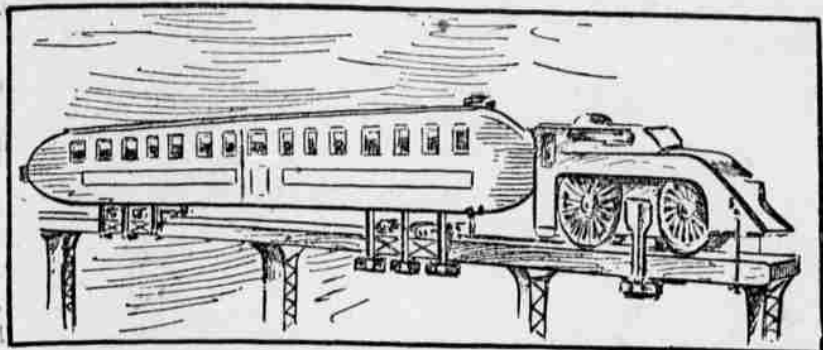


CARS TO RUN SWIFTLY WITHOUT WHEELS.



MODEL OF ALBERTSON MAGNETIC TRAIN.

Letters patent have been issued by the American and European governments for a new system of railroading, which, according to its inventor, will carry a train of cars without wheels drawn by a one horse-power locomotive from New York to San Francisco in ten hours' time. This remarkable invention, which will rush a regulation railway train through space at the speed of 300 miles an hour, is the creation of Professor A. C. Albertson, an electrical engineer, late of Copenhagen University, Denmark. The facilities of the Delaware, Lackawanna and Western Railroad have been placed at the professor's disposal for the working out of his scheme. If the invention proves to be practicable it upsets a law hitherto believed immutable, namely, that the heavier the load, the more power needed to move it. Professor Albertson seems to have proved that the heavier the load, the less the power needed. The scheme in brief is as follows:

The train is equipped with a set of powerful electric magnets, which slide along under the rails and lift the cars from the track. If, for instance, a car weighs ten tons, the engineer of the train would merely turn on a magnetic force of eleven tons, which would thus overcome the weight of the train and allow it to be propelled with a friction of only one ton. In other words, the entire weight of the train is held up by the magnetic force, and experiments have actually shown that the more the train weighs the less force is needed to propel it. The great speed claimed by the inventor for the magnetic train is made possible largely by the fact that friction is almost wholly done away with.

On such a railroad system as this smoke and vibration would be eliminated; there would be no possible chance of grade-crossing accidents, no derailling, no hot boxes. Sleeping cars would be superfluous, as the distance between the oceans could be covered in one day. No mechanical or pneumatic brake would be needed, for the train is itself a brake, for, in order to stop, the engineer would simply turn on more magnetic power, thus making the pressure upward greater.

COOL HEAD IS ESSENTIAL.

Trainers of Wild Animals Must Be Ever on the Alert for Surprises.

Wildcats, tigers, jaguars, panthers, and leopards offer the greatest menace to their trainers. These are the animals that appear to long most ardently stalk their prey and utter their night cries in their native haunts. Almost incessantly they swing back and forth behind the bars peering over the heads of the spectators with wild eyes that seem to be trying to discern the forest beyond the confines of their prison house. Besides their restlessness, a reason why the big beasts of the cat family are considered more dangerous than the others is found in their deceptive methods of attack. Lions and bears meet their enemies boldly, but a tiger or a leopard—particularly the latter—creeps up stealthily, crouches, draws back when faced and then, when the victim's guard is relaxed, gives a mighty leap. Kind treatment has but slight effect upon the creatures of the forests. Their deep feeling of protest against a life that is most unnatural to them cannot be banished by lumps of sugar and friendly pats.

The process of subjection is, of course, a very gradual one. A trainer's first step is to make himself known in a pleasant way to his new pupil. He attends to its feeding for a week or so, stands by its cage talking to it and opens the door a little, rubbing its head cautiously as it approaches. Finally when the animal has become accustomed to his presence he enters the cage, being as unobtrusive as possible, so as not to frighten or irritate his host. For an hour or more at a time he may sit in the cage, reading or playing with the animal if he dares. A trainer's next move is usually to give the pupil a taste of his power. A rope is fastened to its neck and passed around two or three bars of the cage. The animal is given plenty of room in which to move, but when it makes a leap at its trainer, who has become more dictatorial in his manner than before, it is pulled up short. This practice is resorted to so often during the preliminary training that the beast loses confidence in its powers. A whipping now and then is also necessary.

When an animal is well under control it is taken from its cage into the arena, where instruction in tricks begins. It is first made to take and retain the place assigned to it. On its seat at the side of the big cage meat is placed. The animal learns that on entering it will find food there and soon acquires a habit of going voluntarily to its place. Then it must be taught to keep its seat. When it jumps down without being called it is punished a little and forced back. At length it comes to realize that it can have no peace except on its own perch and so it stays there. The same general tactics are used in teaching animals their positions on pyramids and other formations.—Success.

ITALY TIRED OF HER PAST.

Some of Her Ancient Landmarks Likely to Disappear Before Long.

Italy is tired of a glorious death. Her sons boast of Garibaldi and Marconi, not of Raphael and Julius Caesar. Venetians may well shrug their shoulders when foreigners complain of steamboats in the Grand canal. They are not the grieveless when the Campanile

falls. The papers and statesmen exhort the people to imitate more powerful nations and abandon their idle, pleasure-loving spirit, their love of peacemaking, idleness and fireworks, their indifference to education, to sound politics and finance.

The Roman city government is now willing to construct railways alongside the Forum. The old is mixed with the new, industry with art, energy with decay. There is a telephone at the spot where St. Peter is supposed to have been crucified. I saw the king of Italy in an automobile by the ruins in which Christian girls were gored by bulls. His four attendant guards rode bicycles. Trams and buses start from the square in which are Nero's bones, where Luther knelt before his great revolt, by the gate through which an endless line of shadows pass, from guilty Macbeth, doing penance, to so many popes and emperors. The greatest of churches is now lighted by electricity as well as by Michelangelo's dome and the same new luminary is turned upon the dying gladiator. The Roman glories in his modern stations and ugly civil buildings and cares little for Cicero or Brutus, for the renaissance or the antique world.

Underneath a statue of Garibaldi, on one of the Roman hills, are groups of figures, allegories, in which Europe presides over history and art, America over trade and industry.—Collier's Weekly.

"Hot Time" as the National Air.

"Hot Time in the Old Town," declared Prof. Georg Eduard, of the German department of Northwestern University, "is bound to become the national air of the United States. Both the music and the words are in perfect harmony with the Yankee spirit, and when the people want to express themselves and can't think of anything else to sing, they break out spontaneously with 'Hot Time.' They've sung it all round the world.

"The charge up San Juan hill was made to its music, and the hand played it when the United States soldiers entered Peking, and to-day they are singing it in the Philippines."

Prof. Eduard spoke in all earnestness, for though he is a native of Germany and not yet a naturalized citizen of this country, he is thoroughly in love with America and her progressive spirit, and declares that he will never return to Germany to live. These statements were made to his German class, and were occasioned by the lesson for the day, which was the German song, "The Lorelei." The professor became so interested that he took up the whole time of recitation with his discussion. He spoke of German and American political institutions, and compared the character of President Roosevelt with that of the German Emperor. Prof. Eduard came to Chicago in 1893 as world's fair correspondent for a German newspaper, and later accepted the position as teacher of German in Northwestern University.—Chicago Evening Post.

Uncle Reuben Says!

Truth am mighty an' must prevail, but human natur' only likes to hear de pleasant part of it. De man who goes about speakin' de naked truth all de time is less welcome dan de liar. —Detroit Free Press.

Somehow, it always pleases men when a worthless boy comes out, and becomes a mighty good man.

PASSION FOR REVOLUTIONS.

Repeating Rifles and Cannon Have Failed to Work a Cure.

If some of the learned scientists who are devoting their talents to the study of germs would turn their attention to South America and the islands of the Caribbean they might have discoveries which would prove a blessing to mankind in that disturbed quarter of the world. Why should the South American and the West Indian take to riot and revolution as naturally as a duck does to water, asks the Baltimore Sun? Is it because they are of a fiercer and more turbulent disposition than the inhabitants of other parts of this hemisphere, or is it because they are the victims of sinister bacilli, germs of rampant and irresistible strenuousness?

Not long ago an American savant announced that in certain parts of the United States there is a bacillus which makes its way into the bodies of its unfortunate victims and produces an invincible aversion to physical and mental activity. If there is a germ of inertia, why shouldn't there be a bacillus of pernicious activity and misdirected strenuousness as well? It is not fair to the South American brethren to assume that they are totally depraved; that they engage in throat cutting and other bloody diversions from pure love of doing evil. In some degree, at least, they have been under the influence of American and European civilization for a great many years. To some extent they have introduced the forms of civilization into their governments and social institutions. Yet, despite their contact with citizens of the most enlightened nations and their commercial and diplomatic relations with Europe and the United States, they have scarcely more respect for law and order than the human race displayed in the days of primitive man.

If there are bacilli in the western hemisphere indigenous to the tropical regions which incite a people against its will and natural disposition to commit deeds of violence and murder savants ought to be able to find a remedy. The antidote commonly used in cases of pernicious strenuousness has not proved a success. Repeating rifles, bayonets and cannon have failed to work a cure. When the South American has introduced the germs of revolution and riot into his body nothing will deter him from stirring up trouble—not even the fear that he will be shot or bayoneted to death. When he is under the influence of the bacillus of strenuousness—and that seems to be a chronic condition with him—he is like the Malay fanatic who runs amuck, killing right and left. The scientist who discovers the remedy for this would be one of the greatest triumphs of this century if the ever-warring inhabitants of the Latin-American republics and of Haiti were inoculated with the bacilli of slothfulness and reduced to a state of innocuous inactivity. The implements of war have failed to produce the desired result. Now let science take a hand and if possible transform the turbulent folk of the tropics into peaceful and law-abiding citizens of the new world.

What Education Teaches.

The great thing in all education, says a noted professor in the Beacon, is to make our nervous system our ally instead of our enemy. It is to fund and capitalize our acquisitions and live at ease upon the interest of the fund. For this we must make automatic and habitual, as early as possible, as many useful actions as we can, and guard against the growing into the ways that are likely to be disadvantageous to us, as we should guard against the plague. The more of the details of our daily life we can hand over to the effortless custody of automatism, the more the higher powers of mind will be set free for their own proper work. There is no more miserable human being than one in whom nothing is habitual but indecision, and for whom the drinking of every cup, the time of rising and going to bed every day, and the beginning of every bit of work, are subjects of express volitional deliberation. Full half the time of such a man goes to the deciding, or regretting, of matters which ought to be so ingrained in him as practically not to exist for his consciousness at all. If there be such daily duties yet not ingrained in any one of my readers, let him begin this very hour to set the matter right.

Write the Proper Thing.

"Glady's," said Chumley to his manly sister, "I've done so much for you you should write me a testimonial."

"A testimonial?"

"Yes; you might say: 'Dear brother, once I was a timid, delicate girl, but since using your collars, shirts and ties I have become a new woman.'"—Philadelphia Press.

Resenting an Insult.

"This, I suppose," said the visitor, "is the gun your great-grandfather carried through the revolution?"

"Most assuredly not," haughtily replied Cadleigh Rich. "That was his gun, but his man carried it for him, of course."—Philadelphia Press.

A ten-cent argument often ends in a \$10 quarrel.



The Mythical Corn Wheat.

The Department of Agriculture Washington reports that an enormous number of letters are being received from farmers in all parts of the country, asking for definite information concerning a so-called new grain designated as "corn wheat." Samples are asked by most of these quilters. The department says these letters are obviously the result of widely published untruthful newspaper articles. The department authorizes the statement that there is no such thing as "corn wheat," and it is not probable corn and wheat ever be crossed, and that it is a taint, if they were, that the hybrid would not be fertile. The grain has caused the furor, the department says, is known correctly as Polish wheat, although the grain is not a native of Poland, as the name suggests. Its original home is in the Mediterranean region. The heads and grain of this wheat are very large, the grain being, in many cases, twice as large as those of ordinary wheat. The statement that it yields from sixty to eighty bushels per acre, however, is an exaggeration, although there may be instances in Idaho and Washington where the ordinary wheat yield is large, where the crop may be sixty or seventy bushels per acre.

The experiments made by the department with the Polish wheat generally shown that the yield is disappointing. The new wheat has grown, except experimentally, in few places in this country. From experiments so far made the inference is that the grain may be very good as a hog food. But Polish wheat is restricted in its adaptability, and the department says, cannot be successfully grown anywhere east of the Mississippi River, but only in the plains region in Washington, Montana, Idaho and the other parts of the Pacific States where the grain is grown.

Onion Culture Profitable.

Onion growers are feeling hopeful over the prospects than number of years back, for the prospect is for prices for several years ahead. There is little doubt that prices will be the figures of two years ago, when onion growing was profitable, the prospects are, at



SOUTHPORT.

encouraging. One of the best of onions for profit is the Southport, illustrated herewith. The proved strain of globe onions, given the name Southport, and the white and yellow sorts are superior to the old globe varieties. The red Southport does well in many places, but is not so reliable as the Weatherfield. Both the white and yellow Southports are of good most attractive in appearance and excellent keepers. Both are also sorts and heavy yielders. The Southport Globes are well worthy of attention on the part of onion-growers.

Sore Shoulders for Work Horses.

The heavy work season of the nearly always occasions galled shoulders of work horses. Her simple and cheap way to prevent "Take an ordinary sweat pad cover the surface next to the shoulder with white soft oilcloth. Be very full to have it put on very snug without any wrinkles or lumps. The cover is put on by sewing it with strong thread, so it will not become displaced. trouble with the horses' shoulders this respect is caused by sweating as the oilcloth presents a cool, dry surface and does not hold the damp as leather or cloth does, it prevents shoulders from becoming sore most every instance."—It Farmer.

Wool Clip of 1902.

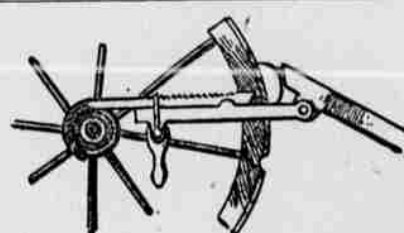
The world's wool clip for 1902 is estimated at 2,711,061,571 pounds. Quantity Europe furnished 944,200 pounds, South America 510,000, Central America 5,000,000, Asia 900,000, Australasia 510,000,000, 134,425,000, Oceania 50,000 pound North America, including the United States, the British provinces and India, 333,342,032 pounds.—Farm Journal.

Farm Notes.

For a good grafting wax take pounds rosin, one pound beeswax and one pound linseed oil. Put into an iron pot and heat slowly, stirring thoroughly until all is well mixed. Pour whole mass into cold water and by hand until it assumes a light color. Make into sticks and put in cool place until required for grafting wax never comes amiss. It always pays to keep it on hand in case of injury to a tree at any time is valuable.

Wagon Wrench and Jack.

When a team gets stalled with a heavy load and the driver uses every means of persuasion, from the whip to bad language, to urge the horses to start the wagon, nearly every passer-by has a feeling of sympathy for the animals and a desire to caution the driver against cruelty. A more practical thought than these has entered the mind of a Missourian, resulting in the invention of a simple apparatus, which can be carried on every wagon for use in emergency of this kind. Instead of "putting his shoulder to the wheel" the driver will get out his wrench, secure it in position and exert his strength at the end of the long



ASSISTS TEAM WITH A HEAVY LOAD.

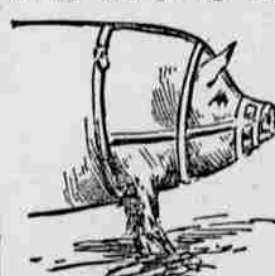
lever, lifting and rolling the wheel out of the rut or up the grade. The arrangement consists of a pair of hook members, which engage the hub and are adjustably secured to the arms pivoted to the lifting lever. The latter has a tilting shoe, which engages the face of the wheel as pressure is exerted on the level. The device will fit any diameter of wheel by loosening the cams which connect the arms with the hooks, and adjusting the latter at the proper length. By placing the hook ends on the ground and the end of the lever beneath the axle this device can also be used as a wagon jack to replace the one which teamsters usually carry.

A Thing to Do.

Another thing we general farmers ought to do, and that is set out more forest trees. Did you notice the story of that old walnut bridge in Indiana that a certain company wanted so badly that they were willing to put up a good steel bridge in the place of it? The wood, they thought, would be worth more than the steel bridge. And the men who controlled the walnut bridge refused the offer. Now, this state of affairs is likely to continue. Our forests are vanishing, and unless you and I, the general farmers of the country, get right down to business and plant trees the day is near at hand when fencing and building material will be worth almost as much as gold. Every farm ought to be turned into a little forestry station. We can easily get the seeds of such trees as are indigenous to our locality and plant them. Time will do the rest, and some day the world will thank us for doing what we did.—Up-to-Date Farming.

Harness for Unruly Sow.

There are several devices for overcoming the proclivities of some swine to eat their young, but none of them better than the method shown in the illustration.



Muzzle for Ugly Pig. can not get it off. At the same time this harness does not prevent the animal from eating slop or shelled grains. Little explanation is necessary about this harness, for the cut shows how it is made and adjusted. The essential feature is to have the strap back of the forelegs adjusted tightly enough so that the animal can not slip it over her head. It must also come close enough to the forelegs so that there will be no chance of its slipping. The harness should be made of heavy leather well joined with rivets. The expense of such a harness as shown is small and several of them can be made if necessary so that any and all of the pig-eaters may readily be kept from doing mischief.

Farmers and Cannery.

The Farmers' Protective Association of Central New York is making trouble for the canning factories in setting prices for which the members are willing to grow their produce instead of taking the prices offered, as heretofore. The scale adopted is considerably in advance of what was received by farmers last year. Some factories have granted a slight increase. In Maryland there are much agitation and conflict between growers and packers of tomatoes along the eastern shore.—Country Gentleman.