Dupont de Nemours
Farming with dynamite
1911

FARMING

with

DYNAMITE

A few hints to

FARMERS

DEALERS WANTED EVERYWHERE

We want a dealer in every city, town and village not already covered. We request any hardware dealer or general store-keeper reading this booklet to mail the Card No. 3 on inside back cover, if he would like to consider our proposition to hand out our literature and take orders for our products for agricultural or other uses. He need not carry any stocks nor make any investment of capital to do this. His orders will be promptly filled from the nearest magazine.

PROFESSIONAL BLASTERS CAN FIND PROFITABLE EMPLOYMENT ON FARMS

Threshermen and others doing farm work of various kinds at certain seasons of the year can obtain much profitable employment from farm owners by learning to do blasting for them in case they do not wish to do it themselves. We would take pleasure in instructing any man in methods of doing the work. For information on this subject fill in and mail the Card No. 2 printed on the inside back cover.

THE LORD BALTIMORE PRESS, BALTIMORE, MD.

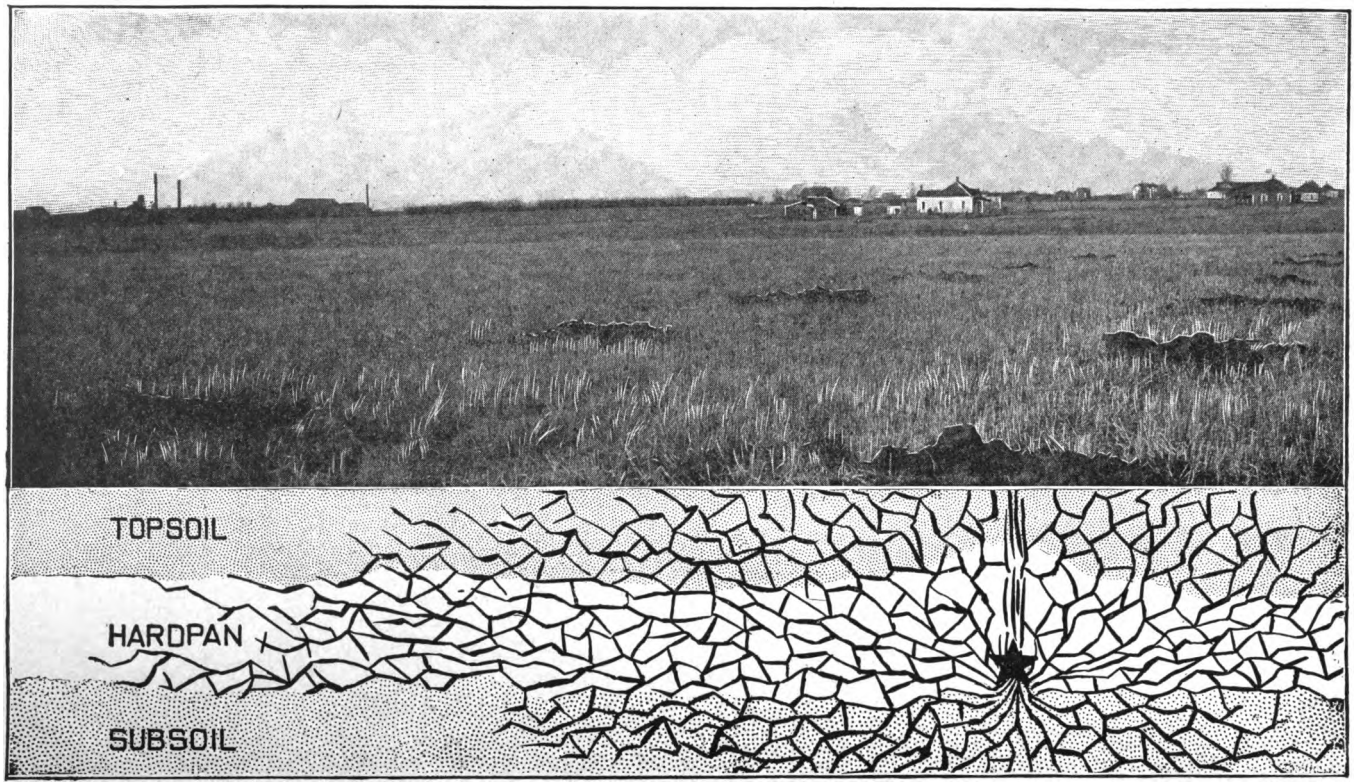
FARMING WITH DYNAMITE

AN IMPROVEMENT IN FARMING
THAT IS PROVING
GREATER THAN
IRRIGATION

DU PONT

ESTABLISHED 1802 WILMINGTON, DEL.

S.G.



BLASTED HARD-PAN IN KANSAS—WITH SECTIONAL VIEW OF SOIL

WHAT IS DYNAMITE?

SOME farmers have a wrong idea about dynamite. They know it is a powerful explosive, and believe it is dangerous to handle.

Dynamite *is* very powerful, much more so than gunpowder, but is actually safer to handle.

After more than a hundred years' experience in making and using explosives, we can truthfully state that by following simple directions with ordinary care, anyone can use our "Red Cross" Dynamite without harm.

The purpose of this booklet is to tell you the wonderful value of the use of "Red Cross" Dynamite on the farm.

RED CROSS DYNAMITE CARTRIDGE, SIZE 1¼ X 8 INCHES

Chief Uses of Dynamite on the Farm.

As farmers all over the country begin to understand the value of "Red Cross" Dynamite in their work, they are constantly reporting new uses for this powerful assistant.

The chief uses are mentioned below and are explained in detail further on. Complete instructions are furnished in the "Handbook of Explosives for Farmers, Planters and Ranchers."

A WELL CLEARED FIELD ON FARM OF G. G. HARTLEY, HIBBING, MINN.—STUMPS SO SPLIT THAT THEY WILL BURN EASILY

Clearing Land of Stumps, Boulders and Trees.

It is needless to tell you the advantages of clearing land.

The stump covered site of a former piece of woods, is as you know, new, rich soil that needs no fertilizer.

You also know that pulling stumps with a machine is the hardest kind of work—liable to injure seriously your horses, and certain to require a lot of work to get rid of the stump after pulling.

Then, too, it leaves the field full of holes, that must be filled; and plowing the hard, packed soil around old roots is no joke.

If instead of pulling the stumps you burn them out, the intense heat required destroys the chief fertile elements of the soil all around the fire. After all your hard work you will leave a burned field instead of new, fertile soil.

You can dynamite all those stumps for about one-third the cost of pulling and chopping them up.

The blast splits up the stump into firewood, removes all the dirt, breaks all the main roots, and loosens the soil for yards around.

You can blast fifty stumps in the time it would take to pull and chop up one or two.

One man can do all the work, if necessary.

After the stumps are all blasted out, you will have a new, rich field, easy to cultivate, and requiring no fertilizer to yield bumper crops.

If you want to remove a whole tree, " Red Cross " Dynamite will lift it bodily out of the ground, and it will usually fall with the wind. When this is done, *there is no stump to remove.*

The split stumps can be removed easily to one place, burned, and the ashes saved for spreading on the land or leaching.

If whole stumps are preferred for making fences, they may be blown out whole by regulating the blasts.

Boulders, which you are now obliged to plow around, can be broken up into easily handled blocks by a single blast.

Road-Making and Grading.

" Red Cross " Dynamite is a big saver of time and labor in making new roads, or leveling grades on old roads. Rock, shale, clay, gravel or sand, can all be broken up with ease, simply by varying the charge according to the nature of the ground and the depth of excavation desired.

TEN MONTHS LATER—$800 WORTH OF CELERY PER ACRE

What it Costs to Blast Out Stumps.

At a "Farming with Dynamite" demonstration, held under the auspices of the Norfolk and Western Railroad, at Ivor, Va., on August 11, 1910, one and one-half acres, containing forty-six stumps were cleared in one day, at an expense of $18.00, including labor, or an average of 39 cents per stump.

Records kept by the Long Island Railroad, covering operations on their Experimental Farm, showed that, including the wages of the men who did the work, the cost of blasting out stumps, piling and burning them, averaged about 16 cents per stump.

Records kept of the cost of this work in different sections of the country show as follows:

Locality and Kind of Stump.	Average Diameter.	Average Cost Per Stump.
Minnesota—		
Birch, Ash, Spruce and Pine	20 inches	$0.16
Southern—		
Pine Stumps	29 inches	.30
Michigan—		
White Pine, Maple and Birch	32 inches	.47
Illinois—		
Oak, Walnut and Gum	30 inches	.53
Pennsylvania—		
Apple, Ash and Chestnut	34½ inches	.56
Western—		
Fir, Pine and Cedar	50 inches	1.13
Redwood	8 feet and over	2.00 and over

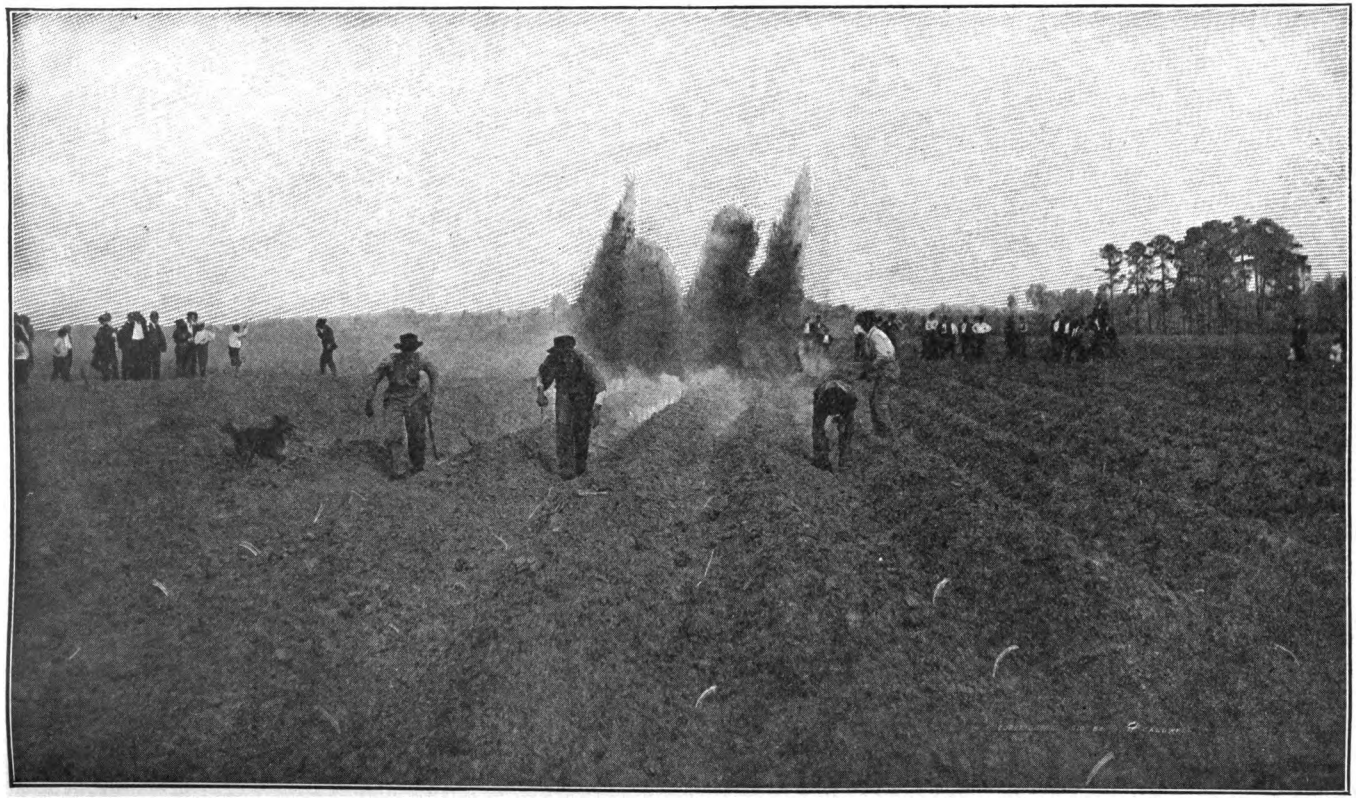
Records kept by Prof. A. J. McGuire, Superintendent Experimental Farm of the University of Minnesota, show even lower costs.

In comparing these costs with the cost of stump pulling, consideration must be given to these items: Pulled stumps must be cleaned of dirt and broken up; blasting stumps loosens the earth for yards around and beneath; no horses or expensive apparatus is necessary for blasting.

Dynamite Successfully Used for Twenty Years In Cranberry Growing.

Mr. A. J. Rider, Secretary of the American Cranberry Growers' Association, of Hammonton, N. J., writes:

"I have used dynamite in the development of my cranberry enterprises with success and economy for the past 20 years. In removing obstructions from watercourses, opening ditches and preparing the way for dams and flood-gates it is especially useful. I keep a supply on hand at all times, and my foremen are all instructed in its use. The saving in time and labor thus effected is very great."



DEEP PLOWING WITH DYNAMITE—LIGHTING THE FUSE

Breaking Up Hard-Pan, Shale or Clay Soils.

This is one of the most important uses of " Red Cross " Dynamite.

It is possible, although difficult and expensive, to clear land of stumps and boulders in other ways, but it is not possible to break up hard-pan, or clay subsoils, without the use of dynamite.

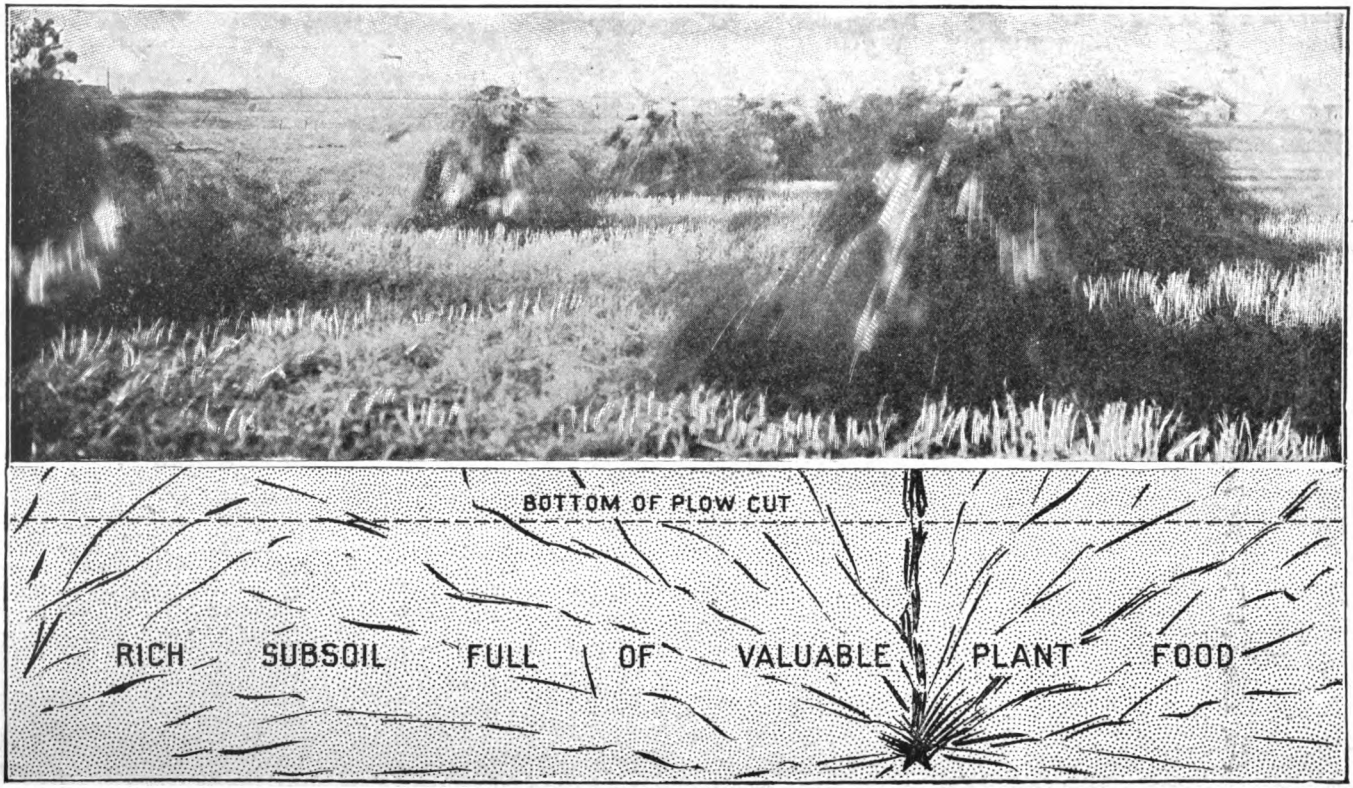
Land that has a waterproof subsoil is practically worthless, as in wet weather it holds the surface water in such quantities on level ground, that the roots of trees and plants are " drowned " or rotted away; and in dry weather such land does not retain moisture and the vegetation dies quickly. Such land can be rendered fertile at once by blasting with " Red Cross " Dynamite. The hard-pan is completely broken up, water-storing capacity increased, and the dry, dead top soil converted into a rich loam for less than the amount of the taxes for a year or two.

The following extract from the Topeka, Kansas, " Mail and Breeze " proves the wonderful results of this use of dynamite:—

"A few years ago M. T. Williams bought a quarter section of land near Medicine Lodge in Barber County, and, conceiving the same idea that Ex-Governor Crawford and others have, used dynamite in dealing with a hard subsoil. The land was overgrown with sunflowers and cockleburs and would have been considered dear at $10 per acre. It was underlaid with a hard subsoil that was almost impervious to water. Mr. Williams' idea was to loosen this subsoil with dynamite. He bored holes in the earth some 3 feet deep and about 40 feet apart, and in each hole placed a part of a stick of dynamite. The explosion of the dynamite loosened the hard subsoil, and made a reservoir for the rains, which had formerly run off the land nearly as fast as they fell. On this quarter there is now 100 acres of, perhaps, as fine alfalfa as can be found in the state. Mr. Williams has refused $15,000 for the quarter and gathers a net income from his alfalfa of from $30 to $35 per acre every year.

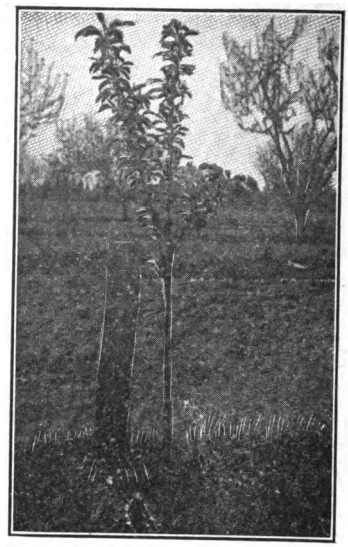
"Last season Mr. Williams proposed to the ladies of the Baptist church that he would give them a load of hay, provided they would come out to the place, shock the hay, load it on wagons and haul it to town. They took him at his word and shocked and hauled to town two tons which sold for $16. When the second crop was ready the ladies came again, and 'touched' Mr. Williams for a little more than two tons which sold as well as the first load." (See cut at bottom of this page.)

MAKING HAY FOR THE CHURCH ON A DYNAMITED FIELD WHERE FORMERLY LITTLE OR NOTHING GREW



DEEP PLOWING—SHOWING HOW BLAST BREAKS UP SUBSOIL

NO. 1—BELLFLOWER APPLE TREE
SET IN DYNAMITED HOLE
(SEE NEXT PAGE)



NO. 2—BELLFLOWER APPLE TREE
SET IN SPADED HOLE
(SEE NEXT PAGE)

NO. 3—BING CHERRY TREE
SET IN DYNAMITED HOLE
(SEE NEXT PAGE)

NO. 4—BING CHERRY TREE
SET IN SPADED HOLE
(SEE NEXT PAGE)

PHOTOGRAPHIC COMPARISONS OF TREES PLANTED IN BLASTED AND IN HAND-DUG HOLES

Planting and Cultivating Orchards.

In the orchard " Red Cross " Dynamite not only saves much labor and time in planting the trees, but ensures the best growth and large yields.

A man will spend an hour digging a tree hole that dynamite will excavate in an instant. The spaded hole will be hard all the way down, making it difficult for the transplanted roots to take hold. This is one of the chief reasons why transplanted trees so often die.

" Red Cross " Dynamite not only excavates the required hole, but also loosens the ground for yards around, killing all grubs, and forming a spongy reservoir for moisture. That is why trees planted in dynamited holes live and thrive.

A whole row of tree holes can be excavated in one instant when charged with " Red Cross " Dynamite electrically exploded.

Old trees are greatly benefited by exploding small charges under them, or between the rows. This keeps the ground loose, and free from grubs.

A well known fruit grower reports that when planting peach trees some years ago, he blasted the holes to determine whether anything was to be gained by using dynamite. A number of trees were planted in holes by detonating a charge of explosives to make the holes, and others were planted in holes of the regulation size, dug by hand. Three years later the trees planted in the blasted holes were strong and healthy, each producing between five and six bushels of very fine peaches. The other trees planted on the same ground without blasting, bore no peaches, both fruit and leaves having shriveled up and dropped off during the dry season.

FAMOUS ORCHARDIST USES DYNAMITE IN PLANTING AND RENOVATING ORCHARDS.

THE J. H. HALE CO., SOUTH GLASTONBURY, CONN.

E. I. du Pont de Nemours Powder Co., Wilmington, Del. February 22, 1911.

Gentlemen:—I am just back from a two weeks stay in our Georgia Orchards.

While I was there we continued further blasting for the replanting of about 3000 trees where they had failed in one of our older orchards. I also looked over carefully the two little blocks of trees we planted with dynamite last season and the results are even better than I had been led to believe when I left there the middle of July. In the meantime I am becoming further interested in the matter and in the recommendations for renovating some of the old apple orchards in New England and want my clients to try dynamiting a portion of the land around these trees, especially when they are in particularly strong heavy soil. Yours, J. H. HALE.

NOTE.—Mr. Hale is the owner of several of the largest commercial orchards in the United States.

CORN GROWN ON BLASTED GROUND AT SPARTANBURG, S. C.

Plowing With Dynamite.

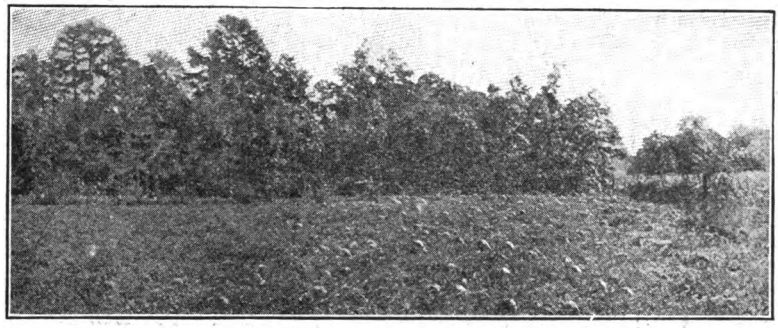
This does not do away with the plow. It simply goes down in the lower strata that a plow can never reach. Ordinary plowing merely turns over the same old soil year after year, and constant decrease in crops is only prevented by rotation or expensive fertilizing.

Natural elements of fertility in soil are phosphoric acid, potash, humus, and nitrogen compounds. Plowing stirs the soil 6 or 8 inches from the top, but these plant-food elements in the underlying soil are never touched by the plow. If the subsoil were disturbed occasionally by dynamite blasts much less costly fertilizing year after year would be required, because the blasting would make the land porous to absorb plenty of water in rainy weather, and this water, which is the principal plant food, in being drawn to the top by the roots of the plant as needed for its growth, would carry with it the soluble fertilizing elements.

With " Red Cross " Dynamite you can break up the ground all over the field to a depth of 5 or 6 feet below the ordinary plowing depth.

J. H. Caldwell, of Spartanburg, South Carolina, states that before the ground was broken up with dynamite, he planted his corn with stalks 18 inches apart in rows 4 feet apart. After the ground was blasted, it was able to nourish stalks 6 inches apart in rows 4 feet apart and produced 33 per cent. more corn to the acre. This is vouched for by the Chamber of Commerce of Spartanburg, South Carolina, and reported to Col. E. J. Watson, of Columbia, South Carolina, United States Commissioner of Agriculture.

F. G. Moughon, of Walton County, Georgia, reports that he has been raising crops of watermelons, weighing from 50 to 60 pounds each, on land blasted by exploding charges of about 3 ounces of dynamite in holes 2½ to 3 feet deep, spaced 8 to 10 feet apart.



CROP OF WATERMELONS GROWN ON LAND PLOWED WITH DYNAMITE. WALTON COUNTY, GA.

Du Pont Powder Co., Grants Pass, Oregon, May 12, 1911.
Wilmington, Delaware.

Gentlemen:—In reply to your inquiry as to our success with orchard trees set in dynamite holes, I am sending you photographs of four trees that answer your question.

Numbers 1 and 2 are Bellflower apple trees; No. 1 was set in a dynamited hole, and No. 2 in a spade dug hole.

Numbers 3 and 4 are Bing cherry trees; No. 3 was set in a dynamited hole, and No. 4 in a spade dug hole.

These four trees were part of a shipment of year old nursery stock received and set out the latter part of March, 1909. The photographs were taken about the 15th of April, 1911, two years after setting out, just as they were coming into leaf.

Bellflower apple tree No. 1 was pinched back in June, 1909, about ten weeks after planting. It was shortened in by removing some two feet of growth from each main lateral the following November. In 1910 it had the same treatment. It is a very vigorous tree with healthy foliage and fine color.

Bellflower apple tree No. 2 had as good ground to grow in, but was spade set and made such small growth it needed neither pinching back nor pruning. Not a bit of growth, not a leaf has been removed from the head of this tree since planting. The trunk is less than a half inch in diameter, while the dynamite set mate to it, tree No. 1, has several branches thicker and finer than the trunk of No. 2.

The Bing cherry trees Nos. 3 and 4 have the same identical history as Bellflower apples Nos. 1 and 2, with the exception that we did not shorten in at fall pruning cherry No. 3 as much as we did apple No. 1.

We have heavier tops and taller trees of these varieties in the orchard, but these trees are two favorites, very typical of their kind and strike a favorable average for the lot of five hundred. From 250 apple trees so set we got a perfect stand, not one of which is missing or replaced.

We use dynamite for making holes and planting trees on our very best and deepest ground, as well as for the poor spots. It is much cheaper than hand labor; it is much quicker when speed is a most important point and delay will cause the loss of many trees. It insures every advantage to the tree getting a good start.

After the orchard is staked, one man with a shovel removes a circle of surface soil from about the stake, usually five cuts or so, which is laid to one side to use in filling the hole to proper level before setting the tree with the roots carefully pruned back.

A second man follows the first with a crow bar and works the hole down where the stake comes out. If a stone or anything of the sort is encountered we dig it out. If a spot of hard sediment or hardpan is encountered the hole is put through. These holes are about eighteen inches deep. We use one stick of dynamite properly fitted with 18 inches of best fuse for the average hole. It is dropped to the bottom of the hole, tamped down, the fuse is lighted, several shovelfuls of earth thrown on top of it and quickly tramped down. There is very little stuff thrown up, the force going down and out. The holes are allowed to stand probably over night, or part of the next day, are probed with the crow bar and, if satisfactory, the sides are broken in, the top earth at one side filled in, and the hole is ready for the tree.

We have set all our trees in wet weather, which insures a storage of moisture under the tree. If one were compelled to set in dry earth a generous supply of water should be added to settle the hole prior to throwing on top earth that makes the bed for the tree to set on. Twice each spring a circle should be worked up to a fine mulch about the depth of a spading fork. This circle of mulch should be kept loose, unbaked and free of weeds the entire growing season.

Last November we had occasion to remove some filler trees, Grimes, Golden apples, seven months after setting out, one of which was spade set. They were taken up with the greatest care so we could get the roots out intact just to prove to ourselves what difference in root growth we would find in same variety, in perfectly matched trees on the same ground, from the two methods of setting.

The spade set tree had a fine bushy and vigorous tassel of roots about a foot long. The dynamite set tree had two roots going down some three feet or over. I held it out at arm's length, my hand clasped around the graft scar, and the roots touched the earth. Also it had a great quantity of medium and short growth roots. The difference was so great and convincing that we now have thirty acres of new orchard and every tree is set with dynamite.

You will probably be amused at my zeal, but I used half sticks of dynamite in making up a rose bed, and also for a hardy border set with peonies and other perennials. Am happy to say the peony plants are now ready to bloom profusely their first season, although hitherto I have failed to bloom them before the second or third year in the new ground.

We wouldn't undertake to clear ground or set new trees, shade or orchard, without using dynamite, notwithstanding our soil is a beautiful loam, with little stone in it, and runs from five to six feet deep.

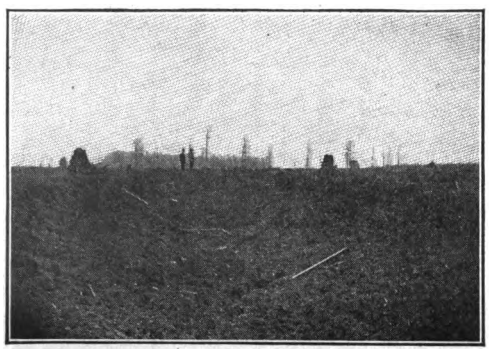
Yours truly,

MRS. JOHN RAWLEY.

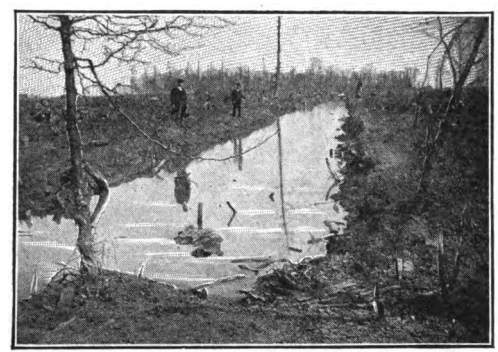
The Four Stages of Ditch Digging With Dynamite

1. BORING THE HOLES

2. THE BLAST



3. A MOMENT AFTER THE BLAST



4. THE COMPLETED DITCH

Digging Ditches, Post Holes, Wells and Reservoirs.

Excavating of any kind is slow, hard work when done with pick and shovel, especially in mixed ground containing large stones, roots, streaks of gravel or shale.

In compact or damp ground several rods of ditch can be excavated at one time with dynamite, varying the size of each charge according to the nature of the ground at that point.

Most of the dirt is thrown out by the blast and spread out, making re-shoveling unnecessary, and the remainder is broken up ready for the shovel.

A Missourian advises us of a ditch he has just blasted through a swamp for $100, which he says would have cost him $500 if dug in the usual way.

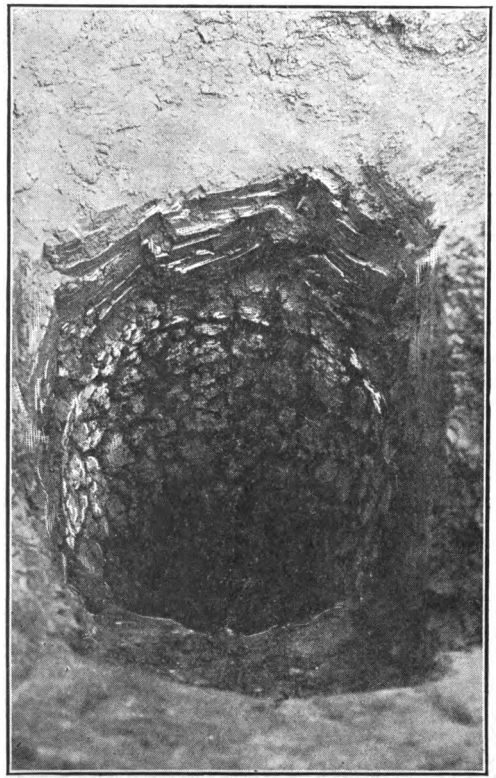
On August 11, 1910, at the demonstration at Ivor, Va., a ditch 85 feet in length, 3 feet deep and 4½ feet wide at the top, was blasted with dynamite, in comparatively dry clay at a cost not exceeding 10 cents per yard, or about $2.75 for the entire work.

In November, 1910, a ditch was blasted in Louisiana through wet gumbo at a cost of 4½ cents per running yard of ditch. The ditch was 26 inches deep and 5 feet wide.

March 10, 1911, a ditch was blasted at Diehlstadt, Mo., 1720 feet long, 16 feet wide at the top, 8 feet wide at the bottom and 4 feet deep. Total cost $329, less than 11 cents per cubic yard. The same work by hand would cost about 25 cents per cubic yard.

Draining Swamps.

Swamps cover about seventy million acres of land in this country. Many of these swamps are caused by surface water gathering on low ground because it cannot sink through the impervious clay subsoil. These swamps can be drained by shattering this subsoil with a few charges of " Red Cross " Dynamite. A few years ago a Kansas farmer who had owned a farm for 12 years with a 40-acre swamp on it, blasted a row of holes across the lowest part where the water was about 3 feet deep. The next day he walked across the tract, although he found it pretty muddy. The following season he raised sixteen hundred bushels of oats on the 40 acres, and since then this ground has produced four crops of alfalfa each year.



LOOKING DOWN INTO A BLASTED FRUIT TREE HOLE

NOTE HOW DYNAMITE HAS BROKEN INTO THE SOIL SIDEWAYS. COMPARE WITH PACKED CONDITION OF SPADE-CUTS AT TOP

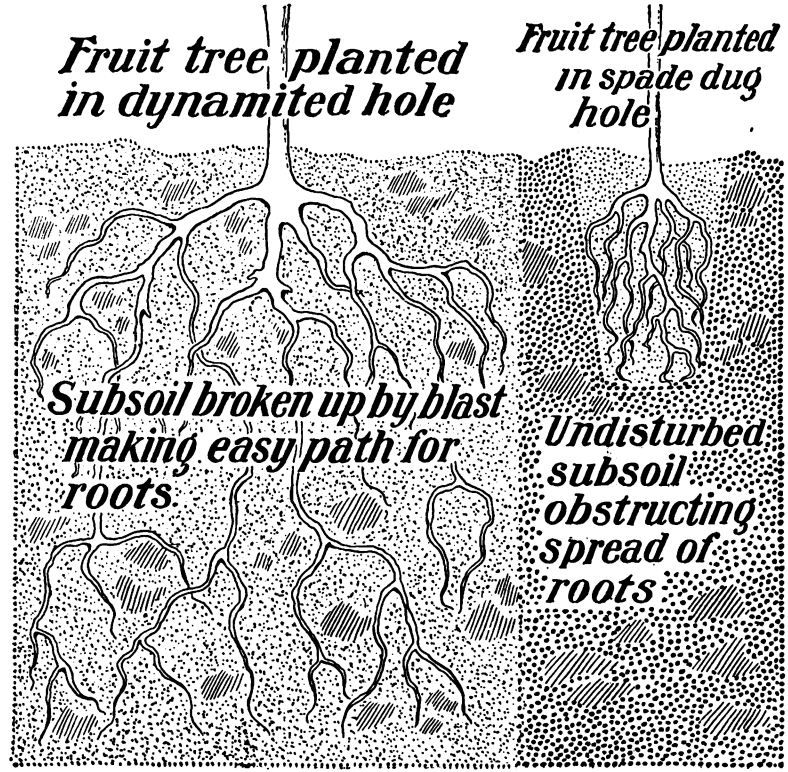


DIAGRAM OF SOIL SECTION

Regenerating Old, Worn-Out Farms.

All over the Eastern and Southern sections of the United States are farms and plantations, once rich, fertile and profitable, but now either abandoned, or so unproductive as to be almost worthless.

The chief trouble with these farms is that the top soil is worked out.

" Red Cross " Dynamite can be used with complete success to make available fresh, fertile subsoil, and convert a $10 an acre " worked-out farm " into land worth $50 to $100 an acre.

The cost of dynamite for this conversion would be about $10 to $15 an acre, according to the nature of the soil.

This matter is worthy of as much consideration on the part of farmers, and all others concerned with national resources, as the reclamation of desert areas in the West.

Surely it is as important to restore the productiveness of established farms in the East, as it is to open up new, fertile fields in the West and Southwest.

If any portion of your farm is not productive, it is probable that " Red Cross " Dynamite can make it productive.

The leading railroads of the country are taking the greatest interest in the increasing use of dynamite on the farm, because they know by actual results that it means more and better crops, bigger shipments and greater prosperity all along their lines.

Mr. H. B. Fullerton, Director Agricultural Development of the Long Island Railroad, is one of the pioneers in this movement, and in an article entitled " Reclaiming Waste Land on Long Island," his wife, Edith Loring Fullerton, graphically describes the use of dynamite in the preparation of waste land for cultivation.

Excavating for Foundations and Cellars. Digging Trenches for Tiling and Pipe Line.

This work can be done with " Red Cross " Dynamite in one-tenth the time required for hand and team shoveling, and the cost of the dynamite is but a fraction of the value of the labor saved.

Keeping Pastures Green.

Pastures fail to grow enough feed to supply cattle all summer because the soil is too hard to hold rain-water. By subsoil blasting with " Red Cross " Dynamite, you can make them hold the spring rain-water in reserve to feed the grass roots during the long, dry spells. That means good pasturage all summer and plenty of rich milk.

Turning Rock into Soil.

In some sections the top soil is underlaid with rock, which makes the shallow top soil infertile, because it is mud in wet weather and desert in dry weather.

Often this rock, when exposed to the air and rain, rusts, crumbles and makes good soil. Under such conditions, blasting with " Red Cross " Dynamite converts useless land into fertile ground.

How We Can Help You.

For more than a hundred years we have been making and selling explosives. We maintain a highly skilled corps of chemists, explosive specialists, and field representatives, whose sole duties are to study conditions and devise means for handling them.

If there is any soil condition on your farm that we have not mentioned, and which you think might be remedied or improved by dynamite, please write us all about it. There will be no charge for the information we will send you; in fact, we will be much obliged to you for giving us the opportunity to study any peculiar condition.

Bear in mind that the age, reputation and high standing of this Company are ample assurance that any statements made by us are conservative, and based on long and varied experience.

Instruction Book Sent FREE

IF the foregoing pages have convinced you that possibly explosives can be used to advantage on your farm, the next questions that will arise in your mind are: How are they used? What do they cost? What quantities are needed? What other supplies or apparatus are needed, etc.? All these things are fully and clearly explained in our larger booklet, "The Farmer's Handbook of Explosives," which may be obtained, free of charge, by cutting out and mailing the card No. 1 printed on the inside back cover of this pamphlet.

We believe that when you have read the book, you will understand how simple, safe and economical the use of "Red Cross" Dynamite is, and that you will find many ways to save and make money with its aid.

E. I. DU PONT DE NEMOURS POWDER CO.
WILMINGTON, DELAWARE

Safe Handling of Dynamite.

There is a popular misconception of dynamite in the public mind. Newspapers in reporting outrages such as bomb throwing by anarchists, safe cracking "jobs" by burglars, etc., incorrectly report them as perpetrated with "Dynamite." The result is an erroneous widespread impression that a dynamite cartridge will explode if dropped on the ground or thrown against the body of a person.

As a matter of fact, safe breakers and bomb throwers do not use dynamite cartridges at all; they would not be suitable for their purpose because it is so difficult to explode them. What these criminals use as a rule is nitro-glycerin. This dangerous explosive is used commercially for shooting oil wells, etc.

True there is a certain proportion of nitro-glycerin in dynamite cartridges, but the dangerous explosive is scientifically compounded with wood meal, earth and other ingredients in such a way that it can be absolutely depended upon not to explode accidentally if our simple and plain instructions for its use are complied with.

One of the safest of explosives manufactured by the Du Pont Powder Company is "Red Cross" Dynamite, which is especially recommended for agricultural purposes. This brand of dynamite cannot be exploded except by powerful shock such as is produced by a strong blasting cap or an electric fuze.

Responsible people can use and handle dynamite just as safely as they can handle gasoline, matches, or coal oil. The energy of dynamite can be directed in the work to which it is adapted just as well as the energy of steam can be directed in the work for which it is used.

A DU PONT DEMONSTRATOR SHOWING A GROUP OF FARMERS HOW TO ATTACH BLASTING CAP AND FUSE TO A DYNAMITE CARTRIDGE

DYNAMITE MORE ECONOMICAL AND EFFECTIVE THAN STUMP PULLERS.

NORFOLK & WESTERN RAILWAY CO.

MR. B. B. HALSTEAD, 2nd Vice-Prest. & Gen'l Mgr., February 27, 1911.
Farmers Manufacturing Co., Norfolk, Va.

Dear Sir:—I have your favor of the 23rd inst., and in reply beg to advise that I am thoroughly convinced that dynamite is much more effective, rapid and economical in the clearing of land than any form of stump puller.

We found that in using stump pullers, the stumps brought up with them a large amount of the tenacious clay subsoil, and that it was more expensive to clean the roots and refill the holes than it was to pull the stumps. Dynamite acts so quickly that it slips the stumps and their roots out of the ground with little disturbance of the soil, and the consequence is clean stumps on which little further work is required.

Dynamite costs from one-half to three-fourths of the grubbing price, not including the labor of cleaning stumps. Yours very truly, F. H. LA BAUME, Agricultural and Industrial Agent.

GAINED TWO YEARS IN SIX BY PLANTING PEACH TREES WITH DYNAMITE.

Du Pont Powder Co., Wilmington, Del.

Gentlemen:—It may be a surprise to you to learn that I have been using dynamite for planting trees for a number of years and have some shade trees planted in that way eighteen or twenty years ago. They are the finest trees that I have ever seen grow for their age. In the planting of peach trees I gained two years in six; in other words, I got as much fruit from a tree planted with dynamite at four years old as we usually get at six years old.

I not only plant them with it but where a tree is failing and seems to be on the decline, I start it off to growing again by firing charges from three to ten feet apart.

Nothing seems to tickle the earth so much as planting watermelons after explosion of dynamite from three to four feet under ground. I plant them twenty feet apart each way. Fertilize heavily and the vines bear right on until frost, the entire summer.

Yours very truly, W. W. STEVENS, Orchardist, Mayfield, Ga.

TWO MEN AND DYNAMITE ONE DAY BETTER THAN THREE MEN ONE WEEK WITHOUT DYNAMITE

A. F. BORNOT BRO. CO., 17TH ST. AND FAIRMOUNT AVE.

The Du Pont Powder Works, Philadelphia, Pa.,
Wilmington, Del. April 26, 1911.

Dear Sirs:—Your Mr. Fulmer was here Monday and together we made about one hundred holes which has enabled my gardener to plant one hundred peach trees the following day. Three men could not have done the same amount of work in a week. The ground is now very loose; I am more than pleased and would not plant another tree on my place without the use of explosives.

Very respectfully, A. F. BORNOT BRO. CO. L.

DYNAMITE SUCCESSFULLY USED IN PLANTING PECAN TREES.

Mr. S. H. Bolinger, President Clear Creek Lumber Company, Shreveport, La., writes us under date of April 26th, 1911, that he used dynamite in blasting the holes in which 1,080 pecan trees were planted a year ago; also for planting 8,000 peach trees. He says the percentage of loss on the pecan trees (which are among the most difficult to set so that they will live) was almost nothing compared to the loss on other trees planted in the ordinary way.

Mr. Bolinger explains how the planting was done. The soil was a hard sand clay. A 2-inch auger with a long shank was used and a 2-inch hole bored about 4 to 4½ feet deep. In the auger hole one stick of 40% dynamite with fuse attached was inserted, the hole filled and lightly tamped; then exploded. The explosion created a space of about the size of an ordinary barrel. The ground was not blown out but was simply raised on the top about 3 or 4 inches. In almost every case, however, it could be seen that the ground had been thoroughly loosened up for a distance of 10 to 15 feet all around the hole. A post hole digger was then used to bore through the top surface to the vacant space below; the surface soil necessary to bore through was about 10 to 15 inches thick. The top soil was then filled in to the depth necessary and the trees planted in the holes, the ground being well packed around the roots.

It is Mr. Bolinger's opinion that the planting was successful because the opening up of the soil under the trees by exploding the charge of dynamite created a space for the storage of moisture which was held throughout the dry spell that followed the planting and thus kept the trees alive and in healthy condition.

Why We Recommend "Red Cross" Explosives For Farm-work.

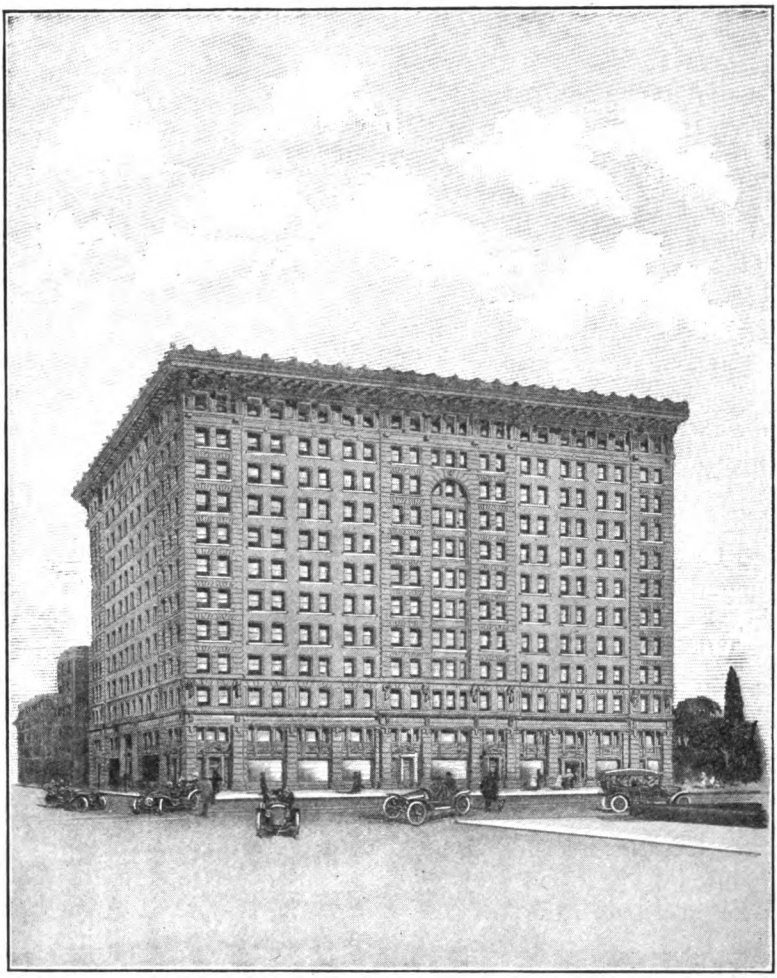
" Red Cross " Explosives are better suited for the different kinds of blasting necessary about the farm, than any other explosive. Our many years of experience in the manufacture and use of explosives has taught us that if an explosive is to do its work at the lowest possible cost and produce the best results, it must be made with qualities especially suited to the work in which it is to be used. " Red Cross " Explosives are particularly strong in those qualities necessary in agricultural blasting.

" Red Cross " Explosives are safer to handle and use in farm work than other dynamite. A large majority of the accidents which happen when dynamite is used, occur in thawing it. Most dynamite freezes at a temperature ranging between 45° and 50° F., but " Red Cross " Explosives can be depended on to keep soft and in good condition in any temperature that will not freeze water. When "Red Cross" Explosives are frozen they can be thawed simply by putting the case containing the dynamite in the manure pile over night.

When dynamite is frozen or even chilled, it cannot be properly exploded, and consequently does poor work. With the exception of " Red Cross " Explosives, dynamite will chill and lose value in a very few minutes in cold weather. Even when loaded in cold earth or rock it will chill in a very few minutes. This loss does not happen with " Red Cross " Explosives because they will remain in perfect working condition for a considerable time, even in freezing weather, and they do not lose any power at all after they have been loaded in bore holes below the frost line.

" Red Cross " Explosives are also less expensive than other dynamites.

" Red Cross " Explosives are made in the following grades and strengths: " Red Cross " Dynamite, 20% to 60% strength; " Red Cross " Semi-Gelatin, 25% to 60% strength and " Red Cross " Extra Dynamite, 25% to 60% strength. Because it is safest to handle and costs the least, we especially recommend " Red Cross " Extra Dynamite for almost all blasting about the farm unless the work is very wet, in which case " Red Cross " Semi-Gelatin should be used. The only work about the farm for which " Red Cross " Explosives are not suitable, is ditch blasting in wet ground with blasting caps and fuse in the middle holes only. In this work 50% or 60% strength Atlas or Hercules Dynamite should be used and the blasting should be done in warm weather.



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IF YOU ARE A FARMER AND WANT TO KNOW MORE ABOUT THE USES OF DYNAMITE, COST, ETC.—CUT OUT, FILL IN AND MAIL THIS CARD

E. I. du Pont de Nemours Powder Co., Wilmington, Del.

Gentlemen:—Please send me, free, your Farmer's Handbook and full information about the use of Red Cross Dynamite for the work before which I have marked **X**.

	STUMP BLASTING		BREAKING UP HARD-PAN
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Gentlemen:—Please send me, free, your Farmer's Handbook containing full information about the use of Red Cross Dynamite in Farm-work, and your proposition to dealers involving the taking of orders only, carrying no stock.

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