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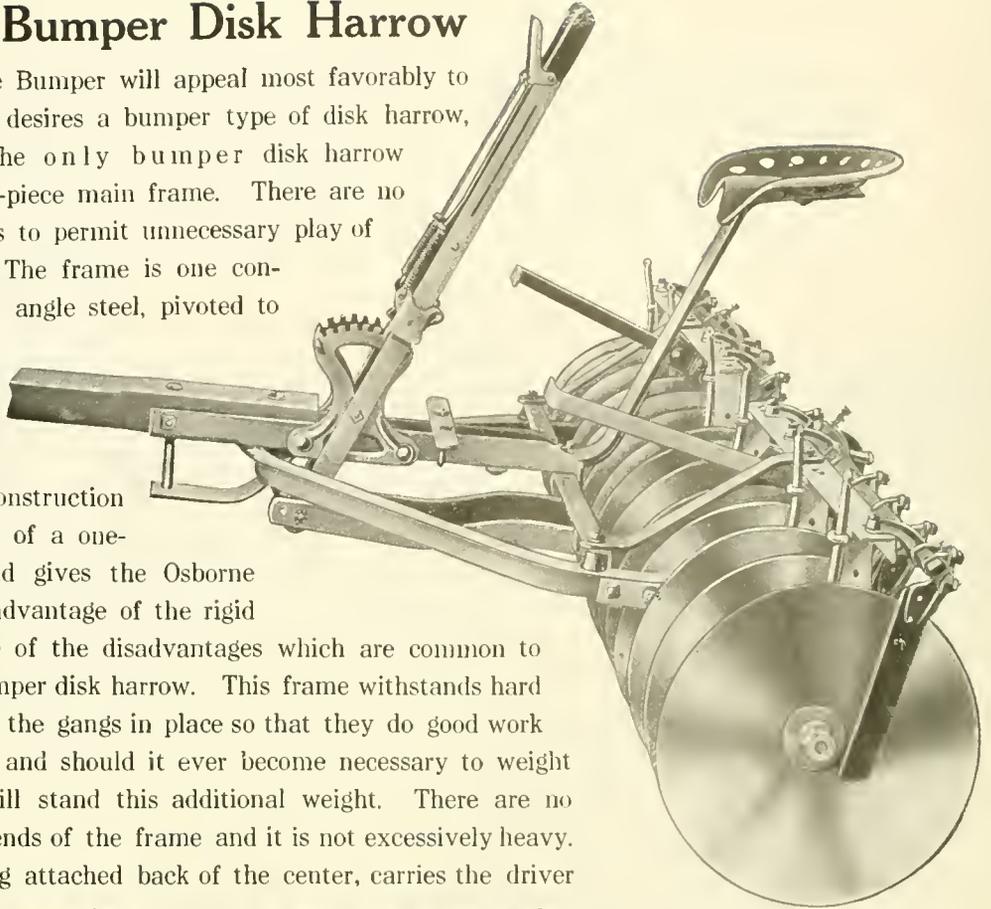
OSBORNE

TILLAGE IMPLEMENTS

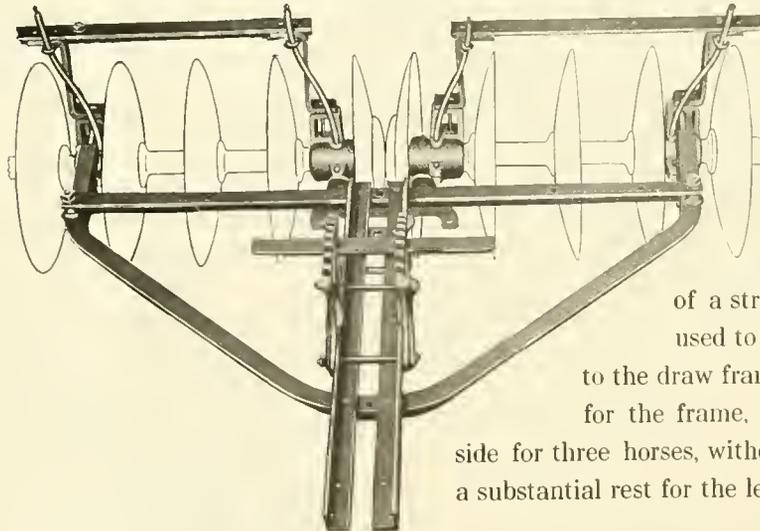


Osborne Bumper Disk Harrow

The Osborne Bumper will appeal most favorably to the farmer who desires a bumper type of disk harrow, because it is the only bumper disk harrow with a solid one-piece main frame. There are no loose connections to permit unnecessary play of the disk gangs. The frame is one continuous piece of angle steel, pivoted to the bearings directly over and back of the center of the disks. This construction permits the use of a one-piece frame, and gives the Osborne Bumper every advantage of the rigid frame and none of the disadvantages which are common to the ordinary bumper disk harrow. This frame withstands hard usage and holds the gangs in place so that they do good work in hard ground, and should it ever become necessary to weight the frame it will stand this additional weight. There are no castings on the ends of the frame and it is not excessively heavy. This frame being attached back of the center, carries the driver



Osborne Bumper disk harrow



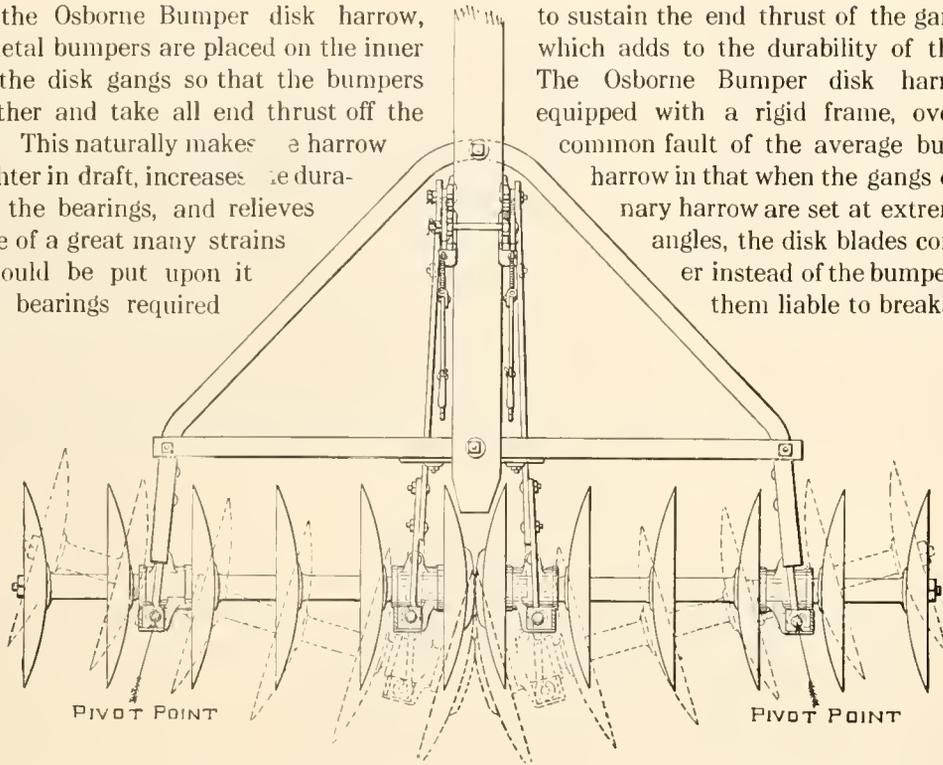
The Osborne Bumper disk harrow is the only type of bumper disk harrow with a one-piece frame. Note its simplicity and strength

with none of his weight on the horses' necks. This also has a tendency to force the disks into the ground. The hitch is attached in a direct line of draft giving the team every advantage of a straight pull. The two angle steel bars used to connect the center of the cross beam to the draw frame make an exceptionally solid brace for the frame, permit the tongue to be set to one side for three horses, without the use of a stub pole, and form a substantial rest for the lever quadrants.

Bumpers Rolling Together Relieve the Bearings of End Thrust

On the Osborne Bumper disk harrow, heavy metal bumpers are placed on the inner ends of the disk gangs so that the bumpers roll together and take all end thrust off the bearings. This naturally makes the harrow much lighter in draft, increases the durability of the bearings, and relieves the frame of a great many strains which would be put upon it were the bearings required

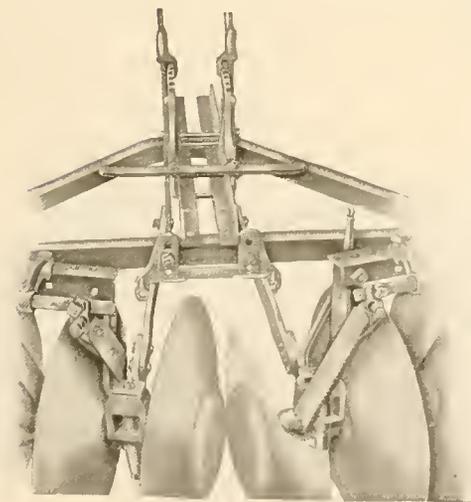
to sustain the end thrust of the gangs—all of which adds to the durability of the harrow. The Osborne Bumper disk harrow being equipped with a rigid frame, overcomes a common fault of the average bumper disk harrow in that when the gangs of the ordinary harrow are set at extreme cutting angles, the disk blades come together instead of the bumpers, making them liable to breakage.



Pivoting the gangs back of center permits the bumpers to roll together without joints in the frame

Adjustable Snubbing Block

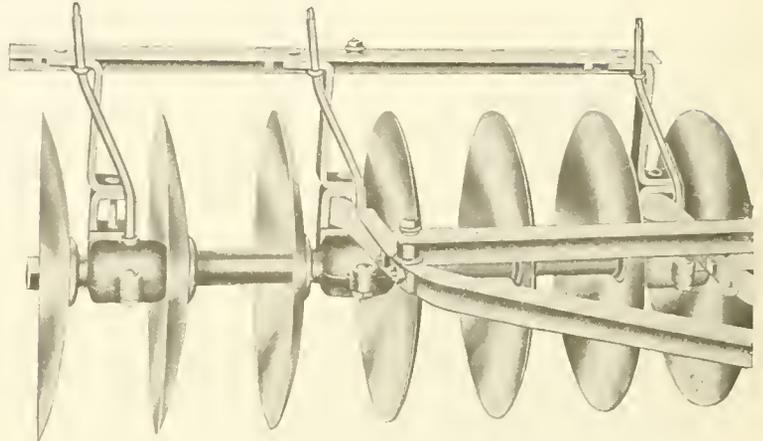
The snubbing block on both the Osborne Bumper and Rival disk harrows are adjustable; that is, they can be adjusted to take up any looseness or wear that may take place, so that the gangs will always be kept perfectly level. If good work is to be done with a disk harrow, it is absolutely necessary to have level gangs. One very frequently sees a disk harrow that is either penetrating the ground deeper at the inner ends of the gangs than the outer, or vice versa. This means that the gangs are not level and that the harrow is not disking the ground at a uniform depth. With this adjustable snubbing block on Osborne disk harrows, the operator can keep his gangs perfectly level whether the harrow has been in operation one month or years. He not only disks at an even depth but also levels the ground.



Snubbing block is adjustable. The bumpers rolling together relieve the bearings of end thrust

Oiling Facilities Are Convenient

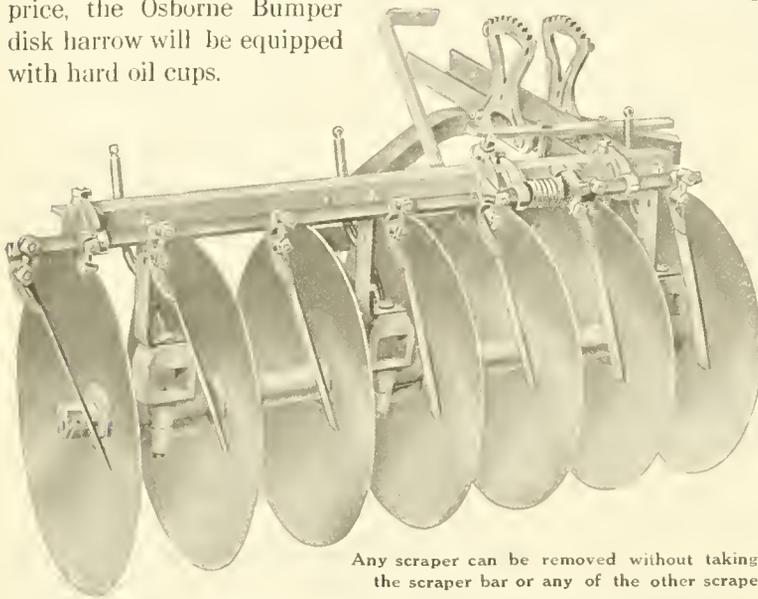
The oil holes on the bearings of the Osborne Bumper disk harrow are placed directly over the center, giving the oil an opportunity of reaching every part of them. The oil pipes extend to the top of the frame, and are fastened in such a way that they can be quickly and easily removed and the bearings cleaned without any difficulty whatever. These bearings are equipped with wood bushings, which can easily be replaced at a slight cost should they become worn. On special order, at a slight additional price, the Osborne Bumper disk harrow will be equipped with hard oil cups.



Note the oil pipes extending to the top of the gang, and that they enter the bearings over the center

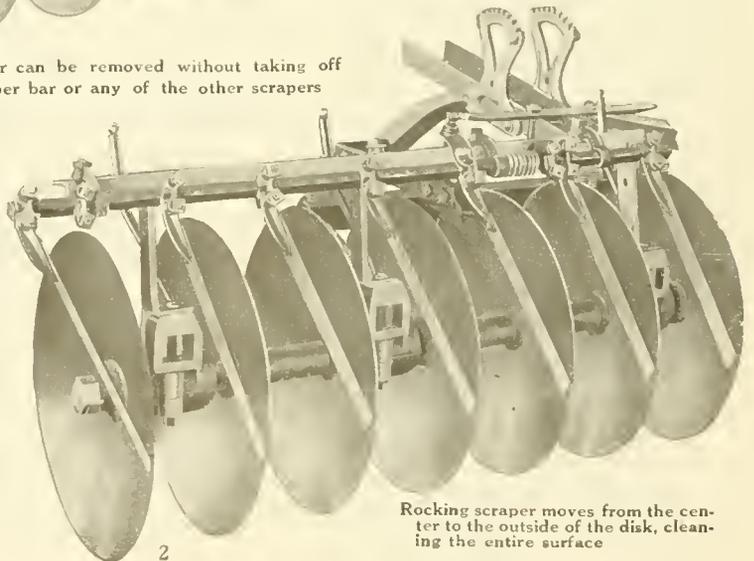
Scrapers Clean the Disks

The Osborne Bumper and Rival disk harrows are equipped with the rocking style of scraper, operated by foot levers within convenient reach of the operator's feet. These scrapers clean the disks from the center to the outer edge, and while they are cleaning the entire surface of the disk they clean themselves as well. This means that trash does not clog the scrapers or wind around



Any scraper can be removed without taking off the scraper bar or any of the other scrapers

the axles. The blades are of a high quality of spring steel and fastened so that each one can be removed without taking off the scraper bar or any of the other scrapers. The foot lever end is fitted with a set screw which strikes on top of the gang frame. This construction prevents the operator from twisting the scraper bar by putting too much pressure on the foot lever. This set screw is adjustable so that the stroke of the scraper blades can be made long or short, as the operator desires.



Rocking scraper moves from the center to the outside of the disk, cleaning the entire surface



Half lap diking leaves the ground level

The Osborne Cutaway Disk Harrow

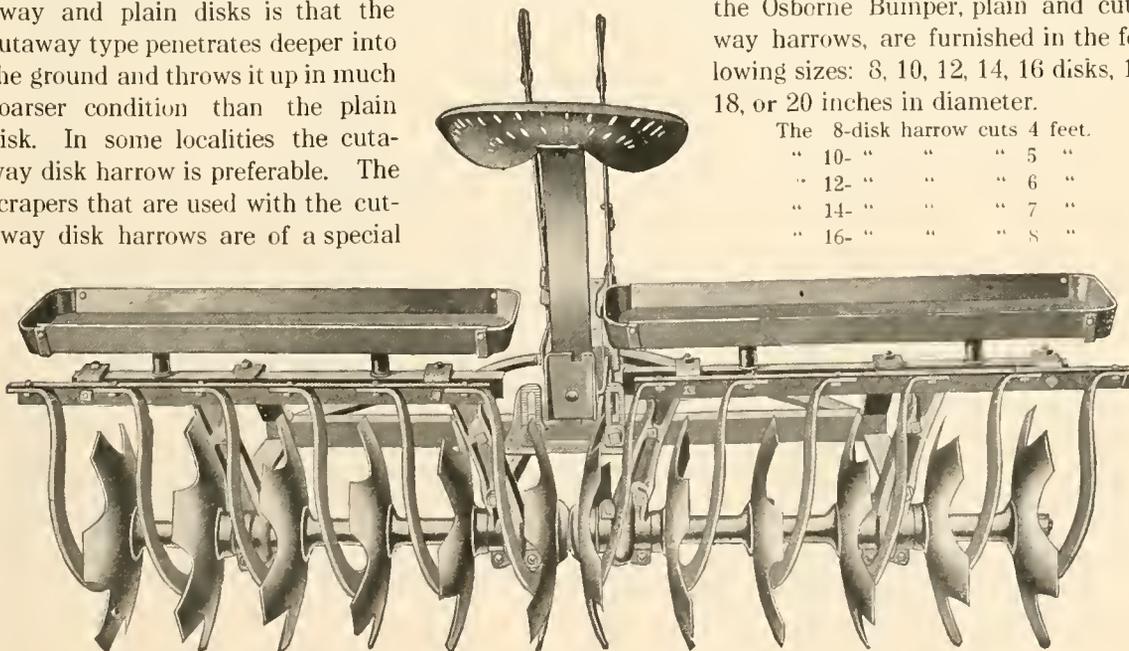
The Osborne Bumper and Rival harrows are furnished with cutaway disks when ordered, and furnished in the same sizes as the regular harrow. The difference in the working qualities of the cutaway and plain disks is that the cutaway type penetrates deeper into the ground and throws it up in much coarser condition than the plain disk. In some localities the cutaway disk harrow is preferable. The scrapers that are used with the cutaway disk harrows are of a special

shape and type. They are very efficient in keeping the disks clean.

The Osborne Rival, plain and cutaway, and the Osborne Bumper, plain and cutaway harrows, are furnished in the following sizes: 8, 10, 12, 14, 16 disks, 16, 18, or 20 inches in diameter.

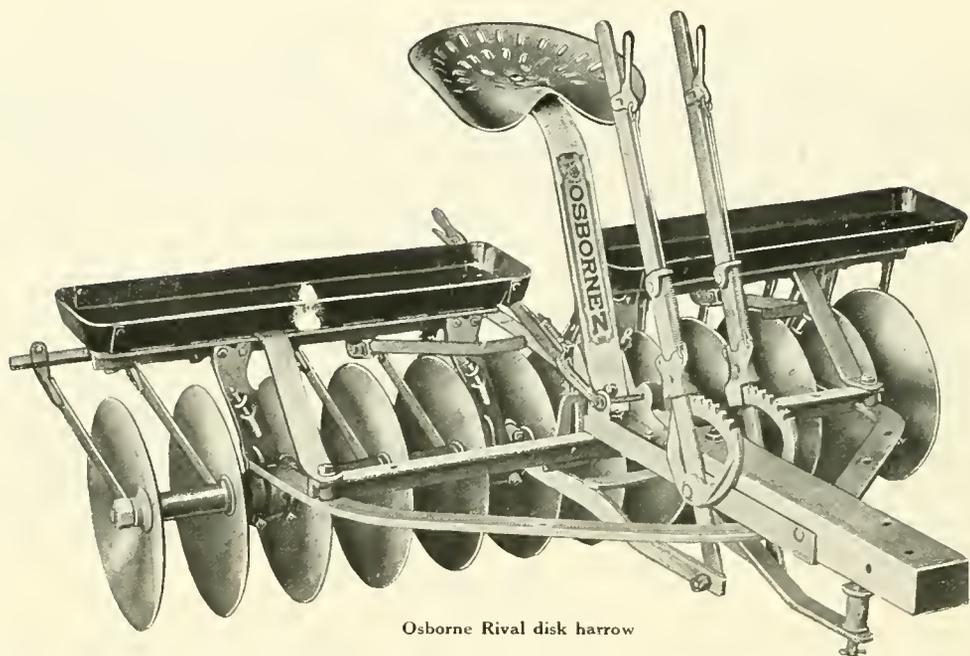
The 8-disk harrow cuts 4 feet.

" 10- "	"	"	5 "
" 12- "	"	"	6 "
" 14- "	"	"	7 "
" 16- "	"	"	8 "



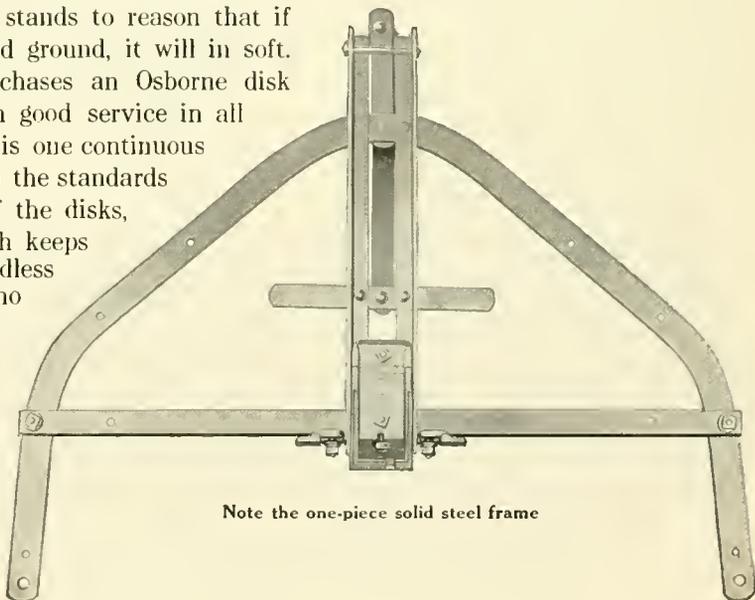
The Osborne cutaway disk harrow

Osborne Rival Disk Harrow



Osborne Rival disk harrow

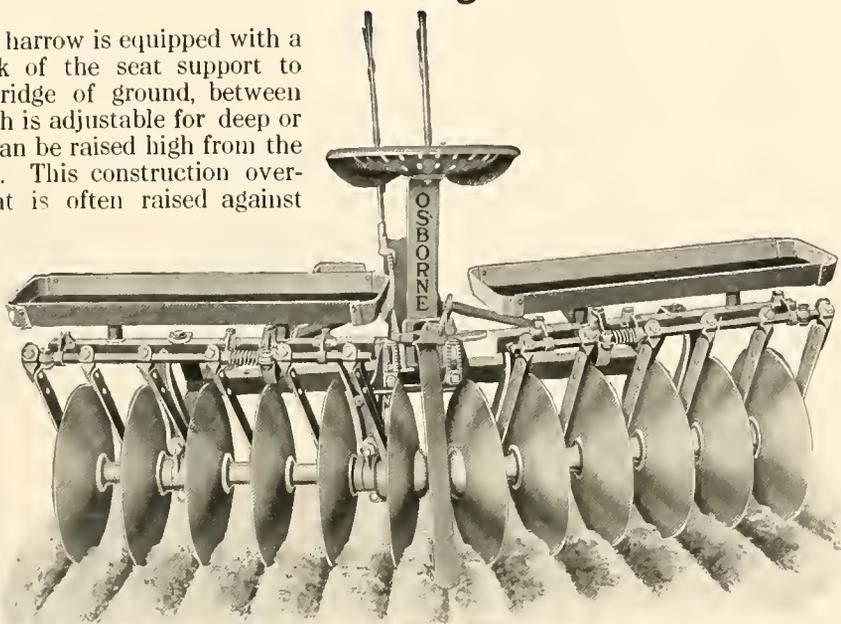
The Osborne Rival disk harrow will do good work in ground where the ordinary disk harrow fails. It has long been the standard type of the rigid frame disk harrow. Most any disk harrow will do reasonably good work in soft ground, but when it comes to disking stubble before plowing in the fall, disking meadows in the early spring before plowing, the ordinary disk harrow is not strong enough to do this work satisfactorily. The exceptional rigidity and strength of the Osborne Rival disk harrow frame holds the gangs to their place so that good disking can be done in this kind of ground. It stands to reason that if a harrow will do good work in hard ground, it will in soft. Consequently, when a farmer purchases an Osborne disk harrow, he has one which gives him good service in all kinds of soil. The draw bar frame is one continuous piece of bar steel and is fastened to the standards of the disk gangs near the center of the disks, making a direct center draft which keeps the harrow in perfect balance, regardless of the driver's weight. There are no castings on the corner of the frames to break and cause endless annoyance. The two steel angle bars riveted to the centers of the cross bar and draw frame in front make the frame exceedingly rigid. These angles serve as a rest for the seat and center tooth, a support for the adjusting lever, and take the place of the stub pole when the tongue is set to one side for three horses.



Note the one-piece solid steel frame

Center Tooth Cultivates and Levels Ridge Between the Gangs

The Osborne Rival disk harrow is equipped with a spring-tooth, pivoted back of the seat support to cultivate and level the ridge of ground, between the disk gangs. The tooth is adjustable for deep or shallow cultivation and can be raised high from the ground for transportation. This construction overcomes the objection that is often raised against the disk harrow, that it does not cultivate all the ground. The Osborne Rival does.



The center tooth cultivates and levels the ridge between the gangs

Bearings

The bearings on the Osborne Rival disk harrow are provided with large center ring projections which relieve the ends of the bearings of end thrust, eliminating extra draft and wear. The bearings are chilled, making them durable and they are large, giving ample bearing surface.

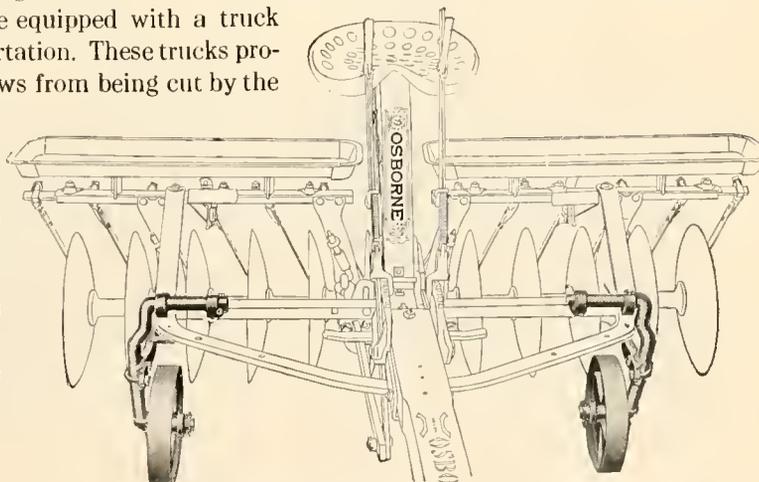
The oil hole in the bearing standard opens in the groove in the center and is large. This groove forms a channel for the oil to flow down, giving it an opportunity to spread out over every part of the bearing. These bearings will never wear out if they are kept properly oiled. They are as nearly dust proof as it is possible to make a disk harrow bearing. The dust bands which fit over the ends of the bearings prevent falling dirt from working in.



The center ring projection on the bearing relieves the end of the bearing of end thrust

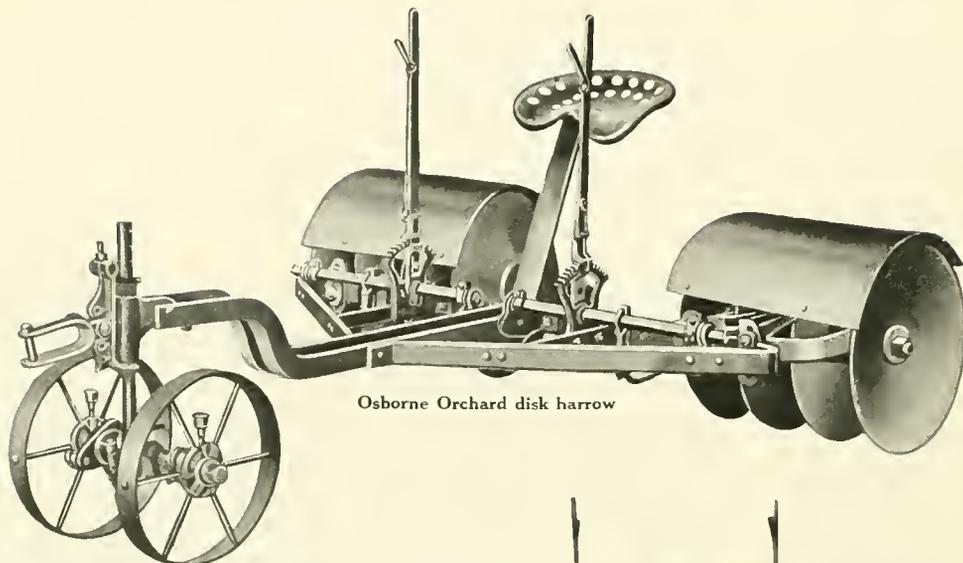
Transport Trucks for Disk Harrows

On special order, at a slight additional cost, the Osborne Rival and Bumper disk harrows will be equipped with a truck for transportation. These trucks protect meadows from being cut by the disks and prevent the disks from being blunted on the edge by coming in contact with hard roads, stones, etc. These trucks can be thrown back over the harrow out of the way when at work in the field. The harrow can be mounted very quickly and easily.



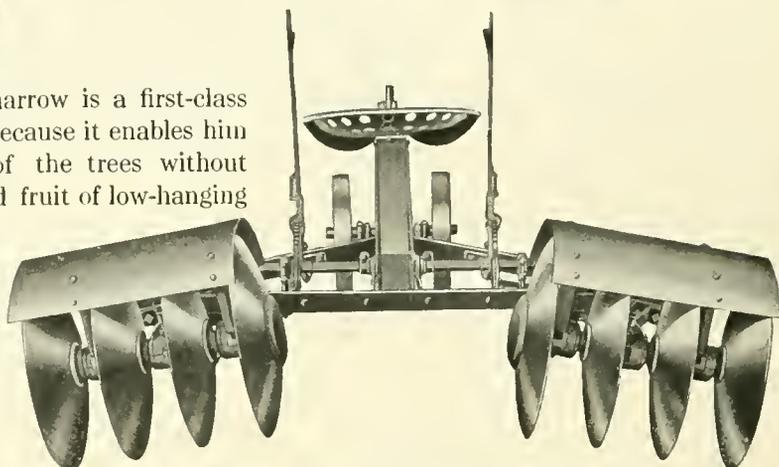
Osborne disk harrow mounted on transport trucks

Osborne Orchard Disk Harrow



Osborne Orchard disk harrow

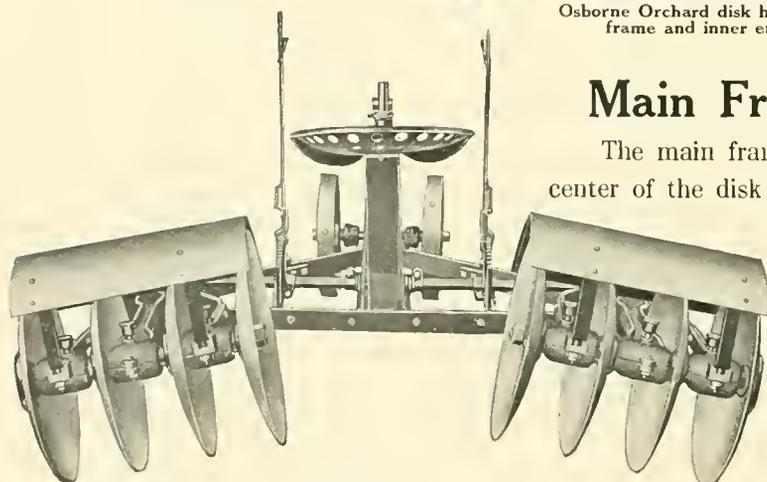
The Osborne Orchard disk harrow is a first-class implement for the fruit grower because it enables him to work close to the trunks of the trees without injuring the leaves, branches, and fruit of low-hanging boughs. This implement can be used also as a regular disk harrow and for building up irrigation ridges, tearing them down, and other innumerable purposes of this character. It is also a good implement for use in vineyards.



Osborne Orchard disk harrow with gangs spread apart on the frame and inner ends raised higher than the outer

Main Frame Construction

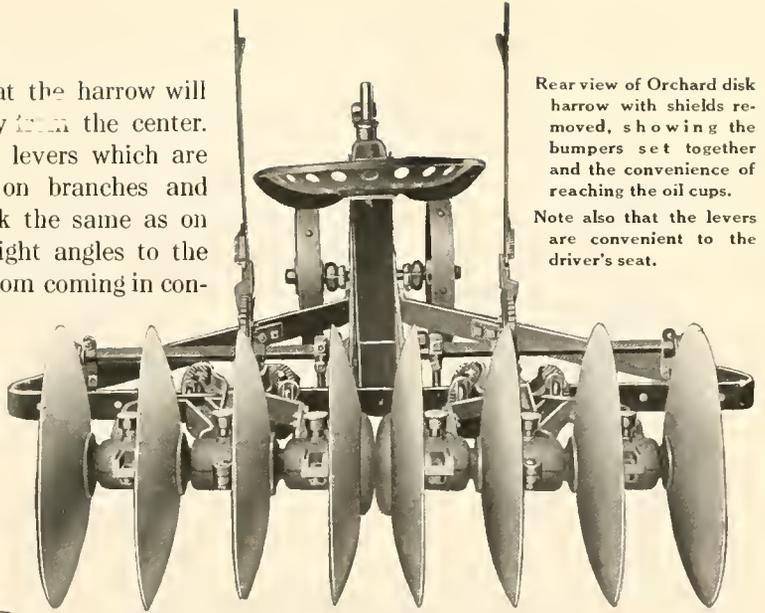
The main frame is placed directly in front of the center of the disk gangs, making it so low that it will readily pass under low-hanging branches. The two steel angle cross sills shaped in the form of a goose neck in front make this frame exceptionally rigid and hold the entire frame almost parallel with the ground so that the front easily passes under low boughs.



Osborne Orchard disk harrow with gangs arranged for in throw, spread apart on frame, and slanted for hilling purposes

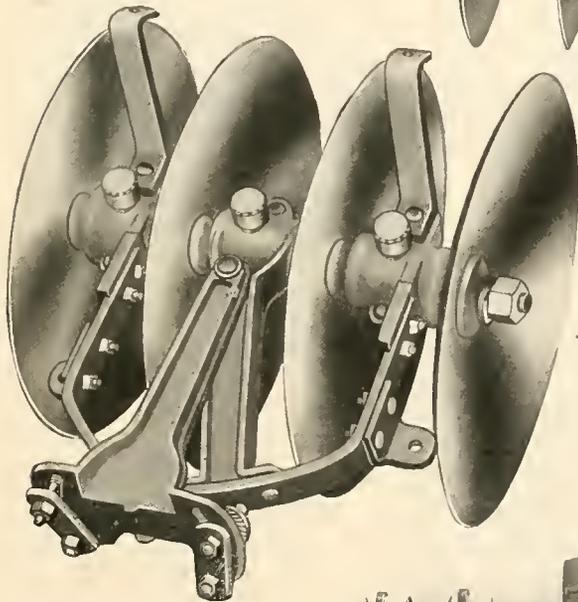
Gangs

The gangs can be changed so that the harrow will throw dirt toward the center or away from the center. The cutting angles are controlled by levers which are so situated that they do not catch on branches and leaves. They work forward and back the same as on the regular disk harrows and not at right angles to the gangs, thus keeping the levers free from coming in contact with branches. Both gangs are equipped with shields which prevent low hanging limbs and twigs from coming into contact with the disks. Hard oilers are used, permitting the use of hard oil.



Rear view of Orchard disk harrow with shields removed, showing the levers bumper set together and the convenience of reaching the oil cups.

Note also that the levers are convenient to the driver's seat.

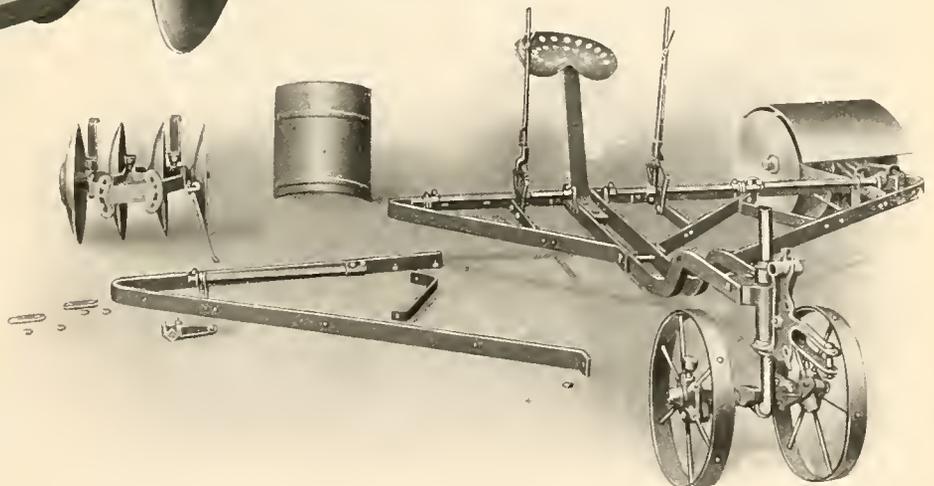


Note this solid gang construction. Bearings are equipped with hard oilers

enough to harm the roots. Extension lever bars are furnished with extension frame. These enable the operator to control the gangs on the extension frame the same as on the regular frame.

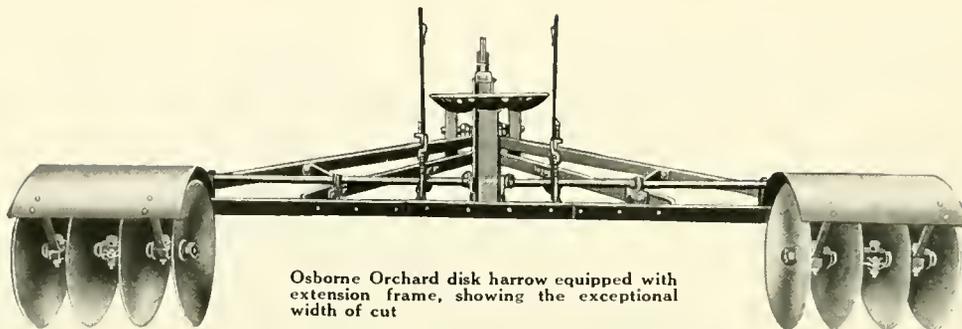
Special Features

On special order, at a slight additional cost, this harrow will be equipped with an extension frame which, when placed on the harrow, is 11 feet and 6 inches from the outside of one gang to the outside of the other. This feature in connection with the fact that the gangs can be worked higher or lower on the outer than inner ends and vice versa makes it possible for the operator to use this harrow with the utmost success in both young and old orchards without injuring the trunks of the trees or cultivating into the ground deep



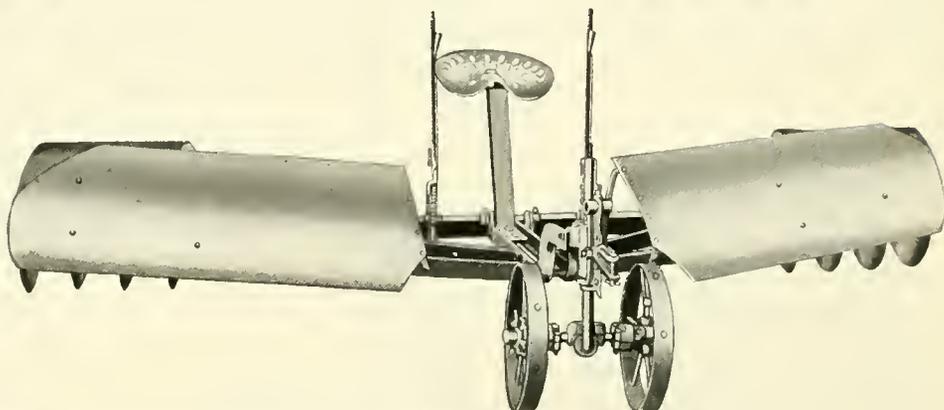
This harrow can be equipped with an extension frame. Note the quickness with which this frame can be taken off and put on

Osborne Orchard Disk Harrow



Osborne Orchard disk harrow equipped with extension frame, showing the exceptional width of cut

A large shield, which extends over the main frame and disk gang, will be furnished on special order. Either the right or left hand shield will be furnished, or both. This shield is a protection for the branches and fruit.



Osborne Orchard disk harrow equipped with frame shields



At work in a California orchard with an Osborne disk harrow

Forecarriage

This harrow is equipped regularly with a forecarriage, description of which is given on the next page. This forecarriage can be used either with or without a pole, as the purchaser desires. If the pole is wanted, it will be furnished on special order at a slight additional expense.

Sizes of Cut

The Osborne Orchard disk harrow is furnished in the following sizes:

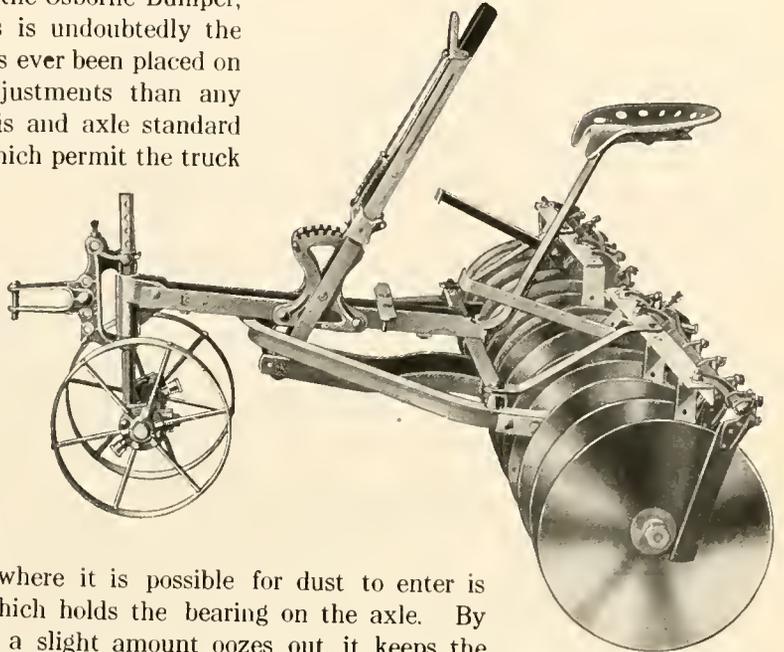
4-ft. size, with 16-, 18-, or 20-in. disk.
5-ft. " " 16-, 18-, or 20-in. "

The gangs can be extended on the regular frame so that the width will be six feet over all. When the special frame is attached, the width of cut over all is 11 feet and 6 inches.

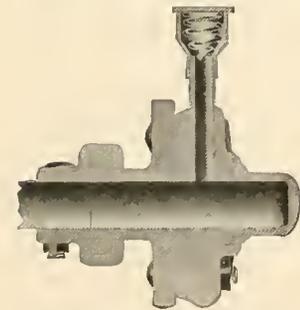
Forecarriage for Use with Osborne Disk Harrows

The forecarriage for use with the Osborne Bumper, Rival, and Orchard disk harrows is undoubtedly the most efficient forecarriage that has ever been placed on a disk harrow. It has more adjustments than any other truck made. Both the clevis and axle standard have up and down adjustments, which permit the truck to be adjusted to any size disk, 16-, 18-, or 20-inch, and press just firmly enough on the ground to keep the harrow running steady without interfering with the proper suction of the disks, work of the harrow, or adding draft on account of the wheels digging into the ground.

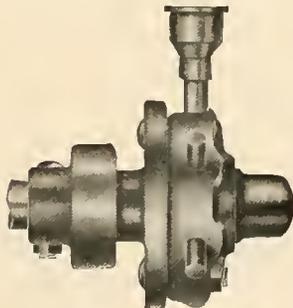
The bearings are dust proof and fitted with hard oilers. One of the unique features of this bearing is that the only place where it is possible for dust to enter is around the edges of the collar which holds the bearing on the axle. By keeping sufficient grease so that a slight amount oozes out, it keeps the opening filled so that dust cannot enter under any circumstances, thus making a bearing which is absolutely dust proof. When filling these oil cups, it is not necessary for a particle of dirt to be mixed in with the grease, because the oil cups are removed entirely from the wheels when being filled. The cup is placed between the spokes, making it impossible for the obstructions to loosen it.



Osborne disk harrow equipped with forecarriage. Note up and down adjustment on clevis and axle standard

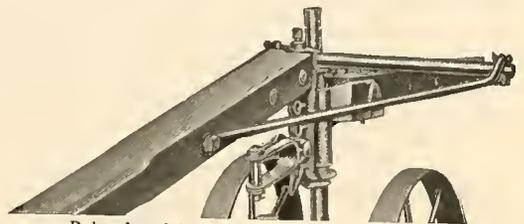


Sectional view of the Osborne disk harrow, forecarriage wheel bearing

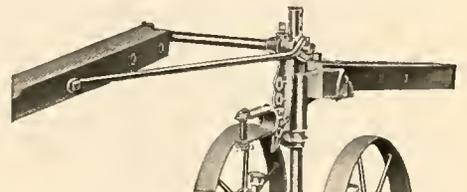


Osborne forecarriage wheel bearing

A pole can be used with this forecarriage or not, as the purchaser desires. If he needs to use the pole when transporting the harrow over roads or going from one field to another, this can be done and the pole removed when working in the field. The pole can be set in the center for two or four horses, and to either the right or left hand side for three horses, thus enabling the operator to adjust the pole to the team and not the team to the pole, as is usually the case with the ordinary forecarriage.



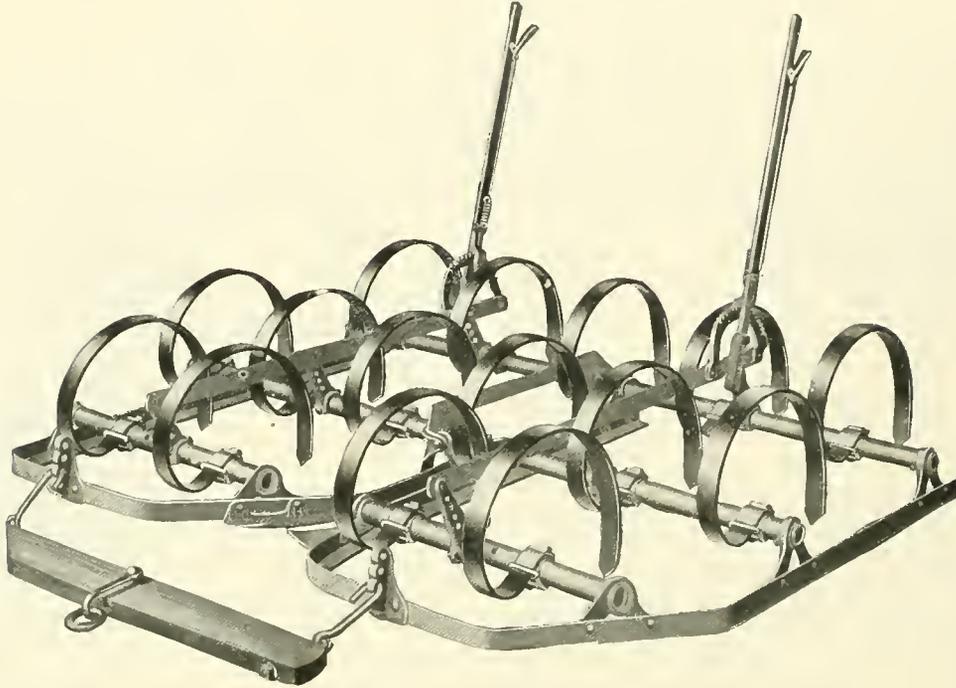
Pole placed in the center for 2 or 4 horses



Pole placed to right side for 3 horses. It can also be placed to left side for 3 horses

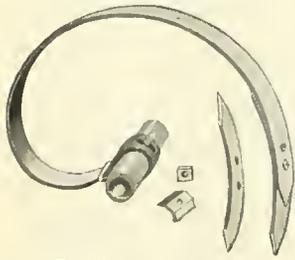
The axle is pivoted to the axle standard, giving the wheels sufficient up and down play, to conform to uneven surface of the ground.

Osborne Spring Tooth Harrow



Osborne spring tooth harrow

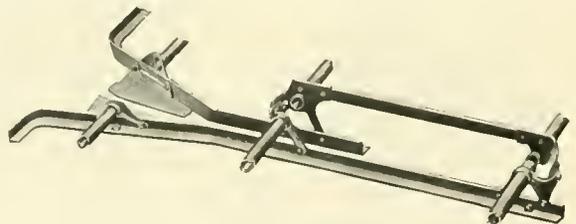
The spring tooth harrow is the most valuable implement for loosening up tenacious and fine texture soil, for leveling inequalities in the surface of the ground, for destroying weeds which have not become deeply rooted, for cultivating stony and gravelly land, for loosening up fall-plowed ground in the early spring, for aerating soil. The Osborne spring tooth harrow is constructed to do these things in the most efficient manner.



Double pointed tooth

The main frame of each section is constructed of angle steel and bent upward with an easy slope in front for trash clearance. The tooth beams are placed high and one section is cut away in the center and raised for trash clearance. The teeth are spaced on the tooth beams so that trailing is impossible, thus each tooth does its full share of the work. The tooth clip which holds the tooth to the beam is made so that the strain on the tooth comes upon the beam and not upon the bolt, thus eliminating breakage of tooth bolts. The bottoms of the frames are equipped with steel runner shoes, which can be removed when they become worn, thus making it impossible to wear out the frame. The hitch is adjustable to make the front or rear teeth work deep or shallow, as conditions require. The quadrants have fine teeth so that close adjustment of the spring teeth is possible, giving the operator the chance of cultivating at just the right depth. On special order, at a small additional price, these harrows will be equipped with reversible double pointed teeth. These can be turned end for end when they become worn, thus giving the wearing qualities of two teeth in one. These harrows are furnished in 15, 17, 23, or 25 teeth. The sections of the spring tooth harrow are hinged together, permitting the harrow to follow unequal surfaces of the ground and to do as good work as when working on level soil.

The 15-tooth spring tooth harrow cuts 4 feet, 5 inches
 " 17- " " " " " 5 " 5 "
 " 23- " " " " " 7 " 5 "
 " 25- " " " " " 8 " 6 "



One section is cut away and raised for trash clearance

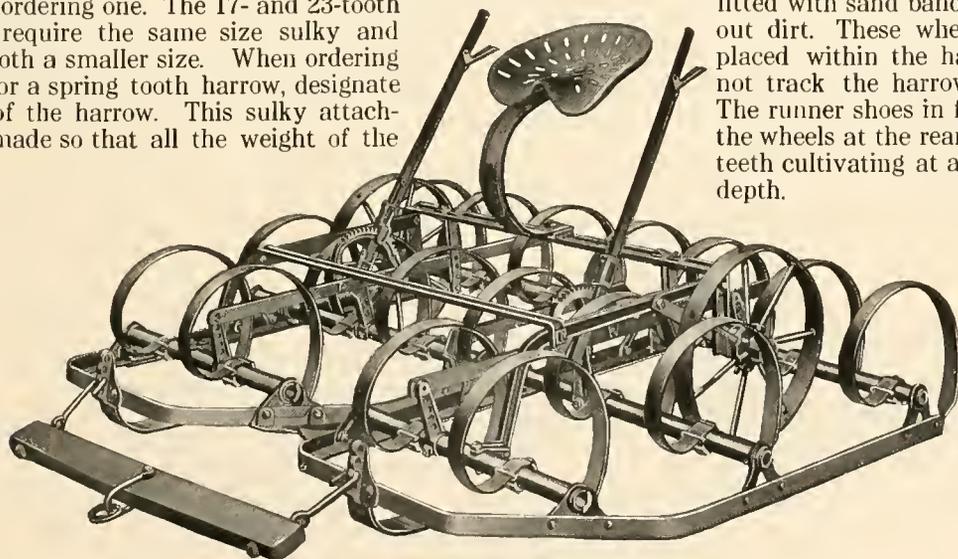
Osborne Sulky Spring Tooth Harrow



The spring tooth harrow is a good implement for loosening up the soil. Note the efficient work it is doing in this field

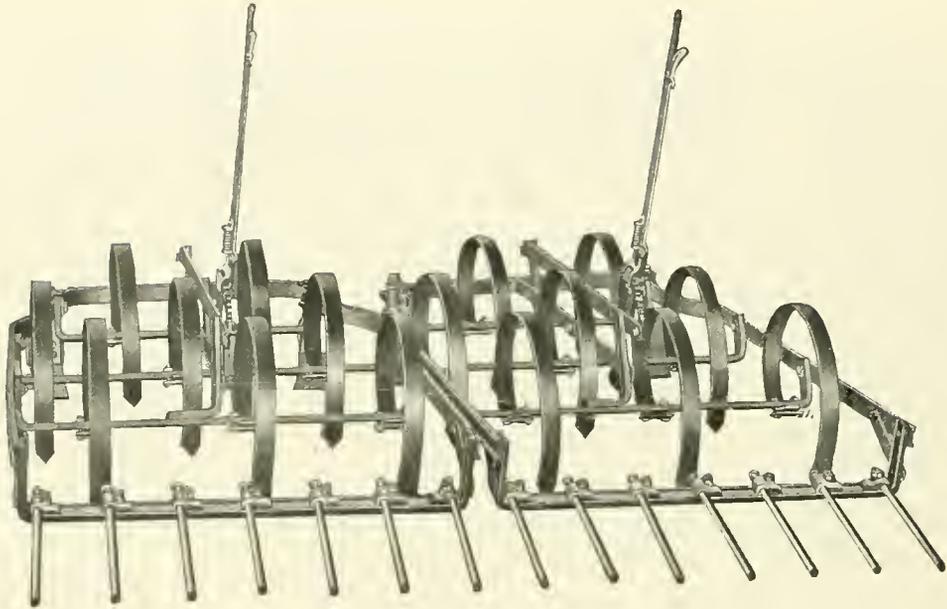
The harrow part of the Osborne sulky spring tooth harrow is identical with that of the spring tooth harrow shown on the opposite page. As a matter of fact, the farmer who has a spring tooth harrow and desires to equip it with a sulky, can do so by ordering one. The 17- and 23-tooth harrows require the same size sulky and the 15-tooth a smaller size. When ordering a sulky for a spring tooth harrow, designate the size of the harrow. This sulky attachment is made so that all the weight of the

driver can be put on the harrow or taken off; thus if the operator is working in hard ground and desires to throw his weight on the harrow, he can do so. The wheels are within the harrow and are placed so that trash does not catch on them. They are fitted with sand bands to keep out dirt. These wheels being placed within the harrow, do not track the harrowed field. The runner shoes in front and the wheels at the rear keep the teeth cultivating at a uniform depth.



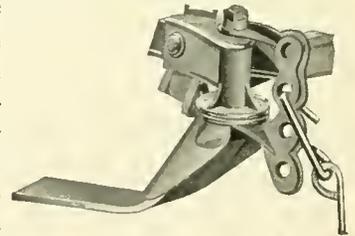
Osborne sulky spring tooth harrow

Osborne Combination Harrow



Osborne combination harrow

The Osborne combination harrow is in reality a spring tooth and peg tooth harrow in one. The trailing teeth in the rear smooth the ground, breaking up the clods while they are fresh, leaving the ground in excellent condition for drilling or planting. The main frame is exceptionally strong and placed high from the ground for easy trash clearance. The teeth are made of a high quality of spring steel and are fastened to the tooth beams by a clamp which permits them to be adjusted to take up wear, thus the operator can keep the points of the teeth working at the same depth, whether the harrow is new or after it has been used a number of years. The trailing teeth in the rear and the swivel shoes in front keep the harrow running steadily and the teeth cutting at a uniform depth. Each section is joined to the draw bar, making the harrow flexible, so that it will conform to unequal surfaces of the ground and do good work. The tooth bars are bent upward at the ends where they are fastened to the frame, making a very simple and exceptionally strong construction. The lever quadrants have fine teeth, permitting close adjustments of the spring teeth. The trailing teeth in the rear can be adjusted so that more or

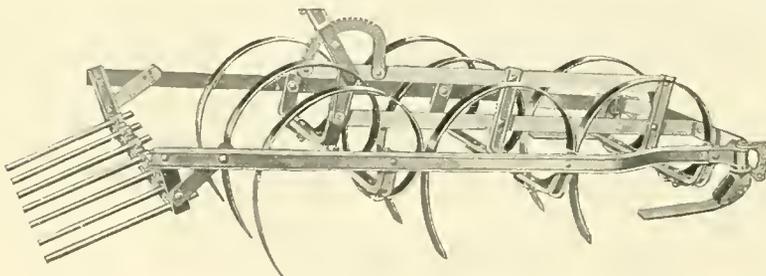


Swivel runner shoe is a great aid in turning corners

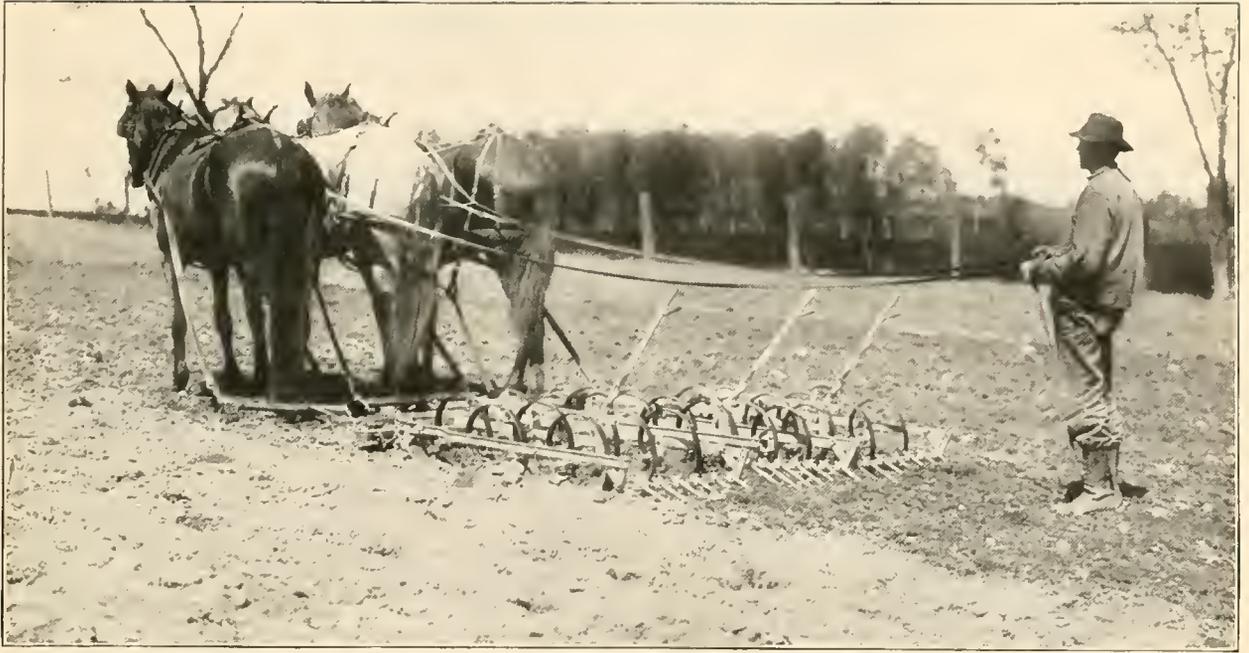
less slant can be put upon them. The trailing teeth in the rear and the swivel shoes in front prevent the harrow from tipping up when turning short corners.

The combination harrow is furnished in two or three sections.

The two-section harrow cuts 5 ft., 5 in.
 " three-section " " 8 " 5 "



Note the strong construction of the tooth beams

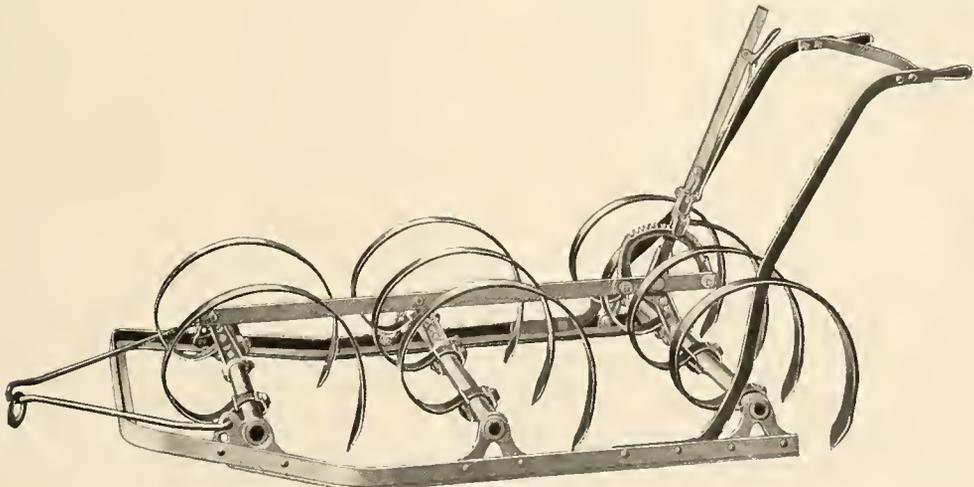


The Osborne combination harrow doing the work of the spring tooth and peg tooth harrow in one operation

Osborne Vineyard Spring Tooth Harrows

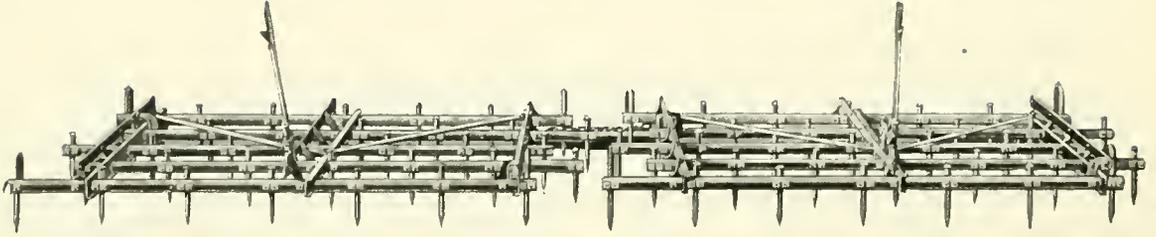
The Osborne vineyard spring tooth harrows have the same features of merit as the regular spring tooth harrows. They are furnished with 7, 9, and 12 teeth, and with or without handles, as the purchaser desires. They are especially adapted for use in fields where a larger spring tooth harrow can not be used to advantage and in vineyards, orchards, nurseries, etc.

The	7-tooth	harrow	cuts	1	feet	11	inches
"	9-	"	"	"	2	"	6
"	12-	"	"	"	3	"	4



Osborne vineyard spring tooth harrow

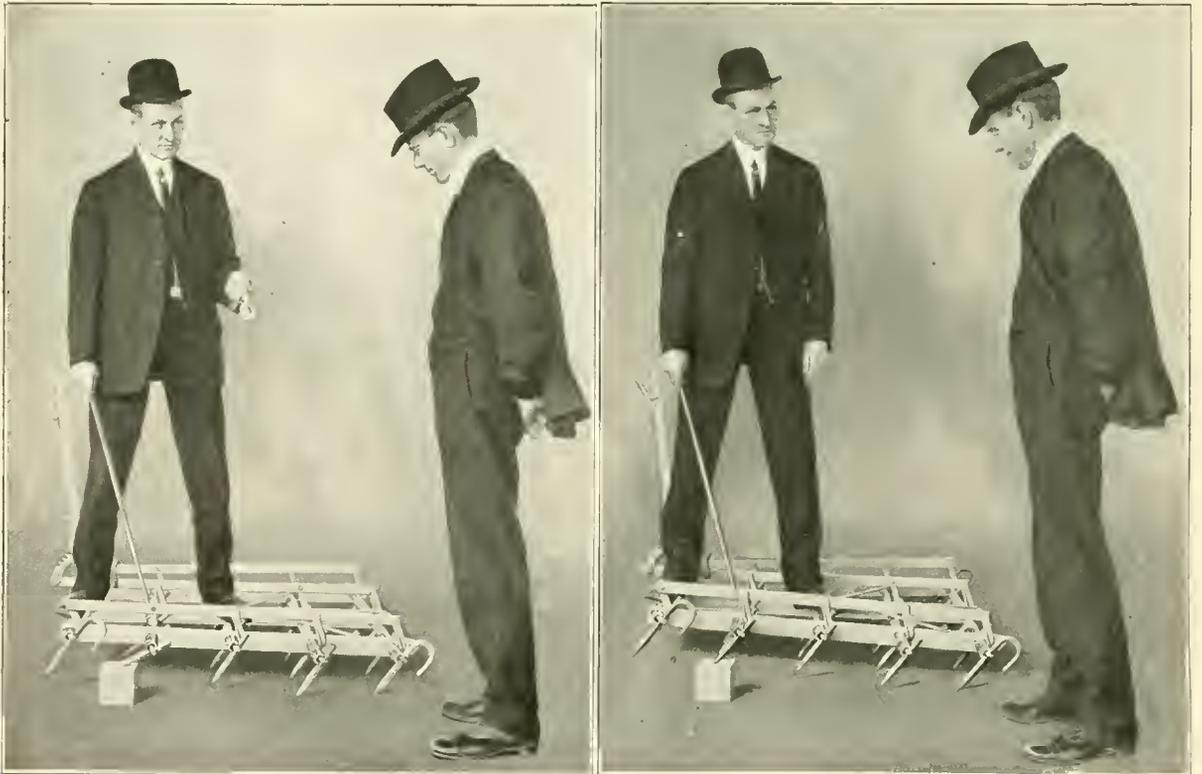
Osborne Peg Tooth Harrow



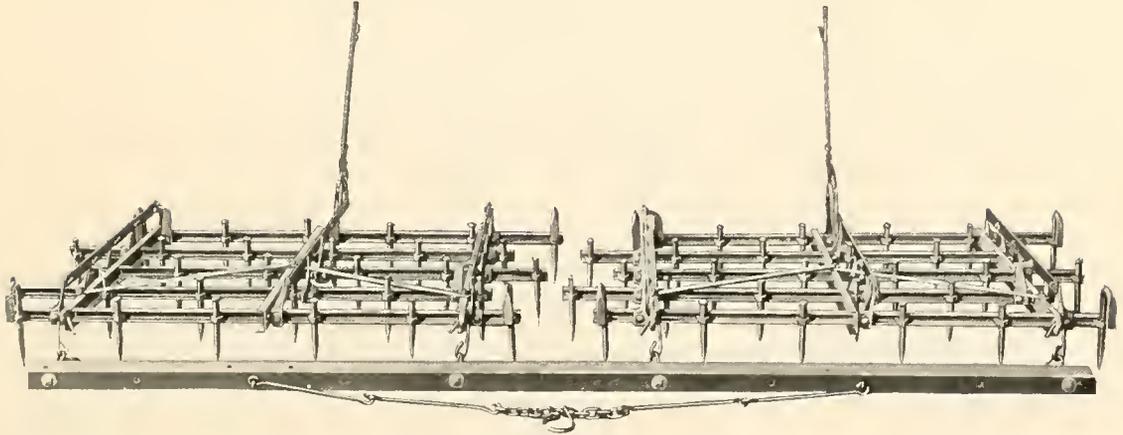
Osborne peg tooth harrow

The Osborne peg tooth harrow stands for all that is good in peg tooth harrows. It is without question the strongest and most durable peg tooth harrow that has ever been made. Each section is equipped with strengthening bars, one on each side, which makes it impossible for a tooth to catch on an obstruction and bend the tooth bar to which it is fastened without bending the other tooth bars also. This means that it is next thing to impossible to bend a tooth bar on an Osborne peg tooth harrow. This harrow without these strengthening bars is as strong as the ordinary harrow.

To illustrate the great strength of this strengthening bar, the salesman in the accompanying picture has removed the bracket connecting the tooth bar to the strengthening bar. Placing the tooth on a block, he stands on the harrow which shows very plainly what must happen on any harrow that does not have the strengthening bar. In the second illustration, he has placed the bracket on the harrow. His weight does not affect this tooth any more than it does the others. The first picture vividly illustrates what happens to the ordinary peg tooth harrow and is the great reason why so many of them have bent tooth bars. The second shows why one never sees a twisted tooth bar on an Osborne harrow.

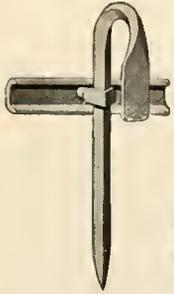


Osborne Peg Tooth Harrow

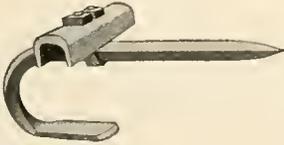


The Osborne peg tooth harrow is equipped with four runner teeth, one on the outer end of each section. These teeth act as transports for the harrow when passing over meadows and going from one field to another, they protect meadows from being torn by the teeth of the harrow, and save the farmer the time and trouble of loading the harrow onto a stone boat or putting it into a wagon.

The tooth clips are forged from steel and are fastened with two nuts, making a very strong and substantial fastening. The teeth have upset heads, and are made of a special quality of steel tempered for this purpose. Each section is attached to the draw bar, making the harrow very flexible, so that it will conform to unequal surfaces of the ground. One section or as many as the operator desires can be attached to a draw bar. The lever quadrants are equipped with fine teeth, which permit close adjustments of the harrow teeth.



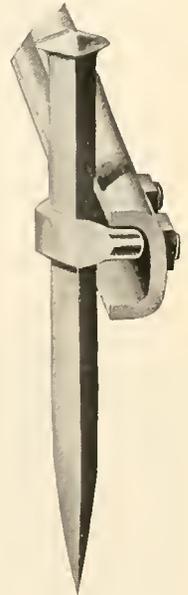
Runner teeth for peg tooth harrow. These teeth act as transports



The tooth bars are made U-shape, and thicker in the center than they are on the edges, thus giving exceptional strength and making them light in weight. This harrow is

furnished with 25, 30, or 35 teeth to the section, either $\frac{1}{2}$ " square, or $\frac{5}{8}$ " diamond shape.

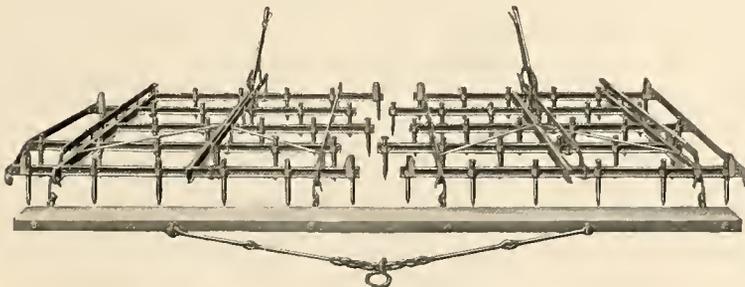
A 2-section 25-tooth harrow cuts	8 feet 3 inches	A 3-section 35-tooth harrow cuts	17 feet 6 inches
" 2- " 30- " " " 9 " 11 "	" " " " " 16 " 8 "	" 4- " 25- " " " 20 " 8 "	" " " " " 23 " 5 "
" 2- " 35- " " " 11 " 8 "	" " " " " 20 " 8 "	" 4- " 30- " " " 23 " 5 "	
" 3- " 25- " " " 12 " 5 "			
" 3- " 30- " " " 15 "			



A solid tooth fastening

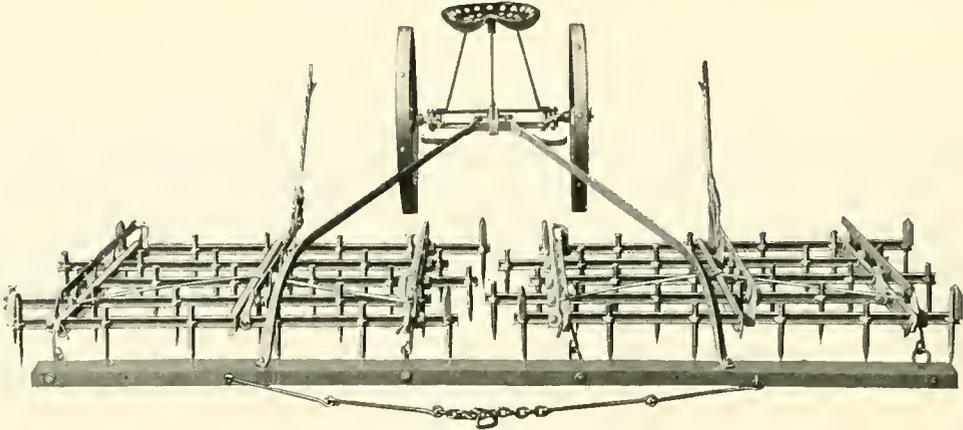
Orchard Guards

On special order, at a slight additional expense, the Osborne peg tooth harrow will be equipped with orchard guards. These guards prevent the outer ends of the tooth bars from catching on trees and stumps. They also prevent the accumulation of trash on the outer ends of tooth bars.



Osborne peg tooth harrow equipped with orchard guards

Riding Attachment for Osborne Peg Tooth Harrows



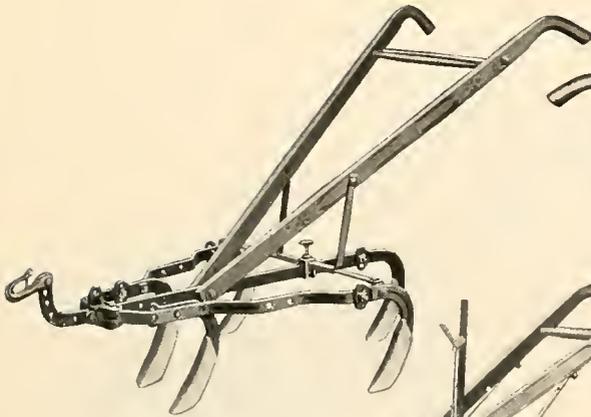
Osborne peg tooth harrow equipped with sulky attachment

The riding attachment for the Osborne peg tooth harrow saves the farmer many steps, thus relieving him of the most tiresome work that a farmer has to do—that of walking after a peg tooth harrow. This attachment is composed of two long arms which fasten to the draw bar of the harrow and an axle which is made so that the wheels turn in when turning corners. This enables the driver to make short turns without the wheels sliding or tipping up. The seat is so arranged that the rider balances the riding attachment, thereby removing all weight from the draw bar. The wheels are made of steel with staggered spokes. These wheels are exceptionally strong and are high enough to keep the driver out of the dust. The bearings are equipped with hard oilers, permitting the use of hard oil, which if properly used is unquestionably the best lubricant for bearings of this character. This attachment is always in the line of draft, consequently it does not disturb the good work of the harrow.

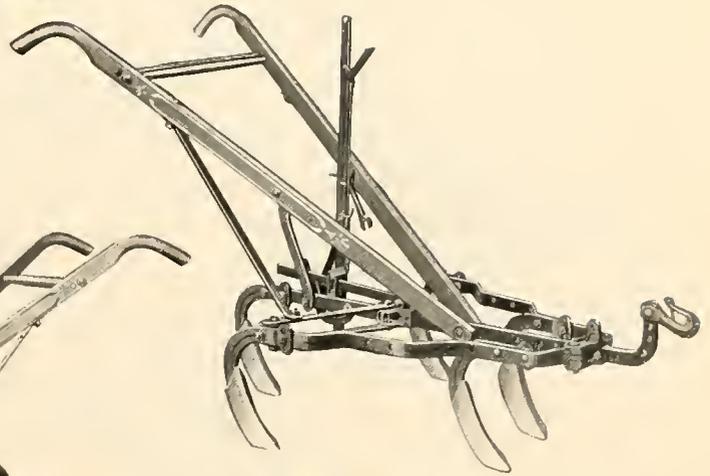


This farmer is saving himself many weary steps

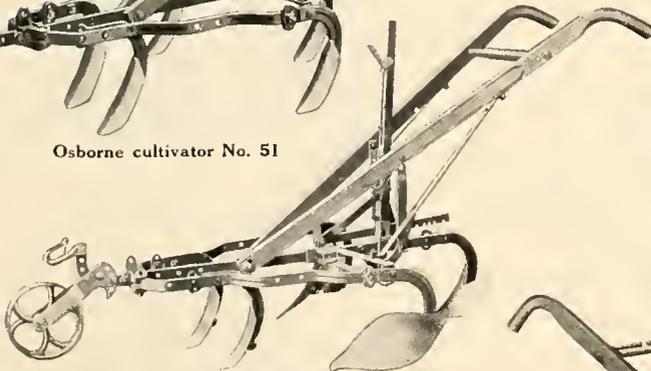
Osborne Cultivators



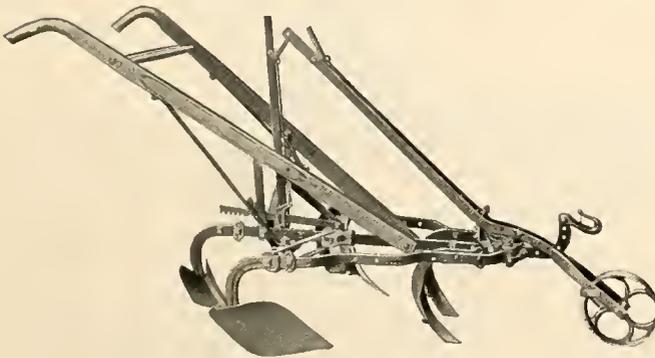
Osborne cultivator No. 51



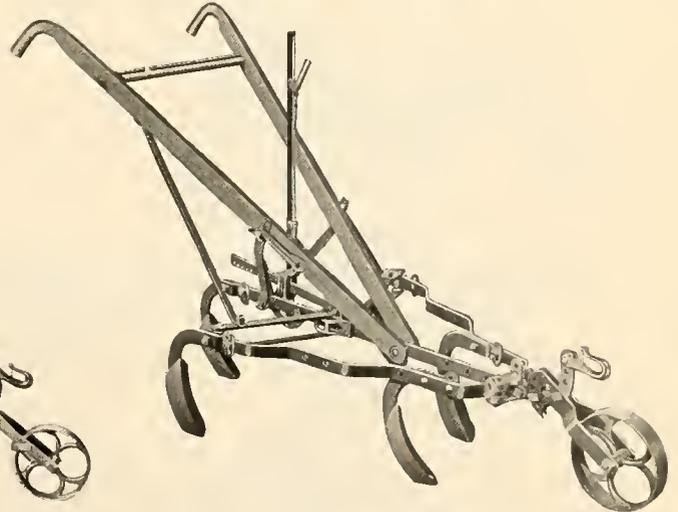
Osborne cultivator No. 52



Osborne cultivator No. 54



Osborne cultivator No. 55



Osborne cultivator No. 53

Osborne cultivators are made for all purposes where a one-horse cultivator is required. They are equipped with different attachments which enable the operator to do good cultivating in all kinds of crops. These cultivators are made in three series. Nos. 51, 52, 53, 54, and 55 comprise one section; Nos. 71, 72, 73, 74, and 75 the second; Nos. 91, 92, 93, 94, and 95 the third series.

The frames of all these cultivators are made the same, consequently by adding different attachments the 70 and 90 series can be made from the 50 series, thus the farmer can have a cultivator for all purposes, enabling him to do the best cultivating.

Cultivator No. 51 is furnished with 5 shovels and expansion screw.

Cultivator No. 52 with expanding lever and 5 shovels.

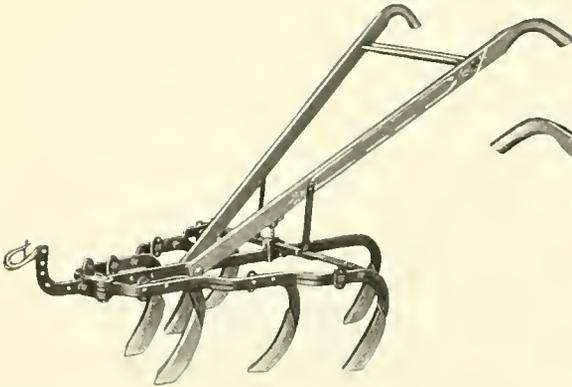
Cultivator No. 53 with 5 shovels, expanding lever, and wheel jack.

Cultivator No. 54 with wheel jack, expanding lever, 5 shovels, 2 mold boards, and 1 horse hoe.

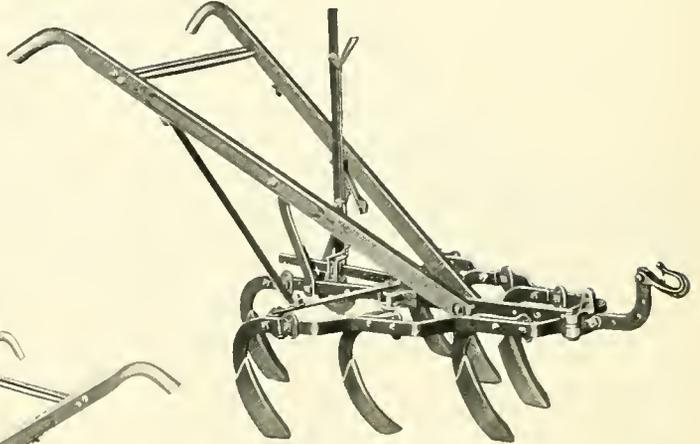
Cultivator No. 55 with expanding lever, lever wheel jack, 5 shovels, 2 mold boards, and 1 horse hoe.

Cultivators No. 51, 52, 53, 54, and 55 can be expanded from 12 to 25 inches. These cultivators can be made into the corresponding Nos. 71, 72, 73, 74, and 75 by adding two shanks and shovels. The frames are punched for this purpose.

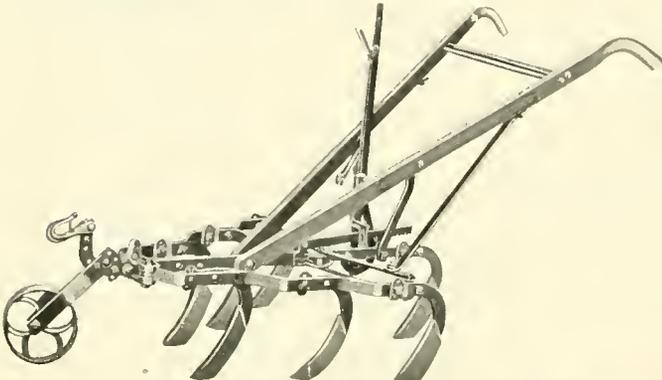
Osborne Cultivators



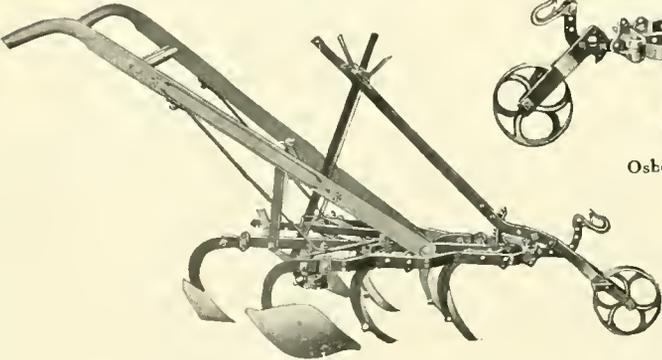
Osborne cultivator No. 71



Osborne cultivator No. 72



Osborne cultivator No. 73



Osborne cultivator No. 74

Osborne cultivator No. 75

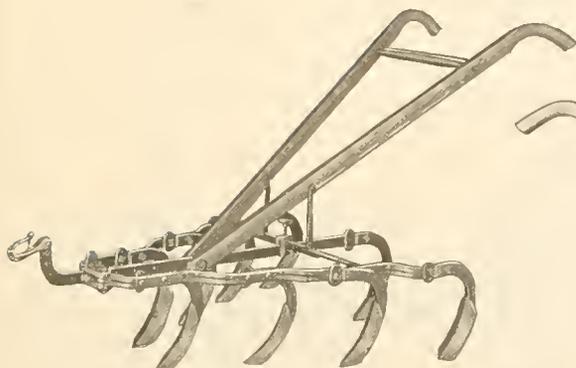
The frames are made of bar steel and they are fastened in such a manner that they present the shovels as squarely as possible to the ground whether the cultivator is expanded or closed. The shovels are extra thick in the center. This makes them strong and provides ample thickness

for the holes in the center to be deep and square, so that the bolts which hold them to the shank will not turn. The shape of the shovel makes it fit the shank so closely that it is impossible for the shovel to turn, insuring that the shovel will be solid on the shank. These shovels are reversible, affording two cutting surfaces. The shovels being thick in the center and thin on the edge, wear has no effect upon the original shape. They will retain sharp points until completely worn out.

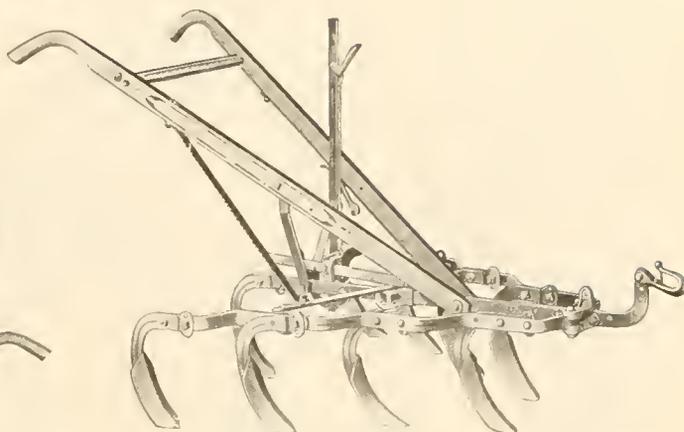
The mold boards are made similar to the mold board and point of a plow. They are reversible the same as the shovels. When one point becomes worn the other can be used. They can be adjusted to throw dirt towards or away from the plants. They also can be used for hilling purposes.

Cultivators Nos. 71, 72, 73, 74, and 75 can be made into corresponding Nos. 91, 92, 93, 94, and 95 by adding two expansion bars, shanks, and shovels. These cultivators can be expanded from 12 to 28 inches. They are furnished the same as the 50 series, except that 7 shovels are furnished instead of 5.

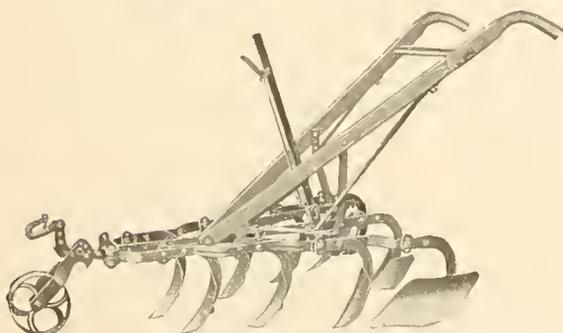
Osborne Cultivators



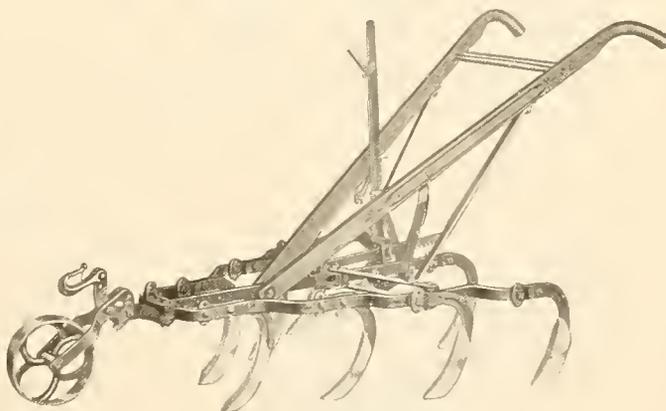
Osborne cultivator No. 91



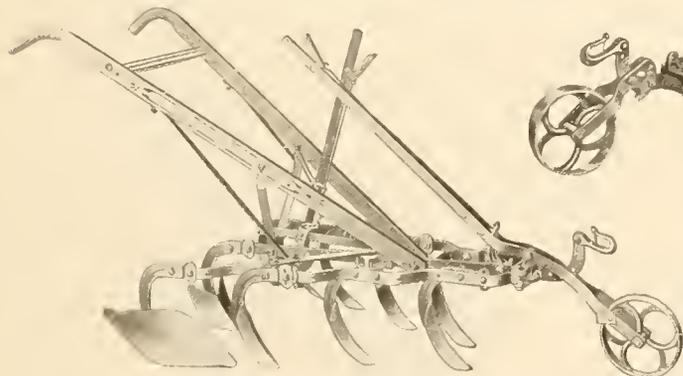
Osborne cultivator No. 92



Osborne cultivator No. 94



Osborne cultivator No. 93



Osborne cultivator No. 95

The wheel jack is exceptionally strong and is made so that the teeth can be regulated by it as well as the clevis hook. The clevis locks so that it is impossible for a singletree to come out when the horse backs.

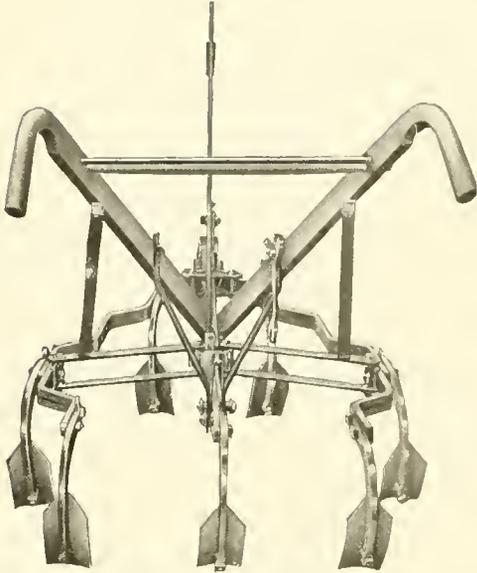
The lever wheel jack used on cultivators Nos. 55, 75, and 95 in connection with the expansion lever makes it possible for the operator to cultivate between rows of different widths without stopping the horse to make adjustments. This makes these cultivators of exceptional value to the truck grower.

The improved lever expanding device holds the cultivator frames exceptionally rigid whether they are closed or expanded, and the teeth are so spaced that close adjustments can be made when the cultivator is being closed. This is of particular value because it gives the operator an opportunity to adjust the cultivator to varying widths of rows and get as close to the plants as he desires.

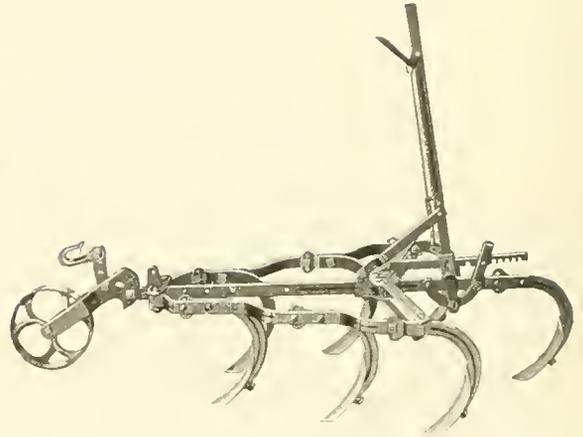
This feature of the Osborne cultivator is a great contrast to the ordinary cultivator of this type, and is a feature which every prospective purchaser should look into very carefully.

Cultivators Nos. 91, 92, 93, 94, and 95 can be expanded from 19 to 38 inches, and are furnished with the same equipment as the 50 series, except that 9 shovels are furnished instead of 5

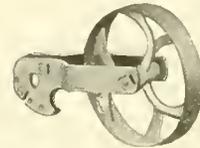
Osborne Cultivators



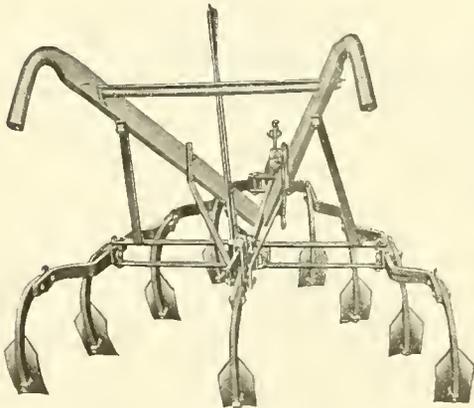
Osborne cultivator with shanks and shovels changed so that the rear shovels fill the furrows made by the outside shovels



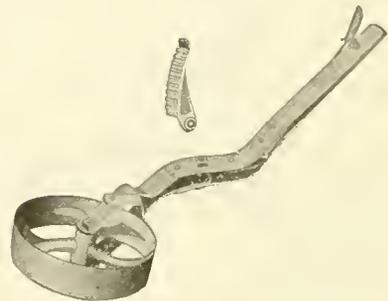
The improved double locking expanding lever holds the cultivator very rigidly. This lever attachment when put on cultivators Nos. 51, 71, and 91, makes them Nos. 52, 72, and 92



The wheel jack shown in accompanying illustration when attached to cultivators Nos. 52, 72, and 92, makes them cultivators Nos. 53, 73, and 93



Cultivator No. 93 showing extreme width. This cultivator can be expanded from 19 to 38 inches



Wheel lever and quadrant to be attached to cultivators Nos. 54, 74, and 94, making them Nos. 55, 75, and 95

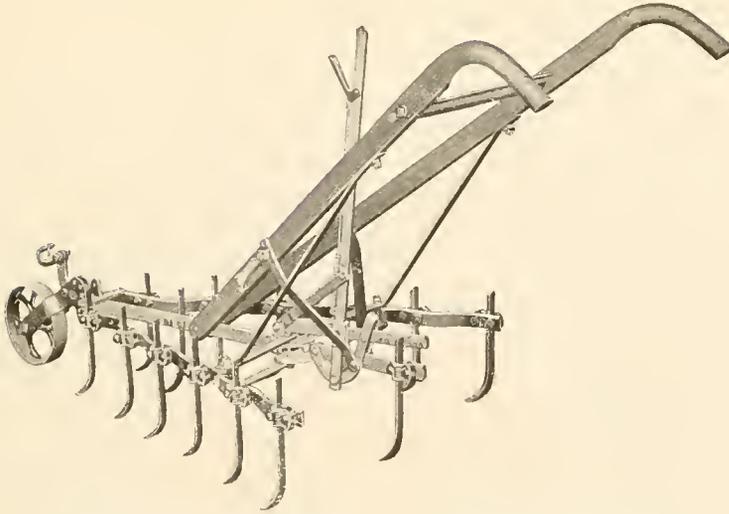


Horse hoe and mold boards. The mold boards are reversible. When these are attached to cultivators Nos. 53, 73, and 93 they become Nos. 54, 74, and 94



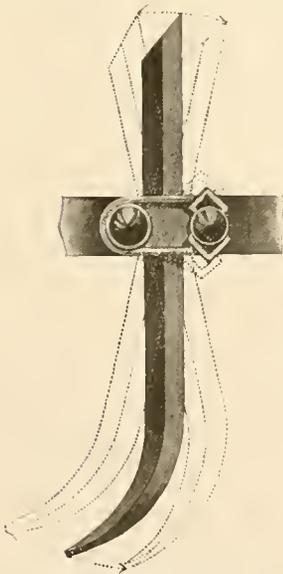
Depth regulator for use with cultivators Nos. 55, 75, and 95. Furnished only on special order

Osborne 14-Tooth Cultivators

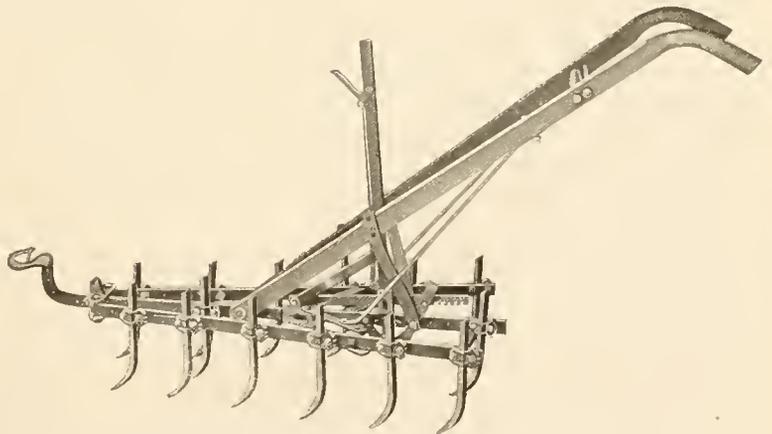


Osborne 14-tooth cultivator zigzag bar frame, equipped with wheel jack and expansion lever. This cultivator will be furnished with thumb expansion and without wheel jack when ordered

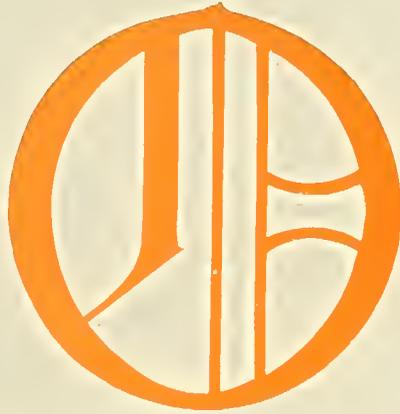
Osborne 14-tooth cultivator is particularly desirable for use in cultivating in places where deep cultivation without stirring the ground is desired. Consequently it is a good implement for use in cultivating strawberries, raspberries, blackberries, gooseberries, hops, vineyards, etc. This cultivator is furnished with a zigzag or straight bar frame, with or without lead wheel, with expanding lever or thumb screw expansion as the purchaser desires. On special order a reversible curved in tooth will be furnished at a small additional price. This gives the advantage of two sets of teeth in one, because they can be reversed when one becomes worn. The expanding lever and wheel jack are the same as those used on 5-7-9-shovel cultivators and have the same features of merit. The tooth clip is slotted to permit different angles of slant. This enables the operator to adjust the teeth for ground in all conditions.



Tooth clip permits different angles of the tooth to work deep or shallow as conditions require



Osborne 14-tooth cultivator with straight bar frame and with expanding lever. This cultivator will be equipped with wheel jack and thumb expansion if desired



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