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BIG TEAMS ON ILLINOIS FARMS

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Big Teams on Illinois Farms

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Many Illinois farmers have abandoned the four-abreast hitch for gang plows. They now work one team in front of another, using from 4 to 6 horses to the common two-bottom gang plow and keeping all of the horses on unplowed ground. This plan speeds up the work. Sometimes in farm demonstrations two gang plows have been used on the same land, one team working two-and-two and the other four abreast. In every case the horses, when strung out in pairs, have walked straighter, and worked more quietly, with less crowding and worry, and have kept cooler.

In Circular 283, "Hitching Horses to Get the Most Work Done," a loss of about 20 percent of the power in side draft was reported when horses are worked four abreast to a gang plow. The circular gives directions for using pulleys and for making single-bar eveners for big teams. The present discussion gives directions for making the Talkington eveners, which many Illinois farmers are adopting, and for driving any number of horses with one pair of lines. The experience of a number of farmers with big teams is related to show the results one may reasonably expect.

Farmers Like the Tandem Hitches

During the past ten years the College of Agriculture and the farm bureaus have demonstrated and introduced tandem hitches for gang plows on farms in several counties, particularly Tazewell, McLean, Champaign and Douglas. In every case when a man has thoroly tried plowing with four horses in pairs, or with five horses hitched two in front of the other three, he has continued with this arrangement. Consequently there has been a steady increase in such hitches, so that there are now some localities in which one seldom sees horses hitched four abreast to a gang plow.

A. L. Robison, Tazewell county, decided ten years ago that four horses working two-and-two to a gang plow would readily plow an acre a day more than they would when hitched four abreast.

John Hubly, Mason county, tried this strung-out hitch with his four-mule teams in 1926, as shown in Fig. 1. He used a pulley next to the plow for an evener. He says, "Four mules hitched tandem (two-and-two) to a two-bottom gang plow will cover 6 acres per 10-hour day with ease. Hitched abreast they cannot cover more than $4\frac{1}{2}$ or 5 acres because they must be rested, cooled, and quieted. With labor as high as it is, I do not want to have men sitting around resting the mules when they might be turning ground."

Cheap Homemade Eveners Do Very Well

Simple and satisfactory eveners for big teams can be made in a short time by any farmer. Regular farm eveners always are used for the lead teams. The other singletrees and doubletrees also are standard equipment. Ordinary clevises and links connect the parts of the eveners. A common log chain is used to extend forward to the lead team because it is more flexible than a drawbar, is more easily adjusted, and allows snapping the buck ropes in at any convenient link.

Double-Lever or Talkington Evener Is Good

The double-lever evener known in the West as the Talkington hitch is simple, easily made from materials already on the farm, and



FIG. 1.—THESE MULES HAVE PLENTY OF ROOM AND THERE IS NO SIDE DRAFT

The tandem four-mule teams shown above were used successfully by John Hubby, Mason county.

adapted for use with any number of horses. The short ends of the eveners keep a little lower than the long ends. This has two distinct advantages: (1) the two parts of the evener do not rub or bind, and (2) a similar angle of traces is maintained for all of the horses. Fig. 2 shows this evener in use with a four-horse team, and Fig. 7 shows the diagram. The principle on which this hitch operates is easily understood. When Illinois farmers were shown several types of hitches at demonstrations last spring, the majority voted their preference for this type.

Any Farmer Can Make Talkington Eveners

The diagrams in the accompanying figures show, in heavy lines, the special parts that it is necessary to make for the simple Talkington eveners for use with 4 to 12 horses. These eveners should be made

out of 2-by-6-inch, or 2-by-8-inch hardwood. The lengths indicated allow the end holes to be 3 inches from the ends of the eveners. A bolt thru each end of an evenner plank prevents splitting. Use clevises and connecting links of such lengths that the singletrees of the rear horses are all in line.

The five-, six-, and eight-horse eveners, all have a plank 46 inches long with the end holes 40 inches apart. *One piece of plank can be used interchangeably for all three hitches by boring holes for the plow clevis in the three different locations.*

Four Horses Keep Cooler Working in Pairs

The four-horse team and Talkington evenner shown in Fig. 2 and Fig. 7 have the line of draft about right for a single sulky plow or a

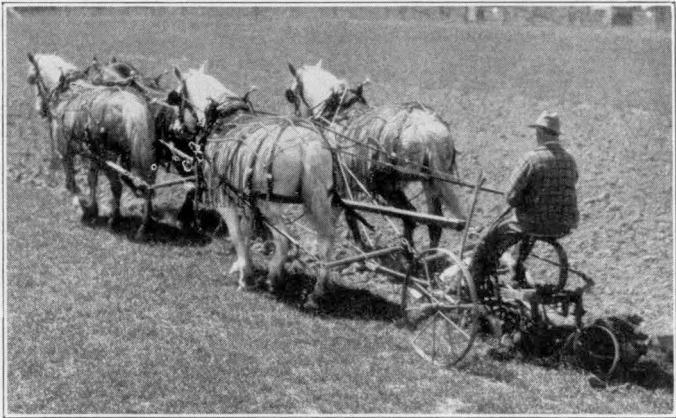


FIG. 2.—FOUR HORSES WITH A TALKINGTON HITCH
ON A SULKY PLOW

The four horses are driven with lines only to the leaders. Buck ropes are used on the rear pair.

two-bottom gang. The horses are spread well apart, wagon double-trees being used for the leaders. They have plenty of air and keep cooler than when crowded together. The team in Fig. 2 is pulling a 16-inch sulky plow in old alfalfa sod. Such an outfit is very good also for plowing under sweet clover in the spring.

Five-Horse Hitch Popular for Gang Plows

The five-horse team has obvious advantages for the common 14-inch two-bottom gang plow in heavy prairie land where the power of the extra horse is needed. The plow clevis is attached very nearly upon the true line of draft, the horses are not crowded, and they seldom need resting. More and more farmers are adopting this hitch.

The single-evener bar, the combination pulley evener and the double-lever Talkington hitch are all giving satisfaction. Most five-horse teams used for plowing in Illinois are arranged with one pair in front



FIG. 3.—FIVE-HORSE TEAM WITH TALKINGTON HITCH

This hitch, driven with one pair of lines, is good for a two-bottom gang plow.



FIG. 4.—SIX-HORSE TEAM WITH TALKINGTON HITCH

This hitch holds the draw chain low at the rear and maintains a similar angle of trace on all of the horses.

of the other three horses, as shown in Fig. 3 and Fig. 7. They usually plow 5 to 6 acres a day.

Six-Horse Team Good for Hot Weather

Six horses to a common gang plow are not too many when the weather is hot and the ground is hard. The six-horse Talkington

hitch shown in Fig. 4 and Fig. 7 is perhaps the most satisfactory simple six-horse hitch. It does have a little pull to one side on the lead team, but this is comparatively slight because of the considerable distance from their collars to the rear end of their draft chain. The front cover gives another view of the same six-horse team.

L. H. Raffety, Greene county, who uses this six-horse hitch for his plowing commends it for convenience and efficiency. He attaches a harrow to the plow. Ray Strauss, Winnebago county, used this



FIG. 5.—EIGHT HORSES PULLING A THREE-BOTTOM PLOW
AT THE UNIVERSITY

Eight horses can walk right along with a plow having three 14-inch bottoms and will plow 8 acres a day in mild weather. The lower picture shows the arrangement of the Talkington eveners. For dimensions of the extra parts, see Fig. 7.

hitch to a common gang plow in a field adjoining the Burritt picnic grounds last summer. He used buck ropes and drove the six horses with one pair of lines. Thousands of the farmers present studied and praised his outfit.

Many farmers have been working two horses in front of the other four, but that arrangement keeps the plow clevis too far from the fur-

row, allowing considerable loss of power in side draft. It also keeps the rear horses crowded together too closely. Six horses abreast are worked to disks and harrows by more and more Illinois farmers each year. That is an efficient arrangement for such work.

Eight Horses Handle a Three-Bottom Plow

When using horses to a three-bottom tractor plow, it is desirable to have a truck behind the team to guide the plow when it is out of the ground and to furnish an elevated seat for the driver, as shown in Fig. 5. The tongue is set 3 feet from the edge of the furrow so as to make

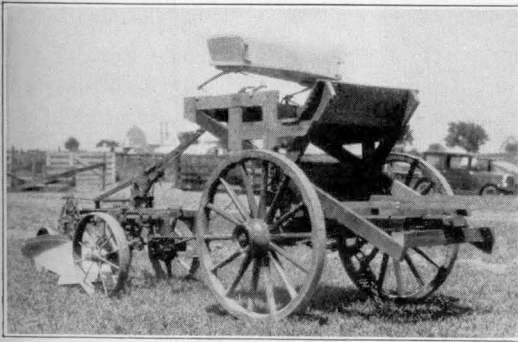


FIG. 6.—THE HIND GEARS OF A WAGON MAKE A GOOD PLOW TRUCK

This arrangement furnishes an elevated seat for the driver and also guides the plow when it is out of the ground.

room for one horse to walk between the tongue and the furrow, while the outside horse and one wheel of the truck are in the furrow. The eveners are attached to a chain extending under the truck axle to the drawbar of the plow. The drawbar is chained loosely by a V-chain to the axle for guiding purposes only. It must not be held up above a straight line. The truck is pulled by another V-chain extending from the axle to the evener clevis. The arrangement of eveners for the eight-horse hitch and dimensions for the extra parts are shown in Fig. 7, page 8.

C. P. Griffiths, Hancock county, found that flies, heat, sweet-clover roots, and dry, hard, gumbo ground were no obstacles to his plowing in early September with eight horses and a tractor plow. He made his truck, his eveners, and his buck ropes according to information mailed to him from the University, spending only \$2.50 upon new materials.

There are three-bottom plows which are made to use with horses, and they do satisfactory work. In a demonstration last year at the farm of Ted Reeder, Douglas county, the visiting farmers saw a three-bottom horse plow drawn by eight horses turning 8 acres a day. This outfit has been used for the past seven years. The horses required very little control from the driver, but walked along steadily in correct positions. Mr. Reeder farms 250 acres, his brother Ralph farms 280 acres, and their father farms 420 acres. They are all "strong" for horses which turn farm-grown grain and cheap forage into power.

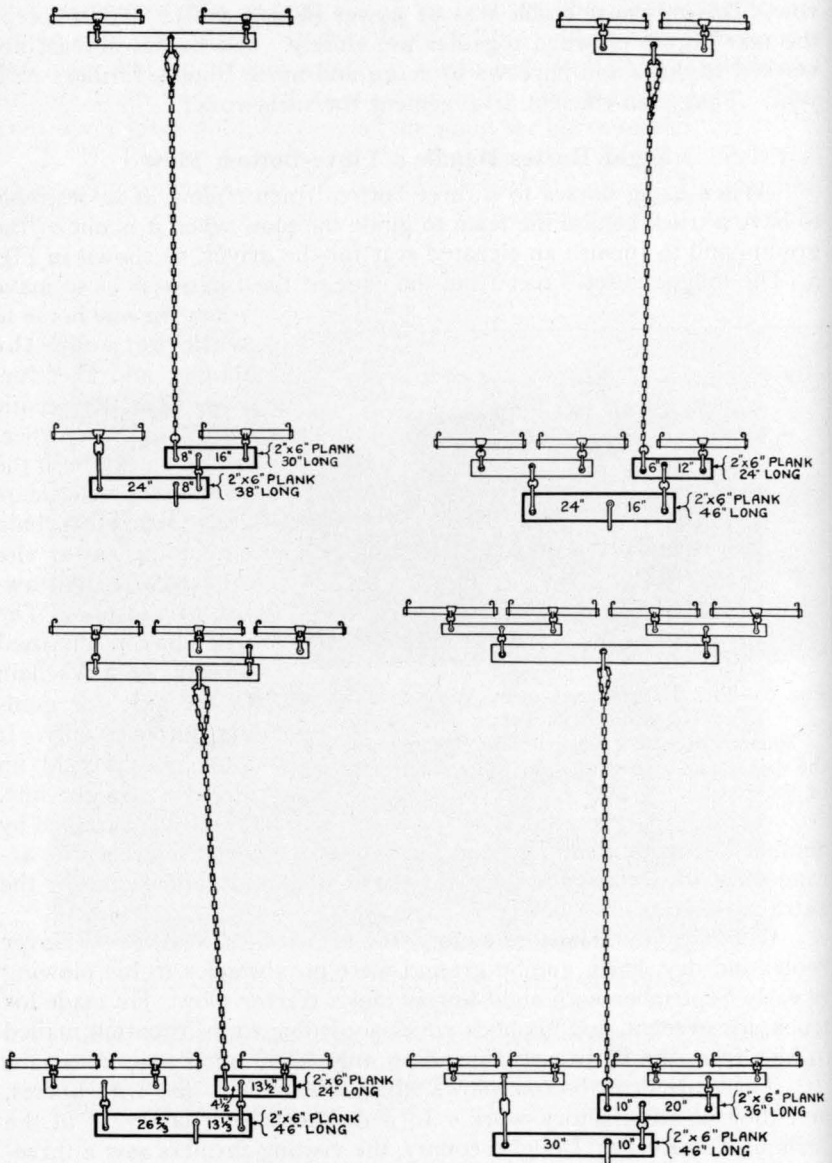


FIG. 7.—FEW EXTRA PARTS ARE NEEDED FOR THESE BIG TEAM HITCHES

In the above arrangements of Talkington eveners for four, five, six, and eight horses, the special parts of each hitch are shown in heavy lines. The four-, five-, and six-horse hitches are good for a two-bottom gang, while the eight-horse team can be used for a three-bottom plow, a tandem disk, or other large implement. The five-horse evener can be changed to the six-horse evener by boring additional middle holes. The end holes are the same.

Eight-Horse Teams Speed Up the Work

W. S. Corsa, Greene county, used two eight-horse teams with the Talkington type of eveners last spring. During oat seeding each outfit handled a tandem disk. The extra speed enabled him to put in his oats crop during the first few days of suitable weather. Then it rained, and rained, and there was a delay of several weeks before any more oats could be sown.

Chris S. Gerber, Livingston county, used an eight-horse team with the Talkington hitch in putting in oats. He used two 9-foot disks side by side, cutting a swath 18 feet wide and stirring 4 acres an hour. Then the eight-horse team pulled a harrow 36 feet wide and covered 10 acres an hour.

Colonel George G. Seaman, Christian county, pulled his combine harvester-thresher last summer with an eight-horse team, using the Talkington hitch and four horses in front of the other four.



FIG. 8.—EIGHT-MULE TEAM OF AMOS ANDERSON, LA SALLE COUNTY

Amos Anderson, La Salle county, works an eight-mule team with a long four-horse evener next to the plow with a pulley attached to each end. Four mules are equalized, two against two, over each pulley. Thus two draw chains are used but there is no heavy four-horse evener between the front four mules and the rear four (Fig. 8). Wm. Freitag, Tazewell county, uses a similar evener for eight horses. Mr. Freitag hitches them directly to a three-bottom tractor plow, without any tongue or truck for guiding purposes.

Twelve Horses Handle a Four-Bottom Plow

A farmer who has as many as 12 horses can cut costs by working them all in one team. This is the conclusion of Chris Gerber, Livingston county, who farms a half-section of land with 14 horses. His

outfit is shown in Fig. 9. He uses the Talkington type of hitch and drives with one pair of lines on the leaders. The other horses are tied in and bucked back. The extra parts for the 12-horse evener are shown in Fig. 10.

He has a four-bottom tractor plow and uses the hind gears of a wagon for a truck to guide it. The tongue is bolted to the coupling pole, and is mid-way between the wheels. With the four-bottom plow this keeps both truck wheels up on the land all of the time. With a



FIG. 9.—TWELVE-HORSE TEAM OF CHRIS GERBER,
LIVINGSTON COUNTY

This team handled a four-bottom tractor plow and harrow, turning and harrowing 12 acres a day in the spring.

harrow attached to the plow, Mr. Gerber usually plowed and harrowed about 12 acres a day in the spring. He carried a pail of pebbles with which to touch up the leaders if they got slow, but he seldom had to throw at them.

Big Teams Driven with One Pair of Lines

Most of the big teams which have been mentioned were driven last year with one pair of lines only on the leaders. Each horse behind these was tied in and bucked back to keep it in position. This is the system which has long been used in the far West with much larger teams. It was introduced into Illinois by Wayne Dinsmore, Secretary of the Horse Association of America.

Most drivers can control the team more easily by this method

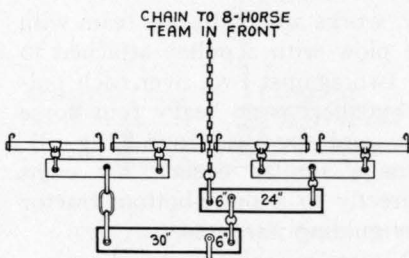


FIG. 10.—EXTRA PARTS FOR THE
TWELVE-HORSE HITCH

This arrangement of parts added behind the eight-horse outfit shown in Fig. 7 completes the twelve-horse hitch.

than by using more lines. Ralph Reeder, of Douglas county, had a small boy driving a six-horse team, hitched three-and-three. He used two pairs of lines and had considerable difficulty managing the outfit around the corners. Then the lines on the rear team were replaced by the tie chains and buck ropes. After that the rear team, which included one big, nervy, touchy, western horse, kept in the right position all of the time even around the corners. With only one pair of lines to handle, the boy drove with ease and with greater safety.

Use Buck Ropes on All but the Leaders

The lead team is driven with one pair of lines, just as farmers commonly drive one team of two, three, or four horses abreast. Each of these lines goes back between the other horses, and is held up by a short spreader strap snapped into the side of a bridle.

Each horse, except the leaders, wears a buck rope, as shown in Fig. 11. This is made of heavy cotton sash cord. Two pieces of this

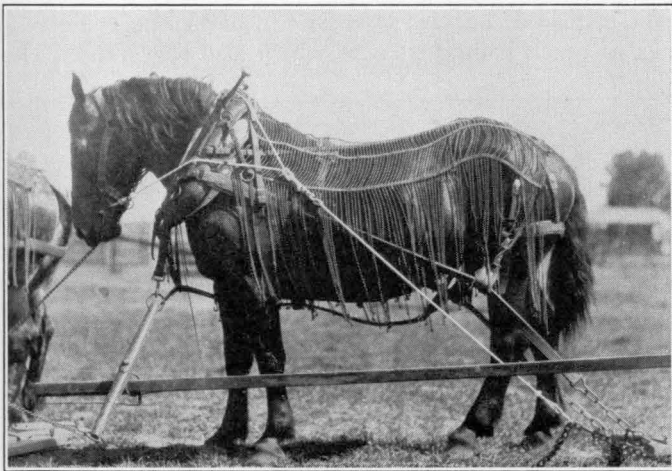


FIG. 11.—BUCK ROPE AND TIE CHAIN IN POSITION

In the big team hitches each horse except the leaders wears a buck rope and tie chain as shown above.

rope, each cut $7\frac{1}{2}$ to 8 feet long, depending upon the height of the horse, are needed to make one buck rope. One of these pieces has a bolt snap spliced into each end. These snap into the opposite bit rings of the horse. The other rope has one end made into an adjustable loop. A big bolt snap is fastened into the other end. This snap has a half-inch opening so as to snap it into the draw chain or into the trace chain of an adjoining horse. Before the rope is put on, the two parts are looped together as shown.

The horses next to the draw chain have their buck ropes snapped into it at such a point as to keep them from getting too far ahead. Each outside horse has the buck rope snapped into the trace chain of the horse adjoining. It is obvious that the leaders must start ahead before any of the other horses can start, and that when the leaders stop all the others must stop.

Each horse which wears a buck rope is led by a tie chain $4\frac{1}{2}$ feet long with a snap in each end. One end is snapped into the halter ring and the other end is snapped into a trace chain of a horse diagonally in front. This chain should be slack enough so that it is not tight when the buck rope is tight.

All of the teams shown in this circular are driven with buck ropes, excepting John Hubly's mules. Last year when the photograph for Fig. 1 was taken he used four lines on each four-mule team; now he uses two lines and two buck ropes.

Short Cuts Save Time in Harnessing

Snaps instead of buckles save time in harnessing. There are several types of quick hame-fasteners which also save time. The halter

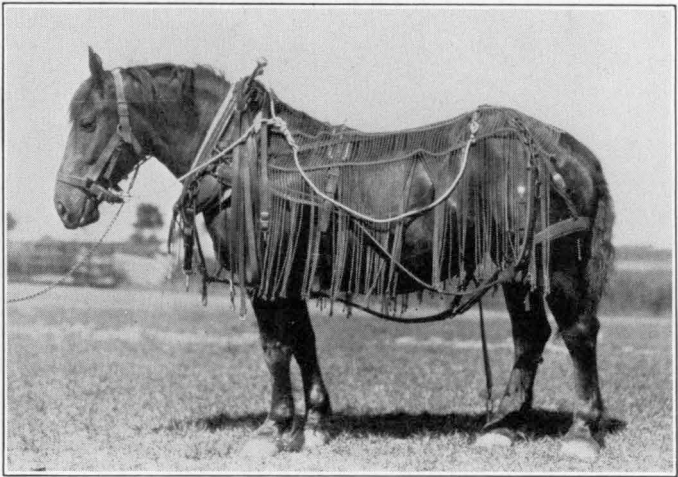


FIG. 12.—THE TIME-SAVING HALTER BIT IN USE

The bit ring on each side is fastened to the halter by means of a strap.

bit (Fig. 12) saves more time than any other one item, and it saves the wear on bridles. The bit ring is snapped directly to the lower halter ring on one side with a double snap. On the other side there is a short strap from the bit ring to a snap which snaps into the upper halter ring. If the halter is long this strap may be put inside the halter nose

piece, as in the illustration, to prevent chafing the corner of the mouth. At noon the bit is unsnapped on the left side, dropped from the mouth and snapped up again with the bit behind the chin.

There is little time for currying when one man works a large number of horses. The important thing is to keep the shoulders and neck and the collar clean. Chris Gerber, Livingston county, turns his 12 horses out at night into a small grass lot, where they roll. He did very little currying last spring and his horses were in good condition on June 6 when the photograph in Fig. 9 was taken. John Hubly, Mason county, clips his mules about April 10 each year. This beats pulling the winter coat off with a currycomb.

A Big Team Is Quickly Hitched

Four years ago Amos Anderson, La Salle county, began working an eight-mule team to a three-bottom tractor plow which he adapted to team use. On the day of a demonstration at his farm last spring the mules were still in the barn when he left the dinner table at one o'clock. Without aid from anyone he watered the mules and hitched up and was plowing at 1:25 o'clock in a field 120 rods from the barn. He did not know that he was being timed. He uses halter bits, which save much time.

Chris Gerber, Livingston county, states that he has no difficulty in harnessing and hitching an eight- or twelve-horse team alone and starting work in the field at about the same time work starts with smaller units in neighboring fields. He uses halter bits and also snaps instead of buckles on part of his horses.

In going to and from the field, each of these men drives the lead four and leads the second four. Mr. Gerber's third four is snapped behind the second four. They drive the lead four into position and hook their traces, at the same time snapping the lead chains of the second four into the right positions. Then the second four are hitched up, and so on. Unhitching is done in the reverse order.

Put Best Horses in Lead

The fastest stepping horses, which require the least urging, should be put in the lead team. These should also be steady and dependable, and not runaways. If the lead team includes more than two horses, the fastest walking pair should be on the outside. Horses which are inclined to lag a little usually will keep up better when hitched between free-stepping mates. The best place for colts and outlaws is on the outside in the rear team. The best place for a lazy horse is in the middle of the rear team.

Big Hitches Are Easy on Horses

It is easier on a horse to keep going with a reasonable load for 10 hours a day than to pull very hard part of the time and rest part of

the time, as happens when the team is overloaded. Farmers report that when using plenty of horses they get more work done for each horse and keep the shoulders in better shape. The 12-horse team of Chris Gerber, Livingston county, had only one horse with a sore shoulder last year in June, and that horse had the sore when he bought it a few weeks before. In the spring of 1926 Fred Rising, Champaign county, plowed 400 acres and did the usual other spring work on an 800-acre farm with 26 horses and mules, working in units of five to eight head, and they had no sore shoulders.

Horses seem to like working in a big team. They keep in their places surprisingly well. Slow horses do better when following others. These facts which farmers have observed correspond with the well-known instinct of horses and mules to stick to their herd and to follow the leader.

Big Team a Good Place to Train Colts

Colts learn quickly to do the usual work in a big team. Chris Gerber's 12-horse team included 1 two-year-old, 2 three-year-olds, 1 four-year-old and 8 seasoned horses. Fred Rising's 26 head, working in four teams, included 9 green colts.

On May 31, 1927, Colonel George Seaman, Christian county, who has had a long experience in the artillery of the regular army wrote, "We have been very successful with our eight-horse hitch drawing a three-bottom tractor plow in rather heavy ground with the plows set down a good 7 inches. Of the eight horses in the team the first day we used them, five were westerns, one of which had been hitched but twice and another had been hitched but three times. The second day we put in another western that had been hitched but once before, and we find that these big hitches are an ideal place to teach a horse to pull and to behave himself."

At the Augusta, Illinois, community fair last fall Jesse Moore hitched six mares from two farms to a road drag and drove them three-and-three with buck ropes and one pair of lines, leading the night horse-show parade. One was a filly which was harnessed for the first time that day, but the outfit was under perfect control in spite of search lights flashing and the band playing.

Keep Horses Going Ahead in Fly Time

In fly time a horse is bound to pick up his feet and stamp. If the load is too heavy and the horse must be rested, he just marks time—and perhaps gets over a trace. When he stamps his foot while working he must set it down one step ahead and he makes progress with the work. That is the secret of successful work with a big team in fly time. Hitch in enough horses so that they can keep going ahead and not just marking time.

Each Horse Plows About an Acre a Day

When the heat is not excessive, nor the ground very hard and dry, each horse in a big team plows about an acre a day, sometimes more. The advantage of the extra horses has been evident in field demonstrations when a two-bottom gang plow has been pulled successively by four abreast, then two-and-two, two-and-three, and three-and-three. With each change, and with each additional horse, the outfit has moved along at a perceptibly faster gait. There is evident economy in putting on enough horses so that they can keep going. In August a few years ago a farmer in Iroquois county was plowing dry, hard, heavy, gumbo land with eight mules to a two-bottom gang. They could keep going steadily with it and at least did the plowing cheaper than two men with two plows could do it under the same conditions.

More Team Work Means Less Pasture Play

The principal factor in cheapening the cost of horse labor is keeping the horses busy every day at the necessary farm work. One man with a big hitch can work at one time all the horses which are kept on the average farm. In the past many an Illinois farmer has worked only four horses to a plow or other tillage implement and has rested the team much of the time, while right across the fence perhaps, in his own pasture, several of his other horses have rested all of the time. "More horses to the plow and fewer in the pasture," would be a good slogan. If the implement pulls so hard that the horses must be rested several times a day, it usually pays well to add more horses to the team. Then if there are two men on the farm, and one man works all the horses, the other man can do other work. Chris Gerber, Livingston county, had a hired man last spring, but while Mr. Gerber worked the 12-horse team the man fixed fences, made garden, and did chores. Mr. Gerber got his spring work done as early as most of his neighbors, and he did not put in any excessively long days. "I'm no tougher than a horse, and when the horses need a rest at night, I do too," he explained.

Last year Amos Anderson, La Salle county, single-handed, with six mules and two horses, disked, plowed, harrowed and seeded or planted 125 acres of small grain and corn, and fed a lot of cattle and hogs.

In 1926 Fred Rising, Champaign county, had four men working his teams, totaling 26 horses and mules, on 800 acres of prairie land. In the spring they plowed 400 acres for corn using one eight-horse team to a plow with three 14-inch bottoms, seven horses to a plow with three 12-inch bottoms, and a six- and a five-horse team, each to a two-bottom gang plow. The outfits included 9 green colts, 9 mares with young foals and only 8 hardened horses. All the field work on

this farm, averaging over 30 acres to the horse, was done with these horses and mules.

Six Horses Can Farm a Quarter-Section

The prairie counties of Illinois average about six work horses or mules to a quarter-section farm. One man working them all in a six-horse team can do all of the plowing, disking, and harrowing on such a farm. The use of these big teams fits into the present-day effort of many Illinois farmers to make the quarter-section a one-man farm.

Heavy implements and 18-inch plows were used last year in combating the European corn borer. When the borer invades Illinois, the farmer who combines his horses into big teams will have the necessary field power for complete and clean plowing under, to a depth of 6 inches, of all infested crop refuse and weeds, which is recommended as the best method now known for preventing serious corn-borer losses.



FIG. 13.—THE SIX-HORSE HITCH HELPS TO MAKE THE QUARTER-SECTION A ONE-MAN FARM