# NEW USES FOR ALUMINUM.

# Valuable Metal in Welding Rail Joints

-Rival of Copper. New York Tribune: When aluminum first became cheap it was employed for scarcely anything besides the manufacture of a few household utensils and a class of ornamental and useful articles of which the pocket matchbox is a type. Its next important service was to compete with copper as an electrical conductor. Be-tween Niagara and Buffalo and in several other parts of the country it has dem-onstrated its technical and economic value in this kind of work beyond a doubt. A In this kind of which be a doubt in third field of usefulness has more recent-ly been opened up. To this the atten-tion of Americans is just now directed by the second visit of Dr. Hans Goldschmidt to the United States. His lecture at Columbia university last Friday revealed new possibilities for the metal, which, according to chemists, is more abundant than any other in the earth's crust.

The key to the function which aluminum performs in metallurgy and engineering is found in the remarkable heat that is suddenly developed when it is burned. Com-bustion, it will be remembered, is simply the union of a given element with oxygen. When wood or coal is set on fire the car-bon combines with that gas and produces carbonic oxide. Aluminum will not unite with atmospheric oxygen, though. It is necessary to supply the element in a solid form. The oxide of some other metal furnishes this. If equal parts of aluminum and the oxide of iron, both pulverized and cold, are placed in a crucible and a tiny fuse of the right kind is applied a mar-velous effect is produced. The receptacle becomes a furnace. By purely chemical means a temperature is induced which ri-vals that of the electric arc. Within a minute or two iron and the latter is melted. If, in advance and with a view to further operations, the from is charged with the proper amount of carbon or some other element the product is a steel ssing qualities that adapt it to some pecial services.

One highly practical operation made fea-tible by the process here described is the welding of rails on trolley roads. In orther to employ both the main track and the third rail (if there be one) as electrical conductors it is customary to do one of two things. Either a copper bond is attached to the ends of adjacent rails at archief to the enus of adjacent rais at each joint or a little molten iron is poured around the cold steel there. The latter pperation, as formerly conducted, involved the use of cumbrous and expensive ap-paratus. In Europe aluminum is now used to some extent instead. A small portable erucible, tapering to a point, is adjusted bver the right spot, a mold is formed pround the joint to be welded, the proper mixture is ignited and almost immedi-Ately a supply of liquid steel is ready to be run into place. So intense is the heat of the latter that it dissolves part of the metal of which the rall is composed and p joint of surprising strength is created. Here, again, aluminum figures as a rival of copper, and it promises to make the old style of bond unnecessary.

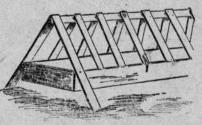
### The Greatest Living Historian.

The Lounger, in January Critic: John Morley is said to have received \$50,000 for his "Life of Gladstone." When one takes Mr. Morley's name into consideration, and the amount of work he has put into this "Life," the pay is not large. It is well known that Messrs. Hay and Nicolay were paid a similar amount for the serial rights alone in their life of Lincoln. Mr. Morley, by the way, is to visit the United States in the new year, having been en-gaged to deliver an address at the open-ing of the technical college at Pittsburg, in October next. It is thirty years since Mr. Morley has visited America. He will see many changes not only in architec ture, but in manners and customs. We were a simpler people thirty years ago than we are today.

A fellow in good old Terre Haute Went out at election to vaute; When his party won out. He gave a great shout— And came home as full as a gaute.

Three Years After. Eugene E. Lario, of 751 Twentieth tvenue, ticket seller in the Union Sta-tion, Denver, Colo., says: "You are et liberty to repeat what I first stated through our





struction will be well spent. As shown, the trough is twelve feet long, sixteen inches wide, twenty-two inches high, ta-pered as shown. With the exception of the slats which are one-half inch thick and two and one-half inches.wide the trough the made of inch lumber. The sides which is made of inch lumber. The sides, which home are nailed on the edge of the bottom are with t shown. These legs are, of course, fastened securely to the trough after the latter is closed. Two hinges on each side (strap hinges of course) will be sufficient. At about the middle of the racks a bent hasp is fastened so that when the racks are in place they may be held so by turning the hasp over the other other side over a staple and holding it in place with a bit of wood. In this arrangement either rack may be let down and the trough thus filled from

### either side

How Oleomargarine Has Failed. When the oleomargarine bill was before congress it was claimed by those who fought against it that the attempt to tax it was nothing more nor less than an ef-fort to throttle a promising industry in the interests of farmers. Its defendants interests of farmers. Its defendants claimed, on the other hand, that they had no objection to the manufacture and sale of oleomargarine as such, but decidedly objected to its being colored in imitation of butter without being labeled as an imi-tation. To the credit of the national law makers, be it said, the bill was passed which provided that oleomargarine col-ored to imitate butter should be taxed at 10 cents a pound and when not colored at one-fourth of 1 cent a pound. The justness of the law as passed is shown by the report of the commissioner of internal rev-enue to the effect that at the close of a fiscal year after the law went into effect no manufacturer or dealer had qualified, as the law directed, to manufacture or market colored oleomargarine and pay the This is conclusive evidence that the tax. claim made, while the bill was before con-gress, that the consumer would rather have oleomargarine than butter was false. A few more victories like this and both farmers and consumers will be on the road farmers and consumers will be on the road to moderate prosperity; the one because he obtains a fair price for his product, the other because he is not, unknowingly, filling his stomach with adulterated foods.

### Care for the Trees.

The storms of winter are likely to make trouble with trees in orchards and elsewhere so it is a good plan to have a sup-ply of grafting wax on hand to dress the

so great that the labor spent in its con-be necessary to remove them daily unless one has a large number of fowls, but they one has a large number of fowls, but they should be springled either with land plas-ter or with dirt to keep down the odor as well as to retain their fertilizing value. Do not use lime, for this releases the am-monia in the manure, its most valuable fertilizer. Covered as described each day, the droppings may be removed once or twice a week and the board then sprin-kled lightly with lime or with a solution of carbolic acid. of carbolic acid.

### Growing Apples of Quality.

Growing Apples of Quality. The advocates of the Ben Davis apple, that superbly colored variety of decidedly-poor flavor, claim that for both the home and the foreign market no other variety approaches it. This might have been true several years ago, but is not now. In the home market consumers are familiar with the beautiful color of the Ben Davis, six inches wide. The end pleces or legs but they are quite as familiar with its are three inches wide and extend six poor quality and want none of it. Recent inches below the bottom of the trough, as foreign consumer is also beginning to look upon the enticing Ben Davis with susbuilt and are independent of the rack it-self. The rack is built by nailing the slats one foot apart on pieces three inches wide and twelve feet long and are then hinged to the sides of the trough so that they rest in the edges of the trough when bland. Thus is not in the least consoling to those who have orchards of Ben Davis. but should be borne in mind when new orchards are to be set. If a variety is of good color and of high quality well and good, but if only one can be had then choose the variety which has the quality. To prove its merits to the consumer let him taste; once will be sufficient, and the trade will be secure. This applies to other fruit as well as to apples.

### Winter Care of Horses.

There are few farmers who properly feed their horses during the winter, the main fault being the tendency to underfeed them. It is admitted that it comes hard to feed very heavy when the horses are doing little or nothing, but on the other hand the heavy work which will be required of them when spring opens is overleaded. In autiting down the mine overlooked. In cutting down the ration care should be used that the grain ration is not cut too greatly, for few horses will be able to do an honest day's work in the spring if their main winter feed has been roughage. An excellent plan of winter-ing horses is to give them a ration which will keep them in good condition, and ev-ery one familiar with feeding horses can figure what this ration should be, and let them how more on heap out do them have more or less out door exer-cise; not in the harness, but in an en-closure sufficiently large so that they may run and kick up their heels if so inclined. In this enclosure have a shed open to the warm side and in it place some roughage so that if the animals are left out longer than one intends they will have shelter and something to keep them busy. It is surprising how much good this daily outing will do the animals.

### Feeding for Protein.

Dairymen who are on a short allowance in the matter of grain naturally wish to keep down the expense bill and make the mistake of feeding one grain only. For example a correspondent asks which would give him the best results, corn or wheat bran, when, as a matter of fact he should feed both to get anywhere near a balanced ration, and they should be fed in the proportion of one part of the wheat bran to six parts of the corn. This, with

# THE OLDEST MAN IN AMERICA

Tells How He Escaped the Terrors of Many Winters by Using Pe-ru-na.

Mr. Brock's Age is 115 Years.

MR. ISAAC BROCK, BORN IN BUNCOMBE CO., N. C., MARCH I, 1788.

His age is 115 years, vouched for by authentic record. He says: "I attribute my extreme age to the use of Peruna."

Born before the United States was formed. Saw 22 Presidents elected. Pe-ru-na has protected him from all sudden changes. Veteran of four wars. Shod a horse when 99 years old. Always conquered the grip with was written 115 years ago. e-ru-na. Witness in a land suit at the age

The Three Hundred.

New York Sun: Leonidas was holding the pass. "If we "If we were only the Four Hundred instead of the Three Hundred," he wailed, "they could never break through."

Angered at his lack of foresight, the hero of Thermopylae fought to the bitter end.

If you are thinking of investing in a farm or of changing your location, call on us or write and we will have

our agent see you. MARCUS P. BEEBE, IPSWICH, EDMUNDS CO., S. D

"I have always been a very healthy man, but of course subject to the little affections which are due to sudden. changes in the climate and temperature. During my long life I have known a great many remedies for coughs, colds and diarchase

of the United States.

and diarrho "As for Dr. Hartman's remedy, Peruna, I have found it to be the best, if not the only, reliable remedy for these affections. It has been my standby for many years, and I attribute my good health and extreme old age to this remedy.

This centenarian is an ardent friend of Peruna, having used it many years. In speaking of his good health and ex-treme old age, Mr. Brock says: "After a man has lived in the world as long as I have, he ought to have found out a great many things by experience. I think I have done so.

"One of the things I have found

out to my entire satisfaction is the

proper thing for ailments that are due directly to the effects of the

climate. For 115 years I have withstood the changeable climate

"It exactly meets all my requirements. It protects me from the evil effects of sudden changes; it keeps me in good appetite; it gives me strength; it keeps my blood in good circulation. I have come to rely upon it almost entirely for the many little things for which I need

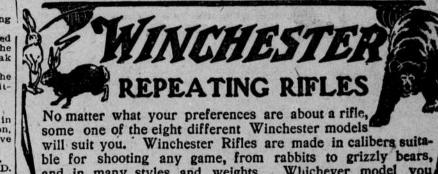
medicine. "When epidemics of la grippe first began to make their appearance in this country I was a sufferer from this disease.

"I had several long sieges with the grip. At first I did not know that Peruna was a remedy for this disease. When I heard that la grippe was epidemic catarrh, tried Peruna for la grippe and found it to be just the thing."

A short time ago, by request, Uncle Isaac came to Waco and sat for his pic-ture. In his hand he held a stick cut from the grave of General Andrew Jack-son, which has been carried by him ever ince. Mr. Brock is a dignified old gen-tleman, showing few signs of decrepi-tude. His family Bible is still preserved, and it shows that the date of his birth was written 115 years ago.

guns Brock,

Witness in a land suit at the ago of 110 years. Believes Peruna the greatest remedy of the age for catarrhal diseases I SAAC BROCK, a citizen of McLen-vears. For many years he resided at Rosque Falls, eighteen miles west of Waco, but now lives with his son-in-law at Valley Mills, Texas.



Surely a few words from this remarka-

Denver papers about Doan's Kidney Pills in the summer of 1899, for I have had no reason in the interim to change my opin-ion of the remedy. I was subject to severe attacks of backache, always ag-gravated if I sat long at a desk. Doan's Kidney Pills absolutely stopped my backache. I have never had a pain or a twinge since.

Foster-Milburn Co., Buffalo, N. Y. For sale by all druggists, orice 50 cents per box.

A Compromise. Chicago Post: "I hate to see a big woman and a little man mated." "So do I."

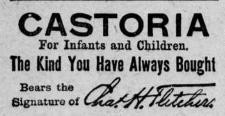
"A man ought to be taller than the girl he marries." "Or else he ought to have a lot of

money.

Mother Gray's Sweet Powders for Children.

Children, Successfully used by Mother Gray, nurse in the Children's Home in New York, cure Constipation, Feverishness, Bad Stomach, Teething Disorders, move and regulate the Bowels and Destroy Worms. Over 30,000 tes-timoniais. At all Druggists, 25c. Sample FREE, Address A. S. Olmsted, LeRoy, N. Y.

Maine's log cabin at the world's fair will be built in the Maine pineries. It will then be taken down, the timbers carefully marked, and the material shipped to St. Louis, where it will be reconstructed.



Prepositions. Puck: Corby-I hear Carr spends a deal of time in his automobile? Miss Ryder-You've been misin-formed: not in it, but under it, and with a Kinkey wrench.

Teosinte and Billion Dollar Grass. Teosinte and Billion Donar Grass. The two greatest fodder plants on earth, one good for 14 tons hay and the other S0 tons green fodder per acre. Grows everywhere, so does Victoria Rape, yielding 60,000 lbs. sheep and swine food per acre. JUST SEND 10c IN STAMPS TO THE John A. Salzer Seed Co., La Crosse. Wis., and receive in return their big catalogne and lots of farm seed samples.

catalogue and lots of farm seed samples. (C. N. U.)

Red uniforms present the best marks for the enemy's shot; rifle green comes next, brown third, while Ausbluish-gray is found to be the least fatal.

wounds to limbs which may result. Have also a narrow blade but sharp saw so that the injured tree limb may be cut off and leave a smooth surface to be covered with the healing wax. A good wax is made by melting slowly in an iron kettle four pounds of rosin, two pounds of first class tallow and one pound of beeswax. When melted and thoroughly mixed turn the mass into a kettle of cold water. When cool the mass may be pulled and stretched in the same manner that candy is manipu-lated. Oil the hands with sweet oil so that the mass will not stick to them. In applying during the cold weather the wax

will be hard unless kept in rather warm water and applied quickly with the hand. The formula as given is for grafting wax to be used under ordinary conditions, but an additional half pound of tallow should be used for the wax to be used during the winter weather. The wounds of the trees thus protected will heal over nicely and the tree not be injured so greatly as it would if the wounds were left exposed. Does Summer Barn Feeding Pay? Several readers of this department have sked for information regarding the growing tendency in some sections to bran-feed

the cows the year round. In some locali-ties this plan has been found profitable, but under normal conditions it is not likely to pay. If one is farming high price land and help can be had both winter and summer at fair prices, and the prices ob-tained for milk and butter are good, then barn feeding the year round is undoubtedly profitable. Any dairyman will know what the work involves without being told and will realize that it is an entirely different proposition from turning the cows onto a good permanent pasture for several s with but one small feed of grain The feed for the winter is to be nths daily. grown as usual and enough more for summer as well to carry out the barn feeding plan, so that the question is one each dairyman must decide for himself upon the conditions under which he is operating.

### The Great Turkey Failure.

As is generally known the demand for high grade turkeys this winter exceeded the supply and the city consumers have been wondering what the trouble with farmers was. Turkeys are not so easily raised as chickens, perhaps, but by proper care they can be raised if one has the proper range for them, but the scarcity was not due to any lack of skill in raising the birds, but to carelessness in breeding them. For some unaccountable reason farmers who raise turkeys do not under-stand the necessity for keeping up the vitality of the flock by the introduction of new blood. They understand this principle in chicken raising better than they did and are profiting accordingly, but they do not apply the same principle to turkeys. Too much inbreeding was undoubtedly at the bottom of the scarcity of turkeys this winter, for where there should have been a dozen turks natched and raised there were four or five. Take the lesson home if a turkey raiser and make selections for the breeding pen from among the best hens, then buy a new tom turkey to head the flock; do this two years in successian and a decided improvement will be noticed.

### Keeping Poultry Houses Clean.

There is more or less objection on the part of some poultry keepers to removing part of some poultry keepers to removing the droppings from the poultry bouses daily, although this is undoubtedly the port \$10,228,000; exports, \$9,497,000.

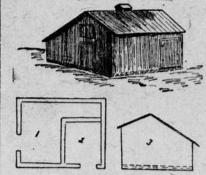
corn stover as roughage and with an oc casional feed of oil meal or a change to some of the concentrated feeds like gluten meal will supply a fairly balanced ration and not a costly one. Those who have to do with farm affairs are coming more and more to figure out these problems instead of guessing at what they should do or working on the same plans they followed years ago when conditions were, perhaps, much different. This is going in the right direction and the ultimate results will not fail to be satisfactory.

## Don't Forget Green Food.

The reminder to feed liberally of green food during the winter cannot be given too often. On every farm there is suf-ficient in the way of parings and unsal-able whole vegetables to give the fowls one good ration of green food daily. Con-sider the quantity of green stuff the fowls consume on the range during the sum-mer and ask yourself if it is possible to feel that they can do without a substiduring the winter. Don't run the if you want or expect a full egg tute basket.

### Ice and Cold Storage House.

While many farmers consider an ice house a luxury that is not for them, a building such as is shown in the cut may be erected at small cost and if the ice can be had for the cutting and drawing it will be found profitable. Even in sec-tions where ice is scarce such a structure would be worth all it cost to a fruit grower who desired to hold back his products in cold storage. To make the house cheap build it of any lumber obtainable, the es



sential thing being to have it with an inner wall a foot from the outer wall and this space filled in hard with sawdust straw, leaves or any similar material. Then pack on the bottom of the floor a foot of straw or hay or sawdust and or this lay the cakes of ice, filling in between them with cracked ice and, if the tween them with cracked ice and, if the weather is freezing, pour water over each layer as it is filled in. Divide off a por-tion of the space for a cold storage room as shown in the lower part of the illustration, and one has a place where fruit milk and butter may be kept in good condition during the warmest days of summer. Try an ice house even though it be but a small one and you will be surprised to see how little it will and how useful it is.

A Sure Sign. must belong to the smart set, mamma." "Well, 1 notice he doesn't pay much at tention to the homes of the poor.'

The U. S. Dept. of Agriculture. Gives to Salzer's Oats its heartiest en-dorsement. Salzer's New National Oats yielded in 1903 from 150 to 300 bu, per acre in 30 different States, and you, Mr. Farmer, can beat this in 1904, if you will. Salzer's seeds are pedigree seeds. bred up through careful selection to big yields

yields.

yields. Salzer's Beardless Barley yielded. 121 bu. Salzer's Home Builder Corn.....300 bu. Spletz and Macaroni Wheat..... 80 bu. Salzer's Victoria Rape......60,000 lbs. Salzer's Teosinte, the quick grow-ing fodder wonder......160,000 lbs. Salzer's Badiwese Pottors. 1,000 by

Salzer's Billion Dollar Grass. 50,000 lbs. Salzer's Pedigree Potatoes... 1,000 bu. Now such yields pay and you can have them. Mr. Farmer, in 1904. SEND 10c IN STAMPS and this notice to the John A. Salzer Seed Co., La Crosse, Wis., and you will get their big catalogue and lots of farm seed samples free. (C. N. U.)

## Spelling Reform.

Brooklyn Eagle: Filibusters are bad Brooklyn Eagle: Filibusters are bad. Hignwaymen are censurable. But spell-ing reformers, like pirates, can well be called the enemies of mankind. Devices to make entrance to knowledge of the English language easy are to be resented. The knowledge is desirable. But all his history is proof that knowledge easy to obtain is soon forgotten while that hard obtain is soon forgotten, while that hard to acquire is permanently appreclated.

FARMS IN EDMUNDS COUNTY, SOUTH DAKOTA, FOR SALE on long time payments. Interest 6 per cent. No cash required from settlers who will improve the land. Your terms are mine. The Chicago, Milwaukee and St. Paul R. R. brings you here Paul R. R. brings you here. MARCUS P. BEEBE, IPSWICH, EDMUNDS COUNTY, S. D.

There are 1,083,473 Odd Fellows in the United States and Canada, 941,221 Free Masons, and 928,035 of the Ancient Order of Foresters.

and in many styles and weights. Whichever in select, you can count on its being well made and finished, reliable in action and a strong, accurate shooter.

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France has, within six months, pu in subsidies for new ships \$38,600,000. paid

