

power diggers and drivers make Fence Post Setting Easier

By W. J. Promersberger and E. W. French

IN keeping pace with progress made in recent years to improve the quality and increase the service life of fencing materials, advancement has been made on mechanical means of setting fence posts. The new developments are the power posthole diggers and power post drivers.

The power post driver has mechanized the difficult, time-consuming job of setting wood posts in fence construction and repair work. Although soil moisture conditions may not always be favorable for post driving, by using the driver under favorable conditions the number of posts set per hour was nearly double the number set by using the power digger and hand tamping method. Where soil conditions are favorable, two men should be able to set 25 to 30 posts per hour in new fence construction, with the aid of a power post driver.

The power post driver is a specialized piece of equipment. Large farms and ranches can justify owning one, but for small farms cooperative ownership or rental of a custom machine may be more practical.

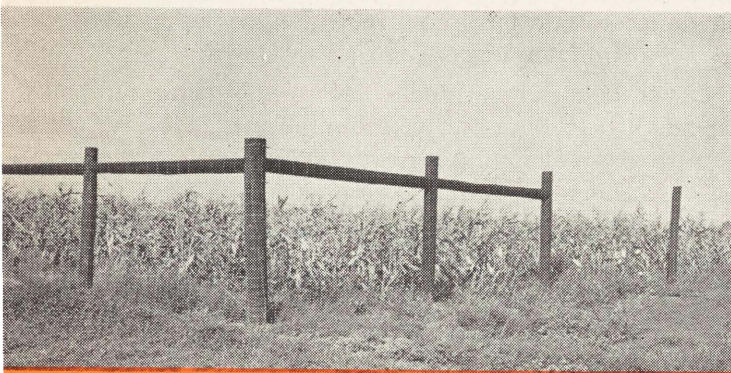
Power digging of post holes saves much hard work and reduces the cost of making holes, but does not eliminate the time-consuming job of hand tamping the posts. Studies in other areas indicate one man with hand tools can set four posts per hour while one man with a power digger and hand tamping can set six posts per hour.

The power post driver completely mechanizes the setting of posts. The drivers are small tractor or trailer mounted pile drivers. The driving is accomplished by dropping a heavy weight on top of the post. Wood posts 3 to 9 inches in diameter and 6 to 8 feet in length can be driven into almost any soil in which a power digger can be used, and they are set firmly in the soil. A 2-man crew can do the post setting job when the posts have been previously

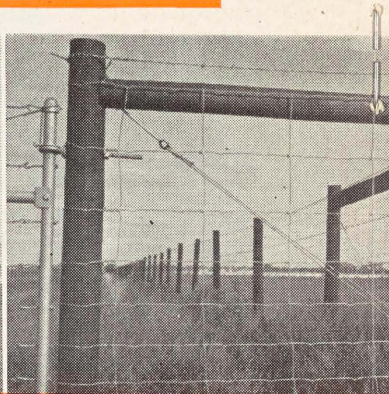
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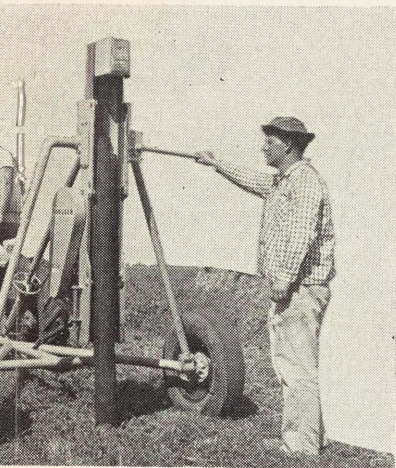


Typical Corner Construction.

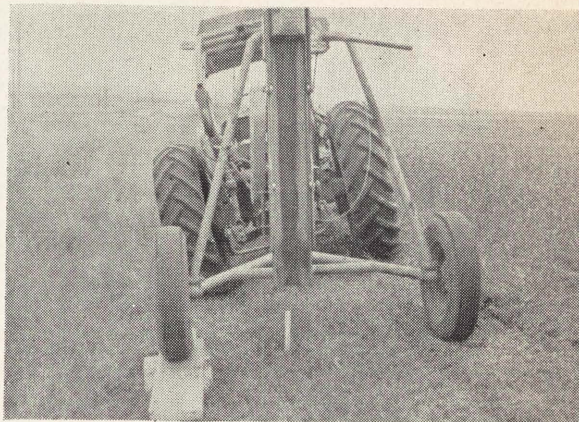


Cross fence joint

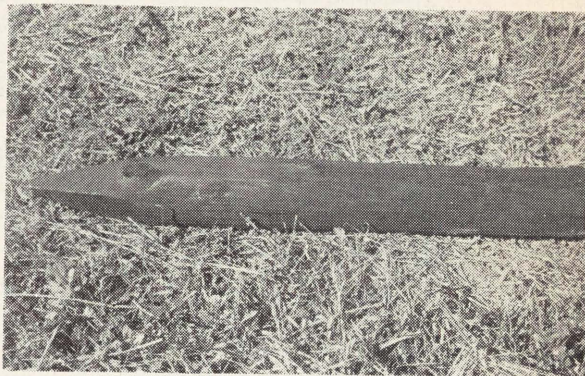
Setting Fence Posts by Power



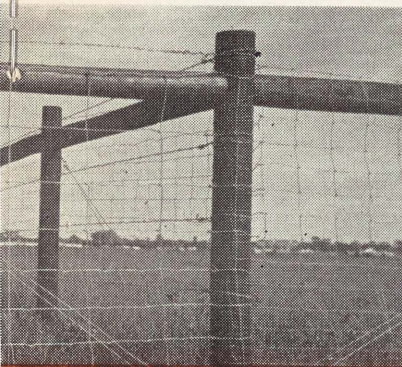
With a trailer mounted post driver you can set twice as many posts as you can with a power digger.



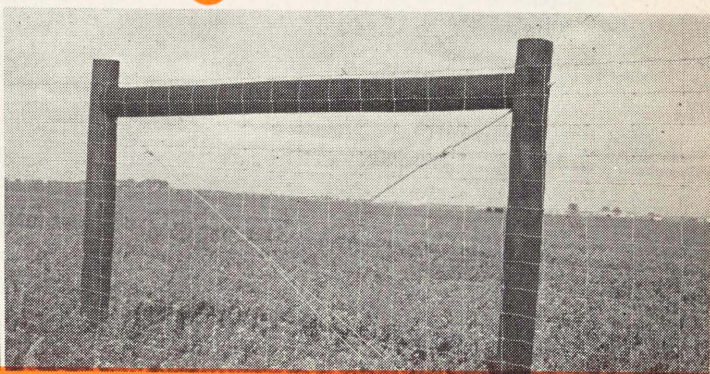
Driving posts on slopes presents a problem in lining up the driving head over the fence line.



Factory pointed posts make driving easier.



joint with main line fence.



Line braces at 30 rod intervals permit repair without disturbing entire line.

TABLE I.—Labor Requirements for the Power Digging—Hand Tamping Method.

	Man Hours per 100 4-inch Wood Posts Set 33 Inches Deep ¹			Average
	Line 1	Line 2	Line 3	
Power digging post holes.....	4.5	4.3	4.5	4.4
Tamping posts.....	15.8	14.3	15.8	15.3
Total man hours per 100 posts....	20.3	18.6	20.3	19.7

¹Does not include time required to distribute posts along fence line.

distributed. A 3-man crew is desirable when the posts are distributed at the time of setting them.

Most of the fences on the college farm have been rebuilt since 1954. This provided an opportunity to obtain comparative data on labor requirements for setting line posts using the two types of power fencing machinery. Six fence lines were constructed on the college farm. Each fence line consists of about 80 pressure treated pine posts having a minimum diameter of 4 inches and a length of 8 feet. The driven posts were factory pointed on the large end to facilitate driving. The posts are 14 feet apart in the line and were driven to a depth of 33 inches.

The posts in three of the fence lines were set by using the power post hole digger and the hand tamping method. Posts in the other three fence lines were power driven.

The fence lines were constructed during the summer of 1954 when the soil was unusually dry. The dry Fargo clay soil made it difficult and in some

cases practically impossible to drive posts with the power driver. To overcome this difficulty, a 4-inch diameter auger was used for digging holes before driving the posts. This auger made a snug fitting hole when the posts were driven. No tamping was necessary. The dry soil conditions increased the labor required to drive posts. This is brought out in table II, which shows that 4.5 man hours per 100 posts were required to dig the 4-inch holes preliminary to driving posts.

It was necessary to straighten some posts that were driven. A few posts were actually removed and reset by hand.

This dry soil condition is not a normal thing, but is reported here along with a feasible solution for it, because it may be encountered in other areas.

Note in table II that, although it was necessary to use the small digger before driving posts in dry soil, the total man hours required to set a line of 100 posts was less than the man hours required for the number of posts when the power digger-hand tamping method was

TABLE II.—Labor Requirements for the Power Driving Method—Wood and Steel Posts.

	Man Hours per 100 Posts ¹			
	4-inch Wood Posts—33 in. Deep		Steel Posts 24 in. Deep	
	Dry Clay Soil (Fargo)	Normal Clay Soil (Fargo)	At Fargo	At Williston
Power digging 4-inch holes . . .	4.5
Driving posts	5.3	11.2	3.3	3.3
Straightening posts	3.9
Total man hours per 100 posts	13.7	11.2	3.3	3.3

¹Does not include time required to distribute posts along fence line.

used, table I. The time required to dig 4-inch holes, drive posts, and straighten them is only slightly more than the time required to drive them during a normal year in heavy clay soil.

An additional fence line was constructed during the summer of 1957 when the soil moisture content was more nearly normal. None of the post driving difficulties experienced in the dry soil conditions was encountered. Posts were readily driven and were set firm and straight. A 2-man crew set an average of 18 posts per hour or 9 posts per man hour. The line brace posts and posts in the corner sections also were driven satisfactorily.

The power post driver was used to set steel posts on the college farm in Fargo and on the Branch Experiment Station

at Williston³. Data from both locations show that a 2-man crew can drive about 30 posts per hour.

The power driver works best where the land is fairly level or where the slope is uniform and not too steep. The driver has manual adjustments to compensate for a small amount of slope in the soil surface so that the driving head can be adjusted to a vertical position with the post. When working across a slope of approximately 4:1, such as a road ditch back slope which frequently extends on to the farmer's land, difficulty was encountered at Williston in getting the driving head positioned over the post. Considerable time thus was lost at each setting and in making the adjustments. Figure 3 illustrates this problem.

TABLE III.—Summary of Post Setting Data.

Method	Kind of Post	Depth Inches	Posts Set per Hour by 2-Man Crew
Power digging and hand tamping . . .	4-inch wood	33	10
Power driving			
Dry soil —digging, driving, straightening	4-inch wood	33	14
Normal soil —driving only	4-inch wood	33	18
Power driving	Steel	24	30

³Howard M. Olson, superintendent, Agricultural Experiment Station, Williston, assisted in obtaining data at Williston.