large enough to cover all the milk can be made with legs two or three inches higher than the pans. Over this stretch muslin and tack tightly. It can be set to one side or raised up on end and down again, covering or uncovering all or as much as you want at once. The muslin can be taken off and washed, and it goes away with so many lids to scour and sun and the milk is better than when shut up tight.

Tin buckets are the best for the cream. In winter I hang my bucket up near the ceiling and ripen my cream as well as in summer. In summer I skim sweet and hang in the well, so without ice can make good butter the year round. Milk must be regularly skimmed and the cream re-

gularly churned winter and summer. Thirty-six hours is long enough for milk to set, and 24 is too long if the milk clabbers. Cream should be churned at least every other day in summer and twice a week in winter. Sixty degrees in summer and 65 to 70 in winter is about the proper temperature to begin churning, for the warm air will raise it a little in summer and cool it in winter.

Stop churning when the butter comes and draw off the milk. I like to wash the butter thoroughly by whirling the churn, changing water until it runs clear. Work just enough to mix the salt. The grain then remains and the butter is rich, sweet and toothsome. Too much working makes it solid and tallowy and destroys the sweet buttery taste. I never work over butter that comes solid in granules. I find customers prefer it this way and every bit of milk and water can be got out of it churned at the right temperature. There are a few people in every town who are willing to pay a good price for gilt-edge butter, and cows can be made to be a source of revenue, not to be despised by the farmer's family, even when only a few are kept.—S. N. Wolcott in American Agriculturist.

Utilize the Bones.

Converting the bones about the farm into soluble fertilizer is another of the small economies that it would be well for every farmer to heed. Very often a good many bones of animals that have died upon the farm might be collected, if farmers would give attention to such things; and quite a lot might be saved in the kitchen in the course of a few months. Instead of being thrown away to be carried off by worthless dogs or left to rot in the forest, all these bones ought to be collected and converted into a good phosphate by the farmer. A bushel or two of bones, packed down in strong wood ashes, and kept wet, but not wet enough to drip, will make a nice lot of fertilizer in a few weeks' time.

A kerosene barrel is a good thing to pack them in: First, a layer of ashes made wet, then a layer of bones, and next another course of ashes, and so on, until the cask is almost full. Leave space enough at top to hold a bucketful of water, and keep the mass wet. If you fear your ashes are not very strong add some of the powdered concentrated lye from time to time. Large bones should be broken small, but a small or soft bones will soon yield to this treatment. In a few weeks turn the mass out on a floor, and with a hoe or maul crush the bones to powder, and you have a good phosphate as the most that you buy and at far less cost.

Superphosphate is made from bones treated with sulphuric acid, which reduces them in a few hours. But the acid is a risky article to handle, and the farmer with only a small parcel of bones had better go slow and safe with ashes. It will pay to utilize bones in this way. Don't let bones lie about in the woods where dead animals were left, but gather them up and reduce them to fertilizer. Save all the bones from the kitchen, and treat them likewise.

Short and Useful Paragraphs.

Bran is a good thing for growing pigs.

In gardening clean culture is the chief essential to success.

It is the sheep that are kept on low, wet pastures that have the foot-rot. The moral is plain.

"No foot, no horse," so take a look at the feet of your animal often and see if everything is "O. K."

Probably the most exacting of all pursuits is farming, as it requires constant and careful watchfulness.

Make it a habit to wash the cow's udder before milking. Most babies are bad, but this is one of the good ones.

Be sure your poultry get some animal food. The advice has been given often, and those who have taken it are the ones who are getting the eggs.

A flock of "scrub" sheep will bring more profit in the hands of a well-bred shepherd than a flock of well-bred sheep in the hands of a "scrub" shepherd.

The weeds will soon put in an appearance. Don't let them get the best of you, for every weed that grows is taking just so much moisture and plant nutriment from your soil.

Economical Conditions in Switzerland.

The cost of engine building in Switzerland is affected not only by the high cost of shipment of the completed work, but also by the fact that nearly all the principal raw materials, especially coal and iron, must be imported from other countries. Wage conditions, also, are certainly not more favorable than those existing in the work of her great competing neighbor, Germany. The Swiss workmen stand as high in respect to their standard of living and home comforts as any of their fellow workmen on the continent or in England. I can make no comparisons with conditions in America. The dwellings of the Swiss workmen are certainly a degree better than those of the same class in other countries, and all the conditions of life have been strongly influenced for the better by the constant stream of foreign travel, due to the natural attractions which have made Switzerland a terminal for travelers from all countries, furnishing examples which have reacted upon the standard of comfort of the whole population.—Professor A. Stodola in Engineering Magazine.

The Province of Quebec requires the barber, first of all, to be himself a healthy subject, free from transmissible affections. Then he must pass an examination in disinfection.