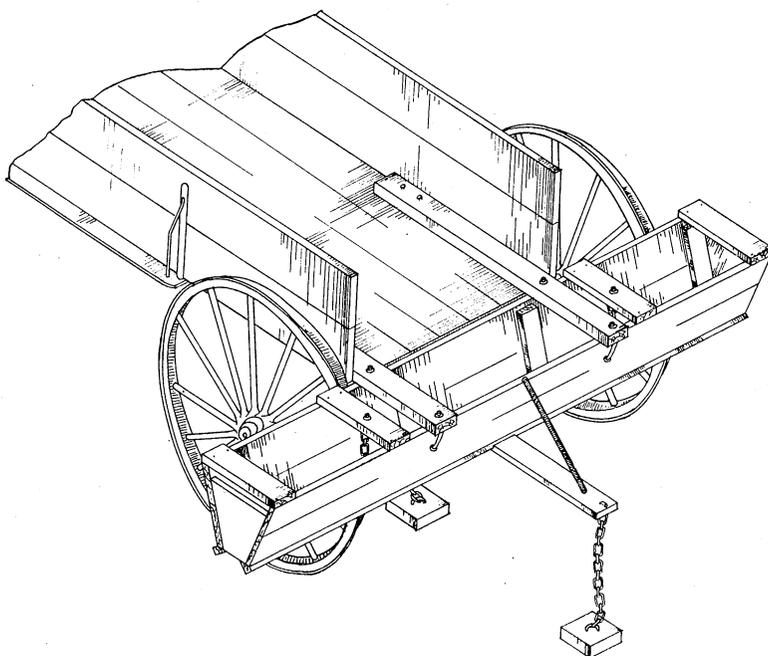


# Wagon-Type Fertilizer Spreader

By

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# Wagon-Type Fertilizer Spreader

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**T**HE homemade fertilizer spreader described in this leaflet is being offered in response to numerous requests for a simple and inexpensive distributor for lime, phosphate, and basic slag. No originality is claimed for the design since it is an adaptation of similar spreaders already in general use. Several changes have been made to eliminate difficulties experienced with spreaders of this type. The spreader is to be attached to the rear of a wagon. Its construction is simple enough to be done with the help of only a few carpenter tools. Where possible, steel parts have been eliminated in order to simplify the construction and to avoid material shortages. This spreader has proved highly satisfactory in its performance and labor-saving qualities.

The principle of operation consists of agitating the fertilizer material in the hopper box by producing a rocking motion of the agitator plank. This rocking motion causes the fertilizer to drop in a thin stream from the edges of the V-shaped agitator at the bottom of the spreader box. The agitator is made by nailing a 2" x 4" and a 2" x 6" board together. This construction is preferable to using a single 4" x 4" member because it has less tendency to warp. The agitator plank and, in turn, the agitator are caused to vibrate by two rocks or small concrete blocks suspended from the plank by old trace chains. These weights are allowed to slide and tumble on the ground. This method of agitation is usually sufficient on firm land and established pastures.

Where the ground is soft or covered with heavy vegetation, an alternate type of knocker should be used. A 2" x 4" wooden frame, as shown, is attached to the side boards of the wagon box and a knocker arm is bolted to the cross member of this frame. One end of the knocker arm engages in the spokes of the rear wheel as indicated. The arm is held in contact with the spokes by a screen door spring which is looped over the knocker arm and fastened at both ends to the agitator plank. This

knocker arrangement is to be preferred over the conventional diagonal type of knocker arm because it eliminates the troublesome side thrust experienced with the diagonal type. It is advisable to tack pieces of sheet metal around the spokes to reduce wear at the points where the knocker arm touches the spokes. The length of the knocker arm will vary with different wagons. Therefore, to provide adjustment for length, several holes should be bored through the cross member of the 2" x 4" frame.

The spreader box is attached to the wagon with two 2" x 4"s which are nailed to the wagon bed. This method of attaching the box permits the top of the box to be level with the wagon bed and makes filling of the box easier. The 2" x 4"s are fastened to the box by means of the side bolts shown in detail on the drawing. Nailing the 2" x 4"s to the wagon bed provides a more rigid attachment than if the box were suspended from the end gate by means of metal strap hangers.

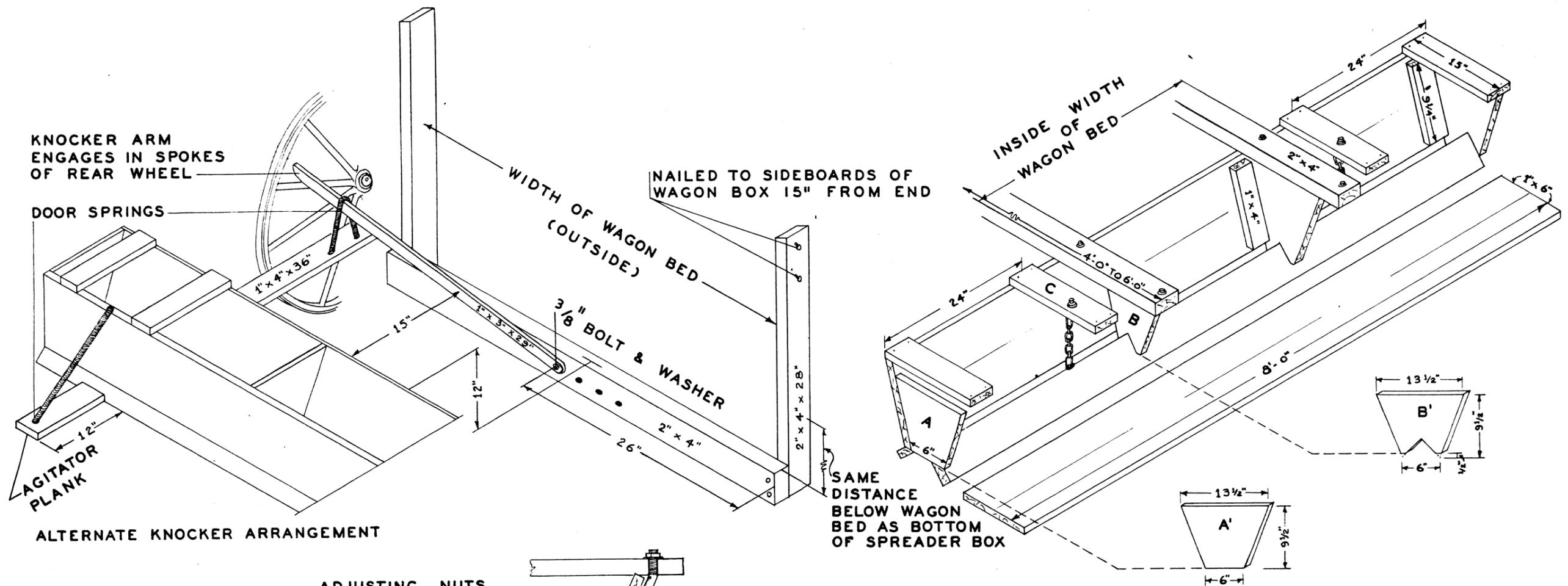
The amount of fertilizer applied with this spreader is controlled by adjusting the agitator as shown on the drawing. The agitator is suspended from the board "C" on top of the box by means of the adjusting bolt and chain. Loosening or tightening of the bolt opens or closes the space between the agitator and the bottom edge of the spreader box and thereby increases or decreases the flow of material from the box.

To determine the amount of fertilizer applied per acre, a trial run should be made. The spreader is eight feet wide so that in traveling one mile, approximately one acre would be covered. At this rate, one-half mile would cover one-half acre, and one-eighth mile, one-eighth acre. The minimum rate per acre which can be applied with this distributor is between 500 and 600 pounds.

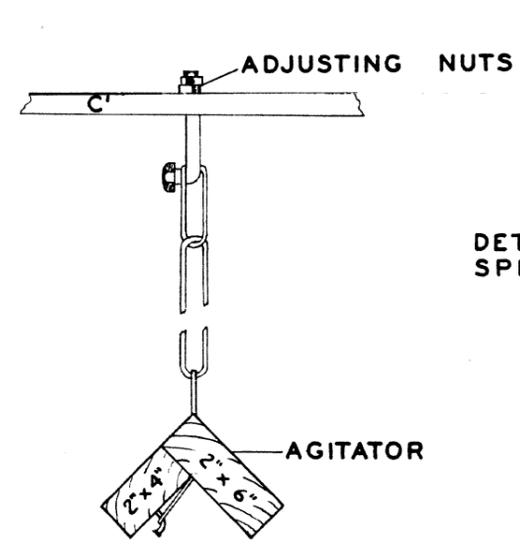
If, for example, 250 pounds of lime are distributed in traveling one-eighth mile or 660 feet, the rate of application would be  $8 \times 250$ , or one ton per acre.

In order to prevent wind from blowing the fertilizer, a simple cloth curtain may be attached around the box and allowed to hang within a few inches of the ground. The ends of the curtain should be weighted with poles or rods.

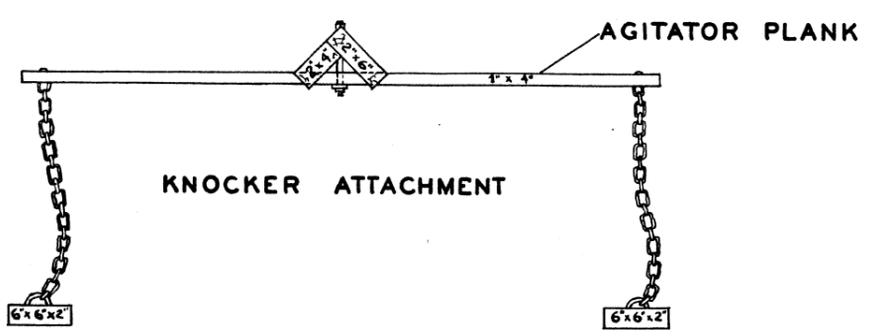




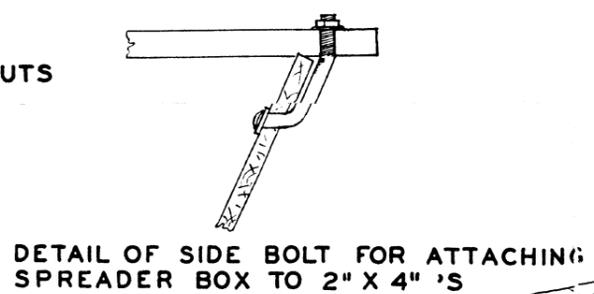
SPREADER BOX ASSEMBLY



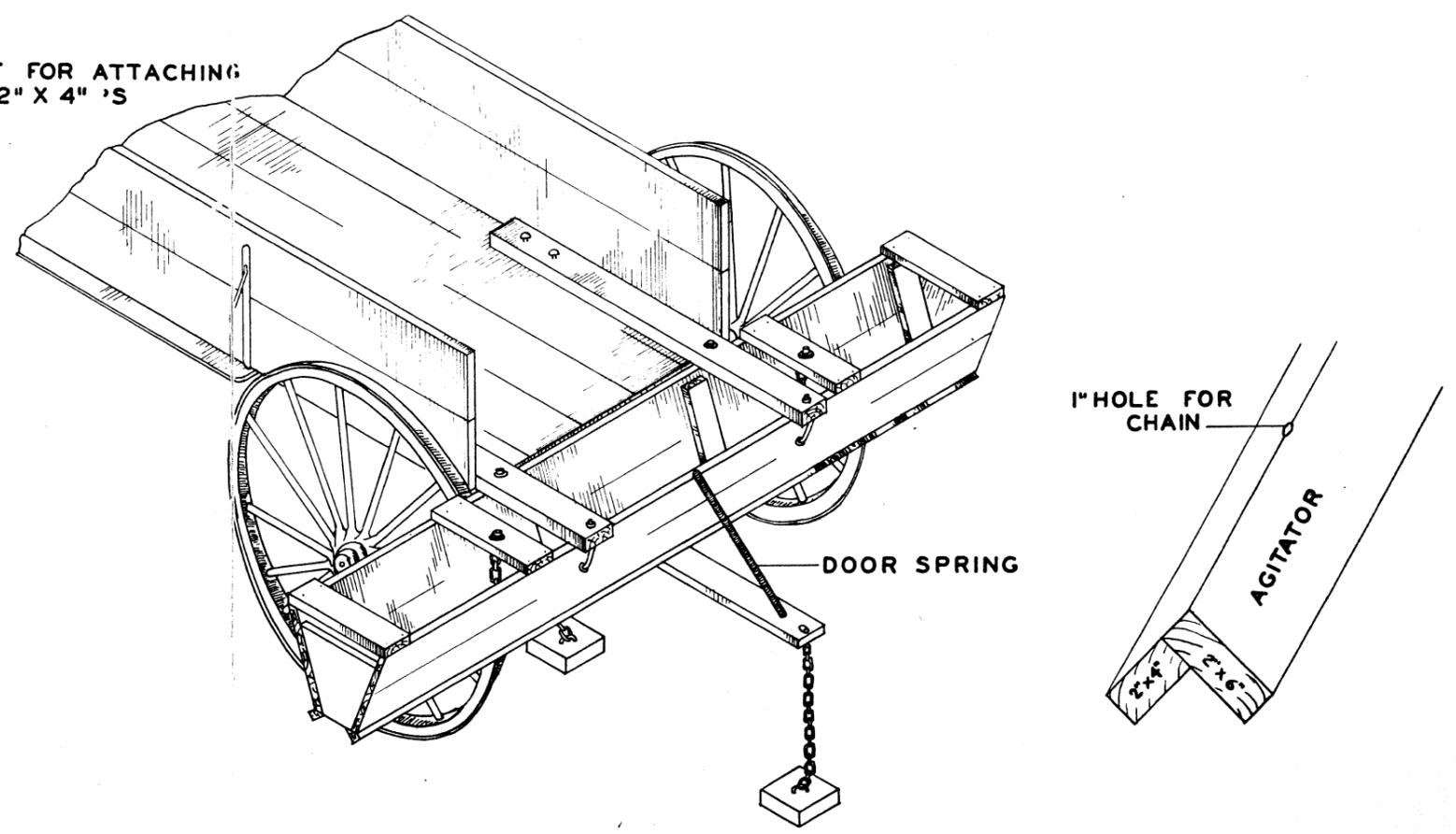
SECTION SHOWING GAGE ADJUSTMENT



KNOCKER ATTACHMENT



DETAIL OF SIDE BOLT FOR ATTACHING SPREADER BOX TO 2\"/>



SPREADER ATTACHED TO WAGON





## BILL OF MATERIALS

Number Required	Size	Material	Description
1	2" x 6" x 7' - 10½"	Pine (Dressed)	Agitator
1	2" x 4" x 7' - 10½"	Pine (Dressed)	Agitator
1	1" x 4" x 6'	Pine (Dressed)	Agitator Plank
4	1" x 6" x 8'	Pine (Dressed)	Spreader Box Sideboards
2	1" x 10" x 13½"	Pine (Dressed)	Box Ends
2	1" x 10" x 13½"	Pine (Dressed)	Division Boards
2	1" x 4" x 13"	Pine (Dressed)	Box Braces
8	1" x 4" x 10"	Pine (Dressed)	Sideboard Cleats
2	1" x 4" x 13"	Pine (Dressed)	Adjusting Bolt Braces
2	2" x 4" x 5' - 6"	Pine (Dressed)	Box Hangers
2	12"	Trace Chain	Agitator Hangers
2	36"	Trace Chain	Weight Hangers
2	½" x 6"	Steel Bolts	Adjusting Bolts (Bent as shown)
4	½" x 6"	Steel Bolts	Side Bolts (Bent as shown)
1	½" x 5"	Steel Bolts	Agitator Plank Bolt

### ALTERNATE KNOCKER ARRANGEMENT

2	2" x 4" x 3'	Pine (Dressed)	Knocker Frame
1	2" x 4" x (outside width of wagon)	Pine (Dressed)	Knocker Frame
1	1" x 4" x 29"	Pine (Dressed)	Knocker Arm
1	1" x 4" x 36"	Pine (Dressed)	Agitator Plank
1	¾" x 4"	Steel Bolt Washer	Knocker Arm Bolt
2	Screen Door Coil Springs		