Getting the Dollar From Under the Stump

How Up to Date Farmers Are Easily and Economically Realizing on Land Hitherto Impossible of Cultivation.

ABOUT 400,000,000 acres of land included in farms throughout the United States are unimproved. Figuring that each acre could be made to produce at least $25 worth of produce per year, there is approximately $10,000,000,000 production being lost annually. Quite a tidy figure. And when we take into consideration that in many cases it requires only the removal of sundry stumps and boulders to make this land profitable, it certainly looks as though something might be done to save the waste. "Stumping with dynamite" is both an economical, quick and labor saving method as well as one that is growing in popularity daily.

The method involved in the blasting of a stump is to confine a quantity of explosive in such a manner that when exploded the expanding gases will lift the stump out of the ground. To secure best results the charge should be placed in the soil well under the base of the stump at the point where the resistance offered to the force of the explosion will be equal on all sides.

Where the soil is of a heavy clay or plastic nature a slow acting powder is preferable, such as farm powder or stumping powder. Where the earth is sandy or loose and is apt to permit the easy escape of gases a fast explosive, such as 40 to 60 per cent dynamite should be used. The condition of the soil with respect to moisture also has a great influence upon the amount of work that a certain quantity of powder will do. After heavy rains when the soil is saturated to the base of the stump and the subsoil is just damp is a most favorable condition.

No set rules as to the amount of powder necessary to blast a certain kind or size of stump can be given, since different conditions govern all cases. Two stumps of the same size, kind and age of cut, when one is grown on well drained soil where the roots must penetrate a great depth for water and the other is grown on soil where there is always water near the surface, will demand different treatment for extraction. The older stumps, especially if from timber free from resin, require less powder. The exact amount necessary for set conditions can, however, be readily determined with a little experimenting.

Few tools and supplies are required. A one and one-half inch wood auger with a shank about four and one-half feet long, a medium sized crowbar, a round pointed shovel and a wooden tamping stick, together with the powder, fuse and caps, will serve to fill the bill.

Deepening the Farm For Bigger Crops

The Third Dimension of the Farm an Important Factor to Greater Crops and Bigger Dividends.

WISE farmers are beginning to realize that a farm goes farther than length and breadth. Depth is a vital factor, and incidentally this third dimension has a clearly identified influence upon the producing value of the earth's surface.

Thus "vertical farming," a newer method of agriculture, is rapidly developing. Merely to scrape the bristles from a hog's hide is not enough. Deeper cutting is essential in order to reach the bacon. And experience has shown that to simply plow or turn the top soil is very often only the scratching of the surface when it comes to bumper crops.

Often the productivity of a farm is limited by the tight clay or hard pan underlying the top soil. Costly implements for tilling this upper soil and taking care of increased horizontal or surface acreage are all right in their way, but to go deeper into the farm, to increase its fertility and productiveness by increasing its depth, is a matter that the practice of vertical farming accomplishes quickly and economically, and very often a single cartridge of explosive will convert several yards of otherwise useless subsoil into half an acre of new root feeding surface. Thus, instead of spreading out and embracing more territory, vertical farming enables the farmer to really concentrate and by intensive methods conserves in both labor and expense. At the same time the resulting increase in crops emphasizes the profitable features of the process.

And there is a practical reason for this. By breaking up the subsoil oxygen is admitted into the ground, and the pent up natural fertilizing elements of the lower soils are released and utilized. A reservoir for the storage of water is created, and a good home for the roots is produced. Good roots are essential to good plants. Men who look below the surface realize these facts. They know also that a plant produces only in proportion to the extent of air, water and nourishment given its roots. Thus is the newer method of vertical farming both logical and profitable.

This method of farming vertically is in itself easy, simple and labor saving. A half cartridge charge of farm powder placed well down into the tight subsoil at intervals of about a rod, tamped properly and fired carefully will do the work quickly and economically. Subsoil blasting, however, can be done successfully only when the subsoil is dry.

Few tools are required for the work.

Straightening Streams With Dynamite

The ancient Egyptians were noted for their crops because, as history states, they "sowed their seeds in the Nile." This does not mean that they actually cast the seed in the river. At certain seasons of the year the Nile overflows its banks, depositing on either shore a rich silt or earth that is highly conducive to bumper crops, and the wise ancient Egyptians, realizing this, profited thereby.

Water is a necessity. The tiniest brooks up to the largest rivers play an important part in the scheme of things inasmuch as they are nature's way of

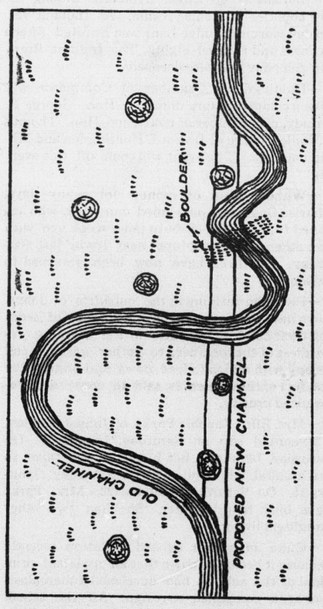


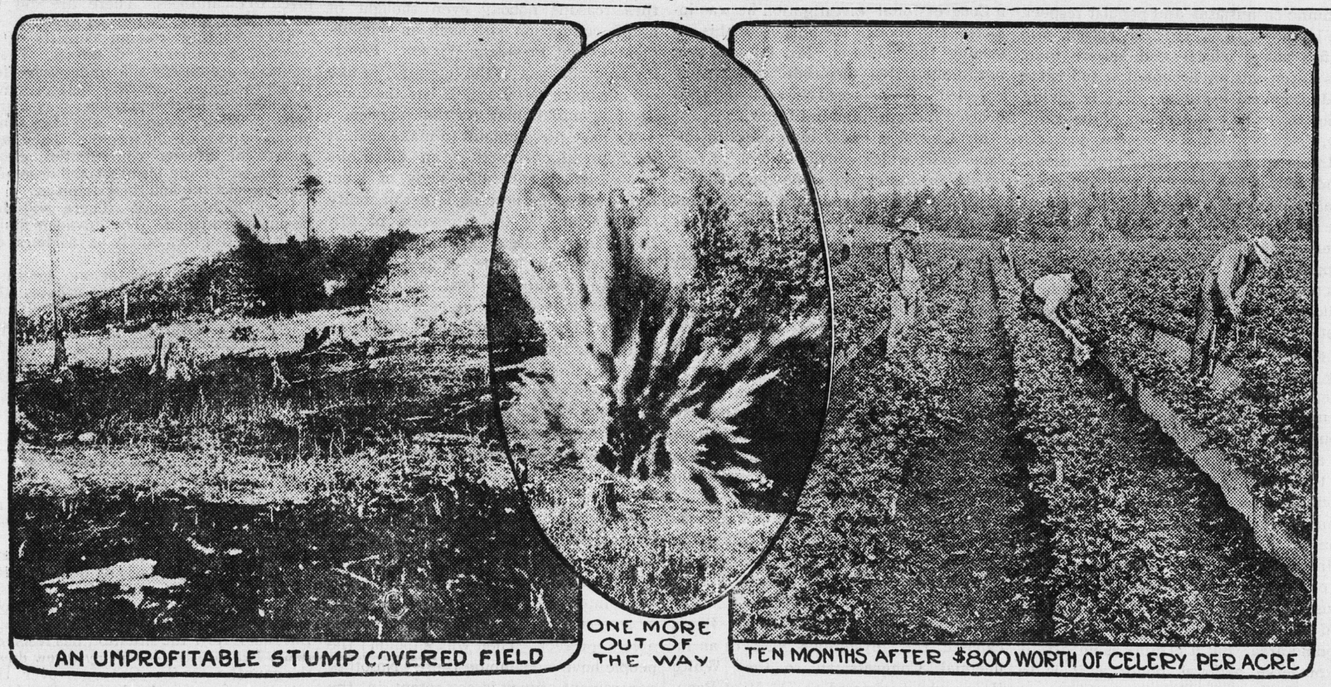
Diagram of Stream Troubles That May Be Corrected by Blasting.

both irrigation and drainage. But being formed according to nature's dictates their courses do not always jibe with man's desires or needs.

Rock ledges impede their progress. Overhanging stumps and trees retard their flow. Numerous irregularities cause them to meander about in apparently wasteful ways, and man's carelessness has added to these troubles by allowing driftwood and loose earth to form dams and sandbars.

All of these things help to hold the flood of waters back and cause either flooding or swamps, which not only occupy land that could be more profitably used for farming, but also form fine breeding places for mosquitoes and other obnoxious pests. Incidentally they cause an annual loss running into millions of dollars per year.

In this day of enlightenment such things are both wasteful and, one might add, criminal, especially so in view of the fact that almost instant relief may be had by a few well placed charges of dynamite. Not only will these blasts straighten out the kinks and bends and remove ledges and sand bars, but they will deepen and improve the channels as nature has really intended. Incidentally by straightening the winding course of a creek much area of tillable land can be obtained and farm operation in many instances made much easier.



Blasting Ground For Tree Planting

Much has been written on how to plant a tree or trees, but if the experiences of scores of famous orchardists have any weight on the topic, then the practice of using dynamite preliminary to planting young trees has fully proved its merits.

The writer has personally seen specific examples of the value and excellence of tree planting with dynamite on a private orchard in Delaware, the difference in growth between the undynamited tree and the tree planted in blasted ground being so unmistakably in favor of the latter that no adequate comparison could be made.

Furthermore, there are so many sane and logical reasons for this method of tree planting that even the most skeptical could not fail to be convinced. Obviously when a tree has to use a large part of its energies in forcing its roots through the hard soil it cannot be expected to make the same rapid growth and come into such early bearing as a tree would that had had the ground in which it was planted thoroughly prepared by dynamiting beforehand.

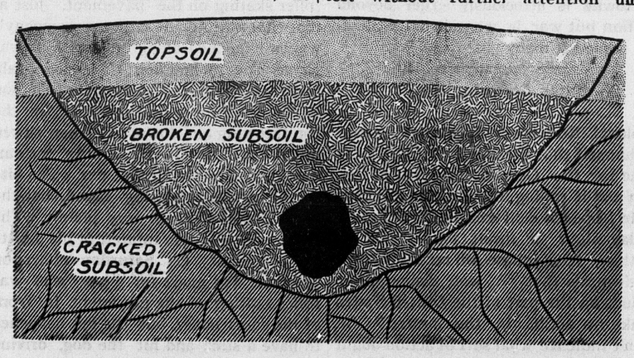
No tree should be planted over hardpan or impacted subsoil without first resorting to blasting, so that the soil may be made open and porous. Such blasting not only creates channels, increases absorption of soil moisture and permits deeper rooting, but it also induces better growth and larger yields.

Blasting for tree planting is best done in the fall, because at this time of the year it is easier to catch the subsoil in dry condition. Blasting in the spring for spring planting, however, is much better than planting in dug holes, notwithstanding the fact that the subsoil is apt to be wet or damp.

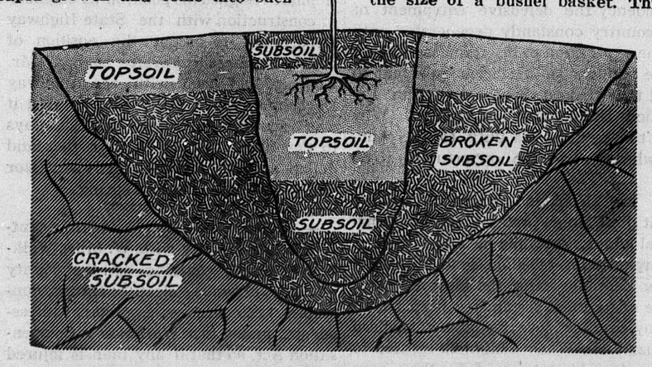
If the holes are blasted in advance of the time of setting the trees they are left without further attention until tree planting time, unless it is desirable to add some manure or fertilizer to be diffused through the soil. This is an excellent practice, especially in poor soil. If the earth is sour, sticky clay a few pounds of lime scattered in the hole will materially assist in flocculating the clay and keeping it permanently granulated and sweet.

Immediately after the blast the soft blasted ground should be dug out down to the location of the charge, where a hole will usually be found about the size of a bushel basket. This must be filled to prevent settling of the tree after planting. The roots should be placed in a natural position in good top soil, covered with more top soil and treaded down firm. The hole can then be filled to a little above the surface with subsoil.

The fact that nearly all commercial orchardists use this method proves that it pays in reduced first year loss, earlier fruiting and larger and better yields.



THE BLAST THOROUGHLY CRACKS THE SOIL, BUT USUALLY LEAVES A CAVITY OR POTHOLE AT THE BOTTOM—THIS MUST BE FILLED.



THE ROOTS ARE FIRMLY EMBEDDED IN RICH TOPSOIL, SURROUNDED BY MELLOW, WELL DRAINED SUBSOIL.

Burrowers---Beware!

Gophers and prairie dogs are the bane of western farmers, while in the east woodchucks are the type of burrowing animals that cause the tillers of the soil to forget some of the things the dominie tells them on Sundays.

Don Leonardo Ruiz, a California rancher, says "dynamite is the proper medicine to give ground squirrels, gophers, prairie dogs, etc."

Take an inch and a half or two inches of dynamite. Put it in a bit of cloth or several thicknesses of paper to form a small round cartridge. Tie the cloth or paper firmly about one end of a piece of fuse twelve or fourteen inches long, but do not use a cap.

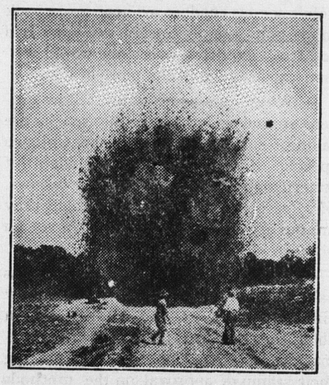
Insert one of these charges well into the mouth of every hole and pack loose dirt around the fuse, leaving enough of the end outside to light easily. Light the fuse and go on to the next hole. There will be no explosion.

There being no cap or other detonator, the dynamite will simply burn, filling the hole with dense, poisonous fumes that will almost instantly stifle and then kill every living thing inside.

Explosives In Road Building

One of the newer methods of road building that is fast winning the indorsement of the better versed contractor is that of employing dynamite for reducing the heavy work.

Grading through hard ground or rock, for instance, is tedious and requires time and labor. The use of dynamite for blasting such material is a welcome relief. Both rock and hard clay may be loosened in the cut by well placed charges of explosives if holes are drilled into the ground a little way up the bank and loaded. Careful spacing and loading for electrically fired blasts will result in bringing down both classes of materials in the best possible manner.



In loosening shale and rock to facilitate hand or steam shovel work dynamite is also very effective, while stumps may be blasted from the roadbed just as though they were being removed from a field to be cleared and cultivated.

Boulders also are easily shattered by suitable loading and when of hard rock may be crushed into surfacing stone. The side ditches as well as the long outfall ditches can also be blasted in keeping with the nature of the ground. In fact, there are no limits practically to the many uses and advantages of dynamite for road building when careful and thoughtful attention is given to the work.

Incidentally the planting of shade trees for roadside improvement and attractiveness is greatly facilitated by the judicious use of a little dynamite. It is a recognized fact that trees planted in blasted holes grow much more rapidly and progress more favorably than those planted in the average spade dug ground.

Digging a Ditch In a Flash

Things move quickly nowadays. The village of yesterday is tomorrow's metropolis. Speed is a requisite, and newer methods that smack of rapidity and labor and money saving are in demand.

Ditches that once consumed many days of hand or machine labor are now being blasted out in almost the twinkling of an eye. By degrees man is learning to adopt some of nature's simple, but mighty forces. And the gullies and valleys that old Mother Earth has created by her natural upheavals and eruptions are being duplicated in a smaller way by some of the more progressive and up to date farmers.

Digging ditches with dynamite is simply a newer and more improved method of trench building. The method employed in wet work is simply to punch holes from eighteen to twenty-four inches deep along the line desired to ditch and then load each hole with a charge of 50 per cent straight dynamite.

Long stretches of ditch can be loaded and fired at one time. One cap placed in a cartridge of dynamite in the middle hole of the line of charged holes and fired will do the work.

A single row of holes can usually be depended upon to excavate a ditch from seven to nine feet wide and about thirty to forty inches deep. Where larger ditches are required the holes can be made deeper and loaded heavier, or two or more lines of holes, spaced from three to four feet apart, can be used. Incidentally the holes can be made in the roughest kind of swamp or in flood muck beds, where other methods of ditching are practically impossible.

When the soil is dry or the weather is too cold to use the propagated method of blasting described above low freezing farm or stumping powder is used in holes spread farther apart, often in large ditches as far as four or five feet. In this case each hole must be primed with an electric cap, as the explosive shock will not propagate in dry ground.

The cheapest lineal foot of small ditch is obtained by using the electric firing method and farm or stumping powder.

Loading.

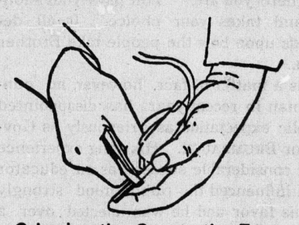
The Ditch.

BLASTING DITCHES THROUGH SWAMP.

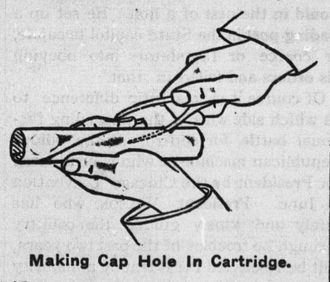
Priming a Dynamite Cartridge

To properly prime a dynamite or farm powder cartridge four things are essential—the cap, the fuse, the cartridge and a crimping tool. The method in itself is very simple.

First crimp the priming cap about the fuse, using the crimping tool as shown in the illustration. Next punch a diagonal hole in the cartridge with the end of the crimping tool, making the hole deep enough to entirely bury the cap. Insert the cap into this hole and tie the fuse to the side of the cartridge securely with a stout piece of cord.



Crimping the Cap to the Fuse.

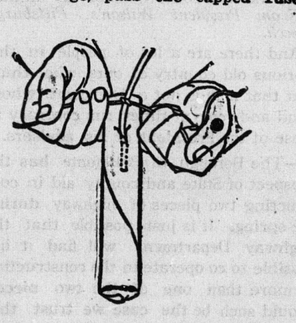


Making Cap Hole In Cartridge.

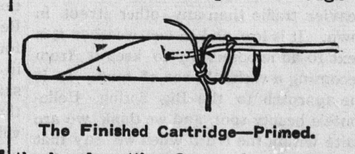
If the job is done carefully and correctly the entire outfit will look like illustration No. 4, and the priming will be complete.

Ignorance, fear or carelessness are the causes of most accidents. There is no immediate danger in handling a stick of farm powder if the user will use but an ordinary amount of care and intelligence.

A common incorrect method of priming is to punch a hole right through the cartridge, pass the capped fuse through it, then insert in another diagonal hole below the first hole. No tying is necessary to hold the cap in the cartridge. This method is called "lacing the fuse through the cartridge." It is unsafe and unreliable. The fuse is likely to break at the sharp turns and the powder train spit fire through the break, setting fire to the cartridge instead of exploding it, or the fuse may miss fire altogether, leaving an unexploded charge in the hole, or it may hang fire for half an hour or half a day and cause a serious accident. Short cuts do not pay in handling explosives.



Tying Fuse and Cap to Cartridge.



The Finished Cartridge—Primed.