

## SELF-PUMPED WATER

### Hydraulic Ram Best Irrigation System for Small Farms.

Small Stream May Be Capable of Watering Good Sized Tract of Land—Open Up Great Possibilities for Cheap Supply.

Of the various irrigation systems for the small individual farmer the hydraulic ram, where it can be applied, is perhaps the most attractive. The use of the ram pre-supposes the presence of a waterfall; not necessarily a cataract, but a stream of water with a fair fall, which might, as an example, be used for running a grist mill, says the American Cultivator.

The stream may be a very small one, and still be capable of irrigating a good-sized tract. In various irrigation plants the water is pumped up by rams into a reservoir excavated on a clay hill, or made by throwing a dam across a ravine, and thus backing the water up into a little lake, its situation being higher than the land to be irrigated. The water thus accumulated for months is held until needed, when it is run through open ditches on to the fields below the reservoir level. A tiny stream having a flow of 50 gallons a minute and a fall of 20 feet will operate a ram that will pump 15,000 gallons a day to a height of 100 feet above the ram. This amount of water, stored as stated, will furnish all the necessary irrigation for from ten to fifteen acres. A ram of this size takes its water from a four-inch drive pipe.

The improved rams of to-day open up great possibilities for cheap water supply. Their first cost is very moderate, and they pump by water power, requiring no attendant. They are manufactured of large capacity, and can be relied upon for pumping water to any desired elevation for irrigating comparatively high lands. They are made from a one-inch size, using three gallons a minute, to a duplex 12-inch ram, using two 12-inch drive pipes. One of the latter placed on a stream having a flow of 1,500 gallons a minute, which is, by the way, a very small creek—with a 20-foot fall—will pump nearly 300,000 gallons a day to a height of 100 feet above the ram. Such creeks or branches with near-by irrigable lands are very plentiful in any of the hilly sections of the country, and where they exist should be recognized as the basis of certain wealth. It may be necessary to construct a small canal, just as in the establishment of the old-fashioned overshoot mill wheel, in fact, old, abandoned mill sites, where much of the work has already been done, can sometimes be utilized. Any amount of fall, from four feet up to 40 feet, can be utilized. Incidentally, water for house and stock can often be provided.

It may, therefore, pay to look into the question of water supply on the farm and to figure out a plan to use this greatest of natural resources. The certainty of production and the greatness of the yield under irrigation make it worth while to go to considerable trouble to benefit by the water supply, if the farm is so fortunate as to have a good-sized one. Even the flow from a good-sized spring may be utilized. In the west every opportunity for using water in this way is quickly grasped, and it is an astonishment to the eastern traveler to see with what ease and at what little expense he could have always used the waters of the small stream flowing through his farm back home.

## TOO MUCH WATER DISASTROUS

### While Irrigation Is Good Thing, It Must Be Properly Handled to Get Best Results.

While irrigation is a very good thing too much water is very disastrous. We know one instance in which an orchard of several acres was planted. Soon after the water had been applied above it seeped out on the slopes of the bench and rendered the upper part of the orchard impassable for man or beast. In a few days the first three rows of trees next to the bench were practically all dying or dead, except on a small knoll of rising ground which was high enough to escape, and the injury was extending to the next few rows adjoining. A deep trench was dug so as to intercept and drain the seepage water with the result that the land below the ditch was hard and firm while that above was impassable as before. The trees below this ditch rapidly recovered their vigor and it appeared that the orchard was saved. A cave-in occurred, however, in this ditch near one end, damming up the water for a small distance, when it immediately appeared on the surface in the orchard below the ditch and within three or four days the adjacent trees were brown and scorched as if they had been swept by fire. The ditch was cleaned and repaired and the water soon subsided from around these trees and all but one of them recovered and put forth a new crop of leaves, the one next to the break being the only tree that died.

### Fail Litters.

The man who raises pure bred hogs rarely breeds twice a year; but the commercial hog raiser finds it profitable to get litters both in the spring and fall. The fall litter is the more expensive to raise, but unless there is an unusually large supply of hogs in sight, the market prices will be better than for the spring litters.

## RAVAGES OF "LOCO" WEED

Experiments Prove Conclusively Stockmen Were Right in Ascribing Poisonous Properties to Plant.

It was evident that the first thing to do in the field experiment was to prove whether the loco weeds did or did not produce the disease. That there was some disease causing loss there was no question. The pictures show some of the animals at different stages of the investigation. Horses and cattle were furnished by the Colorado Experiment station, which co-operated in the work, and at a later stage in the investigation another co-operative experiment with the Nebraska Experiment station was carried on in western Nebraska, writes C. Dwight Marsh in American Review of Reviews. Two similar pieces of land were selected; one was freed of the loco and in the other the loco, which was there in an abundant crop, was left standing. The stock was divided and part pastured on the loco-free pasture and part on the loco-free pasture. Other animals were fed in the corral purple and white loco which were cut for the purpose.

The results of these experiments proved very interesting. The animals in the loco pasture ate freely of the weed; their coats became smoother and they gained rapidly in flesh. Everything pointed toward the probability of the non-poisonous character of the plant. This opinion was strengthened by the failure to find, in the Washington laboratory, any evidence of poison.

After some weeks of feeding, however, it was noticed, somewhat suddenly, that one or two of the cattle stumbled as they walked. A series of symptoms followed rapidly upon those first noticed, and in a short time our animals began to die. Before the end of the season nearly all the animals to which had been fed any considerable amount of loco were dead, while those that were kept in the loco-free pasture remained perfectly well. The first season's work proved conclusively that the stockmen were right in ascribing poisonous properties to the loco plants. Loco would kill, and the manner of death showed those symptoms which the stockmen claimed to be characteristic of locoed animals. Further work in Washington laboratories was confirmatory of the field work, and the demonstration was complete of the poisonous character of the loco weeds.

## CARING FOR BERRY BUSHES

### Time for Tipping Raspberry Is When Long, Slender Branches Incline Toward Earth.

Many of our readers have Black Cap raspberries as well as the pulchre Columbian and Schaffer red raspberry bushes which do not produce sprouts, but must be tipped to propagate new plants. The process is so simple that anyone who can handle a spade may succeed with the work. The opportune time for tipping raspberry bushes is when the long, slender branches incline toward the earth and form roots on the terminals on irrigated ground. Nature must be assisted in the covering of the terminals to insure a full supply of plants. A spade is the ideal implement to use for the purpose. Thrust the blade into the soil and push the handle forward which will open the earth to receive the tips of the raspberry bushes. With one hand grasp the slender cane and hold the terminal in the opening while the spade is drawn out with the other. The soil will immediately fill the cavity which should be firmly packed with the foot to keep the branch in the new home, where roots will soon form on each and every lateral twig or terminal thus covered. These rooted ends will become independent of the parent plants as soon as they take food for growth from the soil. However, it is best to leave them undisturbed until they are needed for planting next spring. If a large number of plants are desired the parent bushes should be pinched back to about three feet when the growth is well established. This treatment will produce a large number of lateral shoots, each of which may be tipped as suggested.

### To Make Arid Lands Fertile.

The main idea of irrigation is to make arid lands fertile. The attendant result has far greater interest to the United States. For the cherished thought of a nation of home owners is getting steady encouragement wherever this work is being pushed. The word irrigation is full of meaning to the people of certain of the western states. Its story is told in stages. There is hopefulness as the project is presented. There is development as its effects begin to appear. There is assured prosperity as the desert blossoms as the rose. And the desert is blossoming, not for owners of vast areas, but for hundreds and thousands of individuals who are carefully cultivating comparatively small farms with most satisfactory results.

### Provide for Comfort.

In raising chickens for profit, do not waste money in making houses and equipments look like pictures, but provide plenty of comfort for the birds, and do not overlook that caring for them ought to be thought of when building or furnishing the house, to the end that the work can be done quickly and with ease.

### Clean, Cold, Rich Cream.

Clean cream, cold cream and rich cream are the three words which tell the secret of producing sweet cream.

## CORNER FOR THE JUNIORS

### DAN MAKES A GIANT TANDEM

Helps His Little Sister Out of perplexing Dilemma by Completing a Big Bicycle.

"There! She's all done except for the assembling," muttered Dan, with greatest satisfaction as he stood what looked like a giant cycle against the wall of his workshop.

Further reflection was interrupted by the sudden entrance of his sister Nan. Trouble was written upon every feature of the little girl's face.

"Can't I do something?" inquired Dan, with that anxiety which made him the nicest of brothers.

Nan now leaned wearily upon the workbox. "Oh, I suppose it's something nobody can help," said she, hopelessly.

"You see," the lass explained, "sister Eva and I have been invited to a little picnic at Brown's woods tomorrow, and now papa says the horse is too lame to drive, and we can't go. The place is too far away to reach by walking and, it's nowhere near a railroad station. Oh, dear! It's just my luck!"

"Things aren't as bad as they seem," cheerily replied the brother. "Both you and Ethel ride bicycles very well," he added.

"Yes," sighed Nan, "but that won't help us any, because we haven't our wheels any more."

Dan smiled as he said, triumphant: "It really does help, inasmuch as I've just about completed the finest tandem bicycle you ever saw. It's a new invention of mine. Two persons ride on opposite sides of this great wheel and work pedals that move a gear chain connected with the smaller front wheel. Anyone who knows how to ride can use my twin bicycle without the slightest difficulty.

"I'm sure, now, that you and Ethel will attend your picnic in spite of the fact that the outlook has been so gloomy," he concluded.

"You're just the dearest, dearest brother any girl could have!" cried Nan, rapturously hugging Dan.

Then she ran to impart the good



They Rode to the Picnic.

news to Ethel, while Dan proceeded to fit together the parts of his remarkable machine.

Of course, the twin bicycle worked splendidly, and the two girls had as much fun operating it as they had at the picnic.

## PETER WAS REALLY MOVING

Thirty-Two-Year Old Horse Creates Much Alarm in Breast of Woman from City.

Peter, 32 years old, was the white horse of all work which had belonged to the Bentons ever since, 30 years ago, they had moved into the country to farm and "rest." Peter had done most of the resting, however, and his perfect health seemed to promise that he was destined to keep on resting almost indefinitely. In spite of his quiet nature, Mrs. Benton, who had grown up in town and was not accustomed to horses, regarded Peter as a fearsome animal.

When not otherwise employed, Peter moved deliberately about the yard at the end of a rope, "mowing the lawn" with his hungry mouth, says Youth's Companion. It would have been safe, so far as Peter was concerned, to let him roam free, but Mrs. Benton insisted that such a course would be disastrous, and sternly forbade it.

Bob, the six-year-old son, of whom Peter appeared to be very fond, was allowed a special privilege. Whenever the grass in the middle of the lawn was too short for even Peter to crop, Bob would lead him to the borders of the garden, and still holding him by the rope, the 32-year-old horse would eat the longer and greener food.

One day, when this process was going on, Bob became interested in a butterfly, dropped the rope, and went pell-mell after it. Peter naturally began on eating. As long as the rope was tied to his halter, he considered himself tied, just as an elephant is said to believe himself bound.

But Mrs. Benton, ever watchful, saw from the dining room window what had taken place. To her to have Peter loose spelled danger. It took but a second to throw up the window and cry, "Bobby! Bobby! Peter's got away from you, and he's moving!"

## SEE-SAW.



See-saw, see-saw; away up in the air!  
See-saw, see-saw; going everywhere.  
See-saw, see-saw; visiting the moon;  
See-saw, see-saw; coming back so soon!

See-saw, see-saw; Mary, Tom and Joe;  
See-saw, see-saw; to the clouds do go.  
See-saw, see-saw; hear their glad some song  
As they see-saw, see-saw all day long.

## IMITATE VOICES OF ANIMALS

Moving Pictures Provided with Device for Realistic Imitation of Barnyard Animals.

The cry of the public that moving pictures are not as real as they might be, because of the absence of the sounds that would attend the movements or display in real life, is causing moving-picture concerns to devote considerable energy toward filling the demand, says Popular Me-



For Imitating Voices.

chanics. Now, many moving-picture sets are provided with excellent mechanical devices to imitate the sound required, no better example of which can be given than this set of barnyard-animal imitators. The first is a device which gives a realistic imitation of hens cackling, the second gives a combined horse whinny, cow moo, and pig grunt, and the third a rooster's crow.

## SUMMER BACK YARD PARTIES

Young Women Who Cannot Afford Trip to Seashore Inaugurate Novel Means of Amusement.

Any kind of outdoor entertainment is preferable in summer to staying in the house, so, for that reason, several young women who cannot go to the seashore or mountains for the "heated term" have inaugurated what they call "back-yard parties" in the spaces in the rear of their homes. These have been made attractive enough to warrant asking their friends to spend the evening there.

At one house in town in particular, the yard has been turned into a really lovely garden. Ivy and other climbing plants have been planted along the fences and now completely cover them. The center is a grass plot, and around is a border of gay blooming geraniums and other hardy flowers. Benches, garden chairs and tables are placed here and there. A low cot bed, with rug and cushions, forms a divan. At night, with Japanese lanterns strung across and little lamps hung among the ivy, the effect is surprisingly pretty.

The daughter of the house finds her friends more than ready to accept her invitations, and the open air entertainment is thoroughly enjoyed. Sometimes they play games, or they have music of banjo or mandolin, and sing college songs. The men, of course, have permission to smoke, and the cold lemonade, ices and cakes are especially delicious served under these unusual and informal conditions. Try it; it is well worth the trouble.

## AMERICAN MEN ARE STUPID

Fail to Keep Up Reading; Have National Obtundity as to Art and Literature.

If the truth were told, most young American men are not especially interesting. They do not keep up their reading, says Atlantic Monthly. They have a national obtundity when it comes to music, to art, to literature; nor do many of them take any of these things at all seriously. The young among them are not good conversationalists. Our cleverest men are monologists pure and simple. They lecture admirably. They are born orators along modified lines. They are inevitable story tellers. None of this is conversation; and women like conversation, like its courtesies, which at least pretend a little interest when their turn comes in the game. Knowledge of people and affairs outside our own country pricks more than one bubble about our young men.

### Luxurious Bee Hives.

A school master in a small German town, being very fond of bees, resolved to build for them something novel in the way of a home. As bee hives are generally of the same size, color and shape, it is sometimes difficult for a bee to find its own particular home, so this kind-hearted school master decided to give each of his hives some distinguishing mark, so the buildings represent an inn, castle, house, cottage, windmill, etc. There are also a number of animals, including an elephant, carved from wood, closely resembling their living brothers. The owner is naturally very proud of his creation and is constantly enlarging it.



## STORY OF CONFEDERATE FLAG

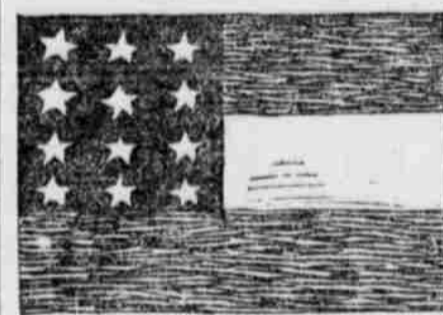
Gen. Cabell of Texas Tells How Stars and Bars Were Designed and Made at Richmond.

Gen. W. L. Cabell of Dallas, Tex., commander of the transmississippi department of the United Confederate Veterans, wrote recently the following history of the confederate flag:

When the confederate army, commanded by Gen. Beauregard, and the federal army confronted each other at Manassas it was seen that the confederate flag and the stars and stripes looked at a distance so much alike that it was hard to distinguish one from the other.

Gen. Beauregard, after the battle of July 18, at Blackburn ford, ordered that a small red badge should be worn on the left shoulder by our troops, and, as I was chief quartermaster, ordered me to purchase a large quantity of red flannel and to distribute it to each regiment.

During the battle of Bull Run it was plain to be seen that a large number of federal soldiers wore a similar red badge. Gen. Johnston and Gen. Beauregard met at Fairfax courthouse in the latter part of August or early September and determined to have a



The Stars and Bars.

battle flag for every regiment or detached command.

Gen. Johnston's flag was in the shape of an ellipse—a red flag with blue St. Andrew's cross and stars on the cross (white) to represent the different southern states. (No white border of any kind was attached to the cross.) Gen. Beauregard's was a rectangle, red, with St. Andrew's cross and white stars, similar to Gen. Johnston's.

"After we had discussed fully the two styles, taking into consideration the cost of material and the care of making the same, it was decided the elliptical flag would be harder to make; that it would take more cloth, and it could not be seen so plainly at a distance; that the rectangular flag, drawn by and suggested by Gen. Beauregard, should be adopted. Gen. Johnston yielded at once.

"No one else was present, but we three. No one knew about this flag but we three until an order was issued adopting the Beauregard flag, as it was called, and directing me, as chief quartermaster, to have the flag done as soon as it could be done.

"I immediately issued an address to the good ladies of the south to give me their red and blue silk dresses, and to send them to Capt. Colin McRae Selph, quartermaster at Richmond, Va. (Capt. Selph is now living in New Orleans), where he was assisted by two young ladies, the Misses Carey from Baltimore, and Mrs. Henningsen of Savannah and Mrs. Hopkins of Alabama.

The Misses Carey made battle flags for Gen. Beauregard and Gen. Van Dorn and I think for Gen. J. E. Johnston. They made Gen. Beauregard's out of their own silk dresses. This flag is now in Memorial hall, New Orleans, with a statement of that fact from Gen. Beauregard. Gen. Van Dorn's flag was made of heavier material, but very pretty.

The statement going around that this flag was first designed by federal prisoners is false.

Gen. Beauregard's battle flag is in Memorial hall at New Orleans. The Washington artillery battle flag can be seen at the Washington artillery hall—Chattanooga Times.

### To Improve Artillery Fire.

The war department has adopted for the coast artillery service a range board, the invention of Maj. E. W. Hubbard, commandant at Fort McHenry, Md. The board is a mechanical device for automatically computing the working range or elevation which must be given a heavy gun to reach a given target. In artillery the range, or distance to the target, is the prime factor in hitting. The range finder gives this distance regularly every 15 seconds. The device corrects the observed range every 15 seconds, giving a fictitious or corrected range, to which the gun is elevated.

The good old days of the smooth bore, when at target practice, about a shot an hour was fired, and then only after careful computations, have passed away," said Maj. Hubbard. "The modern 12-inch gun can be fired, with all allowances made, once a minute, with an even chance of hitting a moving target at long range. This improvement has been due not only to improved guns, powder and cartridges, but to the constant and devoted work of our artillery officers extending over a period of years. As far as can be ascertained the coast defense service in this country has not its equal anywhere."

## THE DIAGNOSIS



"Anything really serious with my eye, Doc?"  
"No, no—simply a pig sty."

### Feeding Farm Hands.

Every farmer's wife knows what tremendous appetites farm hands usually have; but while they eat well they work well, too.

Here's a good suggestion about feeding farm hands. Give them plenty of Quaker Oats. A big dish of Quaker Oats porridge with sugar and cream or milk is the greatest breakfast in the world for a man who needs vigor and strength for a long day's work. The man that eats Quaker Oats plentifully and often is the man who does good work without excessive fatigue. There is a sustaining quality in Quaker Oats not found in other foods, and for economy it is at the head of the list. Besides the regular size packages Quaker Oats is packed in large size family packages, with and without china.

### And He Suffered.

Little Willie, suffering from an attack of toothache, had paid his first visit to the dentist, accompanied by his mother. Father, on his return from the office that evening, was naturally much interested.

"Didn't it hurt?" asked father.

"Sure, it hurt," replied Willie.

"Weren't you scared when the dentist put you in that big chair and started all those zizz-zizz-zizz things?"

"Oh, not so much."

"That was a brave boy. But, surely, you suffered?"

"Of course I suffered. But I just kept repeating over and over the golden text we had in Sunday school last Sunday."

"The golden text? What was it?"

"Why, 'Suffer little children to come unto me,'" replied Willie, glibly. "I kept saying that over and over to myself, and the first thing I knew it didn't hurt any more."

### Poker Finance.

Mose Cooney (a winner)—Guess I'll cash in, boys.

Abe Mokey (also to the good)—Guess I'll do de same.

Jefferson Yallerby—Me too!

Bill Bingy (the banker, a big loser)—Well, I guess yo' each done got anuddeh guess a-comin', gentlemen! Owin' to dis heah attempted an' un-called-for run on de bank, de interstertion am now suspended an' won't resume oppyrtions till de panicky feelin' hab fully subsided an' de foolish depositahs continues doin' business as fohmally. And it's yough deal, Mose Cooney!—Illustrated Sunday Magazine.

### On a Time Limitation.

In spite of the reputation for latitudinarianism he gained from his early trial for heresy, the late Prof. Jowett of Oxford was intolerant of pretentiousness and shallow conceit. One self-satisfied undergraduate met the master one day. "Master," he said, "I have searched everywhere in all philosophies, ancient and modern, and nowhere do I find the evidence of a God." "Mr. —," replied the master, "after a shorter pause than usual, 'if you don't find a God by five o'clock this afternoon you must leave this college.'"

### A Work of Supererogation.

Henry dislikes being bathed and argues with his mother over every square inch of his four-year-old anatomy.

One night, when his patience was especially tried by what he considered wholly unnecessary work, he exclaimed:

"Oh, mamma, couldn't you skip my stomach? Nobody ever sees my stomach!"—Judge's Library.

### CHILDREN SHOWED IT Effect of Their Warm Drink in the Morning.

A year ago I was a wreck from coffee drinking and was on the point of giving up my position in the school room because of nervousness.

"I was telling a friend about it and she said, 'We drink nothing at meal time but Postum, and it is such a comfort to have something we can enjoy drinking with the children.'"

"I was astonished that she would allow the children to drink any kind of coffee, but she said Postum was the most healthful drink in the world for children as well as for older ones, and that the condition of both the children and adults showed that to be a fact.

"My first trial was a failure. The cook boiled it four or five minutes and it tasted so flat that I was in despair but determined to give it one more trial. This time we followed the directions and boiled it fifteen minutes after the boiling began. It was a decided success and I was completely won by its rich delicious flavour. In a short time I noticed a decided improvement in my condition and kept growing better month after month, until now I am perfectly healthy, and do my work in the school room with ease and pleasure. I would not return to the nerve-destroying regular coffee for any money."

Read the famous little "Health Classic," "The Road to Wellville," in pigs "There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.