

SUCCESSFULLY TESTED.

A New System of Drought-Defying Soil Culture.

Invented by Hardy W. Campbell, a Dakota Farmer, But Not Patented—Good Thing for Western Farmers.

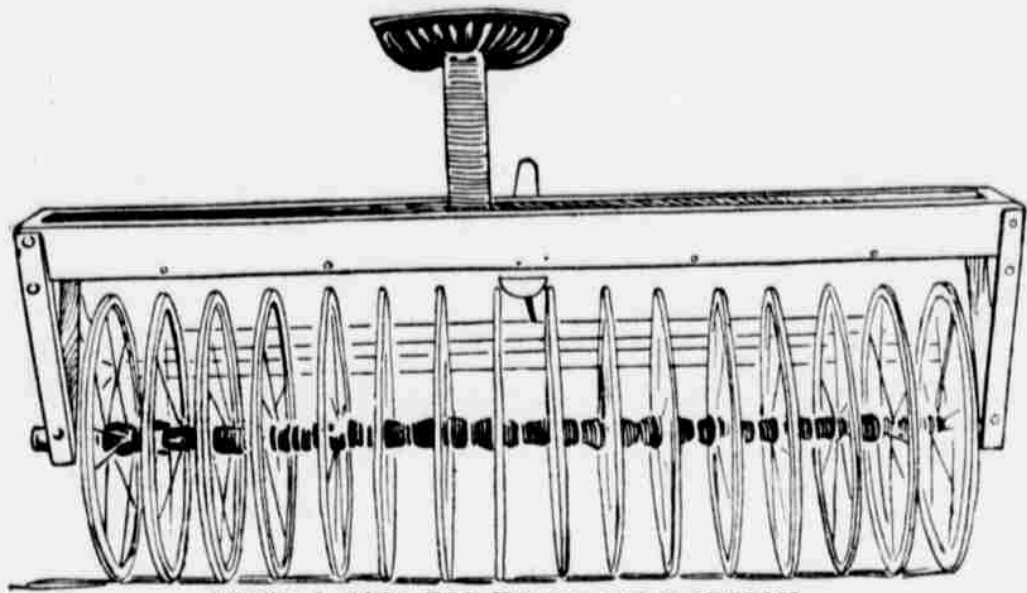
[Special Chicago Letter.]

Four years ago Hardy W. Campbell, a farmer living near Aberdeen, S. D., began to investigate in a modest way the possibilities of overcoming the evils of drought in that part of the west. He ascertained that the average precipitation from snows and rains in the semi-arid region is 20 inches a year which is equivalent to 2,000 tons of water on every acre of land. Most of this moisture comes in the winter and soaks down deep into the earth from which it is rapidly exhausted by the hot suns and warm winds of early summer, leaving the ground dry and parched at the very time when the moisture is most needed for the sustenance of plant life. Experts have established the fact that a crop which in this dried stage weighs three tons to the acre does not require in its growth more than 900 tons of moisture per acre, leaving a waste by evaporation and surface drainage of 1,100 tons of water from each acre every year.

The ordinary method of cultivation in the west is such as to encourage the

gone over repeatedly with a novel constructed harrow which thoroughly pulverizes the top earth, while at the same time it packs firmly all the ground four or five inches below the surface, thus preventing the escape of moisture before the crop is put in. Under the old plan the ground was allowed to lie for days after being plowed before a harrow was started and the evaporation of water through the freshly-broken surface was rapid and exhaustive. Immediate pulverization of the top soil following its turning up by the plow reduces this evaporation to the minimum. Crops are then sowed or planted in the usual manner and the moment the plant shows a fair growth cultivation is begun with a specially designed machine which just scratches the surface of the ground without disturbing the earth around the roots of the plant. By continuous use of this machine so long as the horses can make their way through the fields the top earth is kept in finely powdered condition and serves as what Mr. Campbell calls a dust blanket. By the time the plants are too big to be worked any longer the shade they cast will keep off the sun's rays and even the hot winds will not be able to do much damage. The process is so simple that many farmers are at first inclined to doubt its efficacy, but the results are beyond dispute. It not only insures crops in dry seasons, but it increases the yield per acre when there is seemingly no necessity for its use.

For two years experimental stations have been in operation at Oberlin, Kan.;



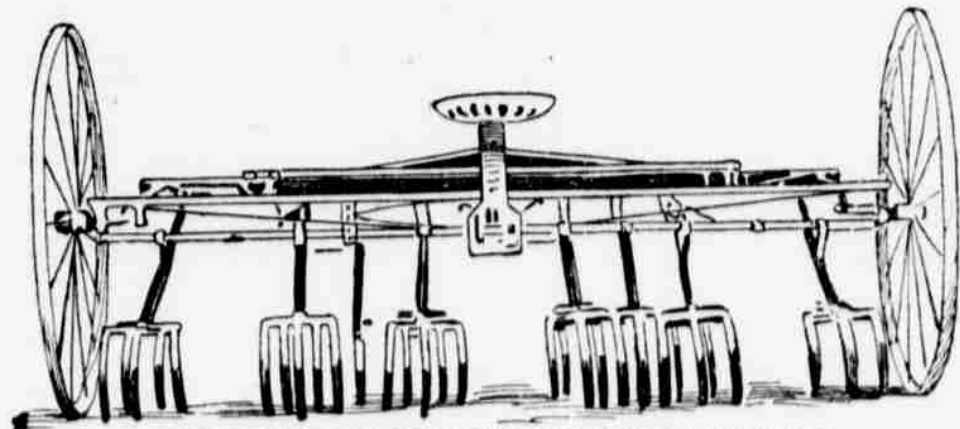
SPECIAL TOOL FOR FERTILIZING SUBSOIL.

maximum of waste in moisture. Land is shallow-plowed to begin with and after the plants are above ground the earth is stirred with a deep-reaching cultivator which turns over all the broken soil and at the same time disturbs the fine roots of the plants. Before the first of August the cultivator is laid by and a hard crust at once forms on the surface of the ground. On this crust the sun and wind act with terrific energy and in a few days the earth is sucked dry of all moisture. The season of drought is then at hand and the crops wither and die from excessive heat. In working his kitchen garden Mr. Campbell noticed he never had trouble in raising good crops of vegetables while a fair yield in adjoining fields was a rarity. As the methods of cultivation were radically different he concluded the secret must lie in this. Extensive experiments satisfied him he was right and he communicated his discovery to his neighbors, to the state authorities, and to railway managers interested in western lands. This was in the fall of 1894. Since then the matter has been more thoroughly tested over a wide area of territory with results that make the most conservative of men give the system emphatic indorsement.

In working his garden Mr. Campbell used a hand hoe continually and the surface soil was kept finely pulverized, forming a sort of dust blanket which

McCook, Holdredge, Alma and Broken Bow, Neb.; at Lisbon, Jamestown, Pine-gree, Dawson and Glenullin, North Dakota, and other points on the Great Northern, Milwaukee & St. Paul, Union Pacific, Burlington and other railroads. From all these places the reports are ro-sate. All sorts of crops have been treated, and under all sorts of conditions. Corn, small grains, hay and root vegetables all are benefited by the new system of cultivation. It might seem at first impossible to raise anything but hoed crops where a cultivator has to be kept constantly in motion, but wheat, rye, barley and oats are handled with great profit, if seeded or drilled in rows from 15 to 24 inches apart. There is a direct gain in quantity of from 25 to 33 per cent. in the yield over the old system, and the quality is much better, as there is no dwarfing or retardation of the plants or grain berries by drought. Statistics which have been carefully kept at these experimental stations put the cost of cultivation by this new method at about 90 cents an acre over the old plan. This increased expense, it is asserted, is more than met by the extra yield, thus virtually furnishing insurance for a crop in dry seasons without cost.

There is no patent on the Campbell system. Everybody is free to use it. The necessary machines are cheap and may be made by any handy mechanic.



CULTIVATOR USED IN THE CAMPBELL METHOD.

choked the pores of the sub-soil and prevented the escape of moisture except as it was drawn up by the roots of the plants. That this theory is correct was proven by taking test tubes of earth from the garden and adjoining fields, and sending them to different chemists for analysis. This earth was in all instances taken from the uniform depth of 12 inches. That from the fields yielded only seven per cent. of moisture while that from the garden gave between 18 and 19 per cent. The importance of this variation may be learned from the fact that earth containing only seven per cent. of water is dry and powdery to the touch; that which holds 18 per cent. can be squeezed into a mud ball. Satisfied he had struck the right idea Mr. Campbell's next move was to devise a means of putting it into practical operation. Large fields cannot be economically cultivated on the same plan as small gardens, and a radical change in tillage methods had to be evolved.

The ground is first plowed deeply, so as to stir up the subsoil and at once

There is no apprenticeship to serve in learning to operate them. These are points which commend the new method to western farmers and are likely to lead to a revolution in the farming business beyond the Mississippi. Railway men think so well of it that they are sending instructors through the country to teach farmers how the thing is done and organizing parties to visit the various experimental stations to benefit by practical object lessons. The directions are simply these: Plow deeply to start with; right behind the plow have a circular harrow that will pulverize the surface soil and while doing this pack the earth under it firmly; after the plants are above ground cultivate them by merely scratching the top of the earth, making sure the packed subsoil is not disturbed. By this course the moisture will be held in store until it is drawn off by the plants instead of being evaporated by the sun and wind. The whole thing is so simple as to appear almost ridiculous, but there is plenty of incontestable evidence that it is productive of surprising results.

AGRICULTURAL HINTS

FOR SHIPPING HOGS.

A Crate That Will Keep the Porkers in Good Condition.

The first thing necessary in shipping hogs or pigs is a good crate, without which no breeder is certain of his shipment arriving at destination in safety and in as fine order as when placed on board of cars. The crate, illustrated herewith, is made of seasoned linden wood, a material at once very tough, hard to break and light, a requisite in shipping animals by express, especially when rates are inclined to be exorbitant. This crate is 18 inches wide, 24 inches high and four feet long, and can be made in like proportion to suit the largest hog. The material used is sawed expressly for this purpose direct from the logs. Before working into crates it is sorted and ricked up, as other lumber, in a sheltered place to season;



CRATE FOR SHIPPING HOGS.

then when made into crates each one is treated to a coating or two of paint. All saw fuzz is removed by a sharp jack plane. The crate is put together with wire nails.

For the sides and tops use one-half by four inches and four feet, 11 pieces, and equally divide the space. The bottom is in one piece one inch thick, 18 inches wide and four feet long less one inch. Front end contains one piece one-half by ten by 18 inches, and two half by four by 18 inches, each. The rear or door end has two pieces one-half by 2 1/2 by 18 inches for inside cross strips top and bottom, and two outside top and bottom strips one-half by four by 18 inches, with two upright strips one-half by 2 1/2 by 23 inches for each side of the movable door, and to which are fastened the side strips. The door is one-half by eight by 23 inches, and is held firmly to place by a wire nail driven partially in at top end. The corner posts in front end are one by two by 23 inches, and on the inside of them is fastened a board one half by eight by 18 inches, which forms with the outside board a feed space of two inches in width in front of crate. The board on the inside comes within an inch of the bottom, where a trough is made by tacking in a piece of board one-half by four by 18 inches, at a slant of about the same degree as shown by one side of the letter V. When ready to ship, place crate in the wagon and back up to the driveway door in the hog house, which is on a level with the wagon bed, and you can load or crate the hogs with ease; then put feed in the box at end of crate, and it will drop down as it is eaten from the trough, thus affording plenty of food for the hog until the end of the journey. Water can be given in the trough, at intervals, by those having the animal in charge. In such a crate, bedded with straw, the hog should reach its destination O. K.—Farm and Home.

FACTS FOR FARMERS.

Wash the harness with soap and water before oiling.

We repeat, that corn, wheat and oats will not be permanently lower than they are at present.

Corn fodder may be shredded, but not perfectly, by running it through an old threshing machine.

A threshing machine boiler that is too small to do the work, is always dangerous from over-pressure.

A farmer says that he kills Canada thistles in the pasture by piling manure on them thick enough to smother them.

Put buggy beans or peas in a tight box and put a little cup of bisulphide of carbon on top, being careful that no fire is near.

Wheat, independent of interest on land, ought to be grown at six dollars an acre at most. Eight, or even ten bushels, per acre, will not pay.

Be careful to sow only the cleanest timothy seed. Weeds in timothy make bad work, worse than clover, though they are bad enough there.—Western Plowman.

Electrical Sheep Shearing.

Farming by electricity is now a recognized fact. Electricity drives the plow, churn, thrasher, and other implements, and stimulates the sprouting and growing of some kinds of vegetation. And now, at Great Falls, in Montana, which is becoming the great wool-growing state, 20 machines for shearing sheep are arranged in a long, narrow shed, open on one side. A single line of shafting extends overhead, and from this 20 flexible cables fall. The shaft, by means of "universal joints," cause each cable to rotate, and the cable transmits its power to the clipper by means of similar connections. A man needs only to steer the clipper around. The blades work themselves. A small electric motor of six horse-power drives the line of shafting. The motor is such as is used under a trolley car, and takes its current from a trolley line. The 20 machines operated for nearly three weeks and sheared 16,184 sheep, averaging nearly 100 sheep a day per machine.—Chicago Inter Ocean.

POULTRY FOR MARKET.

How to Dress Chickens, Turkeys, Geese and Ducks.

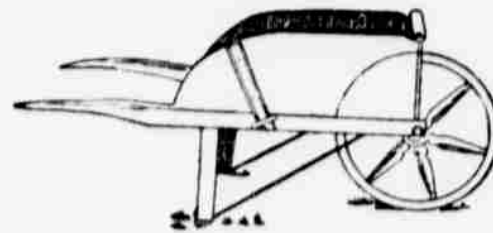
Keep from food 24 hours. Kill by bleeding in the mouth or opening the veins in the neck; hang by the feet until properly bled; head and feet should be left on and the intestines and crop should not be drawn. For scalding poultry, the water should be as near the boiling point as possible without actually boiling; pick the legs dry before scalding; hold by the head and legs and immerse and lift up and down three times; if the head is immersed it turns the color of the comb and gives the eyes a shrunken appearance, which leads the buyers to think the fowl has been sick. The feathers and pin feathers should be removed immediately, very cleanly and without breaking the skin, then "plump" by dipping ten seconds in water nearly or quite boiling hot, and then immediately into cold water, hang in a cool place until the animal heat is entirely out, it should be entirely cold, but not frozen before being packed. Dry picked chickens and turkeys sell best, and we advise this way of dressing, as they sell better to shippers, scalded chickens and turkeys generally are sold to the local trade. To dry pick chickens and turkeys properly the work should be done while the bird is bleeding; do not wash and let the bodies get cold, dry picking is more easily done while the bodies are warm. Be careful and do not break and tear the skin. Pack in boxes or barrels, boxes holding 100 to 200 pounds are preferable, and pack snugly; straighten out the body and legs so that they will not arrive very much bent and twisted out of shape; fill the package as full as possible to prevent shuffling about on the way. Mark kind and weight and shipping directions neatly and plainly on the cover. Barrels answer better for chickens and ducks than for turkeys or geese. When convenient avoid putting more than one kind in a package. Endeavor to market all old and heavy cocks before January 1, as after the holidays the demand is for small, round, fat hen turkeys only, old toms being sold at a discount to canners.

For geese and ducks the water for scalding should be the same temperature as for other kinds of poultry, but it requires more time for it to penetrate and loosen the feathers. It is a good plan after scalding to wrap them in a blanket, providing they are not left long enough to partly cook the flesh. Another method, and no doubt the best for loosening the feathers, is to steam them, and whenever proper facilities are at hand, we advise this process. It is poor policy to undertake to save the feathers dry by picking them alive just before the killing, as it causes the skin to become very much inflamed, and greatly injures the sale. Do not pick the feathers off the head and it is well to leave them on the neck, close to the head, for a space of two or three inches. The feet should not be skinned, nor the bodies singed for the purpose of removing any down or hair, as the heat from the flame will cause them to look oily and bad. The process of plumping and cooling is the same as with turkeys and chickens. There is no kind of poultry harder to sell at satisfactory prices than poor, slovenly dressed geese and ducks, and those who send in such must not be disappointed at low prices. No poultry of any kind sent to city market should be drawn.—Rural World.

GARDEN WHEELBARROW.

How to Make a Wheel That Bears Its Share of Burden.

In market gardening, there is much work that can be done with a wheelbarrow. While resting my aching arms one day, I concluded that the wheel of the ordinary barrow was not bearing its share of the burden, so I made one in which the axle was placed up nearer the body of the barrow, the wheel extending inside. A cap was fitted over this, inside the body, and I



BARROW FOR THE GARDEN.

found that the wheeling was then much easier. The new barrow weighed 49 pounds. With 239 pounds of sand, there is a weight of 56 pounds on the handles, while with the ordinary barrow the weight is 99 pounds. The handles are five feet long, 1 1/4 by 1 1/4 inches at front and smaller toward the back. The wheel is 22 inches diameter with a two-inch tire. The barrow frame is 19 inches at front, two feet at back; the body is three feet by 13 inches, while the legs are two feet ten inches from the front.—R. Bingham, in Orange Judd Farmer.

Surface Water in Wells.

Wells are often dug in depressions, the idea being that in such places springs of water are most apt to be found. But if so dug the well should be stoned and cemented for 12 or more feet from the surface, so that shallow springs cannot find entrance. The deeper springs will generally be free from surface impurities. Then if the well is filled around about so as to turn surface water from it there will be little danger that it will be contaminated in any way.—American Cultivator.

MR. BROWN'S LOST CREEL

Tardy Revelation of the Facts about the Loss of 14 Pounds of Trout.

"I lost a borrowed trout creel once," said Banana Bob Brown, the cigar man, "and was so mad at myself for not following it up and recovering it that I never told the owner how I came to lose it, but bought him another and never said a word. This happened up in Sullivan county.

"The creel was a 15-pound one, and the morning I strapped it on, ready to start out after the 15 pounds of trout necessary to fill it, the landlord of the house where I was stopping said:

"Where are you going, Mr. Brown?" "Where am I going?" I replied, a little ruffled. "After trout, of course! Do I look as if I was going after whales?"

"I asked you where you were going," said the landlord. "I didn't ask you what you were going after."

"Oh!" said I. "I'm going to Jumping creek. Trout there, ain't there?"

"Ought to be," said the landlord. "If the bears haven't fished 'em all out."

"Bears!" I said, and I had to laugh.

"That's right!" said the landlord. "Sure! Bears can beat water snakes catching trout. Water snakes can beat coons, and coons can beat the best trout fisherman that ever went out carrying his fly hook where everyone can see it and his bait box hid in his pocket!"

"Fudge!" I said, and went my way.

"I had great luck that day. The creel I carried belonged to a man who lived in the village. I borrowed it because I was afraid my own creel was too small. It held only ten pounds. I came to a pool where I knew I could get the needed two pounds of trout and at first thought I would make short work of it by killing a two-pounder, but afterward made up my mind it would be more sport to kill two one-pounders. So I prepared to do that. I had to clamber down a steep, rocky place to get to the pool, and I took off my creel and left it at the top, fearing that I might slip and fall and spill the trout and lose 'em in the creek. I got down all right, and soon had a pound trout hooked. Away he went with a rush down stream, and I gave him line. He went a hundred feet before he stopped, and then stopped right where a tremendous big bear stood in the creek, doing, as sure as you live, a little fishing for himself. Before I could reel my trout away from that spot the bear reached out and put the hooks of his big claw into my trout, and yanked it out of the water, grabbing my leader at the same time and breaking it. Then that aggravating and impudent bear held up the trout for me to look at, snapped his eyes at me in a way that made my dander raise right up, and waddled out of the creek into the bushes, taking my trout along. I can't remember when I had been so mad as I was to see that bear walk away with my prize.

"Not if I know it, you don't get away with that fish!" I hollered, and shinned up that rock to head the bear off and make him stand and deliver up that trout or take the consequences. When I got back to the top of the rock I discovered that my creel of trout wasn't where I had left it. I looked all around, but it was nowhere to be seen. I hurried to the bushes, pushed them aside, and there, making for the woods, I saw two bear cubs walking off with my basket of fish, carrying it between them! I was simply dumfounded, and while I gazed after those audacious young thieves they were joined by the old bear that had caught my big trout down the creek, and away the trio went showing every evidence of hilarity over the way they had tricked me. Instead of bounding after the robber bear family, recovering the property they had looted me of, and administering them such punishment as they richly deserved, I was so taken aback that I stood there like a chump and let them escape. When I came to some degree of reason I was so mad at myself that I went home ashamed to tell how I had really lost my creel, and faked up some story about its having tumbled into the creek and been washed away. This is the first time I ever gave away the truth about losing that creel, and I feel better for it.—N. Y. Sun.

Scalloped Oysters.

Take two dozen large salt water oysters. Put them in a pan in their own juice and place them on the fire until they boil, then drain. Take five ounces of best table butter, one large tablespoon of flour; mix and let it simmer for a half minute without getting brown. Then take half of the oyster juice and add an equal portion of cream, and let it cook to thick sauce; mix it with the oysters, and flour and butter. Season with salt, a little cayenne pepper, a soupcon of nutmeg and a little Worcestershire sauce. Wash and clean thoroughly a dozen large deep oyster shells; then put about six oysters in a shell; sprinkle with parmesan cheese, bread crumbs and a little fresh butter. Bake for ten minutes in a brisk oven and serve immediately.—Cincinnati Enquirer.

Fried Tomatoes.

Take ripe, firm tomatoes, slice, sprinkle with salt and pepper, dip in egg, then in grated bread crumbs, and fry in boiling lard.—Housekeeper.