Questions and Answers

on the

E-B Osborne Line

Emerson-Brantingham Implement Co.
(Incorporated)
Established 1852 Rockford, Ill.

A Complete Line of Farm Machinery Made and Guaranteed by One Company

Form A1061 5M-4-27 HPCo

Questions on the E-B Osborne Grain Binder

1. How does the Z bar on the E-B Osborne Binder differ from competitive binders?

1½. How does the reel on the E-B Osborne Binder differ from competitors' binders?

2. What five features are prominent on the E-B Osborne Binders which make them unexcelled by any other binder for cutting down and tangled grain?

3. Describe the E-B Osborne Binder shock absorber.

4. Describe the E-B Osborne Binder main or drive wheel.

5. What provision is made to take care of the wear on the bevel gear on the counter shaft when the binder has become old and worn?

6. How would you prevent the reel on the E-B Osborne Binder from sagging at the outer end when the boxings become worn?

7. What provision is made for easy handling of the reel? Has the reel on the E-B Osborne Binder any longer range of adjustment than any other binder? If so, why?

8. What advantage is the hinged backboard at the rear of the platform over a binder not having this feature?

9. Describe the elevator chain. How does it differ from this chain on other binders?

10. What is meant by self-aligning bearings? What is the advantage?

11. Where does the greatest strain come on the elevator chain on the E-B Osborne Binder and with what results?

12. Describe the canvas tighteners on the E-B Osborne Binders.

13. The E-B Osborne Binder has a reciprocating butter. What is meant by reciprocating? Describe its action when binder is operating.

14. How are the packers driven on the E-B Osborne Binder? What relation have the packers with the butter?

14½. How does the action of the idler on the drive chain differ from other binders?

15. What provision is made for preventing the E-B Osborne Binder from tripping too soon when binder becomes old and worn?

16. What trouble will result from the trip stop becoming worn? How remedied on the E-B Osborne Binder?

17. How would you make a tight or loose bundle on the E-B Osborne Binder?

18. How would you make a small or large bundle on the E-B Osborne Binder?

19. How does the compression differ from other binders? Explain in detail.

20. What is the range of shift of the E-B Osborne Binder attachments? What would you do to get the best results when cutting extra tall grain?

21. How does the relation of the packers and needle differ on the E-B Osborne Binder from other binders? What advantage is this difference?

22. The E-B Osborne knotter is the surest tier of any binder. Tell why.

23. Describe the action of the bundle carrier on the E-B Osborne Binder. Has it any distinct advantages?

24. Describe the E-B Osborne tongue truck fully. Give effect upon the binder when in operation.

25. What is the regular equipment for each size of the E-B Osborne Binder?

Answers to Questions on the E-B Osborne Grain Binder

1. Other binders have the Z bar but the guards on the E-B Osborne Binder are fastened to the under side of the top angle of the Z, and the upright portion of the Z being shorter than on other binders, the under side of the guards are brought on practically a straight line with the bottom angle of the Z which is practically on a line with the under side of the platform.

See Page 3 of New E-B Osborne Catalog.

1½. Has flexible or folding arm. By simple handling of the reel lever it can be folded over the platform without making it necessary to take off reel arms or slats for storage or trucking purposes.

2. (1) Cutter bar can be set to cut close to ground. (2) Reel can be adjusted to push down grain onto the platform. (3) Platform canvas runs faster than elevator, straightening the grain before elevating. (4) Seventh roller avoids grain dropping through onto main wheel and helps to prevent clogging. (5) The drop leaves, grain springs and three discharge arms prevent stringing of the grain.

See Page 4 *of New E-B Osborne Catalog.*

3. The shock absorber on the E-B Osborne Binder is a heavy coil spring on the raising and lowering rod behind the worm, which relieves the binder from shocks when passing over stones, furrows or holes in the ground—this is an exclusive feature.

See Page 11 *of New E-B Osborne Catalog.*

4. The main or drive wheel is of the suspension type. It is of all steel construction. The spokes are forced into rim and hub red hot with upset shoulder against under side of rim. As spokes cool, they shrink, thus making the tight spoke or suspension type wheel. The main drive wheel is 35 inches high with 9-inch rim on the 5-ft. and 6-ft. binders, and with 10-inch rim on 7-ft. and 8-ft. binders, and is equipped with high angle steel lugs.

See Page 11 *of New E-B Osborne Catalog.*

5. The threaded thrust plug on the opposite end of the counter shaft from the bevel gear is placed there to be used as a takeup to force the bevel gear into mesh with the bevel pinion when the binder becomes old and worn; when used this gives longer life to the binder.

See Page 13 *of New E-B Osborne Catalog.*

6. Reels on all grain binders will sag at outer end. The E-B Osborne Binder is provided with an eccentric which fits over the reel standard shaft; this eccentric can be turned with a

wrench which raises or lowers the outer end of the reel and when reel has been adjusted, eccentric is fastened in place by small bolt.

See Page 5 *of New E-B Osborne Catalog.*

7. The reel is balanced by a heavy spring at the junction of the reel arm and reel standard which makes the raising and lowering of the reel easy. On the 5-ft. and 6-ft. binders there are three holes in the reel arm for the lever connection which gives three times greater range of the reel set than on any other binder of these sizes. This provision is not on the 7-ft. and 8-ft. binders as it would not conform to the range of the outside reel support.

See Page 4 *of New E-B Osborne Catalog.*

8. The hinged backboard gives an advantage over a stationary board in that it can be set at any angle to prevent the grain from being blown sideways on the platform on windy days at times when the canvas windbreak does not give sufficient aid in this particular. When the backboard is at its highest position the opening at the rear of the platform below the canvas windbreak is practically closed.

See Page 5 *of New E-B Osborne Catalog.*

9. The elevator chain forms nearly a perfect triangle—it drives only two sprockets. It passes over the chain tightener at a convenient point easy to make such adjustments as are necessary. It is well shielded both where it passes over the sprockets and runs clear of the binder deck so it will not catch grain. Wraps all sprockets well, thus engaging more teeth and makes a straight pull on the sprockets doing the most work.

See Page 6 *of New E-B Osborne Catalog.*

10. A self-aligning bearing is one so constructed that it allows the bearing through which the shaft passes to so conform with the line of the shaft that the shaft may run free in the bearing and not wear on one side more than another. The advantage is less friction and less draft, and is an important feature when binder begins to have wear from long usage.

See Page 10 *of New E-B Osborne Catalog.*

11. The elevator chain on the E-B Osborne Binder does not drive the binder attachment and, as it drives the reel and butter through the lower elevator roller and seventh roller from the rear, the greater strain is placed at the driving sprocket on the crank or pitman shaft and reduces the draft.

See Page 7 *of New E-B Osborne Catalog.*

12. The canvas tighteners for the upper and lower elevator rollers are two eccentrics; one on each end of a rod with lever at the front end; by turning the lever downwards the eccentric forces rollers snugly into the canvases—raising the levers allows the canvases to become slack when binder is not in use.

The tightener for the platform canvas is a lever which working on a quadrant with several holes at the rear of the platform, operates a heavy rod having two pinions geared to racks on the inside of the platform. Operating the lever moves the outer roller backwards and forwards giving just the tension on the platform canvas required—this arrangement eliminates the necessity of springs as commonly used and prevents undue tension on canvas straps and insures longer life to platform canvas.

See Page 10 *of New E-B Osborne Catalog.*

13. Reciprocating as applied to the butter on the E-B Osborne Binder means that the butter moves backwards and forwards as well as upwards and downwards on the deck. When it is in operation it moves in a downward and backward direction when forcing the butts of the grain downward, and in its travel upwards it proceeds in a backward movement which removes it from the butts of the grain passing downward over the deck; this prevents the butts of the grain from being either retarded or drawn back upwards on the deck into the grain passing over the seventh roller and allows all movements of the grain when in contact with the butter to be towards the packers, reducing danger of clogging grain on upper binder deck.

See Page 8 *of New E-B Osborne Catalog.*

14. The packers are driven from the pitman shaft through a sprocket chain at the front end of the shaft. This takes the heavy strain off the

elevator drive — puts the drive close to the packers and as direct as possible. The large sprocket on packer shaft is held firmly in position by a yoke and is always in line with sprocket on pitman shaft when shifting binder attachment. The packers and butter operate at the same speed which brings the grain down straight and puts both butts and heads to the knotter at the same time and at the same rate of speed, avoiding shelling of over ripe grain and makes more perfect bundles.

See Page 7 of New E-B Osborne Catalog.

14½. Idler raises and lowers with the platform, not so with other binders.

15. The trip lock on the E-B Osborne Binder is located conveniently on binder head and is slotted so adjustment can be easily made to always hold binder in proper position when binder is old and worn. The lock is held firmly in place with bolt having lock nut and when properly adjusted, will prevent binder from turning backwards.

See Page 8 of New E-B Osborne Catalog.

16. Should the trip stop become worn, the clutch will click and cause trouble. The stop is made longer or shorter by a long set screw at the lower end through which is a cotter key; by removing cotter key this screw can be turned out or in and stop lengthened or shortened to make the clutch work properly.

See Page 8 of New E-B Osborne Catalog.

17. A compression spring near the trip stop is provided by which bundles may be made loose or tight to conform with change of tension.

See Page 8 of New E-B Osborne Catalog.

18. Large or small bundles can be made easily by moving the compressor for this purpose, downwards or upwards. It is located directly in front of the needle and the change is quickly made simply by removing a cotter pin.

See Page 9 of New E-B Osborne Catalog.

19. A weight trip independent of the compressor but working with it, causes the compressor to drop down out of the way of the bundles, and a bundle cannot be locked in the binder. The compressor has a coil spring which acts as a cushion when the bundle is being made which relieves the binder of excessive strain. The compressor feature differs from other binders regarding the spring and weight trip.

See Page 9 of New E-B Osborne Catalog.

20. The binder attachment on the E-B Osborne Binder has a range of adjustment of 17 inches. This means the distance the attachment can be moved forward and backward and this enables the bands to be placed from 7 inches to 2 feet from the butts of the grain. The distance between the butter and the windboard has a range from 17 to 60 inches, and by removing the windboard, grain longer than 60 inches can be bound in a very satisfactory manner. There are times when this large range of adjustment is of great importance.

See Page 8 of New E-B Osborne Catalog.

21. The packers are so timed that they make three compressions while the needle is on its upward movement—or about ⅔ of its movement for bundle—and as the needle enters the breast plate, one packer proceeds it thus compressing the bundle just ahead of the needle, relieving the needle of this strain. This is an exclusive feature on the E-B Osborne Binder, and no difference in draft can be detected when the bundle is being made.

22. The bill hook of the E-B Osborne knotter pulls the end of the twine clear through—ties the knot more firmly—ties the band at the proper tension to keep the bundles in good shape—and the twine holder feeds the twine toward the bill hook while the knot is being tied. This all tends to prevent the possibility of breaking the twine, and makes the knotter the surest tier on any binder.

23. When the E-B Osborne bundle carrier is tripped by the operator, it drops directly downwards then swings backward allowing the bundles to leave the carrier. When returning to its carrying position the carrier first moves in an upward direction, then forward into the position for receiving the bundles. The advantage is in the return movement when the carrier moves upwards out of the stubble before starting forwards. This is especially true when cutting high and a long stubble is left on the field.

Where a Dropper Type of Bundle Carrier is preferred, it can be furnished without extra charge.

See Page 14 *of New E-B Osborne Catalog.*

24. The tongue truck used on the E-B Osborne Binder is so constructed that when the tongue is pointed straight ahead the wheels run straight with the tongue but when the tongue starts to turn either to right or left the wheels turn faster. Should the grain wheel run either ahead or lag behind the main wheel this would cause a movement either right or left of the truck wheels and would automatically guide the binder in towards the grain or away from it even though the pole was being carried straight ahead by the team. This feature causes the binder to run more evenly as to width of cut and a saving of time because a full swath is cut at all times.

See Page 14 *of New E-B Osborne Catalog.*

25. The regular equipment on E-B Osborne Grain Binders is as follows:

5-ft. Binder with Bundle Carrier Only.

6-ft. Binder with Bundle Carrier Only.

7-ft. Binder with Bundle Carrier Only.

8-ft. Binder with Bundle Carrier and Tongue Truck.

Transports are extra equipment on all binders.

Questions on the E-B Osborne Corn Binder

1. How does the position of the tongue on the E-B Osborne Corn Binder differ from others?
2. What about the drive chain? Describe fully its advantages.
3. Is there any reason why mud or trash is less likely to clog on the E-B Osborne Corn Binder?
4. What could you do to make an E-B Osborne Corn Binder conform to cutting large and small stalks of corn equally well? What advantage is this?
5. Describe the wheels on an E-B Osborne Corn Binder.
6. Describe the position of the packers on an E-B Osborne Corn Binder. How many are there?
7. Why two compressor trips on the E-B Osborne Corn Binder?
8. What is the range possible for binding on both short and tall corn?
9. In what position does the E-B Osborne Corn Binder bind the corn? What is the advantage?
10. How would you make tight or loose bundles on the E-B Osborne Corn Binder?
11. Describe the bundle carrier fully.
12. What is the regular equipment for the E-B Osborne Corn Binder?

Answers to Questions on the E-B Osborne Corn Binder.

1. The tongue on the E-B Osborne Corn Binder is placed directly in front of the main drive chain which is outside of the main drive wheel. The operating mechanism thus balances or overcomes side draft in a large degree.

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2. The drive chain on the E-B Osborne Corn Binder is on the outside of the drive wheel.

This tends also to reduce side draft, prevents clogging with leaves and stalks and allows for placing the chain tightener on the radius bar in a convenient place to get at it to adjust when required. The drive chain is longer which allows for wrapping well around all sprockets.

See Page 25 *of New E-B Osborne Catalog.*

3. The driving chains and clutch on the E-B Osborne Corn Binder are well covered with metal shields which prevent trash and mud from falling on them and clogging the binder.

See Page 26 *of New E-B Osborne Catalog.*

4. The side knives on the E-B Osborne Corn Binder are adjustable as to position and can be set closer together or farther apart to conform to size of corn to be cut; if stalks are large they should be set farther apart so if side knives do not cut them entirely off the reciprocating section can complete the work so as not to drag the stalk. In small stalks the side knives can be set close together and the larger portion of the cutting be done by them.

See Page 25 *of New E-B Osborne Catalog.*

5. Both wheels on the E-B Osborne Corn Binder are the same height, 36¾ inches—are of steel construction. The main or drive wheel is of the suspension type. It has a 9-inch face with lugs angling across the rim; this gives good traction and also tends to eliminate side draft.

See Page 26 *of New E-B Osborne Catalog.*

6. The E-B Osborne Corn Binder has three packers—two are located close together at the upper end of the binding mechanism and the third lower down toward the bottom so it will engage the stalks below the ears near the heavy butts, keeping them in shape for being tied.

See Page 27 *of New E-B Osborne Catalog.*

7. *With two compressor trips the E-B Osborne* Corn Binder adjusts itself when in operation to both tall and short corn, a compressor trip

being in readiness for either condition. This makes the action of the binder certain and is of particular importance when being used in a field where corn varies in size.

See Page 27 *of New E-B Osborne Catalog.*

8. The range at which the E-B Osborne Corn Binder may be adjusted for binding in either tall or short corn is from 21 inches to 33 inches above the butts and this practically covers any reuiqrement for binding corn. On the short corn Binder the range is as close to butt of bundle as 12½ inches or as far as 23 inches.

See Page 27 *of New E-B Osborne Catalog.*

9. On a grain binder a butter is used to adjust the butts of the grain to make square even bundles at the butts. This feature is considered essential and is even more so when binding corn. The E-B Osborne Corn Binder binds the corn in an upright position and the constantly forcing of the butts backward on the bottom of the pan against the drop spring door retarder produces much the same results as the butter on a grain binder, and makes bundles with square butts.

See Page 27 *of New E-B Osborne Catalog.*

10. The compressor trips act against a tension which is a coil spring over a rod with thread and hand nut at outer end; by turning this hand nut and compressing or releasing the spring, tight or loose bundles can be made.

See Page 27 *of New E-B Osborne Catalog.*

11. The bundle carrier on the E-B Osborne Corn Binder is of durable construction and is located on the binder so that when it is tripped by operator the weight of the bundles force it to the side on the left of the binder and downward, the bundles leaving it at a point farther to the left of the binder than is done with any other binder with bundle carrier, and practically out of the way of the team on the next round. When the bundles have been discharged the carrier is returned to position, by heavy coil spring, without effort of operator and remains so until tripped by operator with foot on a lever within easy reach from the seat.

12. The regular equipment of the E-B Osborne Corn Binder is with bundle carrier and regular tongue.

Orders should read "E-B Osborne Corn Binder with bundle carrier," however, if bundle carrier is not wanted, be sure to so state in order.

Always state clearly if tongue truck is wanted —also if elevator attachment is wanted in lieu of bundle carrier.

Questions on the E-B Osborne Mower

1. How is the E-B Osborne Mower mounted on its axle bearings?
2. What is the relative position of the crank shaft to the frame? What advantage is this?
3. Describe how the cutter bar is attached to the E-B Osborne Mower.
4. Describe the drag bar.
5. What provision is made on the E-B Osborne Mowers for taking up the sag of the cutter when the cutter bar gets out of alignment with the crank head?
6. What are the common troubles resulting from a cutter bar out of alignment?
7. When would you consider the cutter bar properly aligned?
8. How does the E-B Osborne method for aligning the cutter bar differ from other mowers?
9. Describe fully the construction of the cutter bar on the E-B Osborne Mowers and the reasons why it will do its work clean.
10. What about the tilting lever on the E-B Osborne Mower?
11. What kind of a gear is on the E-B Osborne Mower?
12. How many pawls or dogs and springs in the wheels? Describe them fully.
13. Explain method of replacing bevel gear and bevel pinion on the E-B Osborne Mower.
14. What is the material of the bushing at the rear end of the crank shaft? Of the bushing at the front end of the crank shaft? Of the bushings on the countershaft?
15. Describe the pitman and its connections on the E-B Osborne Mower.
16. How does the No. 2 E-B Osborne Mower compare in size with other mowers? What is the size of the drive wheels, height and width?

17. How does the No. 3 E-B Osborne Mower compare?

18. What are the features of the grass board on the E-B Osborne Mower?

19. Why is the E-B Osborne Mower better adapted for mowing over uneven ground?

20. What provisions are made for oiling?

Answers to Questions on the E-B Osborne Mower

1. The axle bearings on the E-B Osborne Mower are roller bearings with large oil cups so placed as to permit of efficient oiling of these bearings.

   See Page 18 *of New E-B Osborne Catalog.*

2. The crank shaft is so placed in the frame of the E-B Osborne Mower that it is nearly horizontal and at the lowest point possible on the frame. This gives the advantage of placing the crank shaft more nearly on a straight line with the sickle and eliminates wear and friction on the sickle and reduces the liability of breaking sickles and knife heads. It also overcomes to a large degree the tendency of the crank shaft working forward and drawing the bevel pinion out of mesh at the upper end as is the case on mowers on which the front end of the crank shaft is lower.

3. The cutter bar is attached to the E-B Osborne Mower with hinged coupling wide bearings—9½ inches wide. The front side of the hinge has a ball for the socket in hinge coupling. This feature is for the purpose of allowing free action without binding when realigning the cutter bar.

   See Page 20 *of New E-B Osborne Catalog.*

4. The drag bar is firmly attached to the push bar with tie rod which very materially adds to its strength and stiffens it against bending when mower strikes stones or stumps. The hinge bearing of the drag bar is strongly supported by a lug on the push bar, 3¼ inches back of the center of the hinged bearing.

   See Page 22 *of New E-B Osborne Catalog.*

5. Provision is made on the E-B Osborne Mower for keeping the cutter bar in alignment with the crank head, and as very few mowers have an

efficient device for this, it is one of the most important features on the mower.

The hole in the inside shown at the rear is made much larger than the hinge pin, and the bearing in this hole through which the hinge pin passes is an eccentric, and is held in place by a small bolt through the outer rim or flange of this bearing. By removing this bolt and turning the bearing with a wrench the outer end of the cutter bar is moved forward or backwards, and as the connection at the hinge remains practically the same it becomes a pivot on which to swing the cutter bar, the eccentric forcing the outer end of the cutter bar forward in line with the pitman direct from the crank head connection.

See Page 20 *of New E-B Osborne Catalog.*

6. Common results of the cutter bar out of line are—broken sickles, broken knife heads, worn out and hot pitman boxes, loose pitman straps, broken pitmans, hard draft and poor cutting on the part of the mower.

7. If you can place the mower on a hard level piece of ground or a good smooth floor, by using a square and measuring back from the front edge of the cutter bar at inside shoe, several inches from the bar, then along back of the bar at a perfect right angle to the outer end of the bar, then forward same distance as you measured at inside shoe, then by turning eccentric force the outer end of the cutter bar forward until front edge of bar is the same distance as the inside shoe—if the hinge connection has no play and bar cannot sag back when mower is in operation, this would place the cutter bar in perfect alignment. However, as even on a new mower there is some drawback to the bar; the eccentric should be turned until the outside end of the bar is about one inch ahead of the inside end on a 5-foot mower, which allows for the drawback when moving and cutting against the grass. As the mower becomes old the distance at the outer end should be increased slightly. If conditions do not permit of using a square, a fairly good alignment may be obtained by drawing a string straight from the pitman

box at the crank head over the pitman, hinge and bar to the outer end of the shoe.

See Page 20 *of New E-B Osborne Catalog.*

8. This method of alignment on the E-B Osborne Mower differs from others because the action obtained by turning the eccentric is that of lever and fulcrum or pivotal action. On mowers on which this result is attempted by shortening or lengthening the drag bar with pivot at hinge the fulcrum is not perfect and the inner end of the cutter bar receives almost the entire movement and the outer end of the bar retains the same relation to the inner end and is still out of alignment with the crank head.

9. The cutter bar is firmly fastened to inside shoe. The knife head guides are steel and extra long. Wear plates are high carbon steel and extra long. Guards are bolted to bar with nuts underneath, leaving surface on top which eliminates grass hanging to bar as when the nuts are on top. Guards are attached so when running level the sickle has tilting position which assures close cutting. Guards are machined so they fit accurately and with plenty of space under sickle for all dirt and gum to fall out, preventing the possibility of sickle becoming stuck under clips and in guards.

See Page 21 *of New E-B Osborne Catalog.*

10. The tilting lever has eight notches in the quadrant which permits of close adjustment of guards upwards or downwards and rod from lever to hinge bar is adjustable as to length.

See Page 21 *of New E-B Osborne Catalog.*

11. The E-B Osborne Mower has the internal type of gear—this gives opportunity for large gear to wrap the drive pinion well, engaging at all times 2½ teeth of the pinion. This overcomes backlashing and produces a positive drive and steady stroke of pitman and sickle.

See Page 18 *of New E-B Osborne Catalog.*

12. Each drive wheel of the E-B Osborne Mower has three pawls or dogs with springs. The

pawls are held firmly in position by a rivet through the pawl hub or casting on the axles and over which the ratchet on the wheels fit.

See Page 18 *of New E-B Osborne Catalog.*

13. To replace bevel gear or bevel pinion on the E-B Osborne Mower all that is necessary is to drive the countershaft out of driving pinion and draw the shaft through the bevel gear; this allows for removal of the bevel gear and easy access to bevel pinion when either or both need replacing.

See Page 19 *of New E-B Osborne Catalog.*

14. The bushing or bearing at the front end of the crank shaft is bronze and is held securely in place so that it cannot become loose and work backwards on the crank shaft. The bushing at the rear end of crankshaft and those on the countershaft are of iron.

See Page 19 *of New E-B Osborne Catalog.*

15. The pitman on the E-B Osborne Mower is of hickory. The connections at the knife head have extra large spoons to fit over the knife head which are held firmly in place by bolt with ratchet nut with spring, which can be turned either way without removing tension of spring. The connections at the pitman box end are held in position in like manner. The pitman box has brass bushing with dust caps and bulb oiler which retains the oil instead of throwing it out when mower is in operation.

See Page 22 *of New E-B Osborne Catalog.*

16. The No. 2 E-B Osborne Mower compares in size to the regular size McCormick and Deering and the No. 5 Standard. The wheels are 32 inches high with 3¾-inch face and 45 inches width of tread.

The No. 3 E-B Osborne Mower compares in size to the Big 4 McCormick, Giant Deering and No. 50 Standard. The wheels are 32 inches high, have 4-inch face and 50-inch width of tread.

The grass board is equipped with steel shoe its full length and is fastened to outside shoe with bolt over which is a coil spring to prevent breakage when striking stones or stumps.

By construction of the cutter bar hinge the cutter bar on the E-B Osborne Mower will conform to uneven ground better than any other mower—such as cutting the slope of a heavy back furrow when wheel is running on the top of the furrow, or the side of a ditch when the wheel is running on the edge.

This feature is important in irrigated sections where borders are used to control the flow of water over the fields.

Very liberal provision is made for oiling the E-B Osborne Mower, and in most cases the oil hole was located first and the balance of the casting formed last, thus providing for easy and ample oiling of the mower.

Questions on the E-B Osborne Rake

1. Why will the wheels of the E-B Osborne rake run true? Describe the wheel fully.
2. What provision is made to keep the rake head from sagging? On what size rakes does this come?
3. Describe the dump rods on the E-B Osborne rake.
4. What provision is made for operating the rake by either man or boy?
5. Why is the singletree on the E-B Osborne better than others?
6. How does the E-B Osborne rake handle the hay differently from others especially in regard to the hay not roping?
7. What provision is made for having the teeth return to the ground more quickly, or retard them to conform to the travel of the horse or size of windrow wanted?
8. What is the regular equipment of the different sizes of the E-B Osborne rakes?
9. What provision is made for reducing jar and rebound when the teeth return to the ground on the larger sizes of the E-B Osborne rakes?
10. Do the teeth lock down when raking the hay with an E-B Osborne rake?

Answers to Questions on the E-B Osborne Rake

1. The staggered spoke construction of the wheel of the E-B Osborne Rake makes them run true. The spokes are upset under the rim of the wheel which prevents the rim from creeping up the spokes and are protected on the outside of the rim by the channel construction of the rim.

   The wheels are 54 inches high. They are interchangeable, so should the ratchets in the hubs become worn, by changing wheels this reverses the wear on the ratchet and they work like new.

See Page 30 *of New E-B Osborne Catalog.*

2. All 9-ft., 10-ft. and 12-ft. E-B Osborne Rakes have truss rods extending from wheel to wheel and attached to the rake head. Should the head sag at any time this rod may be drawn tight by nuts at either end and the sag in the rake head be taken out. It should always be kept tight to prevent the possibility of the head beginning to sag.

See Page 30 *of New E-B Osborne Catalog.*

3. The dump rods may be said to be—double reversible—or to have four points of ratchet wear. When they have become worn, used in the position when the rake is new, each rod may be turned end for end—this brings a new part on the ratchet—and when this is worn the rods may be interchanged which brings the reverse side of the ends against the ratchet, and when this point has become worn they may again be reversed and the fourth point of wear applied to the ratchet.

See Page 30 *of New E-B Osborne Catalog.*

4. The trip bar has three holes to allow for adjustment of the trip, and this with the provision for setting the seat forward and backward gives a range of adjustment so that either a boy or a man may easily operate the rake.

See Page 30 *of New E-B Osborne Catalog.*

5. The singletree on the E-B Osborne Rake is fastened to the bar by the hooks and pivots on each hook. The rod connecting the hooks prevents them from turning to allow the tug to come unhooked, but provides for sufficient swing to act as a singletree. This arrangement provides for pulling the rake on turning and not pushing it by the shafts as on other rakes.

6. The teeth of the E-B Osborne Rake are curved well under the rake and carry the hay rather than drag it, and this feature together with floating check teeth prevents roping the hay which is so common on other rakes.

See Page 30 *of New E-B Osborne Catalog.*

7. When the operator trips the rake and the dump rods engage in the ratchets in the wheels, they remain engaged until the casting in the center of the rake head comes in contact with the trip which forces the ends of the dump rods out of the ratchets in the wheels. This trip casting can be adjusted so that the dump rods will be thrown out or disengaged more quickly which allows the teeth to return to the ground sooner. With a fast walking horse this would be desirable and if the horse walked slowly the trip could be adjusted to return the teeth more slowly to the ground.

8. 8-ft., 9-ft., 10-ft. and 12-ft. rakes are regularly equipped with $\frac{3}{8}$-inch single coil teeth.

   All rakes with shafts and singletrees.

   Guard teeth—Doubletrees and Neckyoke—Double coil teeth—$\frac{1}{2}$-inch and $\frac{7}{16}$-inch teeth—Mountain wheels and roller bearings, are all extra equipment and must be specified when wanted, and additional price for same added to regular price.

   See Price Book

9. On the 12-ft. E-B Osborne Rake there is a coil spring at each end of the angle frame, extending backwards over a rod which is attached to the rake head. These springs act as shock absorbers and take off jar and rebound when the teeth return to the ground.

10. The teeth of the E-B Osborne Rake do not lock down when they are on the ground raking the hay. It requires but a light resting of the foot on the foot lever to keep the teeth in position, and the trip responds quickly to the pressure of the foot of the operator.


THE
E-B
LINE