

WAYS TO KILL BOLL WEEVILS

Chain Cultivator Has Proved to Be Effective Weapon.

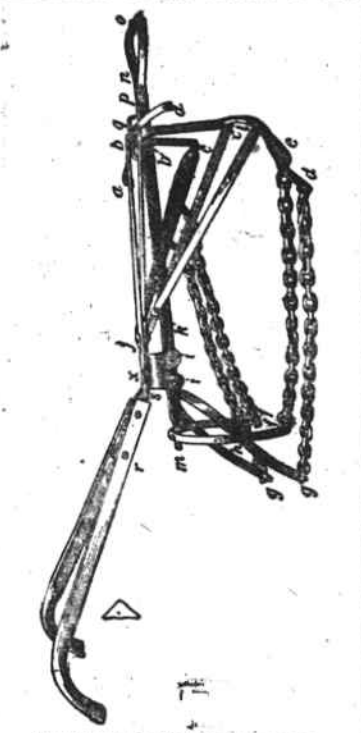
PATENTED BY GOVERNMENT.

Here Are Complete Directions Which Will Enable Any Blacksmith to Construct the Machine—It Drags Infected Squares Out; So Sun Kills the Cotton Pests.

By W. D. HUNTER, Bureau of Entomology of the United States Department of Agriculture.

The impression is more or less general that the only important way in which boll weevils may be killed is by the removal of the infested plants and that all other steps in the system of control are merely to avoid damage by the weevils that have survived that destruction and their offspring. In spite of this impression, however, it is urged that the destruction of myriads of weevils can be accomplished during the growing season. This is to be done by working in co-operation with the natural agencies that destroy the weevil.

In making examinations of many thousands of infested squares (unblown cotton buds) from different localities and different situations in cotton fields it was found that mortality was conspicuously greatest where the sunlight was least obstructed and the heat consequently the greatest. The mortality in infested squares in the middles was many times as great as in the case of squares which remained under the shade of the branches. The temperature at the surface of the



SIDE VIEW OF CHAIN CULTIVATOR.

ground during warm days runs considerably higher than at a few feet above the surface.

For instance, it was found that when the temperature was 100 degrees F. in the regular weather bureau shelter about four feet above the ground the thermometer registered 140 degrees F. on the surface. Likewise 90 degrees F. in the shelter was accompanied by 120 degrees F. on the ground and 80 degrees F. in the shelter by 110 degrees F. on the ground.

It is not surprising, therefore, that the cotton squares that fall to the ground and are not shaded are quickly baled, so that the weevils, if fish, if not from heat, then from hardening of the food supply. In such cases they are simply roasted, the bodies assuming the appearance of larvae that have been placed in flame.

Chain Cultivator Device.

When the foregoing facts came to light efforts were made to perfect a device that would bring the infested squares out of the shade of the plants to the middles of the rows. After much experimental work one of the writer's former associates, Dr. W. E. Hinds, devised an implement that accomplishes the desired work in a satisfactory manner. This implement is known as the chain cultivator or chain drag.

The following specifications should enable any blacksmith to construct an effective chain cultivator. The draft bar n, made of one-half by five-sixteenths inch steel, about fifty-two inches long, is designed to be about sixteen inches above the ground and this is the height of the rear end f h m, which is of this size and forms to allow old cotton roots, etc., to pass through freely without clogging at the rear.

"Log Chains" Used.

The distance between the rear ends of the chains g g, f f, is in each pair fixed at about ten inches. The distance between a chain of one pair and that of the other at their front ends should be about nine inches. The chains used are of the size known as "log chains," having short, close links of three-eighths inch iron. This style of chain can be bent to the length needed in each case. The chain is easily attached by simply making the hooks at d, e, f and g so that the end of the

LIFE HABITS OF THE BOLL WEEVIL

FROM the time the egg is laid until the boll weevil is grown is from two to three weeks. The progeny of a single pair of weevils from June to November can reach the amazing number of 12,755,100. The boll weevil eats nothing but cotton and will starve if this food is not available. The insect does not travel at night and is not attracted by lights. During the summer the boll weevil lives about sixty days. While hibernating in the winter its life is longer, and there is one instance of a weevil living from Dec. 10 until the following October.

hook is as wide as will pass through the length of the link and narrow enough at the middle of the bend to allow the link to turn and bag the other way. So long as the chains are kept tight they cannot become unhooked. The hooks should also be turned or faced in such a way that they will not be likely to catch the passing plants or rubbish.

Grease is Adjustable.

The clevis o p is simply hinged, so that there will be no tendency to pull the front of the machine off of the ground, and it is also broad enough in front to allow of the point of draft being moved from one side to the other, so that the front of the machine may be thrown closer to one row if desired.

The front guard on each side, a b c d, is made of one piece of spring steel seven-eighths by three-sixteenths of an inch. This size seems sufficiently strong and best adapted to carry the tension of the chains d g while still yielding to the pressure against the bases of the plants as they may strike the outer sloping ends near d. The inner ends of these guards a b are horizontal, about eighteen inches each in length, and serve to carry the front guard above the draft bar n m and, passing through the keeper q, guide in the adjustment for width. The machine cannot be extended beyond the bent ends at a or closed beyond the angles at b.

How to Adjust Chains.

The vertical section between b and c is about twelve inches long, so that the remainder of the front guard from c to near d will be about four inches above the ground. This prevents the pushing of dirt and squares toward the plants and allows the chains to catch them where they lie. The hooks at d and e are therefore bent downward and somewhat backward through about five or six inches. Care must be taken, especially in forming the outer ends between c and d, to secure best results. The downward bend for the hook at d should not be abrupt, as a gradual slope helps to prevent catching on any obstacles. The hooks at f and g are formed so as to hold the chains firmly and yet not interfere with the passage of rubbish.

The method of carrying the rear ends of the outer chains is shown at f h g. The piece k l is nearly parallel with the chains and may be used for their proper adjustment as to tension by several holes near the end where it is bolted at k. The chains are between thirty and thirty-six inches long. The stand s, upon which the handles are pivoted by a one-half inch bolt, is made of a piece of boiler plate bent and cut so as to have a horizontal top surface about four inches square and standing about two and one-half inches above the draft bar, to which it is securely bolted.

Handles Adjust Chains.

The handles are bolted, as at r, to the heavy pieces of iron (about two by one-half inch tire steel), which are bent to receive them just behind the pivotal point at x, at such an angle as to bring the handles to the proper height and position. In front of x these pieces bearing the handles need not be so heavy and may therefore be tapered and welded to smaller steel running forward to b, where it is bolted to the front guard. The operation of this arrangement is similar to that of a huge pair of shears. When the handles are pushed apart the front of the machine is spread wider.

The braces j c e serve to support, strengthen and carry the front guard. They are riveted to the adjusting iron at j, one above and one below the "shear" pieces, to prevent their interference with the closing of the machine. At e this iron is bent to conform to the front guard, to which it is riveted between c and l, at which point it is bent downward and forms the hook e.

Made of Tire Steel.

Ordinary tire steel about one by one-fourth inch may be used for all parts like the clevis o p, rear arches f h m and l h g and braces k l and j c e. The front guard a b c d should be of spring steel, as specified. The rivet heads on the front guard should be round and fit smoothly. In nearly all other places the irons are fastened together by one-fourth inch square headed bolts, with washers as needed.

Although the chain cultivator was designed primarily for bringing the squares to the middles, it was found in field practice to have a most important cultural effect. In order that the use of this machine would be obtained by all farmers at the smallest possible cost a patent has been taken out in the name of the department of agriculture and for the benefit of the people of the United States. Under this patent it is impossible for any one to manufacture the machine exclusively and to charge unnecessarily high prices.

Mill Pond Items.

It seems that the farmers around here will soon get their cotton chopped.

J. A. Morlan went to Wilton Monday.

E. E. Evans, C. R. Ball and sister, Miss Ollie, called at T. J. Wright's Sunday night.

There was right much fishing on the mill pond last week.

Jim Ball has caught some right nice fish out of the pond in the past two or three weeks.

A right large crowd met on Friday last, at what is known as the old Ball spring near J. K. Wright's mill pond and had a nice time at a *deb* fr.

The Sunday school has started up and there was a large crowd out Sunday afternoon. Hope we will have a continued good attendance.

It is a fine little boy and G. A. Wright is the proud father.

The good road is getting close by and we hope it will soon be through here.

With best wishes to the TIMES and its editor.

BLACK EYED DAISY.

[The above items were intended for our last issue but were crowded out—EDITOR.]

In Memoriam.

"As flies the snow from rolling crest,
As melts the summer cloud away,
As fades the light at close of day,
So links the weary soul to rest."
It is thus that I felt when on last Wednesday, May 17th, the gentle spirit of Lola Bell Place, daughter of John Place, left us for the larger life in the house not made with hands.

It seems hard that one so bright and happy and helpful should have only twenty-six years in the world that she loved, and that loved her, but by every token, she has only changed her residence for a land where all is love; and life is not a burden; and no foul disease pales the fair young face.

It seems hard that she should leave her father who loved her so tenderly, and to whom she was devoted, but she has surely gone on a little before to be with the mother, and other loved ones on the other shore, and with her to welcome father, and others dearly beloved, who tarry a little longer here.

It seems hard that she should be taken from the dear grandmother, whose light and joy, and stay she was; but, surely the memory of the laughing, helpful, girl that blessed her home for a decade and a half shall abide as a rich perfume, and be to grandmother the foretaste of heaven.

For several years Miss Lola had been battling with that implacable foe of mankind, consumption; and for some months it was plainly evi-

dent that she was fast losing ground. And the expected happened when, from the midst of loved ones, she slipped away. But she died as she lived, with her face lit with a smile. And we are confident that we shall know where to find her. X.

Whooping cough is not dangerous when the cough is kept loose and expectation easy by giving Chamberlain's Cough Remedy. It has been used in many epidemics of this disease with perfect success. For sale by all dealers.

SALE OF LAND.

By virtue of the power conferred upon me in a certain deed of trust, executed to me by Loomas Harris, and recorded in the office of the Register of Deeds of Franklin County in Book 162, Page 378, I will on Monday, the 5th day of June, 1911, at about the hour of noon, sell at public auction at the court house door in Louisburg, N. C., to the highest bidder for cash, the one-seventh undivided interest of the said Loomas Harris in a tract or parcel of land situate in Franklin County, Duans' Township, State of North Carolina, and described as follows: Bounded on the North by the lands of Charlie Frazier, on the East by the lands of A. J. P. Harris, on the South by the lands of J. B. King, and on the West by the lands of Wiley Young, containing 84 acres, more or less, and being that parcel of land known as the Norf Harris land, and on which land Norf Harris lived a few months before his death. This the 28th day of April, 1911. M. S. CLIFTON, Trustee

COMMISSIONER'S SALE OF LAND.

Under and by virtue of an order of sale made by the Superior Court of Franklin County in that special proceedings entitled R. T. Williams et al vs C. E. Gupton et al, the undersigned Commissioner will, on Monday, the 5th day of June, 1911, it being the first Monday in June, 1911, at about the hour of noon, at the court house door in Louisburg, offer for sale to the highest bidder, for cash, that certain tract of land described and defined as follows: adjoining the lands of Lawrence Gupton, Wesley Burnett, William Evans and others, lying on Mill Stone creek, being part of the David Gupton land and known as the "school house tract," containing 20 acres more or less. This 5th day of May, 1911.

W. H. YARBOROUGH, JR., Com's.
WM. H. RUFFIN.

NOTICE OF LAND SALE.

By virtue of an order of re-sale made and entered at April term, 1911, of Franklin Superior Court, in case entitled Finch Richardson & Co., vs A. J. Tally and Mary C. Bartholomew, I will on Monday the 5th day of June, 1911, at about the hour of noon sell to the highest bidder for cash at public auction at the court house door in Louisburg, N. C., Franklin County, the following described real estate, viz: That tract or parcel of land in Cedar Rock township, Franklin County, beginning at a pine in Pearce's corner thence east 37 poles to a rock in W. G. Collin's line thence west 59 poles to a rock, thence north 64 poles to a gum stump, N 2d E 96 poles to the beginning, containing 58 acres, less 10 acres cut off and sold Sam Bartholomew, and known as the home place of said Mary C. Bartholomew. This property has been surveyed and will be described when sold by metes and bounds. This May 1st, 1911. BEN T. HOLDEN, Com'r.

ADMINISTRATORS NOTICE.

The undersigned having qualified as administrator upon the estate of James O'Day, late of the County of Franklin, notice is hereby given to all persons holding claims against the estate of said decedent to exhibit the same to the undersigned on or before the 19th day of May, 1912, or this notice will be plead in bar of their recovery. All persons indebted to the said estate will please make immediate payment. This the 18th day of May, 1911. JAMES J. LACASTER, Ad'm.
of JAMES O'DAY, deceased.
W. H. YARBOROUGH, JR., Atty.

Unexpected Guests

The farmer and his wife were about to sit down to a cold supper when they saw some old friends driving towards the house.

The good wife was equal to the occasion—thanks to her New Perfection Oil Cook-stove.

She had it lit in a moment, and her guests hardly were seated on the porch before a hearty hot meal was ready for the table—sausages and eggs and long rashers of streaky bacon, and rolls just crisped in the oven and fresh coffee—and the hostess herself as cool and neat as if she had not been near the kitchen.

She never could have managed it with an old-fashioned range. The New Perfection is the quickest, most convenient and best cooker on the market.

Made with 1, 2 and 3 burners, with log, kerosene or gas burners. Has a removable top, and a 2-burner stove can be put with or without a cabinet top, which is fitted with drop shelves, towel racks, etc. For every variety of use. Write for descriptive circular to the nearest agency of the

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CORTRIGHT METAL SHINGLES

THE DURABLE ROOF

Buildings covered over twenty years ago are as good as new and have never needed repairs. Fireproof—Stormproof—Handsome—Inexpensive. For further detailed information apply to M. F. HOUCK, Louisburg, N. C.

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The conservative methods of this BANK and its record of nearly 25 years of successful banking, as well as the courteous treatment you will receive, to make all your relations with this institution satisfactory and pleasant, are our best recommendation. Strong! Safe! Progressive.

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The Best Made

Only machine made with either belt or chain drive. Exclusive engine features contained in no other machine. Automatic lubrication instead of having to be pumped in by hand. Cradle spring fork instead of coil. Free engine clutch, which allows machine to stop without stopping engine and two speed gear. Direct sight opening oil gauge. Prices from \$200 to \$350. See me and machine before buying. Will guarantee satisfaction.

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1 Bickenderfer Typewriter	\$15.00	1 No 3 Underwood, long carriage	53.75
1 Willing's typewriter	10.00	1 No 6 Remington, rebuilt	47.50
1 No 2 Remington typewriter	10.00	1 No 7 Remington, rebuilt	49.25
1 Washington typewriter	25.00	1 No 1 Victor, (elite)	62.50
1 Fox typewriter	22.50	1 No 1 Victors (pic)	65.00
1 Densmore typewriter, rebuilt	37.50	1 No 2 Victors (elite)	70.00
2 New Century typewriters, each 35.00	70.00	1 No 2 Victor (pic)	75.00
1 No 10 Smith Premier	50.00	1 No 2 Victors (pic)	84.50
1 No 5 Underwood	49.50		

A set of Edisons business phonographs, consisting of dictating, transcribing and shaving machines, also 1 dozen, cyinders. Regular price \$210, our price \$162.50. Loet Dictaphones, same outfit, regular price \$210, our price \$150. \$1 and 75c ribbons for all makes 60c. \$3 regular paper (a box 100 sheets) \$2.10 a box.

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